



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001

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July 20, 2001

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555  
Attn: Mr. Robert Clark (Mail Stop 0-8-E9)  
Project Directorate I-1

Subject: Revisions to Emergency Implementing Procedures  
R.E.Ginna Nuclear Power Plant  
Docket No. 50-244

Gentlemen:

In accordance with 10 CFR 50.4(b)(5), enclosed are revisions to Ginna Station Emergency Plan Implementing Procedures (EPIPs).

We have determined, per the requirements of 10 CFR 50.54(q), that these procedure changes do not decrease the effectiveness of our Nuclear Emergency Response Plan.

Very truly yours,

Peter S. Polfleit  
Corporate Nuclear Emergency Planner

Enclosures

xc: USNRC Region 1 (2-copies of letter and 2-copies of each procedure and markups to control holder 5).  
Resident Inspector, Ginna Station (1-copy of letter and 1-copy of each procedure)  
RG&E Nuclear Safety & Licensing (1-copy of letter)  
Dr. Robert C. Mecredy (2-copies of letter only)

A045



PROCEDURE

REVISION NUMBER

EPIP 1-11	Revision	22
EPIP 1-12	Revision	8
EPIP 2-4	Revision	13
EPIP 2-5	Revision	12
EPIP 2-11	Revision	16
EPIP 2-12	Revision	19
EPIP 5-2	Revision	25



REPORT NO. 01  
REPORT: NPSP0200  
DOC TYPE: PREPIP

GINNA NUCLEAR POWER PLANT  
PROCEDURES INDEX  
EMERGENCY PLAN IMPLEMENTING PROCEDURE

07/20/01 PAGE: 1

PARAMETERS: DOC TYPES - PREPIP

STATUS: EF

5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-1-0	GINNA STATION EVENT EVALUATION AND CLASSIFICATION	026	01/17/01	01/17/01	01/17/06	EF
EPIP-1-1	UNUSUAL EVENT	002	12/09/96	12/09/96	12/09/01	EF
EPIP-1-2	ALERT	003	12/09/96	12/09/96	12/09/01	EF
EPIP-1-3	SITE AREA EMERGENCY	005	12/09/96	01/23/98	01/20/02	EF
EPIP-1-4	GENERAL EMERGENCY	004	12/09/96	12/09/96	12/09/01	EF
EPIP-1-5	NOTIFICATIONS	043	06/04/01	06/04/01	06/04/06	EF
EPIP-1-6	SITE EVACUATION	012	03/12/01	03/12/01	03/12/06	EF
EPIP-1-7	ACCOUNTABILITY OF PERSONNEL	008	07/27/99	07/27/99	07/27/04	EF
EPIP-1-8	SEARCH AND RESCUE OPERATION	004	05/16/00	05/16/00	05/16/05	EF
EPIP-1-9	TECHNICAL SUPPORT CENTER ACTIVATION	019	10/06/00	10/06/00	10/06/05	EF
EPIP-1-10	OPERATIONAL SUPPORT CENTER (OSC) ACTIVATION	010	07/25/00	07/25/00	07/25/05	EF
EPIP-1-11	SURVEY CENTER ACTIVATION	022	07/20/01	07/20/01	07/20/06	EF
EPIP-1-12	REPAIR AND CORRECTIVE ACTION GUIDELINES DURING EMERGENCY SITUATIONS	008	07/20/01	07/20/01	07/20/06	EF
EPIP-1-13	LOCAL RADIATION EMERGENCY	003	08/04/95	01/23/98	01/23/02	EF
EPIP-1-15	USE OF THE HEALTH PHYSICS NETWORK HPN	005	04/24/96	03/03/99	03/03/04	EF
EPIP-1-16	RADIOACTIVE LIQUID RELEASE TO LAKE ONTARIO OR DEER CREEK	004	02/13/98	02/13/98	02/13/02	EF
EPIP-1-17	PLANNING FOR ADVERSE WEATHER	002	06/21/00	06/21/00	06/21/05	EF
EPIP-2-1	PROTECTIVE ACTION RECOMMENDATIONS	019	06/04/01	06/04/01	06/04/06	EF
EPIP-2-2	OBTAINING METEOROLOGICAL DATA AND FORECASTS AND THEIR USE IN EMERGENCY DOSE ASSESSMENT	010	04/30/01	04/30/01	04/30/06	EF
EPIP-2-3	EMERGENCY RELEASE RATE DETERMINATION	012	02/04/00	02/04/00	02/04/05	EF
EPIP-2-4	EMERGENCY DOSE PROJECTIONS - MANUAL METHOD	013	07/20/01	07/20/01	07/20/06	EF
EPIP-2-5	EMERGENCY DOSE PROJECTIONS PERSONAL COMPUTER METHOD	012	07/20/01	07/20/01	07/20/06	EF
EPIP-2-6	EMERGENCY DOSE PROJECTIONS - MIDAS PROGRAM	011	06/21/00	06/21/00	06/21/05	EF
EPIP-2-7	MANAGEMENT OF EMERGENCY SURVEY TEAMS	010	10/23/00	10/23/00	10/23/05	EF



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PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-2-8	VOLUNTARY ACCEPTANCE OF EMERGENCY RADIATION EXPOSURE	005	05/16/00	05/16/00	05/16/05	EF
EPIP-2-9	ADMINISTRATION OF POTASSIUM IODIDE (KI)	003	12/05/97	12/05/97	12/05/01	EF
EPIP-2-10	INPLANT RADIATION SURVEYS	003	01/16/97	01/16/97	01/16/02	EF
EPIP-2-11	ONSITE SURVEYS	016	07/20/01	07/20/01	07/20/06	EF
EPIP-2-12	OFFSITE SURVEYS	019	07/20/01	07/20/01	07/20/06	EF
EPIP-2-13	IODINE AND PARTICULATE ACTIVITY DETERMINATION FROM AIR SAMPLES	008	07/27/99	07/27/99	07/27/04	EF
EPIP-2-14	POST PLUME ENVIRONMENTAL SAMPLING	014	12/04/00	12/04/00	12/04/05	EF
EPIP-2-15	POST PLUME EVALUATION OF OFFSITE DOSES DUE TO DEPOSITION	004	03/06/98	03/06/98	03/06/03	EF
EPIP-2-16	CORE DAMAGE ESTIMATION	010	02/25/00	02/25/00	02/25/05	EF
EPIP-2-17	HYPOTHETICAL (PRE-RELEASE) DOSE ESTIMATES	006	06/04/01	06/04/01	06/04/01	EF
EPIP-2-18	CONTROL ROOM DOSE ASSESSMENT	012	10/06/00	10/06/00	10/06/05	EF
EPIP-3-1	EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION AND OPERATIONS	016	06/04/01	06/04/01	06/04/06	EF
EPIP-3-2	ENGINEERING SUPPORT CENTER (ESC)	009	03/12/01	03/12/01	03/12/06	EF
EPIP-3-3	IMMEDIATE ENTRY	007	06/21/00	06/21/00	06/21/05	EF
EPIP-3-4	EMERGENCY TERMINATION AND RECOVERY	008	03/12/01	03/12/01	03/12/06	EF
EPIP-3-7	SECURITY DURING EMERGENCIES	009	11/16/99	11/16/99	11/16/04	EF
EPIP-4-1	PUBLIC INFORMATION RESPONSE TO AN UNUSUAL EVENT	006	02/13/98	02/13/98	02/13/02	EF
EPIP-4-3	ACCIDENTAL ACTIVATION OF GINNA EMERGENCY NOTIFICATION SYSTEM SIRENS	008	02/13/98	02/13/98	02/13/02	EF
EPIP-4-6	JOINT EMERGENCY NEWS CENTER ACTIVATION	008	02/11/00	02/11/00	02/11/05	EF
EPIP-4-7	PUBLIC INFORMATION ORGANIZATION STAFFING	017	06/04/01	06/04/01	06/04/06	EF
EPIP-5-1	OFFSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	021	06/04/01	06/04/01	06/04/06	EF
EPIP-5-2	ONSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	025	07/20/01	07/20/01	07/20/06	EF
EPIP-5-5	CONDUCT OF DRILLS AND EXERCISES	012	03/12/01	03/12/01	03/12/06	EF



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PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-5-6	ANNUAL REVIEW OF NUCLEAR EMERGENCY RESPONSE PLAN (NERP)	004	05/28/99	05/28/99	05/28/04	EF
EPIP-5-7	EMERGENCY ORGANIZATION	032	06/04/01	06/04/01	06/04/06	EF
EPIP-5-9	TESTING THE OFF HOURS CALL-IN PROCEDURE AND QUARTERLY TELEPHONE NUMBER CHECK	006	05/28/99	05/28/99	05/28/04	EF
EPIP-5-10	EMERGENCY RESPONSE DATA SYSTEM (ERDS)	005	09/05/97	09/05/97	09/05/02	EF
NERP	GINNA STATION NUCLEAR EMERGENCY RESPONSE PLAN	020	03/21/01	03/21/01	12/09/04	EF
TOTAL FOR PREPIP	52					



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE No. EPIP 1-11

REV NO. 22

**SURVEY CENTER ACTIVATION**

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RESPONSIBLE MANAGER

07/20/01  
EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 9 PAGES



## EPIP 1-11

**SURVEY CENTER ACTIVATION****1.0      PURPOSE:**

The purpose of this procedure is to designate duties for individuals who report to the Survey Center.

**2.0      RESPONSIBILITY:**

2.1      The first person to arrive is responsible for implementing this procedure.

2.2      The Survey Center Manager or the Assistant Survey Center Manager is responsible for activation of the Survey Center upon arrival.

**3.0      REFERENCES:**

3.1      Developmental References

3.1.1    Nuclear Emergency Response Plan

3.2      Implementing References

3.2.1    EPIP 2-11, Onsite Surveys

3.2.2    EPIP 2-12, Offsite Surveys

3.2.3    EPIP 2-13, Iodine and Particulate Activity Determination from Air Samples

3.2.4    EPIP 3-3, Immediate Entry

3.2.5    EPIP 5-7, Emergency Organization

3.2.6    RP-SUR-PER-DECON, Personnel, Decontamination

3.2.7    RP-INS-CAM-OPS, Constant Air Monitor Operation

3.2.8    RPA-RW-SHIP-MTL, Shipment of Radioactive Material-General Guidance

**4.0      PRECAUTIONS:**

NONE

**5.0      PREREQUISITES:**

5.1      An Alert, Site Area Emergency or General Emergency has been declared in accordance with EPIP 1-0.

5.2      The Emergency Coordinator has requested that the Survey Center be activated.



**6.0        ACTIONS:**

**NOTE:**        **SELECTED PROCEDURES ARE LOCATED IN A BINDER INSIDE THE SURVEY CENTER. ADDITIONAL PROCEDURES THAT MAY BE NEEDED CAN BE OBTAINED FROM THE NUCLEAR TRAINING RESOURCE CENTER.**

**6.1        ARRIVING PERSONNEL**

**NOTE:**        **DEPENDING ON THE NUMBER OF ARRIVING PERSONNEL, STEPS MAY BE PERFORMED CONCURRENTLY TO MINIMIZE ACTIVATION TIME.**

6.1.1        Sign in under appropriate position on the Survey Center sign in board and obtain position I.D. badge if applicable. Refer to instructions on tag board or procedure EPIP 5-7.

6.1.1.1 Survey Team instructions are located in EPIP 2-11 and EPIP 2-12.

6.1.2        During normal working hours, bring your assigned TLD with you to the Survey Center. During off hours, obtain an emergency TLD from the Survey Center Manager if your normal TLD is not available.

6.1.3        Log in on Dosimetry Log (Attachment 2) and obtain Dosimetry. Refer to EPIP 2-11 and EPIP 2-12 for dosimeter ranges for Survey Team members. Survey Center personnel obtain 0-1500 mr dosimeters.

**6.2        SURVEY CENTER MANAGER OR ASSISTANT:**

6.2.1        Notify Emergency Coordinator (Ext. 3503) of your arrival.

6.2.2        Obtain Survey Center Keys and unlock equipment storage area door.

6.2.3        Check out high range survey equipment.

6.2.4        Ensure both Deskron II radios are ON and the volume is turned UP in the Survey Center.

6.2.5        Inform the RP/Chemistry Manager (Ext. 3507) that the environmental laboratory should be set up to process samples collected by the survey teams. Have RP personnel set up lab using Attachment 1.

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**CAUTION**

**IF DOSE RATES EXCEED 50 MREM/HR, ADVISE EMERGENCY COORDINATOR AND PREPARE FOR RELOCATION AFTER DISPATCH OF SURVEY TEAMS.**

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- 6.2.6 Conduct radiation survey of survey center and reception areas of both training buildings and the simulator and exterior building areas. Periodically, conduct contamination and radiation surveys of all training areas.
- 6.2.7 Place constant air monitor (CAM) in operation, per RP-INS-CAM-OPS.

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**CAUTION**

**IF AIRBORNE IODINE ACTIVITY IS GREATER THAN  $1\text{E-}8 \mu\text{Ci/cc}$ , INFORM THE EMERGENCY COORDINATOR.**

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- 6.2.8 Take an air sample and analyze in accordance with EPIP 2-13.
- 6.2.9 If the Survey Center is not deemed habitable, the Survey Center Manager should inform the Dose Assessment Manager, and suggest relocation to an alternate survey team staging area such as: Warehouse west end of parking lot, Station 13A, Station 204 on Route 104, White house by the entrance to the plant access road, Manor House, RG&E Service Center on Plank Road just west of Route 250, Substation #230 - Atlantic Avenue, Walworth.
- 6.2.10 If the Survey Center is to be relocated, emergency equipment should also be moved. The equipment should include, but is not limited to:
- Radiological Survey Meters
  - Air Samplers and filters
  - TLD's
  - Dosimeters
  - Survey Maps
  - Radios
  - Cellular Phones
  - Procedures
  - Survey Team Boxes
- 6.2.11 Notify a Personnel Coordinator, from EPIP 5-7, that the Survey Center has been activated and to perform a personnel accountability as listed in Step 6.3.3. .
- 6.2.12 Organize the Survey Teams:
- a. To assist in briefing the Survey Teams obtain the most current copy of the NEW YORK STATE RADIOLOGICAL EMERGENCY DATA FORM (Part I) from the Survey Center fax machine (Ext. 3612).
  - b. If the NEW YORK STATE RADIOLOGICAL EMERGENCY DATA FORM (Part I), is not available , contact the TSC and obtain the following information to assist in briefing the survey teams.
    1. Wind speed and direction.
    2. Release in progress or has occurred.
    3. Event classification.
    4. Plant conditions.



- c. Post the event classification and weather data on the information board.
- d. Maintain a log of all Survey Center activities.
- e. Ensure arriving personnel sign in as Survey Team members, Communicator or Assistant Survey Center Managers.
- F. Assist the Survey Teams in their preparations.
- g. Notify the TSC Dose Assessment Manager when the Survey Teams are ready to be dispatched.
- h. Fax a list of the members of each Survey Team and their cellular phone numbers to the TSC Dose Assessment Manager.

6.2.13 Assure personnel arriving at Training Center are frisked during Site Evacuation. Any personnel who need to respond to the EOF or JENC shall have front of the line privilege.

6.2.14 If arriving personnel are required to staff the TSC assist personnel requiring site access by referring to EPIP 3-3, Immediate Entry.

- a. Notify Security at Secondary Alarm Station (Ext. 3267) of TSC members (by name) who will need access to the site.
- b. Advise those going to the TSC of dose rates in the area.

6.2.15 Ensure decontamination facilities are set up.

- a. Switch the decontamination shower and deep sink drains from the sewer system to the holding tank by shutting and locking valve "S" and unlocking and opening valve "T" located to the right of the shower.
- b. Set up receptacles, step-off pads and barriers to route traffic through the facility.
- c. Operate the decontamination facility in accordance with RP-SUR-PERS-DECON.

**NOTE: PERIODICALLY, CHECK THE WATER LEVEL IN THE TANK BY LIFTING THE TANK COVER TO ENSURE THAT THE TANK IS NOT OVERFILLED WHILE IN USE.**

- d. When the holding tank high level alarm sounds (local alarm 1-1/2 feet from top of tank) notify the RP/Chemistry Manager or his designee.

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#### CAUTION

**ENSURE THAT THE DECONTAMINATION SHOWER AND DEEP SINK ARE NOT USED DURING SAMPLING AND /OR PUMPING. HANG "DO NOT USE" SIGNS ON SHOWER AND DEEP SINK.**

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- e. After a tank sample has been taken and analyzed, the RP/Chemistry



Manager or his designee will determine if the tank will be pumped to the sewer system through a manhole located approximately 50 feet west of the holding tank or transferred to the Ginna radioactive waste system by tanker truck.

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**CAUTION**

**THE SURVEY CENTER MANAGER SHOULD NOTIFY THE SIMULATOR BUILDING OCCUPANTS IF OCCUPIED OR SEND SOMEONE TO THE SIMULATOR BUILDING DURING THE PUMPING OPERATION TO THE SEWER SYSTEM TO CHECK THE SUMP PUMPS ARE OPERATING PROPERLY TO HANDLE THE ADDITIONAL WATER BEING PUMPED FROM THE DECON SHOWER HOLDING TANK.**

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- f. After the holding tank has been pumped, restore decontamination operations.
- g. After decontamination activities have been completed and the shower and deep sink have been smear-surveyed clean and released, restore the drain lineup to the sewer system. Shut and lock valve "T" and unlock and open valve "S".
- h. Ensure all evolutions have been entered in the Survey Center Manager's log.

6.2.16 Notify TSC Administration/Communication Manager of accountability.

6.2.17 Segregation of samples

- a. When survey teams return have them drop their samples off in the roped off area outside the Survey Center.
- b. Perform a survey of each sample returned. Place a label on the sample with the dose rate measured.
- c. Segregate the samples into samples that read:
  - (a) greater than or equal to 200mR/hr
  - (b) less than 200mR/hr

**NOTE: INITIAL SAMPLES THAT ARE COLLECTED THAT HAVE ACTIVITY SHOULD BE ANALYZED USING THE RP COUNT EQUIPMENT.**

- d. Notify the RP/Chemistry Manager that samples need to be counted or to make arrangements to ship them to a contact counting facility.

Place these samples in an area that will not contribute to the exposure of personnel in the Survey Center.



- 6.2.18 Following termination of event, ensure the Dosimetry Log (Attachment 2) is forwarded to Dosimetry for entry into the RADOSE Dose Management System (RDMS).

**6.3 PERSONNEL COORDINATOR:**

- 6.3.1 Notify Survey Center Manager of your arrival.
- 6.3.2 Establish a means of constant communications with the Survey Center Manager.
- 6.3.3 Assure accountability of personnel outside the plant fence; but on company property, such as:
- |                                   |                               |
|-----------------------------------|-------------------------------|
| a. Simulator Building (ext. 6668) | e. White House (315-524-5309) |
| b. Training Center (ext. 6600)    | f. Offsite Warehouse          |
| c. Grounds Crew (Radio)           | (ext. 3292 or 3288)           |
| d. Manor House (ext. 3744)        | g. Station 13A Area           |
- 6.3.4 Report completion of accountability to the Survey Center Manager.
- 6.3.5 Notify personnel outside the plant fence, but on company property to the emergency classification level, and direct them to standby for further instructions.
- 6.3.6 Direct evacuating personnel to appropriate assembly areas as required or as directed by Emergency Coordinator or Survey Center Manager.
- 6.3.7 Release evacuating personnel from assembly areas as required or as directed by Emergency Coordinator or Survey Center Manager.
- 6.3.8 Maintain control of evacuated personnel and additional personnel throughout the emergency.

**7.0 ATTACHMENTS:**

1. Environmental Laboratory Operations.
2. Survey Center Dosimetry Log.



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**ENVIRONMENTAL LABORATORY OPERATIONS**  
**(To be performed by Radiation Protection Personnel)**

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**Preparing the Environmental Laboratory to receive samples:**

1. Samples will be transported from the Survey Center to the Environmental Laboratory. Place radioactive materials signs on the doors to the Environmental Laboratory and the count room. Rope off the west end of the Environmental Laboratory for sample storage. Remove any environmental samples stored in that area to prevent cross contamination.
2. Consult with the Survey Center Manager to determine the best route to transport the samples:
  - a. If samples are transported inside thru the building, personnel may be exposed by the samples or contamination may be spread in the building. A route should be cleared prior to transport and surveyed for contamination afterwards.
  - b. If samples are transported outside, there may be snow or rain to degrade the samples or there may be contamination deposited on the ground from a release. Place step-off pads down where personnel will re-enter the building. Perform surveys at that point to ensure that contamination has not been brought into the building.

**Transport of the samples from the Survey Center to the Environmental Laboratory.**

1. Ensure that the personnel transporting the samples are wearing dosimetry.
2. Place the samples to be transported into a clean plastic bag to prevent the spread of contamination.
3. Move the samples to the Environmental Laboratory.
4. Perform a survey of the route (smears or direct frisk) to ensure that contamination was not spread.

**Analyzing samples in the Environmental Laboratory**

1. Laboratory operations should be conducted using the appropriate Radiation Protection procedures for the Environmental Laboratory.
2. Inform the RP/Chemistry Manager when results are available from the Gamma Spectroscopy System. The TSC/EOF personnel can view the results from the facilities via modem.



3. If data needs to be faxed to the TSC/EOF use the fax machine in the Survey Center.

**Moving the samples to an offsite laboratory.**

1. Ensure that the samples are properly packaged, labeled and marked for activity in accordance with procedure RPA-RW-SHIP-MTL.
2. Laboratory operations at the offsite laboratory should be conducted using their procedures for analyzing samples.



[illegible]

Dose Entered: \_\_\_\_\_

Date: \_\_\_\_\_



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

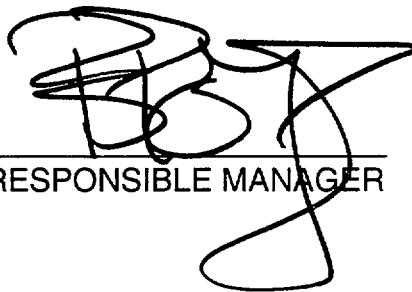
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PROCEDURE NO. EPIP 1-12

REV. NO. 8

REPAIR AND CORRECTIVE ACTION GUIDELINES

DURING EMERGENCY SITUATIONS

  
RESPONSIBLE MANAGER

07/20/01  
EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 6 PAGES



**EPIP 1-12****REPAIR AND CORRECTIVE ACTION GUIDELINES****DURING EMERGENCY SITUATIONS****1.0 PURPOSE:**

To describe the guidelines for emergency response personnel that should be considered for repair and corrective actions during emergency situations.

**2.0 RESPONSIBILITY:**

2.1 The Maintenance Assessment Manager and/or Manager of OSC Satellite shall assemble a repair and corrective action team.

2.2 The Maintenance Assessment Manager and the Radiation Protection/Chemistry Manager are responsible for briefing the repair and corrective action team.

2.3 The Radiation Protection/Chemistry Manager is responsible for implementing section 6.2 of this procedure.

**3.0 REFERENCES:**

3.1 Developmental References

None.

3.2 Implementing References

3.2.1 EPIP 2-10, Inplant Radiation Surveys

3.2.2 EPIP 2-11, Onsite Surveys

3.2.3 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure

3.2.4 EPIP 3-3, Immediate Entry

3.2.5 RP-SUR-PERS-DECON, Personnel Decontamination.



**4.0      PRECAUTIONS:**

The activities considered should not involve control room manipulations normally performed by control room personnel.

**5.0      PREREQUISITES:**

5.1      The Maintenance Assessment Manager has determined that a repair/corrective action is necessary.

5.2      All administrative procedures should be adhered to unless otherwise directed in emergency procedures, or by the Emergency Coordinator.

5.3      Perform work using the Work Control System (A-1603 series), if time permits.

**6.0      ACTIONS:****6.1      Maintenance Assessment Manager, perform the following:**

6.1.1    Upon request for repair/corrective actions, assemble a repair/corrective action team. The team composition should:

- a.      Consist of at least two individuals.
- b.      Be composed of the most qualified personnel available for the task and their alternates.
- c.      If required, check the exposure history and respiratory qualifications.

6.1.2    Direct the Technical Assessment Manager, Operations Assessment Manager, or Radiation Protection/Chemistry Manager to provide assistance for the activity.

**6.2      The Radiation Protection/Chemistry Manager, prior to dispatching the repair and corrective action team shall:**

6.2.1    Perform an estimate of total dose required to perform the task and insure that individuals are aware of maximum dose limits.

6.2.2    Select a qualified individual to perform the radiation protection functions for the team while the activity is being performed.

6.2.3    Select the proper protective clothing, respiratory protection equipment, dosimetry and dose rate meters for the activity.



- 6.2.4 Evaluate the exposure history for personnel selected for the activity and make recommendation where appropriate.

### **6.3 Briefing**

- 6.3.1 The Maintenance Assessment Manager and the RP/Chemistry Manager shall provide a briefing for the team to include the following:
- a. Identify the workers
  - b. Scope of work and verify that both the RP technician and workers are in complete agreement. The discussion should include:
    - 1. the work area
    - 2. scope of work and procedural precautions and responsibilities
    - 3. tools, spare parts & equipment, procedures needed
    - 4. amount of time to perform work
    - 5. Use of 3-way communication and the phonetic alphabet during the performance of the job.
  - c. Consider using a digital camera (from the ALARA group) to take a picture of the component or area so the picture can be analyzed by Maintenance and Engineering.
  - d. Suggested routes for entry and egress
  - e. Discuss contingency actions in the event of anticipated or unexpected hazards or conditions are encountered. Discuss the action to be taken in the event of a site evacuation.
  - f. Check authorized radiation exposure limits for each worker. Discuss exposure limitations. EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure, provides additional guidance.
  - g. Dosimetry
    - 1. Dosimeter capable of measuring exposure levels expected.



2. Alarming dosimeter
    - Integrated dose alarm
    - Dose rate alarm
  3. Multi-badging
- h. Meters capable of measuring radiation levels expected
- i. Air sampling requirements
1. Particulates
  2. Radioiodines
  3. Noble gases
- j. Respirators
1. SCBA with voice emitter
  2. PAPR forced air respirator
  3. Scott filtered respirator
- k. Need for KI for radioiodine exposures (refer to EPIP 2-9, Administration of Potassium Iodide)
- l. Protective clothing
- m. Contamination control procedures
1. Dress and undress areas
  2. Step-off pads
- n. Discuss portable or installed ARMs and CAMs regarding their function and work response to alarms.
- o. Potential concerns such as high airborne and contamination.
- p. Radiation and contamination survey
- q. Radios for communications with OSC
- r. Radwaste disposal



## 6.4 Mission

\*\*\*\*\*

### CAUTION

#### MAINTAIN VISUAL OR VOICE CONTACT WITH EACH OTHER.

\*\*\*\*\*

- 6.4.1 If entering the site from the Survey Center, implement EPIP 3-3, Immediate Entry.
- 6.4.2 If dispatched from the Operations Support Center, follow guidance covered in the briefing by the Radiation Protection/Chemistry Manager.
- 6.4.3 Perform repair/corrective action as required. Follow guidance provided in the briefing.
- 6.4.4 Establish a method of communication to keep the Maintenance Assessment Manager informed of progress during the activity using 3-way communications and phonetic alphabet.
- 6.4.5 The Maintenance Assessment Manager or designee should maintain a Maintenance Activity Log.
- 6.4.6 When mission is completed, return to nearest local access control point for contamination check.

## 6.5 Decontamination

- 6.5.1 At the local control point, follow procedures specified by Radiation Protection.
- 6.5.2 If necessary, perform decontamination in accordance with RP-SUR-PERS-DECON, Personnel Decontamination.
- 6.5.3 Report to the Maintenance Assessment Manager for a debriefing.

## 6.6 Debriefing

- 6.6.1 Maintenance Assessment Manager and Radiation Protection/ Chemistry Manager, debrief the repair/ corrective action teams. The discussion should include:
  - a. Accountability of team
  - b. Dose received by team members
  - c. Radiation survey results obtained from mission and documented on survey map



- d. Repairs accomplished
- e. Parts used and needing replacement
- f. Procedures completed
- g. Observations of damage (including digital camera pictures)
- h. Unusual or abnormal conditions observed on route to and from the repair location.

6.6.2 Provide information from the repair/corrective action effort to the Emergency Coordinator and other Managers, as requested.

**7.0 ATTACHMENTS:**

None.



ROCHESTER GAS & ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-4

REV. NO. 13

EMERGENCY DOSE PROJECTIONS - MANUAL METHOD

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RESPONSIBLE MANAGER

07/20/01  
EFFECTIVE DATE

Category 1.0

This procedure contains 16 pages



**EPIP 2-4**

**EMERGENCY DOSE PROJECTIONS - MANUAL METHOD**

**1.0 PURPOSE**

- 1.1 The purpose of this procedure is to provide a manual method for performing projections of downwind dose rates and doses. Such information is needed to decide upon protective actions to be recommended to limit the exposure of the general public and emergency workers. This procedure is intended as a backup to EPIP 2-5.

**2.0 RESPONSIBILITY**

The TSC or EOF Dose Assessment Manager is responsible for implementing this procedure.

**3.0 REFERENCES**

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.1.2 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)

3.1.3 Ginna UFSAR, Chapter 15

3.1.4 Regulatory Guide 1.109

3.2 Implementing References

3.2.1 EPIP 2-1, Protective Action Recommendations

3.2.2 EPIP 2-2, Obtaining Meteorological Data and Forecasts and their use in Emergency Dose Assessment

3.2.3 EPIP 2-3, Emergency Release Rate Determination

**4.0 PRECAUTIONS**

None.



## 5.0 **PREREQUISITES**

- 5.1 The following equipment and data sources are available for use in performing manual dose projections.
  - 5.1.1 Xu/Q tabulated values (Attachment 2)
  - 5.1.2 Wind and temperature indications from the Control Room
  - 5.1.3 Plant Process Computer System (PPCS) - EVENT 2 Report
  - 5.1.4 Control Room Radiation Monitor System (RMD) Panel read-outs of effluent monitors
  - 5.1.5 Personal Computer in TSC and EOF (for obtaining 15 minute meteorological data average from Ginna Primary Weather Tower)
  - 5.1.6 Back-up wind speed and direction indications at Station 13A (accessible from TSC or EOF IBM terminals) and National Weather Service.

## 6.0 **ACTIONS**

- 6.1 Preliminary Downwind Dose Estimates
  - 6.1.1 For initial notifications purposes, a preliminary estimate of potential offsite doses and releases may be obtained by the Control Room using EPIP 2-18.
  - 6.1.2 For calculations performed by the Control Room, TSC and EOF staffs, a 4-hour release duration should be used if the duration is not known. A 4-hour release duration is consistent with the value used by Wayne and Monroe Counties.
  - 6.1.3 If iodine effluent monitor or isotopic data are unavailable, a default value of  $1.0E-4$  should be used to reflect the estimated release concentration ratio of gross iodine to noble gas. (See Attachment 1)

**NOTE:      WHEN DATA IS AVAILABLE, CALCULATE AN IODINE-TO-NOBLE GAS RATIO THAT REFLECTS PRESENT CONDITIONS.**

- 6.1.4 Determine the classification of the emergency with respect to plant releases and site boundary doses from the criteria provided in EPIP 1-0.
- 6.2 Use of Meteorological and Release Data with EPA Dose Factors Manual Method



**NOTE: ANY PRELIMINARY DOES ESTIMATES USED AS A BASIS FOR EMERGENCY CLASSIFICATION OR PROTECTIVE ACTION RECOMMENDATIONS SHOULD BE REFINED AS FOLLOWS USING RELEASE MEASUREMENTS AND ACTUAL METEOROLOGICAL SAMPLING DATA AS THEY BECOME AVAILABLE.**

- 6.2.1 Meteorological Data (15 min. averages) can be obtained by modem from the MIDAS storage computer in the Meteorological Tower Trailer by using the Personal Computer. (See EPIP 2-2 for instructions.)
- 6.2.2 Determine Pasquill Stability Class (A-G), using Attachment 2, in this procedure.
- 6.2.3 Obtain concentration or particulate, noble gas or iodines and vent flow to determine release rate. Refer to EPIP 2-3 or refer to the listing of effluent monitor calibration factors provided in Attachment 6 to this procedure.

**NOTE: Standard Release Rates\***

Plant Vent	=	Normal = 75,184 cfm, Emergency = 69,074 cfm
Containment	=	Normal and Emergency = 15,300 cfm
Air Ejector	=	Normal and Emergency = 6.00E2

**\* Verify values with Dose Assessment Manager**

- 6.2.4 To calculate the downwind concentration of noble gas, particulates or radioiodine, multiply the release rate of radioactivity (Ci/sec) from the plant times the  $X/Q$  ( $\text{sec}/\text{m}^3$ ) dispersion coefficient determined in Attachment 1. The resultant concentration will be  $\mu\text{Ci}/\text{cc}$ . Perform these calculations on Attachment 1.
- 6.2.5 Obtain an initial release estimate of release duration from the TSC Emergency Coordinator or Recovery Manager. If this estimate is unavailable, use an initial release duration estimate of 4 hours for dose projection purposes.
- 6.2.6 Whole body gamma dose rate due to noble gas and radioiodine isotopes is estimated using Attachments 3 and 4 and using the listed factor corresponding to the approximate time after shutdown. Multiply this factor times the concentration calculated in Step 6.2.4 to get Rem/hour.



- 6.2.7 Whole body gamma dose is obtained by multiplying the dose rate calculated in Step 6.2.6 times the integrated exposure determined in Step 6.2.5.
- 6.2.8 Thyroid dose rate to the child (actually, the thyroid dose commitment per hour of inhalation) is estimated using Attachment 5 and using the listed factor corresponding to the time after shutdown. Multiply this factor times the concentration calculated in Step 6.2.4 to get Rem/hour. Project dose rates are always determined for child thyroid as they are the most critical population group. To determine the dose or dose rate for adults (which would only be necessary for emergency workers) divide the dose or dose rate for the child by 2.
- 6.2.9 Thyroid dose is found by multiplying the dose rate calculated in step 6.2.8 times the exposure time determined in step. 6.2.5.

### 6.3 Protective Action Recommendations

- 6.3.1 Recommend the appropriate measures for the general public in accordance with EPIP 2-1.
- 6.3.2 Weather forecast information should be considered when planning protective actions. Refer to EPIP 2-2 for instructions to obtain weather forecast information.

## 7.0 ATTACHMENTS

1. Dose Assessment Calculation
2. Pasquill Stability Class Criteria
3. Noble Gas Whole Body Dose Conversion Factors
4. Radioiodine Whole Body Dose Conversion Factors
5. Radioiodine Thyroid Dose Conversion Factors
6. RMS Process Monitor Calibration Factors



**DOSE ASSESSMENT CALCULATION****GENERAL INFORMATION:**

Current Time: \_\_\_\_\_

Shutdown Time: \_\_\_\_\_

Release Start Time: \_\_\_\_\_

Release Vent:	Plant Vent	Air Ejector	ARV or Safety
	Containment Vent	Other	

Stability Class:	A B C	D	E F G
	Unstable	Neutral	Stable

Vent Flow (CFM): \_\_\_\_\_  
 See Step 6.2.3 for flow rates

**VENT CONCENTRATION FROM EFFLUENT MONITOR READING:****NOTE: Vent concentration can be input directly from SPING monitors, if available.****Noble Gas** (Monitor Number \_\_\_\_\_):

$$\frac{\text{_____ cpm}}{\text{(count rate)}} \times \frac{\text{_____ } \mu\text{Ci/cc}}{\text{(calib. factor) cpm}} = \frac{\text{_____ } \mu\text{Ci/cc}^*}{\text{(vent cond.)}}$$

**Radioiodine** (Monitor Number \_\_\_\_\_):

$$\frac{\text{_____}}{\text{(later counts)}} - \frac{\text{_____}}{\text{(initial counts)}} \div \frac{\text{_____ hours}}{\text{(time between readings)}}$$

$$\frac{\text{_____}}{\text{(\Delta cpm/hr from monitor)}} \times \frac{\text{_____ } \mu\text{Ci/cc}}{\text{(calib. factor)}} = \frac{\text{_____ } \mu\text{Ci/cc}}{\text{(vent cond.)}}$$

**Particulate** (Monitor Number \_\_\_\_\_):

$$\frac{\text{_____ cpm}}{\text{(count rate)}} \times \frac{\text{_____ } \mu\text{Ci/cc}}{\text{(calib. factor) cpm}} = \frac{\text{_____ } \mu\text{Ci/cc}^*}{\text{(vent cond.)}}$$

**Flowrate Conversion** (Convert CFM to cc/sec) (Step 6.2.3)

$$\text{_____ CFM} \times 2.8\text{E4 cc/ft}^3 \times 1 \text{ min/60 sec} = \text{_____ cc/sec}$$



**NOBLE GAS:**

To calculate release RATE in Ci/sec from monitors:

$$\text{_____ } \mu\text{Ci/cc} \times \text{_____ cc/sec} \times 1\text{E-6 } \mu\text{Ci/cc} = \text{_____ Ci/sec}$$

**NOTE: TO PREDICT DOWNWIND CONCENTRATION, OBTAIN FIRST VALUE FROM ATTACHMENT 2.**

**NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.**

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ } \text{mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{\text{S.B. 500 meters}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ } \text{mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{2 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ } \text{mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{5 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ } \text{mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{10 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ } \text{mph}) = \text{_____ } \mu\text{Ci/cc at } \text{_____}$$

(windspeed) (distance)

Hours after shutdown \_\_\_\_\_

Rem/hr. per  $\mu\text{Ci/cc}$  (Attachment 3): \_\_\_\_\_

Distance	<u>SB</u>	<u>2 miles</u>	<u>5 miles</u>	<u>10 miles</u>	_____
Noble Gas Whole Body Dose Rate (REM/hour)	_____	_____	_____	_____	_____
Projected duration (Hours)	_____	_____	_____	_____	_____
Noble Gas Projected Whole Body Dose (REM) (External Dose Equivalent - EDE)	_____	_____	_____	_____	_____



**RADIOIODINE:**

To calculate release RATE in Ci/sec from monitor:  
(or use appropriate NG to I Default 1:1E-4)

$$\text{_____ } \mu\text{Ci/cc} \times \text{_____ cc/sec} \times 1\text{E-6 } \mu\text{Ci/cc} = \text{_____ Ci/sec}$$

**NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.**

To predict downwind concentration:

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{\text{S.B. 500 meters}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{2 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{5 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{10 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/(\text{_____ mph}) = \text{_____ } \mu\text{Ci/cc at } \underline{\hspace{1cm}}$$

(windspeed) (distance)

Hours after shutdown \_\_\_\_\_

Rem/hr. per  $\mu\text{Ci/cc}$  (Attachment 4): \_\_\_\_\_

Distance	<u>SB</u>	<u>2 miles</u>	<u>5 miles</u>	<u>10 miles</u>	_____
Radioiodine Whole Body Dose Rate (REM/hour)	_____	_____	_____	_____	_____
Projected duration (Hours) _____	_____	_____	_____	_____	_____
Radioiodine Projected Whole Body Dose (REM) (Committed Effective Dose Equivalent - CEDE) + PLUS +	_____	_____	_____	_____	_____
Noble Gas Projected Whole Body Dose (REM) from previous page (External Dose Equivalent - EDE) + EQUALS +	_____	_____	_____	_____	_____
TOTAL Projected Whole Body Dose (REM) (Total Effective Dose Equivalent - (TEDE)	_____	_____	_____	_____	_____



**RADIOIODINE:** (continued)

To calculate release RATE in Ci/sec from monitors:  
(or use appropriate NG to I DEFAULT 1:1E-4)

\_\_\_\_\_  $\mu\text{Ci/cc}$  x \_\_\_\_\_  $\text{cc/sec}$  x  $1\text{E-6 } \mu\text{Ci/cc}$  = \_\_\_\_\_  $\text{Ci/sec}$

Rem/hr. per  $\mu\text{Ci/cc}$  (Attachment 5): \_\_\_\_\_

Distance	<u>SB</u>	<u>2 miles</u>	<u>5 miles</u>	<u>10 miles</u>	_____
Radioiodine Whole Body Dose Rate (REM/hour)	_____	_____	_____	_____	_____
Projected duration (Hours)	_____	_____	_____	_____	_____
Radioiodine Projected Thyroid Dose (REM) (Committed Dose Equivalent - CDE)	_____	_____	_____	_____	_____



**PARTICULATE:**

To calculate release RATE in Ci/sec from monitors:

$$\text{_____ } \mu\text{Ci/cc} \times \text{_____ cc/sec} \times 1\text{E-6 } \mu\text{Ci/cc} = \text{_____ Ci/sec}$$

**NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.**

To predict downwind concentration:

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/( \text{ ) mph} = \text{_____ } \mu\text{Ci/cc at } \underline{\text{S.B. 500 meters}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/( \text{ ) mph} = \text{_____ } \mu\text{Ci/cc at } \underline{2 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/( \text{ ) mph} = \text{_____ } \mu\text{Ci/cc at } \underline{5 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/( \text{ ) mph} = \text{_____ } \mu\text{Ci/cc at } \underline{10 \text{ miles}}$$

(windspeed)

$$\text{_____ } \frac{\text{sec-mph}}{\text{m}^3} \times \text{_____ Ci/sec} \times 1/( \text{ ) mph} = \text{_____ } \mu\text{Ci/cc at } \underline{\hspace{2cm}}$$

(windspeed) (distance)

Hours after shutdown \_\_\_\_\_

Rem/hr. per  $\mu\text{Ci/cc}$ : \_\_\_\_\_

Distance	<u>SB</u>	<u>2 miles</u>	<u>5 miles</u>	<u>10 miles</u>	_____
Particulate Whole Body Dose Rate (REM/hour)	_____	_____	_____	_____	_____
Projected duration (Hours)	_____	_____	_____	_____	_____
Particulate Projected Whole Body Dose (REM)	_____	_____	_____	_____	_____

**NOTE: THE APPROPRIATE DOSE CONVERSION FACTOR FOR PARTICULATES WOULD BE BASED UPON THE RESULTS OF AN ISOTOPIC ANALYSIS OF THE MIXTURE AND REFERENCING EPA-400-R-92-001.**



**PASQUILL STABILITY CLASS CRITERIA**

PASQUILL STABILITY CLASS	DELTA T (DEG F/100 FT)		150 FT - 33 FT DELTA T (DEG F/117 FT)		250 FT - 33 FT DELTA T (DEG F/217 FT)	
	GREATER THAN	LESS THAN OR EQUAL TO	GREATER THAN	LESS THAN OR EQUAL TO	GREATER THAN	LESS THAN OR EQUAL TO
A	---	1.0	---	-1.17	---	-2.17
B	-1.0	-0.9	-1.17	-1.05	-2.17	-1.95
C	-0.9	-0.8	-1.05	-0.94	-1.95	-1.74
D	-0.8	-0.3	-0.94	-0.35	-1.74	-0.65
E	-0.3	0.8	-0.35	0.94	-0.65	1.74
F	0.8	2.2	0.94	2.57	1.74	4.77
G	2.2	---	2.57	---	4.77	---



## PASQUILL STABILITY CLASS CRITERIA

Attachment 2, Rev. 13

Page 2 of 2

GINNA SITE VALUES OF  $X_u/Q$  AS A FUNCTION OF  
STABILITY AND DISTANCE

<u>MILES</u>	UNSTABLE			NEUTRAL (D)		STABLE (F)	
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
0.1	4.48E-5	2.32E-4	6.44E-4	9.16E-4	9.35E-4	1.18E-3	1.22E-3
0.2	1.91E-5	7.88E-5	2.29E-4	3.89E-4	4.37E-4	6.30E-4	7.35E-4
0.3 SB	1.16E-5	4.20E-5	1.25E-4	2.36E-4	2.80E-4	4.36E-4	5.46E-4SB
0.4	8.12E-6	2.68E-5	8.15E-5	1.65E-4	2.04E-4	3.35E-4	4.43E-4
0.5	6.17E-6	1.90E-5	5.84E-5	1.26E-4	1.60E-4	2.74E-4	3.76E-4
0.6	4.93E-6	1.43E-5	4.45E-5	1.00E-4	1.31E-4	2.32E-4	3.29E-4
0.7	4.08E-6	1.12E-5	3.54E-5	8.29E-5	1.11E-4	1.60E-4	2.94E-4
0.9	2.99E-6	7.60E-6	2.43E-5	6.08E-5	8.40E-5	1.60E-4	2.44E-4
1.0	2.63E-6	6.45E-6	2.08E-5	5.33E-5	7.49E-5	1.46E-4	2.26E-4
1.1	2.34E-6	5.56E-6	1.80E-5	4.74E-5	6.74E-5	1.34E-4	2.11E-4
1.2	2.10E-6	4.86E-6	1.58E-5	4.26E-5	6.13E-5	1.23E-4	1.98E-4
1.6	1.47E-6	3.11E-6	1.03E-5	2.99E-5	4.47E-5	9.50E-5	1.60E-4
1.9	1.19E-6	2.38E-6	7.98E-6	2.41E-5	3.70E-5	8.12E-5	1.41E-4
2.0	1.12E-6	2.20E-6	7.39E-6	2.27E-5	3.50E-5	7.75E-5	1.36E-4
2.2	9.95E-7	1.89E-6	6.41E-6	2.01E-5	3.15E-5	7.11 E-5	1.27E-4
2.5	8.50E-7	1.55E-6	5.30E-6	1.72E-5	2.74E-5	6.33E-5	1.16E-4
2.8	7.39E-7	1.30E-6	4.47E-6	1.50E-5	2.42E-5	5.71 E-5	1.06E-4
3.0	6.79E-7	1.17E-6	4.04E-6	1.37E-5	2.24E-5	5.36E-5	1.01E-4
3.5	5.62E-7	9.20E-7	3.21E-6	1.14E-5	1.90E-5	4.66E-5	9.04E-5
3.7	5.24E-7	8.44E-7	2.95E-6	1.06E-5	1.78E-5	4.43E-5	8.68E-5
4.0	4.76E-7	7.47E-7	2.63E-6	9.63E-6	1.64E-5	4.41 E-5	8.20E-5
4.2	4.49E-7	6.93E-7	2.44E-6	9.07E-6	1.55E-5	3.95E-5	791 E-5
4.5	4.12E-7	6.22E-7	2.20E-6	8.33E-6	1.44E-5	3.71 E-5	7.52E-5
4.8	3.81E-7	5.63E-7	2.00E-6	7.69E-6	1.34E-5	3.50E-5	7.17E-5
5.0	3.62E-7	5.28E-7	1.88E-6	7.31E-6	1.28E-5	3.37E-5	6.98E-5
5.2	3.45E-7	4.97E-7	1.78E-6	6.96E-6	1.23E-5	3.25E-5	6.76E-5
5.5	3.22E-7	4.55E-7	1.63E-6	6.50E-6	1.15E-5	3.09E-5	6.49E-5
5.8	3.01E-7	4.19E-7	1.51E-6	6.09E-6	1.09E-5	2.94E-5	6.24E-5
6.0	2.98E-7	3.98E-7	1.44E-6	5.84E-6	1.05E-5	2.85E-5	6.09E-5
6.2	2.78E-7	3.78E-7	1.37E-6	5.60E-6	1.01 E-5	2.77E-5	5.95E-5
6.5	2.62E-7	3.51E-7	1.27E-6	5.29E-6	9.61 E-6	2.65E-5	5.74E-5
6.8	2.48E-7	3.27E-7	1.19E-6	5.00E-6	9.15E-6	2.55E-5	5.56E-5
7.0	2.39E-7	3.13E-7	1.14E-6	4.82E-6	8.86E-6	2.48E-5	5.44E-5
7.2	2.31E-7	3.00E-7	1.09E-6	4.66E-6	8.59E-6	2.42E-5	5.33E-5
7.5	2.20E-7	2.81E-7	1.03E-6	4.43E-6	8.22E-6	2.33E-5	5.17E-5
7.8	2.09E-7	2.65E-7	9.71E-7	4.22E-6	7.87E-6	2.25E-5	5.03E-5
8.0	2.03E-7	2.54E-7	9.35E-7	4.09E-6	7.66E-6	2.20E-5	4.93E-5
8.2	1.97E-7	2.45E-7	9.01E-7	3.97E-6	7.45E-6	2.15E-5	4.85E-5
8.5	1.88E-7	2.31E-7	8.54E-7	3.80E-6	7.16E-6	2.08E-5	4.72E-5
8.8	1.80E-7	2.19E-7	8.11E-7	3.64E-6	6.90E-6	2.01 E-5	4.60E-5
9.0	1.75E-7	2.12E-7	7.84E-7	3.54E-6	6.73E-6	1.97E-5	4.53E-5
9.2	1.71E-7	2.05E-7	7.59E-7	3.44E-6	6.57E-6	1.93E-5	4.45E-5
9.5	1.64E-7	1.95E-7	7.23E-7	3.31E-6	6.34E-6	1.88E-5	4.35E-5
9.8	1.58E-7	1.85E-7	6.91E-7	3.18E-6	6.13E-6	1.83E-5	4.25E-5
10.0	1.54E-7	1.80E-7	6.70E-7	3.11E-6	5.99E-6	1.79E-5	4.19E-5

SB = Site Boundary



**NOBLE GAS DOSE CONVERSION FACTORS FOR WHOLE BODY (EDE)**

<u>Time After Shutdown (Hours)</u>	<u>Rem/Hour Per <math>\mu\text{Ci/cc}</math></u>
0	470
1	434
2	331
3	265
4	221
6	159
12	65

**NOTE: MULTIPLY MCI/CC BY THE LISTED FACTOR TO OBTAIN REM/HOUR.**



**RADIOIODINE DOSE CONVERSION FACTORS FOR WHOLE BODY (CEDE)**

<u>Time After Shutdown (Hours)</u>	<u>Rem/Hour Per <math>\mu\text{Ci/cc}</math></u>
0	1.73E4
1	1.57E4
2	1.76E4
3	1.92E4
4	2.05E4
6	2.24E4
12	2.65E4

**NOTE: MULTIPLY MCI/CC BY THE LISTED FACTOR TO OBTAIN REM/HOUR.**



**RADIOIODINE CONVERSION FACTORS FOR THYROID (CDE)**

<u>Time After Shutdown (Hours)</u>	<u>Rem/Hour Per <math>\mu\text{Ci/cc}^*</math></u>
0	4.4E5
1	5.4E5
2	6.4E5
3	7.4E5
4	7.8E5
6	8.8E5
12	1.1E6

**NOTE: MULTIPLY MCI/CC BY THE LISTED FACTOR TO OBTAIN REM/HOUR.**

- \* These conversion factors have been increased by a factor of two. EPA-400 uses the adult thyroid. New York State has increased EPA-400 factors by two to adjust for child thyroid.



**RMS PROCESS MONITOR CALIBRATION FACTORS****R-10A    CONTAINMENT IODINE:**

$\mu\text{Ci/cc Iodine-131} = (\Delta \text{ cpm/hour}) (1.10 \text{ E-11})$

**R10B    PLANT VENT IODINE:**

$\mu\text{Ci/cc Iodine-131} = (\Delta \text{ cpm/hour}) (9.02 \text{ E-12})$

**R-11    CONTAINMENT PARTICULATE:**

$\mu\text{Ci/cc as Cs-137} = ( \text{ cpm}) (3.12 \text{ E-12})$

**R-12    CONTAINMENT GAS:**

$\mu\text{Ci/cc Xe-133} = ( \text{ cpm}) (5.6 \text{ E-8})$

**R-13    PLANT VENT PARTICULATE:**

$\mu\text{Ci/cc as Cs-137} = ( \text{ cpm}) (2.91 \text{ E-12})$

**R-14    PLANT VENT GAS:**

Calibration factors calculated based on Kr-85 and Xe-133 calibration factors.

$\mu\text{Ci/cc as Xe-133} = ( \text{ cpm}) (5.6 \text{ E-8})$

**R-15    AIR EJECTOR AND GLAND STEAM EXHAUST GAS:**

$\mu\text{Ci/cc Xe-133} = ( \text{ cpm}) (4.6 \text{ E-8})$

$\mu\text{Ci/cc as normal gas mixture} * = ( \text{ cpm}) (5.0 \text{ E-8})$

\* Based on the mixture of noble gas present in the reactor coolant during the 01/25/82 tube rupture which is representative of normal operations.

**R-16    CONTAINMENT FAN COOLER SERVICE WATER:**

$\mu\text{Ci/cc as Cs-137} = ( \text{ cpm}) (1.5 \text{ E-8})$

**R-17    COMPONENT COOLING:**

$\mu\text{Ci/cc as Cs-137} = ( \text{ cpm}) (1.4 \text{ E-8})$



**RMS PROCESS MONITOR CALIBRATION FACTORS****R-18 RADWASTE SYSTEM DISCHARGE::** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.4 \text{ E-8})$ **R-19 STEAM GENERATOR BLOWDOWN:** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.4 \text{ E-8})$ **R-20A SPENT FUEL POOL HEAT EXCHANGER SERVICE WATER:** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (2.4 \text{ E-8})$ **R-20B SPENT FUEL POOL HEAT EXCHANGER SERVICE WATER** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.7 \text{ E-7})$ **R-21 RETENTION TANK:** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.5 \text{ E-8})$ **R-22 HIGH CONDUCTIVITY WASTE TANK:** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.2 \text{ E-8})$ **R-31 STEAM LINE RADIATION MONITOR:** $\text{mr/hr} = ( \text{ cpm} ) (2.11 \text{ E-2})$ **R-32 STEAM LINE RADIATION MONITOR:** $\text{mr/hr} = ( \text{ cpm} ) (2.02 \text{ E-2})$ **R-36 CONTROL ROOM NOBLE GAS MONITOR:** $\mu\text{Ci/cc as Kr-85} = ( \text{ cpm} ) (1.75 \text{ E-8})$  $\mu\text{Ci/cc as Xe-133} = ( \text{ cpm} ) (1.41 \text{ E-7})$ **R-37 CONTROL ROOM PARTICULATE MONITOR:** $\mu\text{Ci/cc as Cs-137} = ( \text{ cpm} ) (1.68 \text{ E-12})$ **R38 CONTROL ROOM IODINE MONITOR:** $\mu\text{Ci/cc as I-131} = ( \text{ cpm} ) (2.51 \text{ E-12})$



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-5

REV. NO. 12

EMERGENCY DOSE PROJECTIONS - PERSONAL COMPUTER METHOD

  
RESPONSIBLE MANAGER

07/26/01  
EFFECTIVE DATE

Category 1.0

This procedure contains 10



EPIP 2-5EMERGENCY DOSE PROJECTIONS - PERSONAL COMPUTER METHOD1.0 PURPOSE

The purpose of this procedure is to provide a personal computer-based method for performing projections of downwind dose rates and doses. Such information is needed to decide upon protective actions to be recommended to limit the exposure of the general public and emergency workers.

2.0 RESPONSIBILITY

The TSC or EOF Dose Assessment Manager is responsible for implementing this procedure.

3.0 REFERENCES

## 3.1 Developmental References

## 3.1.1 Nuclear Emergency Response Plan

3.1.2 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)

## 3.1.3 Ginna UFSAR, Chapter 15

## 3.1.4 Regulatory Guide 1.109

3.1.5 Vertechs Corporation, EOF7, Estimated Offsite Dose Assessment Software Users Manual

## 3.2 Implementing References

## 3.2.1 EPIP 2-1, Protective Action Recommendations

## 3.2.2 EPIP 2-2, Obtaining Meteorological Data and Forecasts and Their Use in Emergency Dose Assessment

## 3.2.3 EPIP 2-3, Emergency Release Rate Determination

## 3.2.4 EPIP 2-4, Emergency Dose Projections - Manual Method

## 3.2.5 EPIP 1-0, Ginna Station Event Evaluation and Classification

## 3.2.6 EPIP 2-17, Hypothetical (Pre-Release) Dose Estimates

4.0 PRECAUTIONS

None.



5.0 PREREQUISITES

5.1 The following equipment and data sources are available for use in performing computerized dose projections:

5.1.1 Plant Process Computer System (PPCS) - EVENT 2 Report.

5.1.2 Personal Computer in TSC and EOF (for obtaining 15-minute meteorological data averages from Ginna primary weather tower).

5.1.3 Back-up wind speed and direction indicators at Station 13A (accessible from TSC or EOF Personal Computer) and National Weather Service.

5.1.4 Field readings from survey teams, including gamma dose rate and air sample measurements taken in the release plume.

5.1.5 Personal Computer for performing dose projection routines detailed in this procedure.

**DOSE ASSESSMENT USE OF GINNA COMPUTER DATA**

**NOTE: COMPARE ALL DOSE PROJECTIONS AGAINST EPIP 1-0, SECTION 5.2.**

6.0 ACTIONS

6.1 Part "A" - Release Assessments

6.1.1 During a Ginna Refueling Outage, R12 could be an effluent monitor. Check with your technical support for this condition. If R12 is an effluent monitor and IS NOT on alarm or increasing, go to step 6.1.2. If R12 is an effluent monitor and IS on alarm or increasing, check:

Alarm

EPIP 1-0 Section 5.1 and

R12A5 - SPING Containment Vent LOW Range Gas Monitor ☐ Yes ☐ No

R12A7 - SPING Containment Vent MID Range Gas Monitor ☐ Yes ☐ No

R12A9 - SPING Containment Vent HIGH Range Gas Monitor ☐ Yes ☐ No

Use the SPING sheet (Attachment 1) to determine which channel to use and enter the value in the DOWNCALC program (Go to step 6.1.2).

**NOTE: R15 PROBLEMS USUALLY INDICATE THAT THERE IS A TUBE IN THE STEAM GENERATOR THAT IS LEAKING RADIOACTIVE REACTOR COOLANT SYSTEM WATER INTO THE NON-RADIOACTIVE STEAM PLANT WATER.**



- 6.1.2 R15 - Condenser Air Ejector Monitor. If R15 IS NOT on alarm continue to Step 6.1.3. If R15 IS on alarm check:

Alarm

EPIP 1-0 Section 5.1 and

R15A5 - SPING Condenser Air Ejector LOW Range Gas Monitor ☐ Yes ☐ No

R15A7 - SPING Condenser Air Ejector MID Range Gas Monitor ☐ Yes ☐ No

R15A9 - SPING Condenser Air Ejector HIGH Range Gas Monitor ☐ Yes ☐ No

Use the sping sheet (Attachment 1) to determine which channel to use and enter that value in the downcalc program. (Go to step 6.1.3).

**NOTE: R14 PROBLEMS USUALLY INDICATE THAT THERE IS SOMETHING LEAKING IN THE AUXILIARY OR INTERMEDIATE BUILDINGS.**

- 6.1.3 R14 - Plant Vent Gas Monitor. If R14 IS NOT on alarm go to step 6.1.4 If R14 IS on alarm check:

Alarm

EPIP 1-0 Section 5.1 and

R14A5 - SPING Plant Vent LOW Range Gas Monitor ☐ Yes ☐ No

R14A7 - SPING Plant Vent MID Range Gas Monitor ☐ Yes ☐ No

R14A9 - SPING Plant Vent HIGH Range Gas Monitor ☐ Yes ☐ No

Use the sping sheet (Attachment 1) to determine which channel to use and enter that value in the downcalc program. (Go to step 6.1.4).

**NOTE: R31 AND R32 PROBLEMS USUALLY INDICATE THAT THERE IS A TUBE IN THE STEAM GENERATOR THAT IS LEAKING RADIOACTIVE REACTOR COOLANT SYSTEM WATER INTO THE NO-RADIOACTIVE STEAM PLANT WATER. AS LONG AS THE ARVS AND SAFETY VALVES ARE SHUT, THERE IS NO RELEASE.**

- 6.1.4 R31 and R32 - "A" & "B" Steam Line Monitors. If R31 and R32 ARE NOT on alarm, go to step 6.2 for plant assessments. If R31 or R32 ARE on alarm, determine, from the event 2 printout, if any ARVs or Safety Valves are open. Also, compare R-31/32 readings to EPIP 1-0, Section 5.1. If the associated ARV or Safety Valve for the alarming monitor is open, enter the reading in the DOWNCALC program. (Go to step 6.3.) The event 2 report also lists a computer calculated 15 minute average of Ci/sec released. This can be directly entered into the DOWNCALC program also.

- 6.1.5 For unmonitored releases from containment, go to EPIP 2-17 to calculate the release rate.

## 6.2 Part "B" - Plant Assessments

- 6.2.1 Check R12 - Containment Gas Monitor. If R12 IS NOT on alarm or increasing then the containment atmosphere is clean of radioactivity. If R12 IS on alarm or increasing, then the Reactor Coolant System is leaking water out into the containment atmosphere. Go to step 6.2.2.

- 6.2.2 Check R9 - Letdown Monitor. If R9 IS on alarm or increasing then the Reactor Fuel is leaking into the Reactor Coolant System water. Go to Step 6.2.4.



- 6.2.3 If you have reached this step the plant and reactor, most probably, are in a stable condition and no release is occurring. If the plant is in an outage, check with your Technical Group to learn about any unusual conditions that could pose special problems.
- 6.2.4 Check R29 and R30 - Containment HIGH Range Area Monitors. Check and compare the readings. If R29 or R30 read >100 R/hr, declare a Site Area Emergency (EAL#2.3.2). If R29 or R30 read >1000 R/hr, declare a General Emergency (EAL#2.3.3). Continue to check R29 and R30 for increases due to degraded plant conditions.

### 6.3 Dose Calculations Using Personal Computer

- 6.3.1 If using the computers at RG&E, log in to corporate desktop using "User: Ginna", "Password: lakela".
  - 6.3.1.1 Select the EOF8 icon to start session information.
  - 6.3.1.2 Choose "new session".
  - 6.3.1.3 Enter "session date" in MM/DD/YY format. Enter "session time" in HHMM format.
  - 6.3.1.4 Enter your name.
  - 6.3.1.5 Enter a short description of the event.
  - 6.3.1.6 Enter a reactor shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, do not enter any data.
  - 6.3.1.7 Select the "save" button. A message should appear in the upper right portion of the screen. Click anywhere on the screen to clear the "save" message.
- 6.3.2 Downwind dose calculations
  - 6.3.2.1 Select the downcalc button along the left side of the screen.
  - 6.3.2.2 Review the release flowrates. Contact Operations personnel to determine current flowrates. On the initial calculation, if Operations is busy, use the normal flowrates in the program so the initial assessment is not delayed. Select the normal or emergency flowrates. Adjust the values as necessary. Select OK when done. Ensure TSC/EOF Dose Assessment and offsite responders are using the same flowrates.

**NOTE: TO SCROLL THROUGH FIELDS, PRESS THE TAB KEY.**

- 6.3.2.3 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press tab to scroll through these 2 fields.
- 6.3.2.4 Enter the calculation date and the calculation time.
- 6.3.2.5 To use the last saved values, click on the button labeled "use the last saved values". If new data is to be used, continue.



6.3.2.6 Enter the temperature at 250 feet.

6.3.2.7 Enter the temperature at 33 feet.

**NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.**

6.3.2.8 Enter the wind speed at 33 feet.

**NOTE: IF "WHAT IF" CALCULATIONS ARE DESIRED, REFER TO EPIP 2-17.**

6.3.2.9 If a radioiodine value for the containment vent (R10A) or plant vent (R10B) has been calculated using the "ventconc" program, enter the values for the appropriate monitor. If no value has been calculated, the program will use the default radioiodine release rate based on the noble gas concentration.

6.3.2.10 Enter the value (in mR/hr) if R-31 is in alarm condition.

6.3.2.11 Enter the value in (in mR/hr) if R-32 is in alarm condition and is a release path.

6.3.2.12 Enter value (in uCi/cc from R-12A) if R-12 is in alarm condition and is a release path.

6.3.2.13 Enter value (in uCi/cc from R-14A) if R-14 is in alarm condition.

6.3.2.14 Enter value (in uCi/cc from R-15A) if R-15 is in alarm condition.

6.3.2.15 Enter date and time of data.

6.3.2.16 Enter exposure duration, if the release duration is known. If the release duration is unknown, enter the default of 4 hours.

**NOTE: THE SITE BOUNDARY IS 0.3 MILES FROM THE REACTOR.**

6.3.2.17 Enter "X" miles to 5.0. If PARs have been issued, ensure that 5 miles is adequate for evacuation. This can be changed in later assessments for other areas of interest.

6.3.2.18 Select the "save and report" button on the bottom of the screen.

6.3.2.19 Review the file name and select OK.

6.3.2.20 Review the data, then print the report and exit.

**CAUTION: DO NOT PRINT THE "EMERG DATA FORM" WITH N/A OR ZEROS (0) IN ALL OF THE RELEASE POINTS.**

6.3.2.22 Select "emerg data form (part II)". Report will print. Give this report to the Dose Assessment Manager. This report should be reviewed and faxed to RG&E, Wayne County, Monroe County and New York State.



- 6.3.2.23 Return to step 6.3.2.2 for more downwind calculations. To perform other calculations, select "exit" from the top of the screen.
- 6.3.3 Survey Team Data Dose Projections
- 6.3.3.1 Select the sample button from the left hand side of the screen.
- 6.3.3.2 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press enter to scroll through these 2 fields.
- 6.3.3.3 Enter the calculation date and the calculation time.
- 6.3.3.4 Enter the team number, color or other identification.
- 6.3.3.5 Enter the team location where the sample was obtained.
- 6.3.3.6 Enter the date and time that the sample was started.
- 6.3.3.7 Enter the date and time that the sample was stopped.
- 6.3.3.8 Enter the units of measurement of the air sample.
- 6.3.3.9 Enter the air sample flow rate at the start of the sample.
- 6.3.3.10 Enter the air sample flow rate when the sample was stopped.
- 6.3.3.11 Enter the count rate (CPM) of the iodine cartridge.
- 6.3.3.12 Enter the count rate (CPM) of the particulate filter.
- 6.3.3.13 Enter the background count rate (CPM) in the area that the sample was counted. (This should be performed outside of the plume).
- 6.3.3.14 The bottom right of the screen will show you:
- radioiodine concentration in the air (in uCi/cc)
  - radioactive particulate in the air (in uCi/cc)
  - the dose rate (in REM/hr) to a child's thyroid from the radioiodine concentration in the air.
- 6.3.3.15 Select the "save and report" button on the bottom of the screen.
- 6.3.3.16 Enter description of reason for calculation and select ok.
- 6.3.3.17 Review the data, then print the report and exit.
- 6.3.3.18 Select "exit" from the top of the screen.
- 6.3.3.19 Select the "backcalc" button along the left side of the screen.
- 6.3.3.20 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press enter to scroll through these 2 fields.



6.3.3.21 Enter the calculation date and the calculation time.

6.3.3.22 Enter the temperature at 250 feet.

6.3.3.23 Enter the temperature at 33 feet.

**NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.**

6.3.3.24 Enter the wind speed at 33 feet.

6.3.3.25 Enter the team number, color or other identification.

6.3.3.26 Enter the team location where the sample was obtained.

6.3.3.27 Enter the distance (in miles) away from the Ginna Plant.

6.3.3.28 Enter the sample date and sample time.

6.3.3.29 Enter the closed window dose rate that the survey team reported at the sample location. This dose rate will be in R/hr or mR/hr. (DO NOT use the background CPM value of the radioiodine analysis. That was a different screen that you have already completed.)

6.3.3.30 Enter the radioiodine concentration (in uCi/cc) from the SAMPLE program printout.

6.3.3.31 Enter A & B points of interest.

6.3.3.32 You have now projected doses from the point where your survey team collected sample data.

6.3.3.33 Select the "save and report" button on the bottom of the screen.

6.3.3.34 Review the file name and select OK.

6.3.3.35 Review the data, then print the report and exit.

6.3.3.36 Select "report".

6.3.3.37 Select "emerg data form (part II)". Report will print. Give this report to the Dose Assessment Manager. This report should be reviewed and faxed to RG&E, Wayne County, Monroe County and New York State.

6.3.3.38 Return to step 6.3.2 for more survey team calculations. To perform other calculations, select "exit" from the top of the screen.

6.4 Use of RASCAL for determination of exposure due to field samples.

6.4.1 Start RASCAL by clicking on the icon labeled "Shortcut to STDose3". Click OK.

6.4.2 Select "Event Type"



- 6.4.2.1 Select "Nuclear Power Plant Reactor" then OK.
- 6.4.3 Select "Event Location"
- 6.4.3.1 Under Site Names select "Ginna" then OK
- 6.4.4 Select "Source Term"
- 6.4.4.1 Select "Effluent Release Concentrations" then OK.
- 6.4.4.2 Input the measurement location (i.e. plant vent, air ejector).
- 6.4.4.3 Under Release Period 1, Enter:
  - Start date and time
  - Stop date and time
  - Effluent Flow Rate and select the correct flowrate unit on the right hand side. Also on the right hand side, change the "Effluent Concentrations in:" to the units in the sample results.
- 6.4.4.4 Enter the radionuclides and the concentrations.
- 6.4.4.5 Select OK when all of the data has been entered.
- 6.4.4.6 Select "Release Path".
- 6.4.4.7 Release height should be zero.
- 6.4.4.8 Enter the release start date and time.
- 6.4.4.9 Enter the release end date and time then OK.
- 6.4.5 Select "Meteorology".
- 6.4.5.1 Select "Actual Observations and Forecasts" then "Create New".
- 6.4.5.2 Ensure Station is "GINN" then select "Enter Data".
- 6.4.5.3 Enter the date, time, wind direction, wind speed, Stability, precipitation and 33 ft temp.
- 6.4.5.4 Select OK.
- 6.4.5.5 Select "Create RASCAL Input".
- 6.4.5.6 Under "Save File as", name the file using the Ginna then a number (i.e. 1,2,3) then OK.
- 6.4.5.7 Select "View Meteorology"
- 6.4.5.8 Select "Observations" and review the data to ensure only the center data point has an arrow.



- 6.4.5.9 Select "Done".
- 6.4.5.10 Select "Exit".
- 6.4.5.11 Select "Return"
- 6.4.5.12 Select OK
- 6.4.6 Select "Calculate Doses"
- 6.4.6.1 Under Distance Calculations select
  - Close-in + out to 10 miles"
  - "Defaults"
- 6.4.6.2 Under Building Wake correction select "on"
- 6.4.6.3 Input the date and time that calculations should end (typically 4 hours after release start)
- 6.4.6.4 Enter case description then OK
- 6.4.7 Save the case using the button on the bottom left part of the screen
- 6.4.8 Print Results by using the Print button on the right hand side of the screen.
- 7.0 ATTACHMENTS
- 7.1 SPING Functional Ranges



# SPING FUNCTIONAL RANGES

12  
R-14A9 (High Range)  
15

---

12  
R-14A7 (Mid Range)  
15

---

12  
R-14A5 (Low Range)  
15

---

E-8 E-7 E-6 E-5 E-4 E-3 E-2 E-1 E+0 E+1 E+2 E+3

uCi/cc



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE No. EPIP 2-11

REV. NO. 16

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ONSITE SURVEYS

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RESPONSIBLE MANAGER

07/20/01  
EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 31 PAGES



**EPIP 2-11****ONSITE SURVEYS****1.0      PURPOSE:**

To describe the procedure to be followed for the conduct of onsite radiological surveys.

**2.0      RESPONSIBILITY:**

2.1      The onsite survey team members are responsible for implementing this procedure.

2.2      The Survey Center Manager or Dose Assessment Manager is responsible for briefing, dispatch and control of the team as described in EPIP 2-7, Management of Emergency Survey Teams.

**3.0      REFERENCES:**

3.1      Developmental References

3.1.1      Nuclear Emergency Response Plan

3.1.2      RP-SUR-POST-LABEL, Radiological Surveys and Area Postings

3.2      Implementing References

3.2.1      EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure

3.2.2      EPIP 2-9, Administration of Potassium Iodide (KI).

3.2.3      EPIP 2-13, Iodine and Particulate Activity Determination from Air Samples.

3.2.4      EPIP 2-7, Management of Emergency Survey Teams.

3.2.5      EPIP 5-2, Onsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests.

3.2.6      EPIP 1-11, Survey Center Activation

**4.0      PRECAUTIONS:**

4.1      If the seal on the Onsite Survey Team footlocker is broken, use the equipment list inside the footlocker to inventory equipment (Equipment list from EPIP 5-2).



- 4.2 Maintain communications contact at regular intervals with the TSC Radio Operator when performing surveys especially when significant changes to dose rates occur as described in this procedure.

**5.0 PREREQUISITES:**

None

**6.0 ACTIONS:**

**6.1 Equipment Check/Team Preparation**

6.1.1 Assemble the following equipment which is not stored in the survey footlocker:

- a. Personal thermoluminescent dosimeter (TLD) for each team member.
- b. One 0-1500 mr dosimeter and 0-10R dosimeter for each team member. Sign-in on dosimeter log sheet, Attachment 2 in from EPIP 1-11.
- c. One full-face mask with iodine filter and voice amplifier for each member.
- d. Hand held portable radio.
- e. Gilian low volume air sampler with filter holder or equivalent.

Verify the battery charge status by observing the battery voltage displayed on the battery charger. Press the button on the battery charger (for #1, 2, 3, 4, or 5) that corresponds with the air sampler that you are checking.

**NOTE: IF AN AIR SAMPLER DOES NOT HAVE THE MINIMUM VOLTAGE LISTED BELOW, IT MAY NOT RUN FOR AN ADEQUATE LENGTH OF TIME. LEAVE THE AIR SAMPLER ON THE CHARGER UNTIL THE REQUIRED VOLTAGE IS REACHED. IF THE AIR SAMPLER HAS BEEN CHARGING FOR GREATER THAN 8 HOURS AND HAS NOT REACHED THE REQUIRED VOLTAGE, REMOVE IT FROM SERVICE.**

- A Gilian HFS-113A should read 4.50v or greater on the charger.
  - A Gilian HFS-513A should read 5.80v or greater on the charger.
  - A Gilian Gilair-5 should read 5.80v or greater on the charger.
- f. Eberline RO-20 dose rate meter or equivalent.
  - g. Eberline RM-14 Frisker or equivalent.



- 6.1.2 Check operation of the following equipment using the Equipment Check and Operation Instructions:

**NOTE: IF EQUIVALENT EQUIPMENT IS UTILIZED ENSURE EQUIPMENT CHECK AND OPERATION INSTRUCTIONS ARE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE RADIATION PROTECTION PROCEDURES.**

- a. Hand-held radio with extra battery pack and 9 AA batteries. (Attachment 1)

**NOTE: SURVEY METERS ARE RESPONSE CHECKED PRIOR TO USE, DAILY WHILE IN USE, AND PRIOR TO STORING THEM AFTER USE.**

- b. Eberline RM-14 Frisker (Attachment 2)  
c. Eberline Model RO-20 dose rate meter (Attachment 3)  
d. Gilian low volume air sampler (Attachment 4)  
e. VAS-2 Earmark "Loud Mouth" Voice Amplification System (Attachment 5)

**NOTE: THE PLANT HAS 2 FOUR WHEEL DRIVE VEHICLES AVAILABLE FOR ADVERSE WEATHER CONDITIONS. (CONTACT MAINTENANCE MANAGER IN TSC.)**

- 6.1.3 Load survey equipment in equipment bags and back packs and inform Survey Center Manager you are ready for departure. Obtain meteorological and plant status information. Document Team readiness on Survey Team Attachment Form (Attachment 15).
- 6.1.4 Log time, date and survey team members on survey map.
- 6.1.5 Establish radio communication with Technical Support Center Radio Operator and advise of teams departure.
- 6.1.6 When taking air samples, log time, date, flow rate and start time of low volume air sampler on air sample envelopes and RG&E Emergency Survey Team Data Sheet (Attachment 14).
- 6.1.7 If directed by the Dose Assessment Manager, don protective clothing and full face masks with charcoal filters and VAS-2 Earmark "loud mouth" voice amplifier.



## 6.2 **Team Briefing**

6.2.1 Survey Center Manager or Dose Assessment Manager brief the Survey Team Members.

6.2.2 Ensure that the briefing covers the following items:

- a. Team Identification
- b. Communications Equipment and Channel
- c. 3-way communications and use of the phonetic alphabet
- d. Protective Equipment (including use of KI)
- e. Authorized doses
- f. Survey Instructions
- g. Survey Equipment
- h. Type of Data Required
- i. Job Safety Briefing

6.2.3 If dose authorization is required, implement EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

6.2.4 If potassium iodide (KI) administration is required, take one KI tablet at this time in accordance with EPIP 2-9, Administration of Potassium Iodide (KI).

## 6.3 **Survey**

6.3.1 Perform surveys using the appropriate Survey Instructions (Attachment 6,7,8,9 and 10).

6.3.2 Follow the Survey Route for your team designation (Attachment 11 or 12).



---

**CAUTION**

**DO NOT ENTER AREAS WHERE RADIATION LEVELS ARE GREATER THAN 2 REM/HR UNLESS DIRECTED BY THE HEALTH PHYSICIST.**

**THE DOSE LIMITATION OF THE SURVEY TEAM IS LIMITED TO 1 REM (TEDE) UNLESS THE HEALTH PHYSICIST OR EMERGENCY COORDINATOR AUTHORIZES A HIGHER LIMIT.**

**A ONETIME DOSE LIMIT OF 75 REM (TEDE) MAY BE USED TO SAVE THE LIFE OF AN INDIVIDUAL ON A VOLUNTARY BASIS.**

**A ONETIME DOSE LIMIT OF 25 REM (TEDE) MAY BE USED TO INSURE EQUIPMENT IS OPERATIONAL OR SECURED IN ORDER TO PREVENT A GREATER POSSIBLE HAZARD TO THE GENERAL PUBLIC.**

---

6.3.3 At each assigned report point, the team should report the following information to the Radio Operator:

- a. Location
- b. Completed Actions
- c. Results of Surveys

**NOTE: REMEMBER TO CHECK THE SCALE BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.**

- d. Request for additional instructions

6.3.4 Upon completion of Survey Route, inform radio operator at Technical Support Center. The Dose Assessment Manager may assign an additional survey route or direct you to return to the Survey Center.

6.3.5 Document route completion on Survey Team Attachment Form (Attachment 15).

6.4 **Decontamination/Sample Return**

6.4.1 Inform Survey Center Manager of team return to the Survey Center.

6.4.2 Perform a personnel frisk of team personnel in accordance with Attachment 8. Document results on Survey Team Attachment Form (Attachment 15).



- 6.4.3 If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.
- 6.4.4 Give all air sample filters, survey maps, data records and attachment forms to the Survey Center Manager. Ensure all information is complete and samples are properly labeled.
- 6.4.5 Dispose of contaminated and potentially contaminated waste in designated containers.
- 6.4.6 Perform a contamination survey of equipment in accordance with Attachment 8. Re-stock and inventory the Survey Team Equipment Footlocker. Stow equipment in its designated location.
- 6.4.7 Return radio system, portable air sampler, frisker and dose rate meter to the Survey Center Equipment Area and place on charge as appropriate. Response check survey meter (s) prior to returning to storage. Notify the Survey Center Manager if any meter(s) do not response check properly.
- 6.4.8 Return dosimeters and sign-out on dosimeter log sheet from EPIP 1-11.
- 6.4.9 If directed by the Dose Assessment Manager, receive a whole body count to check for internal contamination.

## 7.0

### **ATTACHMENTS:**

#### **EQUIPMENT CHECK AND OPERATING INSTRUCTIONS**

1. Radio System
2. Eberline RM-14 Frisker
3. Eberline model RO-20 Dose Rate Meter
4. Gillian Low Volume Air Sampler
5. VAS-2 Earmark "Loud Mouth" Voice Amplification System

#### **SURVEY INSTRUCTIONS**

6. General Area Radiation Survey
7. Survey to Determine Presence of Beta Radiation-Plume Survey
8. Contamination Survey
9. Taking Air Samples
10. Changing Filters at Fixed Environmental Stations



11. Survey Route (Onsite East)
12. Survey Route (Onsite West)
13. Onsite Survey Map
14. RG&E Emergency Survey Team Data Sheet
15. Survey Team Attachment Form
16. EPIP Instrument Response Check



## **RADIO SYSTEM (HAND-HELD PORTABLE)**

### **EQUIPMENT CHECK AND OPERATION**

1. Remove radio from the charger rack.
2. Switch on the transceiver by turning the power switch/volume control clockwise until it clicks.
3. Adjust the volume by turning the power switch/volume control knob to the desired volume.

**NOTE: CHANNEL IDENTIFICATION IS INDICATED ON THE DISPLAY LOCATED ON THE TOP OF THE RADIO.**

4. Turn the channel selector switch to the General Maintenance frequency.
5. Transmit a test message for a communications check using the 3-way communications protocol given below:
  - a. The general procedure for communication on the radio should be as follows:
    1. During a drill or exercise, all information transmitted via radio shall be preceded with "This is a drill/exercise."
    2. The message should include the name or title of the receiver, name or title of the sender and the message text.  
  
 Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. We are starting our primary route, over."
    3. Message acknowledgment by the receiver to include the name or title of the sender and the title of the acknowledging receiver. The acknowledging receiver should paraphrase or repeat back the message.  
  
 Example: "This is a drill. Alpha Survey Team, this is the Technical Support Center. I understand you are starting your primary route, over."



4. Sender confirmation - confirmation of the acknowledgment.

Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. That is correct."

2. When communicating alpha-numeric information, such as survey team designation or meter readings, where the sender or receiver may encounter background noise or static, the phonetic alphabet should be used.
3. If the receiver does not understand the message, they are expected to ask the sender to repeat or rephrase the message. If the receiver acknowledges the message incorrectly, the sender should correct the receiver by saying "that is not correct" and repeating the message.
4. Confirmation of the acknowledgment by the sender is imperative. The absence of the confirmation step could result in a mis-communication because the receiver may have misheard the message and repeats back erroneous information. A lack of response by the sender could be interpreted as a silent confirmation that the repeat back is correct.

**NOTE: THERE MAY BE TIMES THAT TSC OR EOF WILL BE RECEIVING COMMUNICATIONS FROM A TEAM THAT YOU CANNOT HEAR. IF THIS HAPPENS, THE RADIO OPERATOR WILL TELL YOU TO WAIT OR STANDBY. AFTER HE HAS COMPLETED HIS TRAFFIC, HE WILL ASK YOU TO TRANSMIT YOUR INFORMATION.**

6. To transmit: depress the push-to-talk switch on the side of the radio. Speak in a normal voice into the speaker/mike.
7. To receive: release the push-to-talk switch.
8. When you have been directed to secure your survey team, turn the radio off and place it in the charger located in the Survey Center Equipment area.



**EBERLINE RM-14 FRISKER****EQUIPMENT CHECK**

1. Disconnect power cord from the back of the meter. Ensure "TEST ON" toggle switch is off.
2. Ensure that an HP-260 pancake probe or equivalent is connected to the DETECTOR connector on the front of the instrument.
3. Turn range switch to BATT position. Meter should read in the BATT-OK area.
4. Ensure alarm set knob on back of instrument is turned fully clockwise to position 5.
5. Perform instrument response check. Obtain source from safe and verify meter reading corresponds to reading on attached card. Log on response check log (Attachment 16), whether response check was satisfactory or not.
6. Turn range switch to OFF when not in use.

**EQUIPMENT OPERATIONS**

1. Turn range switch to X1.
2. Place response switch in the SLOW RESPONSE position.
3. Adjust the volume control so that the audio indication (a click) can be heard.
4. Ensure alarm set knob on back of instrument is turned fully clockwise to position 5.
5. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.
6. All readings must be multiplied by the range switch setting, i.e. (X1, X10, X100).
7. 3,600 CPM is approximately equal to 1 mrem/hr. Maximum reading is 50,000 CPM or 14 mR/hr.
8. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if response check is satisfactory. Notify the Survey Center Manager if the instrument does not response check properly. Unit should be recharged before the next use.



**EBERLINE MODEL RO-20 DOSE RATE METER****EQUIPMENT CHECK**

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.
2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.
3. If either of these checks are unsatisfactory, turn survey meter in to Survey Center Manager.
4. Turn function switch to *Zero* position. Check that meter reads zero. If not, set it to zero with the Zero knob.
5. Set the function switch to the 5 mR/hr. Range. Obtain response check source from the safe and verify that the meter reading corresponds to the reading on the source card. Use the open window reading. Log on response check log (Attachment 16), whether response check was satisfactory or not.
6. Turn meter off when not in use.

**EQUIPMENT OPERATION**

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.
2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.
3. If either of these checks are unsatisfactory, turn survey meter in to Survey Center Manager.
4. Set function switch to the desired range of operation. The switch position selected is the full scale reading of that range.
5. When surveying an area of unknown radiation, always start the survey at the higher scales and move to a lower scale until readings are between 10% and 90% of that scale.

**NOTE:**      **REMEMBER TO CHECK THE SCALE SETTING BEFORE  
RECORDING READINGS ON A SURVEY MAP OR  
REPORTING READINGS TO DOSE ASSESSMENT.**



6. For low light conditions, set the *Light* toggle switch to either *On* for continuous illumination or *Momentary* for momentary illumination. When not needed, ensure *Light* switch is returned to the *Off* position to conserve battery power.
7. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if the response check is satisfactory. Notify Survey Center Manager if the meter does not response check satisfactorily.



**GILIAN HFS-113A AIR SAMPLER , GILIAN HFS-513A AIR SAMPLER  
GILIAN GILAIR-5 AIR SAMPLER****EQUIPMENT CHECK OF GILIAN AIR SAMPLERS**

1. Perform all sampler checks prior to use as follows:
  - a. Verify calibration is current by checking the calibration sticker.

**NOTE: THE PARTICULATE FILTER IS INSTALLED WITH THE TEXTURED SIDE FACING OUT. THE SILVER ZEOLITE CARTRIDGE HAS ARROWS ON ITS SIDE TO INDICATE THE DIRECTION OF THE SAMPLE FLOW.**

2. Ensure the sample head is attached to the sampler inlet. Install new filters in the sample head.

**OPERATION OF THE GILIAN HFS-113A AND GILIAN HFS-513A**

1. Ensure filter cartridge contains a GY-130 Silver Zeolite cartridge and particulate filter. Ensure sample head is connected to the sampler.

---

**CAUTION**

**MASTER ON/OFF SWITCH MUST BE ON FOR UNIT TO OPERATE. MASTER ON/OFF SWITCH ALSO RESETS TIME DISPLAY.**

---

2. At start of the sampling period record start time. PRESS TEST button and record time in digital display and flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 14. Turn unit on using ON/OFF switch located to the right of the digital display.

---

**CAUTION**

**IF A FAULT CONDITION EXISTS, UNIT SHUTS DOWN AFTER 15-30 SECONDS INTO A FAULT CONDITION.**

---

3. If the FAULT LED is lit, this was activated by either an under voltage, over current, or over pressure (restricted flow) condition beyond the units capability. The motor stops and the time is latched. By pressing the TEST button, the sample time (in minutes) at which the fault occurred will be displayed indicating a valid sample period.



4. At end of the sampling period, turn pump off using ON/OFF switch located to the right of digital display. Press TEST button, record time in digital display, stop time and all other pertinent information on sample envelope and Attachment 14.
5. Sample volume in liters equals the flow rate in liters per minute multiplied by minutes the sampler operated. The sampler has a fixed flow rate of 4 liters per minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters ( $4 \times 30 = 120$ ).
6. Handle completed samples in accordance with Attachment 9 "Taking Air Samples".

#### **OPERATION OF THE GILIAN GILAIR-5**

1. Turn the power switch to the ON position.
2. Record the start time and the run time on the digital display and a flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 14.
3. During use, periodically check the unit to ensure that it does not have a fault condition.

**NOTE:      A LIT FAULT LED MAY BE CAUSED BY:**

- **UNDER VOLTAGE**
- **OVER CURRENT**
- **OVER PRESSURE (RESTRICTED FLOW).**

4. If the FAULT LED comes on during sampling, perform the following:
  - a. Check the digital display to determine how long the sample ran.
  - b. Determine the fault condition if possible and correct.
  - c. If the condition causing the fault is corrected and work is continuing, turn the unit off to reset it, and then restart it. Be sure to add the previous run time to the total run time of the sample.

If the cause of the fault cannot be determined, remove the unit from service.

5. At the end of the sampling period, look at the digital display and note the total run time of the air sampler. Turn the sampler OFF. Record the run time from the display, stop time and all of the other pertinent information on Attachment 14.
6. Sample volume in liters equals the flow rate in LPM multiplied by the minutes the air sampler was operated. If the unit was operated for thirty minutes, the sample volume would equal 120 liters ( $4\text{LPM} \times 30 \text{ minutes} = 120 \text{ liters}$ ).



## **VAS - 2 EARMARK "LOUD MOUTH" VOICE AMPLIFICATION SYSTEM**

The "Loud Mouth" System is designed to provide voice amplification for individuals wearing respiratory protection devices.

### **EQUIPMENT CHECK**

Earmark Throat Microphone Model TM-1

1. Figure 1 (attached) shows the proper "at rest" position for the microphone. If it is necessary to reform the spring tension, hold the microphone, starting two inches behind the microphone head, between the thumb and forefinger and bend the cable slightly while progressing down the cable until the end of the spring is reached. Check the diameter of the coil and repeat if necessary. Note that the microphone head should tilt up from a flat surface about 1/4 inch. If necessary, form the spring to give this dimension.
2. Batteries: A 9-volt Alkaline Battery is the required power source. The battery is located in the amplifier unit. To replace the batteries, remove the cover plate to the battery compartment. Pull plastic tab, remove and replace the battery.

**Note: Small terminal (+) in first.**

### **EQUIPMENT OPERATION**

1. Ensure microphone cable is securely connected to jack on voice amplifier.
2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.
3. Securely fasten amplifier unit to belt.

---

### **CAUTION**

**WHEN COMMUNICATING THROUGH RADIO, TELEPHONE, ETC., SPEAK PRECISELY. KEEP SPEAKER AT LEAST 12" FROM THROAT MIC. KEEP THE MEANS OF COMMUNICATION 12" FROM THE THROAT MIC. HOLD MEANS OF COMMUNICATION OFF TO SIDE OF SPEAKER. IF ANY FEEDBACK IS APPARENT, LOWER VOLUME.**

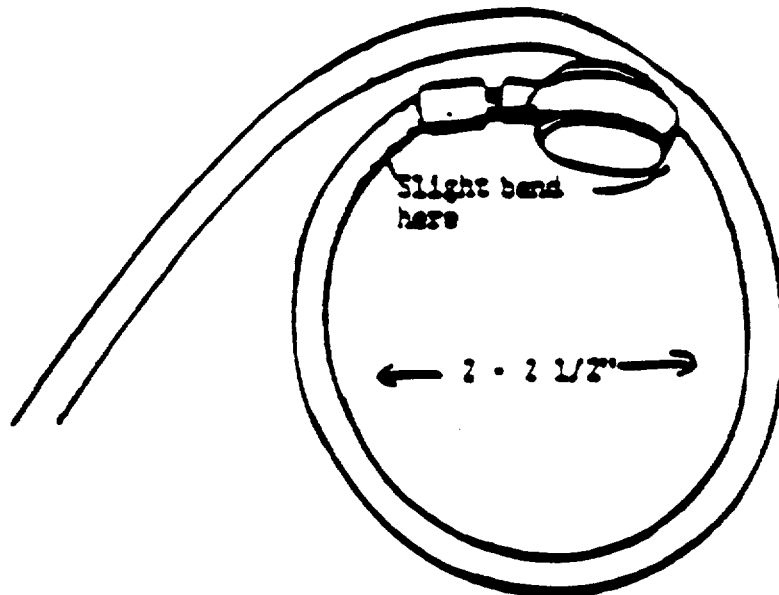
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4. To operate unit, turn volume control clockwise, the TALK slide switch has two (2) positions; up is the standby mode and down is the talk mode. Slide TALK switch to down position to talk. Adjust volume to desired level with VOLUME control.
5. Turn unit off by turning volume control counter clockwise as fast as it will turn. Leave talk switch in the standby position.



# EQUIPMENT CHECK AND OPERATION INSTRUCTIONS



On a flat surface the mic should rest about 1/4" above said surface

When mic is laid on a flat surface it should form a circle 2 to 2 1/2 " in distance. Depending on user size. If it has been stretched to form a larger circle the inbuilt spring wire should be reformed to produce the diameters indicated. This insures proper throat pressure for optimum sound quality.

Fig. 1

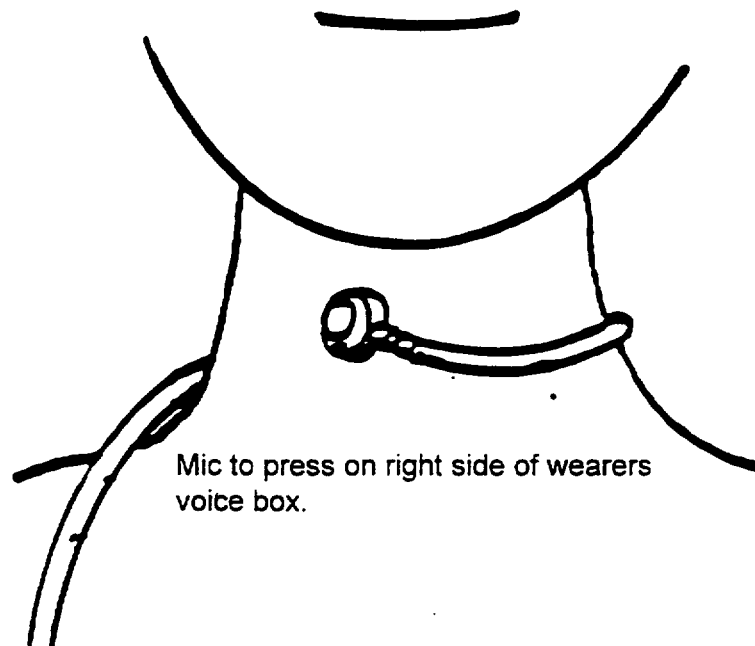


Fig. 2



### GENERAL AREA RADIATION SURVEY

1. A general radiation area survey should be conducted while moving between defined survey points, and at the specific survey points.
2. The survey should be conducted using a Eberline RO-20 dose rate meter or equivalent.
3. Normally, radiation readings are taken at 3 feet with the Beta window closed.
4. Record results on a survey map.

\*\*\*\*\*

### CAUTION

**IF RADIATION LEVELS ARE GREATER THAN 100 MR/HR, COMPLETE THE SURVEY AND RETREAT TO A LOWER DOSE AREA PRIOR TO REPORTING RESULTS TO KEEP YOUR EXPOSURE ALARA.**

\*\*\*\*\*

5. If a reading of 1 mr/hr or greater is detected, stop and conduct a survey for Beta radiation in accordance with Attachment 7. Record results on the RG&E Emergency Survey Team Data Sheet, Attachment 14 and immediately report the results of the survey to the Radio Operator.



**SURVEY TO DETERMINE PRESENCE OF BETA RADIATION  
PLUME SURVEY**

1. If the General Area Radiation Survey indicates a reading of 1 mr/hr or greater, or if the "plume" is suspected to be in your area, a survey to detect the presence of Beta radiation should be conducted:
2. Using a Eberline RO-20 dose rate meter, conduct the following surveys:
  - a. With a meter held at waist level (3 feet) :  
  
Beta shield open  
  
Beta shield closed  
  
Difference #1 = (opened reading - closed reading)
  - b. With the meter held at ground level (3 inches)  
  
Beta shield open  
  
Beta shield closed  
  
Difference #2 = (open reading - closed reading)
3. If either difference #1 or difference #2 from Step 2 is positive, this is an indication that Beta radiation is present.
  - a. If both difference #1 and #2 are positive, this is an indication that you are in the plume.
  - b. If only difference #2 is positive, this is an indication of ground contamination.
4. Record survey results on RG&E Emergency Survey Team Data Sheet, Attachment 14.
5. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.



## **CONTAMINATION SURVEY**

### **COLLECTING AND COUNTING SMEAR SAMPLES**

**NOTE:** DO NOT TOUCH METER PROBE TO ANY SURFACE BEING SURVEYED. PROBE CONTAMINATION MAY RESULT.

**BACKGROUND COUNT RATE SHOULD BE BELOW 200 CPM TO BE SENSITIVE ENOUGH TO DETECT LOW LEVELS OF CONTAMINATION.**

### **PERSONNEL FRISK**

1. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over a person (i.e., within ½ inch from the person) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 100 CPM.

### **DIRECT FRISK SURVEY (OBJECTS)**

1. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over an object or area surface (i.e., within ½ inch from it) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.



6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 250 CPM.

**SMEAR SURVEY**

1. Obtain cloth smear with adhesive backing mounted on waxed paper.
2. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
3. Check the background count rate.
4. Mark the smears with sequential numbers (e.g., 1,2,3,...).
5. Holding the smear paper between the thumb and index and middle fingers and applying medium pressure, smear an area  $100 \text{ cm}^2$  (approximately 4 inches by 4 inches). A 16-inch "S" pattern can also be used.
6. Record the smear location by writing the smear number on the map and circling it.
7. Hold the smear paper within  $\frac{1}{2}$  inch of the meter probe until the meter indication stabilizes. This is the gross count in CPM.
8. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
9. Record the net count as CPM/ $100 \text{ cm}^2$  in the smears table of the map next to corresponding smear number.

**NOTE: THIS NOTICE DOES NOT APPLY TO ENVIRONMENTAL SMEARS**

10. Notify the Survey Center Manager if the net count rates exceed 1000 CPM/ $100 \text{ cm}^2$ .
11. Return completed contamination surveys and smears to the Survey Center Manager.



### TAKING AIR SAMPLES

1. Air samples are drawn using the following equipment:
  - a. **LOW VOLUME** - Using a Gilian HFS-113A low volume air sampler draw approximately 120 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **30 minutes**.
2. Record the sample date, time, location (either survey point number or road intersection), and initials on the sample envelope and on RG&E Emergency Survey Team Data Sheet (Attachment 14).
3. Using clean, disposable gloves, remove the particulate filter and silver zeolite cartridge from the sample holder and place in the sample envelope.
4. Remove the disposable gloves and discard in a plastic bag. Treat as potentially contaminated material.
5. Return the sample to the Survey Center for gross analysis at the completion of your assigned route or when directed by the Dose Assessment Manager.



**CHANGING FILTERS AT FIXED ENVIRONMENTAL STATIONS**

1. Record the following information on the sample envelope left from the previous filter change:
  - a. Date
  - b. Time
  - c. System Vacuum (inches)
  - d. Gas meter reading (cubic feet)
  - e. Total hour meter reading (record in column marked "OFF")
  - f. Initials of person changing filters
2. Turn pump off.
3. Using clean, disposable gloves, remove the filter holder at the quick disconnect joint.
4. Unscrew the outside retaining ring and remove the particulate filter from the holder and place in the sample envelope.
5. If a charcoal or zeolite cartridge was used, transfer the information from the particulate filter envelope to a new envelope and place the cartridge in the envelope.

**NOTE:      PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE  
FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW  
ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.**

6. Reassemble the filter holder installing a new GY-130 silver zeolite cartridge and a particulate filter.
7. Reconnect the filter holder to the pump at the quick disconnect joint.
8. Remove disposable gloves and place in a plastic bag. Treat as potentially contaminated material.
9. Turn the pump on.



10. Record the following information onto two new envelopes. Mark one envelop "GY-130 silver zeolite".
  - a. Station number
  - b. Date
  - c. Time
  - d. System vacuum (inches)
  - e. Gas meter reading (cubic feet)
  - f. Total hour meter reading (record in the "ON" column)
  - g. Initials of person starting sampler
11. Place the new envelopes inside the monitor cabinet.
12. Bring the envelopes containing the removed cartridge and filter to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.



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**CAUTION**

**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.**

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**SURVEY ROUTE (ONSITE EAST)**

1. Proceed north and east from the Survey Center surveying between the Training Center East building and Deer Creek. (see Attachment 13).
2. Turn south across the lawn and proceed to environmental station #4 and change the filter and cartridge per instructions in Attachment 10.
3. Proceed southeast to Manor House driveway, follow driveway to where it turns north, proceed east out of the trees into orchard.
4. Go through orchard, then turn north and proceed to environmental station #3 and change the filter and cartridge per instructions in Attachment 10.
5. Proceed west across field and through woods to Manor House driveway.
6. Go north on Manor House driveway to the lake shore.
7. Proceed east to environmental station #2 and change the filter and cartridge per instruction in Attachment 10.
8. Proceed west along the lake shore to the plant fence.
9. Proceed along the plant fence to the Guard House.
10. Report to the Radio Operator that the survey route has been completed noting any unusual radiological conditions and are awaiting further instructions.



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**CAUTION**

**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.**

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**SURVEY ROUTE (ONSITE WEST)**

1. Proceed west from the Survey Center to the plant access road (see Attachment 13).
2. Continue north across the bridge to environmental station #5 and change the filter and cartridge per instructions in Attachment 10.
3. Proceed west along Deer Creek and the parking lot to environmental station #6 and change the filter and cartridge per instructions in Attachment 10.
4. Proceed west approximately 100 yards.
5. Turn north towards the hill, to the northwest corner of the plant fence.
6. Proceed south along the plant fence to environmental station #7 and change the filter and cartridge per instructions in Attachment 10.
7. Continue along the plant fence to the Guard House.
8. Report to Radio Operator that the survey route has been completed noting any unusual radiological conditions and are awaiting further instructions.



# GINNA STATION ON-SITE SURVEY MAP

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Onsite East Route: Team Name \_\_\_\_\_

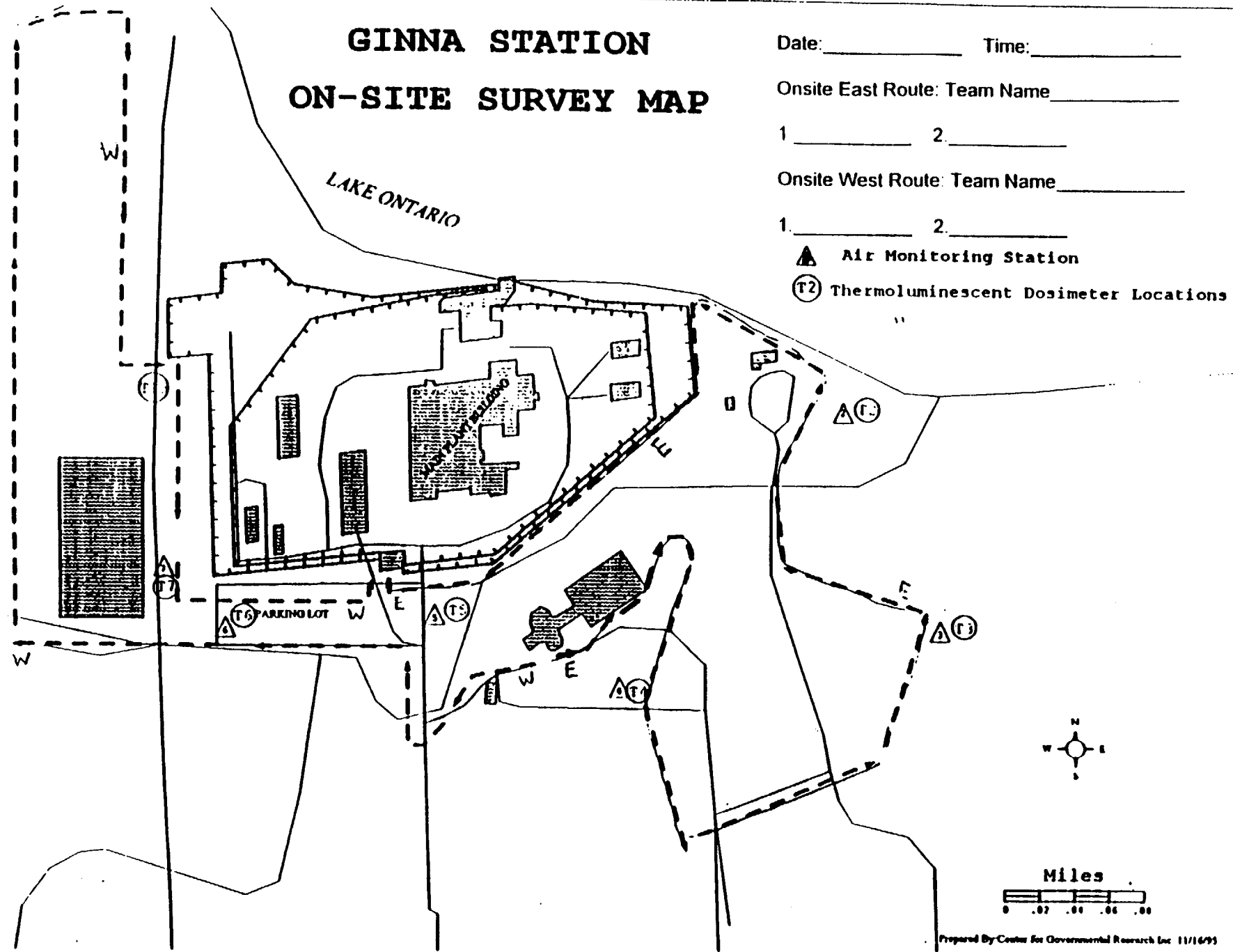
1 \_\_\_\_\_ 2 \_\_\_\_\_

Onsite West Route: Team Name \_\_\_\_\_

1 \_\_\_\_\_ 2 \_\_\_\_\_

▲ Air Monitoring Station

Ⓣ Thermoluminescent Dosimeter Locations





1. DATA FROM:	<input type="checkbox"/> RG&E	<input type="checkbox"/> WAYNE COUNTY	<input type="checkbox"/> MONROE COUNTY
2. A. DATE: _____ B. TIME: _____ C. DATA SHEET NO.: _____			
D. TEAM: _____			
E. LOCATION: _____			
3. A. SURVEY UNITS: (CIRCLE ONE)			
B. SURVEY METER: (CIRCLE ONE)			
	CPM	MICRO-R/HR	MR/HR
	CDV-700	CDV-715	EBERLINE
	BICRON		R/HR
			RO-20
METER NO. _____			
4. WAIST LEVEL (3 FEET) READINGS:			
A.. OPEN WINDOW _____ B. CLOSED WINDOW _____			
5. GROUND LEVEL (3 INCHES) READINGS:			
A.. OPEN WINDOW _____ B. CLOSED WINDOW _____			
6. AIR SAMPLING COLLECTION TIMES:			
A. TIME ON: _____ B. TIME OFF: _____ C. MINUTES RUN: _____			
7. AIR SAMPLING FLOWRATES:			
A. LPM START: _____ B. LPM END: _____ C. LPM AVERAGE: _____			
8. PARTICULATE CPM:			
A. CONTACT: _____ B. 1" _____			
9. IODINE CPM:			
A. CONTACT: _____ B. 1" _____			
10. BACKGROUND CPM:			
_____			
11. COMMENTS AND ADDITIONAL DATA:			

☐ **THIS IS NOT A DRILL**



**NOTE: THIS DOES NOT NEED TO BE FILLED OUT FOR TRANSMISSION TO OTHER AGENCIES.**

RADIOIODINE:

(8.50 E-8) @ 1"  
(CPM SAMPLE - CPM BACKGROUND) (4.13 E-8) ON CONTACT = \_\_\_\_\_ UCI/CC  
(MINUTES RUN) (LPM AVERAGE) RADIOIODINE

PARTICULATE:

(9.83 E-9) @ 1"  
(CPM SAMPLE - CPM BACKGROUND) (3.47 E-9) ON CONTACT = \_\_\_\_\_ UCI/CC  
(MINUTES RUN) (LPM AVERAGE) PARTICULATE

RADIOIODINE DOSE CONVERSION  
FACTORS (REM/HR PER UCI/CC)

HR	DCF	HR	DCF
1	5.4E5	7	9.3E5
2	6.4E5	8	9.3E5
3	7.3E5	9	1.0E6
4	8.0E5	10	1.1E6
5	8.7E5	11	1.1E6
6	8.7E5	12	1.1E6

CHILD THYROID (CDE) DOSE RATE

(UCI/CC) (DCF) = \_\_\_\_\_ REM/HR  
CHILD THYROID

PERFORMED BY: \_\_\_\_\_

NAME

DATE/TIME

CHECKED BY: \_\_\_\_\_

NAME

DATE/TIME

☐ THIS IS A DRILL

☐ THIS IS NOT A DRILL



**SURVEY TEAM:** \_\_\_\_\_

[illegible]



<b>RAD. PROTECTION &amp; CHEMISTRY</b>	
Category:	
Subject:	EPIP Instruments
Date:	
Reviewed:	

**EPIP INSTRUMENT RESPONSE CHECK**

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

DOSE RATE METERS				
	Model	Serial #	Response Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

FRISKERS				
	Model	Serial #	Response/Alarm Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				



ROCHESTER GAS & ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-12

REV. NO. 19

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OFFSITE SURVEYS

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RESPONSIBLE MANAGER

07/20/01  
EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 47 PAGES



**EPIP 2-12****OFFSITE SURVEYS****1.0 PURPOSE**

To describe the procedure to be followed for the conduct of offsite radiological surveys.

**2.0 RESPONSIBILITY**

- 2.1 The offsite survey team leader is responsible for implementing this procedure.
- 2.2 The Emergency Survey Center Manager or Dose Assessment Manager is responsible for briefing, dispatch, and control of the team as described in EPIP 2-7, Management of Emergency Survey Teams.

**3.0 REFERENCES****3.1 Developmental References**

- 3.1.1 Nuclear Emergency Response Plan
- 3.1.2 RP-SUR-POST-LABEL, Radiological Surveys and Area Postings.
- 3.1.3 PCN 944253 to EPIP 2-12, position statement subject "Action Level for smears taken by Survey Teams during Emergency Response", dated 5/24/94.

**3.2 Implementing References**

- 3.2.1 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.
- 3.2.2 EPIP 2-9, Administration of Potassium Iodide (KI).
- 3.2.3 EPIP 2-13, Iodine and Particulate Activity Determination From Air Samples
- 3.2.4 EPIP 2-7, Management of Emergency Survey Teams
- 3.2.6 EPIP 5-1, Offsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests
- 3.2.7 EPIP 5-2, Onsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests



#### 4.0 PRECAUTIONS

- 4.1 If the seal on the offsite survey team footlocker is broken, use the equipment list inside the footlocker to inventory equipment (equipment list from EPIP 5-2 for Ginna Teams, EPIP 5-1 for EOF Teams).
- 4.2 Maintain communications contact at regular intervals with the Radio Operator when performing surveys, especially when significant changes in dose rates occur as described in this procedure.

#### 5.0 PREREQUISITES

None.

#### 6.0 ACTIONS

##### 6.1 Equipment Check/Team Preparation

**NOTE: RAPID DEPLOYMENT SURVEY TEAM USES ATTACHMENT 22.**

- 6.1.1 Assemble the following equipment which is not stored in the survey team footlocker:
  - a. Personal thermoluminescent dosimeter (TLD) for each team member.
  - b. One 0-1500mR dosimeter and one 0-10R dosimeter for each team member. Sign-in on dosimeter log sheet, Attachment 2 in EPIP 1-11.

**NOTE: EOF Survey Teams do not need items listed in c and d.**

- c. One full-face mask with iodine filter and voice amplifier for each team member.
- d. Pack of nine environmental TLD's from lead storage container labeled environmental TLDS.
- e. Motorola GM 300 Mobile radio and magnetic mount antenna.
- f. Gilian low volume air sampler with filter holder or equivalent.

Verify the battery charge status by observing the battery voltage displayed on the battery charger. Press the button on the battery charger (for #1, 2, 3, 4, or 5) that corresponds with the air sampler that you are checking.



**NOTE: IF AN AIR SAMPLER DOES NOT HAVE THE MINIMUM VOLTAGE LISTED BELOW, IT MAY NOT RUN FOR AN ADEQUATE LENGTH OF TIME. LEAVE THE AIR SAMPLER ON THE CHARGER UNTIL THE REQUIRED VOLTAGE IS REACHED. IF THE AIR SAMPLER HAS BEEN CHARGING FOR GREATER THAN 8 HOURS AND HAS NOT REACHED THE REQUIRED VOLTAGE, REMOVE IT FROM SERVICE AND GIVE IT TO THE SURVEY CENTER MANAGER.**

- A Gilian HFS-113 should read 4.50v or greater on the charger.
- A Gilian HFS-513 should read 5.80v or greater on the charger.
- A Gilian Gilair-5 should read 5.80v or greater on the charger.

- g. Eberline RM-14 Frisker with HP-260 pancake probe or equivalent.
- h. Eberline RO-20 dose rate meter or equivalent.
- i. RADECO H-809C Portable High Volume Air Sampler with filter holder
- j. Cellular Mobile Telephone
- k. Bicron Micro REM meter (Required by EOF Survey Team ONLY)

6.1.2 Check operation of the following equipment using the Equipment Check and Operation Instructions (Attachments 1-8):

**NOTE: IF EQUIVALENT EQUIPMENT IS UTILIZED, ENSURE EQUIPMENT CHECK AND OPERATION INSTRUCTIONS ARE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE RADIATION PROTECTION PROCEDURES.**

- a. Radio system (Attachment 1)
- b. Cellular Mobile Telephone (Attachment 2)

**NOTE: SURVEY METERS ARE RESPONSE CHECKED PRIOR TO USE, DAILY WHILE IN USE AND PRIOR TO STORING THEM AFTER USE.**

- c. Eberline RM-14 Frisker (Attachment 3)
- d. Eberline Model RO-20 dose rate meter (Attachment 4)



- e. Bicron Micro REM meter (Attachment 5) (Required by EOF Survey Team ONLY.)
- f. Gilian low volume air sampler (Attachment 6)
- g. RADECO H809C high volume air sampler (Attachment 7)
- h. Model VAS-2 Earmark "Loud Mouth" Voice Amplification System (Attachment 8)

**NOTE: THE PLANT HAS TWO (2) FOUR-WHEEL DRIVE VEHICLES AVAILABLE FOR ADVERSE WEATHER CONDITIONS. (CONTACT MAINTENANCE MANAGER IN THE TSC.)**

- 6.1.3 Obtain transportation and check vehicle for contamination by performing a direct frisk survey in accordance with Attachment 11.
- 6.1.4 If the vehicle survey indicates surface contamination greater than 250 cpm above background, contact the Survey Center Manager for instructions.
- 6.1.5 Load survey equipment into vehicle, and inform Survey Center Manager you are ready for departure. Participate in a prejob brief when meteorological and plant status information are given as per step 6.2. Document readiness on Survey Team Attachment Form (Attachment 20).
- 6.1.6 Log time, date, and names of survey team members on survey map.

**NOTE: EOF SURVEY TEAMS CONTACT EOF DOSE ASSESSMENT RADIO OPERATOR.**

- 6.1.7 Establish radio communication with Technical Support Center Radio Operator and advise of team departure using 3-way communications and the phonetic alphabet where applicable.
- 6.1.8 When taking air samples, log time, date, flow rate, start time, and initials on air sample envelope(s) and RG&E Emergency Survey Team Data Sheet(s), Attachment 19.
- 6.1.9 If directed by the Dose Assessment Manager, don protective clothing, full face masks with charcoal filters, and VAS-2 Earmark "Loud Mouth" Voice amplifier.
- 6.2 **Team Briefing**
  - 6.2.1 Survey Center Manager or the Dose Assessment Manager brief the Survey Team members.



6.2.2 Ensure that the briefing covers the following items:

- a. Team identification
- b. Communications equipment and channel
- c. 3-way communications and use of the phonetic alphabet where applicable
- d. Protective equipment (including use of KI)
- e. Authorized doses
- f. Survey instructions
- g. Survey equipment
- h. Type of data required
- i. Job safety briefing

6.2.3 If dose authorization is required, implement EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

6.2.4 If potassium iodide (KI) administration is required, take one KI tablet at this time in accordance with EPIP 2-9, Administration of Potassium Iodide (KI).

### 6.3 Survey

\*\*\*\*\*

#### **CAUTION**

**DO NOT ENTER AREAS WHERE RADIATION LEVELS ARE GREATER THAN 2 R/HR UNLESS DIRECTED BY THE HEALTH PHYSICIST.**

**THE DOSE LIMITATION OF THE SURVEY TEAM IS LIMITED TO 1 REM (TEDE) UNLESS THE HEALTH PHYSICIST OR EMERGENCY COORDINATOR AUTHORIZES A HIGHER LIMIT.**

**A ONETIME DOSE LIMIT OF 75 REM (TEDE) MAY BE USED TO SAVE THE LIFE OF AN INDIVIDUAL ON A VOLUNTARY BASIS.**

**A ONETIME DOSE LIMIT OF 25 REM (TEDE) MAY BE USED TO INSURE EQUIPMENT IS OPERATIONAL OR SECURED IN ORDER TO PREVENT A GREATER POSSIBLE HAZARD TO THE GENERAL PUBLIC.**

\*\*\*\*\*



- 6.3.1 Perform surveys using the appropriate Survey Instructions (Attachments 9, 10, 11, 12, 13, 14)
- 6.3.2 Follow the Survey Route Instructions (Attachments 15, 16, 17, or 18,) for your team designation. Drive designated routes at 15 miles/hour.
- 6.3.3 At each assigned report point the team should report the following information to the Radio Operator:
  - a. Location
  - b. Completed Actions
  - c. Results of Surveys

**NOTE: REMEMBER TO CHECK THE SCALE SETTING BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.**

- d. Request for additional instructions

- 6.3.4 If radio contact cannot be established, or transmission interference occurs, report by cellular phone using telephone numbers given on the instructions for Radio System - Motorola GM 300 Mobile (Attachment 1) or Cellular Telephone (Attachment 2).
- 6.3.5 Upon completion of Primary Survey Route, inform the radio operator at Technical Support Center or Emergency Operations Facility. The Dose Assessment Manager will assign an Alternate Survey Route, have the team stand by at a designated location and wait further instructions, or direct the team to return to the Survey Center. Document completion on Survey Team Attachment Form (Attachment 20).

#### **6.4 Decontamination/Sample Return**

- 6.4.1 Inform Survey Center Manager when the team returns to the Survey Center.
- 6.4.2 Perform a contamination survey of team personnel in accordance with Attachment 11. Document results on Attachment 20.
- 6.4.3 If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.
- 6.4.4 Conduct a vehicle contamination survey by direct frisk in accordance with Attachment 11. Document results on Attachment 20.



- 6.4.5 If any contamination greater than 250 cpm above background is found, contact the Survey Center Manager for decontamination instructions.
- 6.4.6 Contact Survey Center Manager for instructions for where to return samples, survey maps, data records and attachment forms. Ensure all information is complete and samples are properly labeled.
- 6.4.7 Dispose of contaminated and potentially contaminated waste in designated containers.

**NOTE: EOF SURVEY TEAMS SHALL PERFORM STEPS 6.4.8 THROUGH STEP 6.4.11 AFTER RETURNING TO EOF SURVEY TEAM EQUIPMENT AREA.**

- 6.4.8 Re-stock and inventory the Survey Team Equipment Footlocker. Stow equipment in its designated location.
- 6.4.9 Return radio system, cellular phones, portable air sampler, radiation count rate meter, and dose rate meter to the Survey Center Equipment Area and place on charge as appropriate. Response check all survey meters prior to returning to storage. Notify Survey Center Manager if any meters do not response check properly.
- 6.4.10 Return dosimeters and sign-out on dosimeter log sheet.
- 6.4.11 If directed by the Dose Assessment Manager, receive a whole body count to check for internal contamination.

## **7.0 ATTACHMENTS**

### **EQUIPMENT CHECK AND OPERATION INSTRUCTIONS**

1. Radio system - Motorola GM 300
2. Cellular Telephone
3. Eberline RM-14 Frisker
4. Eberline Model RO-20 Dose Rate Meter
5. Bicron Micro REM Meter
6. Gilian Low Volume Air Sampler
7. RADECO H809C High Volume Air Sampler
8. VAS-2 Earmark "Loud Mouth" Voice Amplification System



SURVEY INSTRUCTIONS

9. General Area Radiation Survey
10. Survey to Determine Presence of BETA Radiation - Plume Survey
11. Contamination Surveys
12. Installation of TLD
13. Taking Air Samples
14. Changing Filters at Fixed Environmental Stations

SURVEY ROUTE INSTRUCTIONS

15. OFFSITE EAST
16. OFFSITE WEST
17. EOF Survey Route #1
18. EOF Survey Route #2
19. RG&E Emergency Survey Team Data Sheet
20. Survey Team Attachment Form
21. EPIP Instrument Response Check
22. Rapid Deployment Survey Team Instructions



**RADIO SYSTEM - MOTOROLA GM 300****Equipment Check:**

1. Ensure the vehicle's metal roof is free of ice and snow.

\*\*\*\*\*

**CAUTION**

**DO NOT ATTEMPT TO MOVE THE ANTENNA BY SLIDING IT. YOU WILL SCRATCH THE SURFACE OF THE VEHICLE. ALWAYS REMOVE THE MOUNT BY LIFTING FROM THE REAR!**

\*\*\*\*\*

2. Hold the magnetic mount antenna in the palm of your hand with the antenna wire pointed towards the rear of the vehicle and the base of the mount at an angle of about 45 degrees to the vehicle roof.
3. Position the front edge of the mount in the approximate center of vehicle roof.
4. Lower the mount onto the vehicle roof. It will be held in place by the magnetic force.
5. Route the antenna lead wire into the vehicle between the 2nd door jam. With any amount of weather stripping the lead should not be damaged.
6. Route the antenna wire in the vehicle so that it does not interfere with operation of the vehicle.
7. Connect the antenna by inserting the antenna connection into the connector on the back side of the radio and tighten the locking screw in place.
8. Plug the power jack into automobile power receptacle.
9. Turn the ON/OFF-VOLUME knob clockwise (CW) until it clicks. The LED lights will show the last status of the radio and a start-up tone will be heard.
10. Adjust the volume as necessary.
11. Select the desired frequency by depressing the channel select up or down button located on the front left side of the LED display.



12. Normally use Channel #1 (General Maintenance frequency) You are now ready to receive messages from other radios in your system.
13. Transmit a test message for a communications check using the 3-way communications protocol given below:
  - a. The general procedure for communication on the radio should be as follows:
    1. During a drill or exercise, all information transmitted via radio shall be proceeded with "This is a drill/exercise."
    2. The message should include the name or title of the receiver, name or title of the sender and the message text.  
  
Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. We are starting our primary route, over."
    3. Message acknowledgment by the receiver to include the name or title of the sender and the title of the acknowledging receiver. The acknowledging receiver should paraphrase or repeat back the message.  
  
Example: "This is a drill. Alpha Survey Team, this is the Technical Support Center. I understand you are starting your primary route, over."
    4. Sender confirmation - confirmation of the acknowledgment.  
  
Example: "This is a drill. Technical Support Center, this is the Alpha SurveyTeam. That is correct."
  - b. When communicating alpha-numeric information, such as survey team designation or meter readings, where the sender or receiver may encounter background noise or static, the phonetic alphabet should be used.
  - c. If the receiver does not understand the message, they are expected to ask the sender to repeat or rephrase the message. If the receiver acknowledges the message incorrectly, the sender should correct the receiver by saying "that is not correct" and repeating the message.



- d. Confirmation of the acknowledgment by the sender is imperative. The absence of the confirmation step could result in a mis-communication because the receiver may have misheard the message and repeats back erroneous information. A lack of response by the sender could be interpreted as a silent confirmation that the repeat back is correct.

**NOTE:        THERE MAY BE TIMES THAT THE TSC OR EOF WILL BE RECEIVING COMMUNICATIONS FROM A TEAM THAT YOU CANNOT HEAR. IF THIS HAPPENS, THE RADIO OPERATOR WILL TELL YOU TO WAIT OR STANDBY. AFTER HE HAS COMPLETED HIS TRAFFIC, HE WILL ASK YOU TO TRANSMIT YOUR INFORMATION.**

14. To transmit, depress the push-to-talk switch on the microphone. Speak in a normal voice across the microphone.
15. To receive, release the push-to-talk switch.
16. If radio contact cannot be made, report using a cellular telephone. Call one of these numbers:

Ginna/TSC	
Survey Team Coordinator	(716) 771-3128

Survey Center	(716) 771-3331 or
	(716) 771-3207

EOF Dose Assessment	(716) 262-5799 or
	(716) 771-2164

17. When you have been directed to secure your survey team, turn the radio off, disconnect the antenna plug from the radio and remove the magnetic mount antenna from the vehicle by lifting up at the rear of the mount.
18. Return the radio and the magnetic mount antenna to the appropriate survey team equipment area.



**CELLULAR MOBILE TELEPHONE****Equipment Check**

1. Remove telephone from charging unit, if on charger.

2. Turn the unit on by pressing top red button on for several seconds.

**NOTE: EOF SURVEY TEAM(S) CALL DOSE ASSESSMENT RADIO OPERATOR AT 262-5799.**

3. Call Survey Center at 771-3331 to test unit.

4. To place a call, press the appropriate number buttons and verify the number displayed is correct.

5. Press the top green button to activate the call.

6. Press the top red button to end the test call.

7. Turn the unit off by pressing the top red button for several seconds unless you will be using the unit soon. This will conserve battery power.

**Equipment Operation**

**NOTE: THE UNIT CAN BE OPERATED BY PLUGGING THE CHARGING CORD INTO A POWER OUTLET IN A VEHICLE OR ON ITS OWN INTERNAL BATTERY. IF POWER IS SUPPLIED BY BATTERY, THE UNIT WILL FUNCTION IN THE STANDBY MODE (POWER ON) FOR APPROXIMATELY 170 HOURS, AND IN THE OPERATING MODE (CALL-CONNECTED) FOR APPROXIMATELY 3 HOURS.**

1. Turn the unit on by pressing the top red button for several seconds.

2. To place a call, press appropriate number buttons followed by the top green button.

3. To receive a call, press the top green button while phone is ringing.

4. To end a call, press the top red button for several seconds.



5. Use the following numbers to report information:

Ginna/TSC (716) 771-3128  
Survey Team Coordinator

Survey Center (716) 771-3331 or  
(716) 771-3207

EOF Dose Assessment (716) 262-5799 or  
(716) 771-2164

- | 6. To turn the unit off, press the top red button for several seconds. The display  
| screen on the handset will go blank.



**EBERLINE RM-14 FRISKER****Equipment Check**

1. Disconnect power cord from back of meter. Ensure TEST ON toggle switch is off.
2. Ensure that an HP-260 pancake probe or equivalent is connected to the DETECTOR connector on the front of the instrument.
3. Turn range switch to BATT position. Meter should read in the BATT-OK area.
4. Ensure alarm set knob on back of instrument is turned fully clockwise to position 5.
5. Perform instrument response check. Obtain source and verify meter reading corresponds to reading on attached card. Log on response check log (Attachment 21), whether response check was satisfactory or not.
6. Turn range switch to OFF when not in use.

**Equipment Operation**

1. Turn range switch to X1.
2. Place response switch in the SLOW RESPONSE position.
3. Adjust the volume control so that the audio indication (a click) can be heard.
4. Ensure alarm set knob on back of instrument is turned fully clockwise to position 5.
5. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.
6. All readings must be multiplied by the range switch setting i.e. (X1, X10, X100).
7. 3,600 CPM is approximately equal to 1 mR/hr. Maximum reading is 50,000 CPM or 14 mR/hr.

**NOTE:      EOF TEAMS RETURN EQUIPMENT TO EOF.**



8. Upon completion of the survey, return meter to the Survey Center equipment area and response check the meter. Turn the meter off and return to storage if the response check is satisfactory. Notify the Survey Center Manager if the instrument does not response check properly. Unit should be recharged before the next use.



**EBERLINE MODEL RO-20 DOSE RATE METER****Equipment Check**

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.
2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.
3. If either of these checks are unsatisfactory, turn survey meter into Survey Center Manager.
4. Turn function switch to *Zero* position. Check that meter reads zero. If not, set it to zero with Zero knob.
5. Set the function switch to the 5 mR/hr range. Obtain response check source from the safe and verify that the meter reading corresponds to the reading on the source card. Use the open window reading. Log on response check log (Attachment 21), whether response check was satisfactory or not.
6. Turn meter off when not in use.

**Equipment Operation**

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.
2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.
3. If either of these checks are unsatisfactory, return survey meter to Survey Center Manager.
4. Set function switch to the desired range of operation. The switch position selected is the full scale reading of that range.
5. When surveying an area of unknown radiation, always start the survey at the higher scales and move to a lower scale until reading are between 10% and 90% of that scale.



**NOTE:       REMEMBER TO CHECK THE SCALE SETTING BEFORE  
RECORDING READINGS ON A SURVEY MAP OR REPORTING  
READINGS TO DOSE ASSESSMENT.**

6. For low light conditions, set the *Light* toggle switch to either *On* for continuous illumination or *Momentary* for momentary illumination. When not needed, ensure *Light* switch is returned to the *Off* position to conserve battery power.
7. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if the response check is satisfactory. Notify Survey Center Manager if the meter does not response check satisfactorily.



## **BICRON MICRO REM METER**

### **Equipment Check**

1. Turn meter control switch to the BATT position and ensure meter reading is in BAT O.K. band. If not, change batteries with 2 new 9V alkaline batteries. Then if meter reading is not in BAT O.K. band, tag and remove instrument from service.
2. Turn meter control switch to HV position and ensure meter reading is in HV O.K. band. If not, tag and remove instrument from service.
3. Turn meter control switch to appropriate range position. Perform instrument response check and verify that meter reading correspond to reading on attached card. Log meter reading on response check log.

### **Equipment Operation**

1. Turn meter control switch to appropriate range position.
2. Observe reading and multiply reading by the selected switch multiplier.
3. The following are switch multiplier positions: x1000, x100, x10, x1, x.1.
4. Upon completion of the survey, return to the equipment storage area and response check the meter. Turn the meter OFF and return to storage if the response check is satisfactory. Notify the Dose Assessment Manager if the instrument does not response check properly.



## GILIAN HFS-113A AIR SAMPLER, GILIAN HFS-513A AIR SAMPLER, GILIAN GILAIR-5 AIR SAMPLER

### Equipment Check of Gilian Air Samplers

1. Perform air sampler checks prior to use as follows:

Verify calibration is current by checking the calibration sticker.

**NOTE:**      **THE PARTICULATE FILTER IS INSTALLED WITH THE TEXTURED SIDE FACING OUT. THE SILVER ZEOLITE CARTRIDGE HAS ARROWS ON ITS SIDE TO INDICATE THE DIRECTION OF THE SAMPLE FLOW.**

2. Ensure the sample head is attached to the sampler inlet. Install new filters in the sample head.

### Operation of the Gilian HFS-113A and Gilian HFS-513A

1. Ensure filter cartridge contains a GY-130 Silver Zeolite cartridge and particulate filter. Ensure sample head is connected to a sampler.

\*\*\*\*\*

#### **CAUTION**

**MASTER ON/OFF SWITCH MUST BE ON FOR UNIT TO OPERATE. MASTER ON/OFF SWITCH ALSO RESETS TIME DISPLAY.**

\*\*\*\*\*

2. At start of sampling period record start time. PRESS TEST button and record time in digital display and flow of 4.0 LPM on sample envelopes and on RG&E Emergency Survey Team Data Sheet Attachment 19.

Turn unit on using on/off switch located to the right of the digital display.

\*\*\*\*\*

#### **CAUTION**

**IF A FAULT CONDITION EXISTS, THE UNIT SHUTS DOWN AFTER 15-30 SECONDS.**

\*\*\*\*\*

3. If the **FAULT LED** is lit; this was activated by either an undervoltage, overcurrent, or overpressure (restricted flow) condition beyond the units capability. The motor stops and the time is latched. By pressing the TEST button, the time (in minutes) into sampling at which the fault occurred will be displayed indicating a valid sample period.



4. At end of sampling period, turn pump off using ON/OFF switch located to right of digital display. Press TEST button, record time in digital display, stop time and all other pertinent information on sample envelope and Attachment 19.
5. Sample volume in liters equals the flow rate in liters per minute multiplied by minutes the sampler operated. The sampler has a fixed flow rate of 4 liters per minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters ( $4 \times 30 = 120$ ).

#### Operation of the Gilian Gilair-5

1. Turn the power switch to the ON position.
2. Record the start time and the run time on the digital display and a flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 19.
3. During use, periodically check the unit to ensure that it does not have a fault condition.

NOTE: A lit **FAULT LED** may be caused by:

- under voltage
- over current
- over pressure (restricted flow)

4. If the **FAULT LED** comes on during sampling, perform the following:
  - a. Check the digital display to determine how long the sample ran.
  - b. Determine the fault condition if possible and correct.
  - c. If the condition causing the fault is corrected and work is continuing, turn the unit off to reset it and then restart it. Be sure to add the previous run time to the total run time of the sample.
  - d. If the cause of the fault cannot be determined, remove the unit from service.
5. At the end of the sampling period, look at the digital display and note the total run time of the air sampler. Turn the sampler OFF. Record the run time from the display, stop time and all of the other pertinent information on Attachment 19.
6. Sample volume in liters equals the flow rate in LPM multiplied by the minutes the air sampler was operated. The sampler has a fixed flow rate of 4 Liters Per Minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters ( $4 \text{ LPM} \times 30 \text{ min.} = 120 \text{ liters}$ ).



**RADECO H809C HIGH VOLUME AIR SAMPLER****Equipment Check**

1. Ensure power switch on air sampler is off.
2. Ensure battery charger is not plugged in and on the 12 volt position. The black and red clips of battery charger shall not be touching.
3. Separate clips of battery charger and clamp onto cabinet.
4. Connect air sampler power cables to the battery charger, RED clip to positive and BLACK clip to negative.
5. Plug in battery charger.
6. Turn power switch on air sampler on.
7. Check flow meter on air sampler. Flow meter should be off scale high with no filters in place.
8. Turn power switch on air sampler off.
9. Unplug battery charger and disconnect air sampler power cables.

**EQUIPMENT OPERATION FROM VEHICLE**

1. Ensure power switch on air sampler is OFF.

\*\*\*\*\*

**CAUTION**

**KEEP HANDS AND EQUIPMENT AWAY FROM ROTATING PARTS ON THE VEHICLE ENGINE.**

\*\*\*\*\*

2. Connect RED power clip to positive post of vehicle battery and BLACK power clip to vehicle ground (engine block, chassis, etc.).

**NOTE: PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.**

3. Ensure the filter assembly contains a GY-130 silver zeolite cartridge and a particulate filter.
4. Turn air sampler on and record the sample date, time, location, and air flow rate (normal is 30 lpm) on a sample envelope and RG&E Emergency Survey Team Data Sheet, Attachment 19.
5. Run sampler for approximately 6 minutes.



6. Record air flow rate of air sampler in lpm and time sampler is turned off.
7. Turn air sampler off.
8. Disconnect BLACK power clip from vehicle ground, and disconnect RED power clip from positive post of vehicle battery.



## VAS-2 EARMARK "LOUD MOUTH" VOICE AMPLIFICATION SYSTEM

The "Loud Mouth" System is designed to provide voice amplification for individuals wearing respiratory protection devices.

### Equipment Check

Earmark Throat Microphone Model Tm-1

1. Figure 1 (attached) shows the proper "at rest" position for the microphone. If it is necessary to reform the spring tension, hold the microphone, starting two inches behind the microphone head, between the thumb and forefinger and bend the cable slightly while progressing down the cable until the end of the spring is reached. Check the diameter of the coil and repeat if necessary. Note that the microphone head should tilt up from a flat surface about 1/4 inch. If necessary, form the spring to give this dimension.
2. Batteries: A 9-volt Alkaline Battery is the required power source. The battery is located in the amplifier unit. To replace battery, remove cover plate to battery compartment. Pull plastic tab, remove and replace battery.

**NOTE: Small terminal (+) in first.**

### Equipment Operation

1. Ensure microphone cable is securely connected to jack on voice amplifier.
2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.
3. Securely fasten amplifier unit to belt.

\*\*\*\*\*

### CAUTION

**WHEN COMMUNICATING THROUGH RADIO, TELEPHONE, ETC., SPEAK PRECISELY. KEEP SPEAKER AT LEAST 12" FROM THE THROAT MIC. KEEP THE MEANS OF COMMUNICATION 12" FROM THE THROAT MIC. HOLD THE MEANS OF COMMUNICATION OFF TO THE SIDE OF THE SPEAKER. IF ANY FEEDBACK IS APPARENT, LOWER VOLUME.**

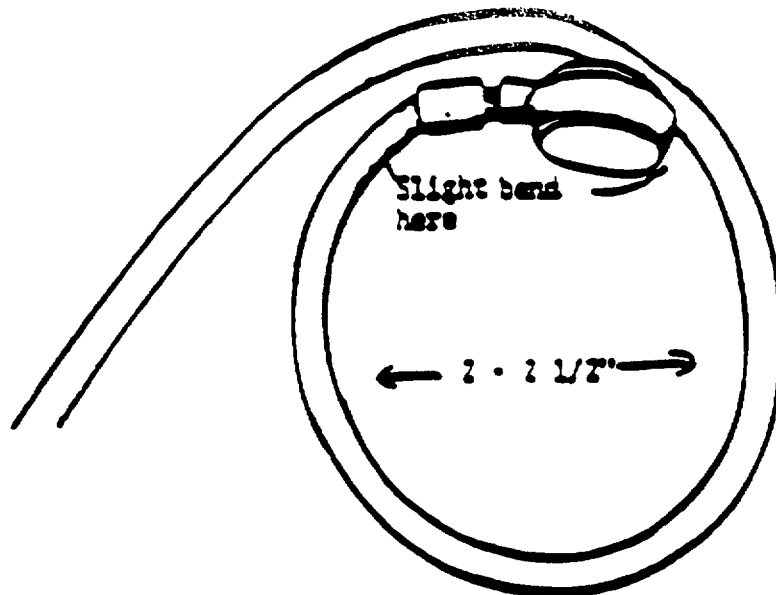
\*\*\*\*\*



4. To operate unit, turn volume control clockwise. The TALK slide switch has two (2) positions; up is the standby mode, and down is the talk mode. Slide TALK switch to down position to talk. Adjust VOLUME to desired level with volume control.
5. Turn unit off by turning volume control counter clockwise as far as it will turn. Leave talk switch in the standby position.



## EQUIPMENT CHECK AND OPERATION INSTRUCTIONS



On a flat surface the mic should rest about 1/4" above said surface

When mic is laid on a flat surface it should form a circle 2 to 2 1/2 " in distance. Depending on user size. If it has been stretched to form a larger circle the inbuilt spring wire should be reformed to produce the diameters indicated. This insures proper throat pressure for optimum sound quality.

Fig. 1

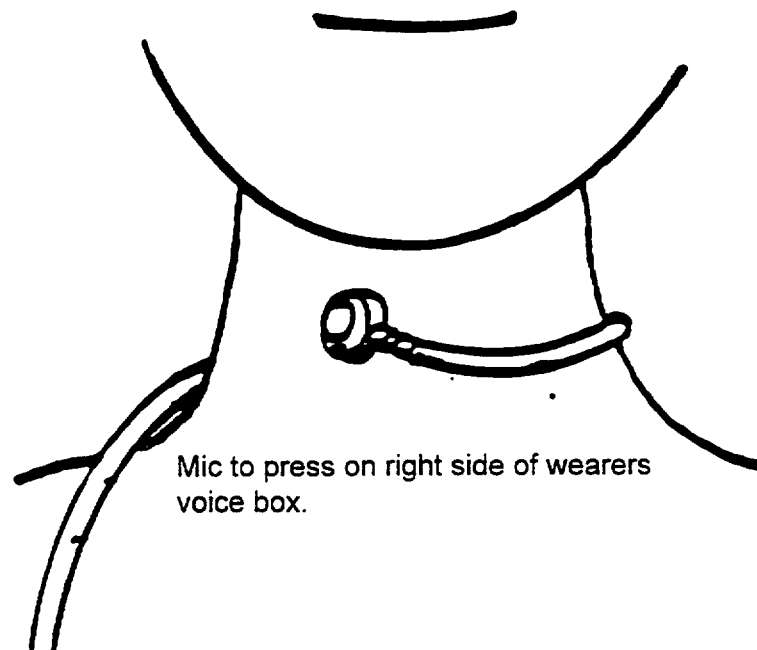


Fig. 2



**GENERAL AREA RADIATION SURVEY**

1. A general radiation area survey should be conducted while moving between defined survey points, and at the specific survey points.
2. The survey should be conducted using a Eberline RO-20 dose rate meter or equivalent.
3. Normally, radiation readings are taken at 3 feet with the Beta window closed.
4. Record results on a survey map.

\*\*\*\*\*

**CAUTION**

**IF RADIATION LEVELS ARE GREATER THAN 100 MR/HR, COMPLETE THE SURVEY AND RETREAT TO A LOWER DOSE AREA PRIOR TO REPORTING RESULTS TO KEEP YOUR EXPOSURE ALARA.**

\*\*\*\*\*

5. If a reading of 1 mr/hr or greater is detected, stop and conduct a survey for Beta radiation in accordance with Attachment 10. Record results on the RG&E Emergency Survey Team Data Sheet, Attachment 19 and immediately report the results of the survey to the Radio Operator.



# **SURVEY TO DETERMINE PRESENCE OF BETA RADIATION PLUME SURVEY**

1. If the General Area Radiation Survey indicates a reading of 1 mr/hr or greater, or if the "plume" is suspected to be in your area, a survey to detect the presence of Beta radiation should be conducted.
2. Using a Eberline RO-20 dose rate meter, conduct the following surveys:
  - a. With a meter held at waist level (3 feet):  
  
Beta shield open  
  
Beta shield closed  
Difference #1 = (open reading - closed reading)
  - b. With the meter held at ground level (3 inches):  
  
Beta shield open  
  
Beta shield closed  
  
Difference # 2 = (open reading - closed reading)
3. If either difference #1 or difference #2 from Step 2 is positive, this is an indication that Beta radiation is present.
  - a. If both difference # 1 and # 2 are positive, this an indication that you are in the plume.
  - b. If only difference # 2 is positive, this is an indication of ground contamination.
4. Record survey results on RG&E Emergency Survey Team Data sheet, Attachment 19.
5. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.



**CONTAMINATION SURVEYS**

**NOTE: DO NOT TOUCH THE METER PROBE TO ANY SURFACE BEING SURVEYED. PROBE CONTAMINATION MAY RESULT.**

The background count rate should be below **200 CPM** to be sensitive enough to detect low levels of contamination.

**Personnel Frisk**

1. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over a person (i.e., within ½ inch from the person) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager, if the net count rate is greater than 100 CPM.

**Direct Frisk Survey (Objects)**

1. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over an object or area surface (i.e., within ½ inch from it) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.



7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 250 CPM.

**Smear Survey**

1. Obtain cloth smears with adhesive backing mounted on waxed paper.
2. Obtain a RM-14 with a HP-260 pancake probe or equivalent frisker.
3. Check the background count rate.
4. Mark the smears with sequential numbers (e.g., 1,2,3,...).
5. Holding the smear paper between the thumb and index and middle fingers and applying medium pressure, smear an area  $100 \text{ cm}^2$  (approximately 4 inches by 4 inches). A 16-inch "S" pattern can also be used.
6. Record the smear location by writing the smear number on the map and circling it.
7. Hold the smear paper within  $\frac{1}{2}$  inch of the meter probe until the meter indication stabilizes. This is the gross count in CPM.
8. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
9. Record the net count rate as CPM/ $100 \text{ cm}^2$  in the smears table of the map next to the corresponding smear number.

**NOTE: THIS NOTICE DOES NOT APPLY TO ENVIRONMENTAL SMEARS.**

10. Notify the Survey Center Manager if the net count rates exceed  $1000 \text{ CPM}/100 \text{ cm}^2$ .
11. Return completed contamination surveys and smears to the Survey Center Manager.



**INSTALLATION OF TLD**

1. Specific locations for TLD's will be listed on the survey route instructions or will be given by the Dose Assessment Manager.
2. Hammer a nail through non-sealing plastic into a utility pole at the specified location. The nail should be positioned on the pole at head height and facing the site.

Ensure the TLD window is oriented facing the site.

3. Record the location (either survey point number or road intersections), utility pole number, date, time, and TLD number on the back of the survey map.



**TAKING AIR SAMPLES**

1. Air samples are drawn using either of the following equipment:
  - a. **HIGH VOLUME** - Using a RADECO H809C high volume air sampler or Buck Lapel Air Sampler, draw approximately 180 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **6 MINUTES**.
  - b. **LOW VOLUME** - Using a Gilian HFS-113A low volume air sampler, draw approximately 120 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **30 MINUTES**.
2. Record the sample date, time, and location (either survey point number or road intersections) on a sample envelope and on RG&E Emergency Survey Team Data sheet, Attachment 19. Take radiation readings as per Attachment 10 and record on Attachment 19.
3. Determine the background radiation level using the Eberline RM-14 Frisker and HP-260 pancake probe or equivalent. Record the reading on Attachment 19. If background reading is greater than 200 CPM, move to lower background area prior to taking readings. If background of 200 cpm cannot be located, contact Dose Assessment for further instructions.

\*\*\*\*\*

**CAUTION****IF FILTERS ARE READING OFF SCALE, MOVE PROBE APPROXIMATELY 1" FROM FILTER. REPORT AND LOG DATA AS BEING TAKEN AT 1".**

\*\*\*\*\*

4. Using clean disposable gloves, remove the particulate filter and measure the activity level using an Eberline RM-14 Frisker and HP-260 pancake probe or equivalent. **DO NOT TOUCH THE PROBE WINDOW TO THE PARTICULATE FILTER.** Record the gross cpm reading on Attachment 19 and place the particulate filter in the envelope.
5. Remove the GY-130 silver zeolite cartridge from the sample holder and measure the activity on the inlet side of the cartridge filter. **DO NOT TOUCH THE PROBE WINDOW TO THE CARTRIDGE.** Record the gross reading on Attachment 19 and place the cartridge in the envelope.
6. Remove the disposable gloves and discard in a plastic bag. Treat as potentially contaminated material.
7. Report the sample collection information from Attachment 19 to the Radio Operator.



**NOTE: DO NOT PERFORM CALCULATIONS UNLESS REQUESTED BY THE DOSE ASSESSMENT MANAGER.**

8. Field calculations of the airborne activity level may be performed as follows:
- a. Sample volume in liters equals the flow rate (30 lpm) times the number of minutes the sampler operated
  - b. Radioiodine (GY-130 cartridge)

\*\*\*\*\*

**CAUTION**

**IF THE CARTRIDGE CONTACT READING IS OFFSCALE, DETERMINE THE IODINE ACTIVITY FOR THE HP-260 PROBE ONE INCH (ONE CARTRIDGE THICKNESS) AWAY FROM THE INLET SIDE OF THE CARTRIDGE, USING EQUATION b.2. OTHERWISE, USE EQUATION b.1.**

\*\*\*\*\*

@ contact    1.  $\frac{(\text{CPM Sample} - \text{CPM Background})(4.13 \text{ E-8})}{(\text{Volume of Sample in Liters})} = \frac{\text{Radioiodine}}{\text{uCi/cc}}$

@ 1"            2.  $\frac{(\text{CPM Sample} - \text{CPM Background})(8.50 \text{ E-8})}{(\text{Volume of Sample in Liters})} = \frac{\text{Radioiodine}}{\text{uCi/cc}}$

- c. Particulate

\*\*\*\*\*

**CAUTION**

**IF THE FILTER CONTACT READING IS OFFSCALE, DETERMINE THE PARTICULATE ACTIVITY FOR THE HP-260 PROBE ONE INCH AWAY FROM THE INLET SIDE OF THE FILTER, USING EQUATION c.2. OTHERWISE, USE EQUATION c.1.**

\*\*\*\*\*

**SURVEY INSTRUCTIONS**

@ contact    1.  $\frac{(\text{CPM Sample} - \text{CPM Background})(3.47 \text{ E-9})}{(\text{Volume of Sample in Liters})} = \frac{\text{Particulate}}{\text{uCi/cc}}$

@ 1"            2.  $\frac{(\text{CPM Sample} - \text{CPM Background})(9.83 \text{ E-9})}{(\text{Volume in Sample in Liters})} = \frac{\text{Particulate}}{\text{uCi/cc}}$



### CHANGING FILTERS AT FIXED ENVIRONMENTAL STATIONS

1. Record the following information on the sample envelope left from the previous filter change:
  - a. Date
  - b. Time
  - c. System Vacuum (inches)
  - d. Gas meter reading (cubic feet)
  - e. Total hour meter reading (record in column marked "OFF")
  - f. Initials of person changing filters
2. Turn pump off.
3. Using clean disposable gloves, remove the filter holder at the quick-disconnect joint.
4. Unscrew the outside retaining ring and remove the particulate filter from the holder and place in the sample envelope.
5. If a charcoal or zeolite cartridge was used, transfer the information from the particulate filter envelope to a new envelope and place the cartridge in the envelope.

**NOTE: PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.**

6. Reassemble the filter holder installing a new GY-130 silver zeolite cartridge and a particulate filter.
7. Reconnect the filter holder to the pump at the quick-disconnect joint.
8. Remove disposable gloves and place in a plastic bag. Treat as potentially contaminated material.
9. Turn the pump on.
10. Record the following information to two new envelopes. Mark one envelop "GY-130 silver zeolite".
  - a. Station number
  - b. Date
  - c. Time
  - d. System vacuum (inches)
  - e. Gas meter reading (cubic feet)
  - f. Total hour meter reading (record in the "ON" column)
  - g. Initials of person starting sampler
11. Place the new envelopes inside the monitor cabinet.
12. Bring the envelopes containing the removed cartridge and filter to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

\*\*\*\*\*

**OFFSITE EAST**  
**PRIMARY SURVEY ROUTE**

**NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.**

**NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.**

1. Travel East on Lake Road from the Training Center driveway to Knickerbocker Road. Place a TLD near the intersection of Lake Road and Knickerbocker Road (2ESE) per instructions in Attachment 12.
2. Continue East on Lake Road to Fisher Road.
3. Go South on Fisher Road to Shepard Road. Place a TLD near the intersection of Fisher Road and Shepard Road (3ESE-2) per instructions in Attachment 12.
4. Continue South on Fisher Road to Seely Road. Place a TLD near the intersection of Fisher Road and Seely Road (4ESE) per instructions in Attachment 12.
5. Continue South on Fisher Road to Kenyon Road (4SE).
6. Go West on Kenyon Road to Furnace Road. Place a TLD near the intersection of Kenyon Road and Furnace Road per instructions in Attachment 12.
7. Continue West on Kenyon Road to Knickerbocker Road (3SSE).
8. Go North on Knickerbocker Road to Brick Church Road (2SE).
9. Place a TLD near the intersection of Knickerbocker Road and Brick Church Road (2SE) per instructions in Attachment 12.
10. Take a high volume air sample at Knickerbocker Road and Brick Church Road (2SE) per instructions in Attachment 13. Report the results.
11. Report to the Radio Operator that the survey route for the Offsite East Primary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE EAST**  
**SECONDARY SURVEY ROUTE**

**NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.**

**NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.**

1. From the intersection of Brick Church Road and Knickerbocker Road, go North to Lake Road.
2. Go East on Lake Road to the intersection of Lake Road and Route 21 in Pultneyville.
3. Place a TLD near the intersection of Lake Road and Route 21 (6E) per instructions in Attachment 12.
4. Go South on Route 21 to Salmon Creek Road.
5. Place a TLD near the intersection of Salmon Creek Road and Eaton Road (6ESE-1) per instructions in Attachment 12.
6. Take a high volume air sample at Salmon Creek Road and Eaton Road (6ESE-1) per instructions in Attachment 13. Report the results.
7. Go South on Salmon Creek Road to Ridge Road.
8. Place a TLD near the intersection of Salmon Creek Road and Ridge Road per instructions in Attachment 12.
9. Go West on Ridge Road to the intersection of Ridge Road and Knickerbocker Road.
10. Take a high volume air sample at Route 104 and Knickerbocker Road (4SSE) per instructions in Attachment 13. Report the results.
11. Go North on Knickerbocker Road to Brick Church Road (2SE).
12. Report to the Radio Operator that the survey route for the Offsite East Secondary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE EAST**  
**THIRD SURVEY ROUTE**  
**WINDS FROM THE EAST**

1. From the intersection of Brick Church Road and Knickerbocker Road travel West to Ontario Center Road.
2. Go South on Ontario Center Road to Plank Road.
3. Go West on Plank Road to Five Mile Line Road.
4. Go North on Five Mile Line Road to Klem Road.
5. Go East on Klem Road to Whiting Road.
6. Go North on Whiting Road to Lake Road.
7. Go East on Lake Road to Knickerbocker Road.
8. Go South on Knickerbocker Road to Brick Church Road.
9. Report to the Radio Operator that the Survey Route for the Offsite East Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE EAST**  
**THIRD SURVEY ROUTE**  
**WINDS FROM THE WEST**

1. From the intersection of Brick Church Road and Knickerbocker Road travel North to Lake Road.
2. Go East on Lake Road to Townline Road.
3. Go South on Townline Road to Ridge Road.
4. Go West on Ridge Road to Route 21.
5. Go South on Route 21 to Walworth-Marion Road.
6. Go West on Walworth-Marion Road(Route 441) to Route 350.
7. Go North on Route 350 to Brick Church Road.
8. Go East on Brick Church Road to Knickerbocker Road.
9. Report to the Radio Operator that the Survey Route for the Offsite East Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE WEST**  
**PRIMARY SURVEY ROUTE**

**NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.**

**NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.**

1. Travel West on Lake Road from the Training Center driveway to Lakeside Road.
2. Place a TLD near the intersection of Lake Road and Lakeside Road (2WSW) per instructions in Attachment 12.
3. Go South on Lakeside Road to the intersection of Berg Road.
4. Place a TLD near the intersection of Lakeside Road and Berg Road (3SSW-2) per instructions in Attachment 12.
5. Continue South on Lakeside Road to Ridge Road.
6. Go East on Ridge Road to Route 350.
7. Go North on Route 350 to Brick Church Road.
8. Travel West on Brick Church Road to Slocum Road.
9. Place a TLD near the intersection of Brick Church Road and Slocum Road (2SSW) per instructions in Attachment 12.
10. Take a high volume air sample at Brick Church Road and Slocum Road (2SSW) per instructions in Attachment 13. Report the results.
11. Report to the Radio Operator that the Survey Route for the Offsite West Primary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE WEST - SECONDARY SURVEY ROUTE**

**NOTE:** NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.

**NOTE:** IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.

1. From the intersection of Brick Church Road and Slocum Road travel North to Lake Road.
2. Go West on Lake Road to Route 250 (Webster Road).
3. Place a TLD near the intersection of Lake Road and Route 250 per instructions in Attachment 12.
4. Travel South on Route 250 to Schlegel Road.
5. Go East on Schlegel Road to Salt Road.
6. Place a TLD near the intersection of Schlegel Road and Salt Road (6WSW) per instructions in Attachment 12.
7. Take a high volume air sample at Schlegel Road and Salt Road (6WSW) per instructions in Attachment 13. Report the results.
8. Go South on Salt Road to Route 104.
9. Travel East on Ridge Road to County Line Road.
10. Travel South on County Line Road to Whitney Road.
11. Place a TLD near the intersection of County Line Road and Whitney Road per instructions in Attachment 12.
12. Go East on Whitney Road to Slocum Road.
13. Take a high volume air sample at Whitney Road and Slocum Road per instructions in Attachment 13. Report the results.
14. Continue on Whitney Road to Hennessey Road.
15. Go East on Hennessey Road to Route 350.
16. Go North on Route 350 to Brick Church Road.
17. Go West on Brick Church Road to Slocum Road.
18. Report to the Radio Operator that the Survey Route for the Offsite West Secondary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**OFFSITE WEST**  
**THIRD SURVEY ROUTE**  
**WINDS FROM THE EAST**

1. From the intersection of Brick Church Road and Slocum Road travel North to Lake Road.
2. Go West on Lake Road to Route 250 (Webster Road).
3. Go South on Route 250 to Atlantic Avenue.
4. Go East on Atlantic Avenue to Route 350 (Ontario Center Road).
5. Go North on Route 350 to Paddy Lane.
6. Go West on Paddy Lane to Slocum Road.
7. Go North on Slocum Road to Brick Church Road.
8. Report to the Radio Operator that the Survey Route for the Offsite West third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



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**CAUTION  
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM  
DOSE ASSESSMENT.**

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**OFFSITE WEST  
THIRD SURVEY ROUTE  
WINDS FROM THE WEST**

1. From the intersection of Brick Church Road and Slocum Road travel South to Paddy Lane.
2. Go East on Paddy Lane to Route 350 (Ontario Center Road).
3. Go South on Route 350 to Route 441.
4. Go East on Route 441 to Cory Corners Road.
5. Go North on Cory Corners Road to Ridge Chapel to Ridge Road.
6. Go East on Ridge Road to Salmon Creek Road.
7. Go North on Salmon Creek Road to Lake Road.
8. Go West on Lake Road to Slocum Road.
9. Go South on Lake Road to Brick Church Road.
10. Report to the Radio Operator that the Survey Route for the Offsite West Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.



\*\*\*\*\*

**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**EOF SURVEY ROUTE #1**  
**LONG ROUTE (EOF-1L)**

1. Take 490 East to 590 North. (During rush-hour periods, consider using Culver to Atlantic Avenue as an alternate route.)
2. Take Browncroft Boulevard exit and head east to Creek Street. Head north on Creek Street to Empire Boulevard.
3. At Eastway Plaza, take a high volume air sample per instructions in Attachment 13.
4. From Eastway Plaza, continue north on Bay Road to Lake Road. Turn west on Lake Road and proceed to the Irondequoit Bay Outlet.
5. Head east on Lake Road to Bay Road. Head south on Bay Road to Route 104. Head west on Route 104, cross the Irondequoit Bay Bridge and continue on Route 104 West to the Culver Road exit. Head north on Culver Road to Sea Breeze to the Irondequoit Bay Outlet.
6. Head south on Sea Breeze Expressway to 590 South to Route 404 Webster exit. Head east on Empire Boulevard to Creek Street/Bay Road (Eastway Plaza.)
7. Report to Radio Operator that the EOF Survey Route #1Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.

**SHORT ROUTE (EOF-1S)**

1. Take East Avenue to Culver Road. Turn north on Culver Road and proceed to Empire Boulevard.
2. At Culver Road and Empire Boulevard, take a high volume air sample as per instructions in Attachment 13.
3. Proceed northwest on Waring Road to Norton Street. Turn west on Norton Street to Portland Avenue.
4. Proceed west on Portland Avenue to North Street. Head South on North Street to East Avenue.
5. Report to Radio Operator that the EOF Survey Route #1Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.



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**CAUTION**  
**DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM**  
**DOSE ASSESSMENT.**

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**EOF SURVEY ROUTE #2**  
**LONG ROUTE (EOF-2L)**

1. Take 490 East to Route 441 (Linden Avenue) exit. Head east on Route 441 to Route 250.
2. At Penfair Plaza, take a high volume air sample per instructions in Attachment 13.
3. Continue east on Route 441 to Harris Road. Turn north on Harris Road to Atlantic Avenue (Route 286). Turn west on Atlantic Avenue to Route 250. Turn south on Route 250 and return to Penfair Plaza.
4. Report to Radio Operator that the EOF Survey Route #2Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.

**SHORT ROUTE (EOF-2S)**

1. Take Monroe Avenue (Route 31) southeast to the 12 Corners.
2. At 12 Corners, take a high volume air sample per instructions in Attachment 13.
3. Head north on Winton Road to Main Street. Turn west on Main Street to Culver Road. Turn south on Culver Road to East Avenue.
4. Report to Radio Operator that the EOF Survey Route #2 Short has been completed noting any unusual radiological conditions, and are awaiting further instructions.



1.	DATA FROM:	<input type="checkbox"/> RG&E	<input type="checkbox"/> WAYNE COUNTY	<input type="checkbox"/> MONROE COUNTY
2.	A. DATE: _____ D. TEAM: _____ E. LOCATION: _____	B. TIME: _____	C. DATA SHEET NO.: _____	
3.	A. SURVEY UNITS: (CIRCLE ONE) B. SURVEY METER: (CIRCLE ONE)  METER NO. _____	CPM CDV-700 BICRON	MICRO-R/HR CDV-715	MR/HR EBERLINE R/HR RO-20
4.	WAIST LEVEL (3 FEET) READINGS:  A.. OPEN WINDOW _____ B. CLOSED WINDOW _____			
5.	GROUND LEVEL (3 INCHES) READINGS:  A.. OPEN WINDOW _____ B. CLOSED WINDOW _____			
6.	AIR SAMPLING COLLECTION TIMES:  A. TIME ON: _____ B. TIME OFF: _____ C. MINUTES RUN: _____			
7.	AIR SAMPLING FLOWRATES:  A. LPM START: _____ B. LPM END: _____ C. LPM AVERAGE: _____			
8.	PARTICULATE CPM:  A. CONTACT: _____ B. 1" _____			
9.	IODINE CPM:  A. CONTACT: _____ B. 1" _____			
10.	BACKGROUND CPM:  _____			
11.	COMMENTS AND ADDITIONAL DATA:			

☐ **THIS IS NOT A DRILL**



**NOTE: THIS DOES NOT NEED TO BE FILLED OUT FOR TRANSMISSION TO OTHER AGENCIES.**

RADIOIODINE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (8.50 \text{ E-8}) @ 1''}{(\text{MINUTES RUN}) (\text{LPM AVERAGE})} = \frac{\text{ON CONTACT}}{\text{RADIOIODINE}} \text{ UCI/CC}$$

PARTICULATE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (9.83 \text{ E-9}) @ 1''}{(\text{MINUTES RUN}) (\text{LPM AVERAGE})} = \frac{\text{ON CONTACT}}{\text{PARTICULATE}} \text{ UCI/CC}$$

RADIOIODINE DOSE CONVERSION FACTORS (REM/HR PER UCI/CC)

<u>HR</u>	<u>DCF</u>	<u>HR</u>	<u>DCF</u>
1	5.4E5	7	9.3E5
2	6.4E5	8	9.3E5
3	7.3E5	9	1.0E6
4	8.0E5	10	1.1E6
5	8.7E5	11	1.1E6
6	8.7E5	12	1.1E6

CHILD THYROID (CDE) DOSE RATE

$$(\text{UCI/CC}) (\text{DCF}) = \frac{\text{REM/HR}}{\text{CHILD THYROID}}$$

PERFORMED BY:

NAME

DATE/TIME

CHECKED BY:

NAME

DATE/TIME



**THIS IS A DRILL**



**THIS IS NOT A DRILL**



**SURVEY TEAM:**\_\_\_\_\_

[illegible]



<b>RADIATION PROTECTION &amp; CHEMISTRY</b>
Category:
Subject: EPIP Instruments
Date:
Reviewed:

**EPIP INSTRUMENT RESPONSE CHECK**

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

DOSE RATE METERS				
	Model	Serial #	Response Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

FRISKERS				
	Model	Serial #	Response/Alarm Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				



**Rapid Deployment Survey Team Instructions**

1. Assemble the following equipment:
  - a. Personal thermoluminescent dosimeter (TLD) for each team member
  - b. One 0-1500 mR dosimeter and one 0-10 R dosimeter for each team member. Sign in on dosimeter log sheet, Attachment 2 in EPIP 1-11.
  - c. Motorola GM 300 mobile radio and magnetic mount antenna.
  - d. Eberline RM-14 Frisker with HP-260 pancake probe or equivalent.
  - e. Eberline RO-20 dose rate meter or equivalent.
  - f. Cellular telephone
  - g. Survey map of 10-mile EPZ
  - h. Other equipment (eg., PC's, KI tablets, respirators, air sampler, etc.) as determined by Dose Assessment Manager.
2. Source response check survey meters and document on Attachment 21.
3. Obtain transportation and check vehicle for contamination by performing a direct frisk survey. Document results on Attachment 20.
4. Establish radio and cell phone communications with Technical Support Center (TSC) Radio Operator.
5. TSC Radio Operator will provide a team briefing and instructions to the Rapid Deployment Team from the Dose Assessment Manager.
6. The Rapid Deployment Team will be called back to the Survey Center when other survey teams are staffed and deployed to designated survey routes.



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 5-2

REV. NO. 25

ONSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT

PERIODIC INVENTORY CHECKS AND TESTS



RESPONSIBLE MANAGER

07/20/01

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: \_\_\_\_\_

THIS PROCEDURE CONTAINS 32 PAGES



**EPIP 5-2****ONSITE EMERGENCY RESPONSE FACILITIES AND  
EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS****1.0 PURPOSE**

The equipment required by the Nuclear Emergency Response Plan and the means of assuring it is available are outlined in this procedure. Inspections will be made monthly. After each drill or use, inventory Survey Team Boxes, Survey Center, Warehouse, TSC, OSC, and Control Room lockers to ensure equipment has been returned and is available for emergency use. (Only those boxes or lockers which were opened should be inventoried.)

**2.0 RESPONSIBILITY**

2.1 The Corporate Nuclear Emergency Planner (CNEP), is responsible for ensuring the periodic inspections, inventory and operational checking of emergency preparedness equipment.

2.2 The Ginna Radiation Protection Section usually performs the onsite inventories.

**3.0 REFERENCES**

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.2 Implementing References

3.2.1 RP-INS-C-EFF, Efficiency Calibration of Alpha and Beta Counters

3.2.2 RP-JC-DAILY-SRC-CHKS, Daily Instrument Source Checks

3.2.3 SC-3.16.15, Charging of SKA-PAK, II, IIA, 300 Cubic Feet Cylinder Compressor or Cascade Method

3.2.4 SC-3.16.15.1, Charging of 4.5 Units Using the Breathing Air Compressor

3.2.5 SC-3.15.7, Inspection Of Self Contained Breathing Apparatus Scott 4.5 and Cascade System Charging Equipment

3.2.6 EPIP 2-11, Onsite Surveys

3.2.7 RP-JC-AIRSAMPLE, ATT 1, Air Sample Job Coverage Record

3.2.8 A-1.8, Radiation Work Permits



- 3.2.9 RP-RES-M-RESP, Decontamination, Packing and Storage of Respirators
- 3.2.10 ETIP 2-12, Offsite Surveys
- 3.2.11 ETIP 2-14, Post Plume Environmental Sampling
- 3.2.12 RP-INS-CAM-OPS, Constant Air Monitor Operation

#### **4.0 PRECAUTIONS**

- 4.1 This procedure may be performed in any order, and attachments may be removed and submitted individually.

#### **5.0 PREREQUISITES**

- 5.1 Obtain current copies of applicable procedures of RP-JC-AIRSAMPLE, A-1.8, SC-3.16.15 and SC-3.16.15.1
- 5.2 Each individual environmental TLD shall be sealed in plastic before being stored.

#### **6.0 ACTIONS**

- 6.1 Inspection of Equipment
  - 6.1.1 Inspect each location using Attachments 1 through 6. These inspections are performed by initialing the blank space if minimum requirement is met on the Attachments.
    - a. Survey Center - Attachments 1 and 2.
    - b. Control Room - Attachment 3.
    - c. Operational Support Center, Radiation Protection Office, PASS (in Hot Shop) and Intermediate Building per Attachment 4.
    - d. Technical Support Center - Attachment 5.
    - e. Warehouse and Security Access Control Area (Guardhouse) - Attachment 6.
    - f. Engineering Support Center - Attachment 7
  - 6.1.2 Notify Control Room (3235) and Corporate Nuclear Emergency Planner (6772) prior to initiating Survey Center and TSC communication checks to ensure confirmation of equipment operation.



- 6.1.3 Send completed attachments to the Onsite Emergency Planner for review.
- 6.2 Reporting Discrepancies
  - 6.2.1 If any discrepancies are found, the person performing the inventory will make a note on the Emergency Equipment Monthly Inspection Log, Attachment 9. If there are no discrepancies, enter none for each location.
  - 6.2.2 Discrepancies are to be corrected as soon as possible and so noted on the Emergency Equipment Monthly Inspection Log, Attachment 9.
  - 6.2.3 Any equipment calibration that will expire prior to the end of the next inventory month should be recalibrated or replaced with equipment whose calibration will not expire prior to the next inventory.
  - 6.2.4 Send a signed copy of completed Attachment 9, Emergency Equipment Monthly Inspection Log, to the Onsite Emergency Planner for review and forwarding to Central Records.
  - 6.2.5 Send signed copy of completed Attachment 10, Equipment Calibration Expiration Notification, to the Lead Technician-RP Instruments/TLDs.

## **7.0 ATTACHMENTS**

- 1. Emergency Equipment in Survey Center
- 2. Emergency Equipment Per Survey Box - Survey Center
- 3. Emergency Equipment in Control Room
- 4. Emergency Equipment in Operational Support Center, Radiation Protection Office, PASS (in Hot Shop) and Intermediate Building
- 5. Emergency Equipment in Technical Support Center
- 6. Emergency Equipment in Warehouse and Security Access Control Area (Guard House)
- 7. Emergency Equipment in the Engineering Support Center
- 8. Cellular Mobile Telephone Equipment Check
- 9. Emergency Equipment Monthly Inspection Log
- 10. Equipment Calibration Expiration Notification



**EMERGENCY EQUIPMENT IN SURVEY CENTER**

**1.0 Assignment tag board** - all tags in place \_\_\_\_\_

**NOTE: PERFORM INVENTORY ON SURVEY TEAM, BOXES IN JANUARY AND JULY OR IF SEAL HAS BEEN BROKEN.**

**NOTE: CHANGE BATTERIES IN JANUARY AND JULY OR IF THE EXPIRATION DATE IS WITHIN 6 MONTHS OF THE DATE THAT THE INVENTORY IS PERFORMED.**

**2.0 Survey team boxes** - Onsite East, Onsite West, Offsite East, Offsite West, Spare 1, Spare 2.

**2.1** Perform inventory on each survey team box in accordance with Attachment 2. N/A this step and Attachment 2, if not required at this time. \_\_\_\_\_

**3.0 Survey Meters.** Battery check, check calibration date, source check and document using RP-JC-DAILY-SRC-CHKS.

**3.1** Low range. RM-14 with Pancake Probe or equivalent (min. 8-units)  
Expiration Date: \_\_\_\_\_

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

**3.2** High range, Eberline RO-20 or equivalent (min. 8-units)  
Expiration Date: \_\_\_\_\_

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

**4.0 Scaler, BC-4 or equivalent.** Check calibration date and document using RP-JC-DAILY-SRC-CHKS, (min. 1-unit)  
Expiration Date: \_\_\_\_\_

**5.0 Dosimeter Chargers**

**5.1** 110V AC power operated - check operation (min. 1-unit) \_\_\_\_\_

**5.2** Battery operated - check operation (min. 2-units) \_\_\_\_\_



**6.0 Self-Reading Pocket Dosimeters - check calibration****NOTE: RECORD EARLIEST DATE FOR ASSOCIATED EQUIPMENT.**

6.1 0-1500 mr (min. 44-units) Expiration Date: \_\_\_\_\_

6.2 0-10R (min. 22 units) Expiration Date: \_\_\_\_\_

**NOTE: EACH INDIVIDUAL ENVIRONMENTAL TLD SHALL BE HEAT-SEALED IN PLASTIC AND PACKAGED 9 TO A PACKAGE IN A PLASTIC BAG.****7.0 TLDs**7.1 Thermoluminescent dosimeters (TLDs) -  
Anneal TLDs and check ECF's in January,  
April, July and October. (Min. - 100) \_\_\_\_\_7.2 Environmental TLDs -  
Anneal TLDs and check ECF's in January,  
April, July and October (4 packages  
of 9 each) \_\_\_\_\_**NOTE: RECORD EARLIEST DATE FOR THE ASSOCIATED EQUIPMENT. RUN SAMPLERS FOR SEVERAL MINUTES TO CHECK OPERATION. ENSURE FILTERS ARE NOT LEFT IN HOLDERS.****8.0 Air Sample Equipment**8.1 Low volume, Gilian or equivalent with air sampling heads.  
Ensure units are plugged into charger after test. (min. 10-units)  
Expiration Date: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_8.2 RADECO H 809 B2. Run for 90 minutes  
(min. 2-units) Expiration Date: \_\_\_\_\_8.3 RADECO H 809 C. Run for 1 minute  
(min. 4-units) Expiration Date: \_\_\_\_\_  
\_\_\_\_\_**9.0 Battery charger**

9.1 Check operation. Disconnect after testing is complete. (min. 1-unit) \_\_\_\_\_



**10.0 Respiratory Equipment**

10.1 Respirators, full face. Inspect and label per  
RP-RES-M-RESP. (min. 22-units)

10.2 Respirator filters, charcoal.  
(min. 22-units) Expiration Date: \_\_\_\_\_

10.3 Voice emitters for respirators. Check operation.  
(min. 13-units)

10.4 Local mask use sheets for Scott A Respirators  
RP-JC-AIRSAMPLE, ATT.1 - Air Sample  
Job Coverage Record (min. 5-copies)

10.5 Shaving kit with razor, blades, shaving cream, beard trimmer  
and two (2) AA batteries.

**NOTE: PRECEDE ALL COMMUNICATIONS WITH "THIS IS A  
TEST" AND PERFORM RADIO CHECKS WITH SECURITY.**

**11.0 Communications Equipment**

11.1 Portable radios (min. 4 units)

11.1.1 Radio check with Security

11.2 Motorola GM 300 Mobile Radio (min. 6-units)

11.2.1 Magnetic or mount antennas (min. 3 units)

11.2.2 Radio check with Security

11.3 Deskon II, stationary. (min. 2-units)

11.4 Intercom "A". Call Control Room at ext. 3509 and have them plug in  
the Control Room Intercom "A" and perform communication check  
with Survey Center. (min. 1-unit)

**11.5 Cellular Phone checks**

11.5.1 Check operation of each unit by performing Attachment 8.  
(min. 6 units)



**NOTE: VERIFY PHONE BOOKS ARE UP-TO-DATE.****11.6 Telephone Books**

11.6.1 Rochester (min. 1 unit) \_\_\_\_\_

11.6.2 Wayne County (min. 1 unit) \_\_\_\_\_

11.6.3 RG&amp;E Phone Directory \_\_\_\_\_

**11.7 FAX MACHINE**

11.7.1 Test fax machine by faxing a test message to the TSC (ext. 3927). \_\_\_\_\_

**12.0 AMS-4** Calibration due date: \_\_\_\_\_

**13.0 Radiation monitor**, XETEC Model 501 A-2. Perform operational check in accordance with RP-JC-DAILY-SRC-CHKS and check Calibration Due Date: \_\_\_\_\_

**14.0 Decon Shower**

14.1 Ensure that decon shower area is free from debris and that decon supplies (RMC Kit) are available. \_\_\_\_\_

14.2 Verify Test Tank Alert Alarm System for the decon shower holding tank functions properly by performing the following steps.

14.2.1 Ensure horn/silent slide switch is in "Horn" position. \_\_\_\_\_

14.2.2 Verify "T" valve is "Locked Shut". \_\_\_\_\_

14.2.3 Verify "S" valve is "Open". \_\_\_\_\_

14.2.4 Momentarily depress "To Test" Push button and verify the warning light red and horn activate. \_\_\_\_\_

**NOTE: CHANGE BATTERIES IN JANUARY AND JULY. CHANGE BATTERIES IF EXPIRATION DATE IS WITHIN 6 MONTHS OF THE DAY INVENTORY IS PERFORMED.**

**15.0 Batteries** (alkaline)

15.1 AAA (min. 12-units) \_\_\_\_\_

15.2 D-Cell (min. 10-units) \_\_\_\_\_



15.3	9V (min. 12-units)	_____
<b>16.0</b>	<b>RADIATION PROTECTION SUPPLIES</b>	
16.1	Air sampler filters	
16.1.1	Particulate (min. 100-units)	_____
16.1.2	Silver Zeolite (min. 50-units) Expiration Date: _____	_____
16.2	Air Sample Envelopes (min. 100-units)	_____
16.3	Smears (min. 10-boxes)	_____
16.4	Planchets (min. 1-bag)	_____
16.5	Anti-contamination clothing - sets are to consist of 1-pair inner gloves, 1-Tyvek hood, 1-Tyvek suit, 1-pair work gloves, 1-pair shoe covers. (min 25 units)	_____
16.6	Plastic bags	
16.6.1	Poultry (min. 1 box)	_____
16.6.2	Large, clear (min. 20 units)	_____
16.6.3	Large, Radioactive Material, yellow (min. 1 roll)	_____
16.7	Radiation rope (min. 1 roll)	_____
16.8	Radiation hazard signs with inserts (min. 10 each)	_____
16.8.1	RADIATION AREA	_____
16.8.2	HIGH RADIATION AREA	_____
16.8.3	CONTAMINATED AREA	_____
16.8.4	RADIOACTIVE MATERIAL AREA	_____
16.8.5	RESTRICTED AREA	_____
16.8.6	RWP Required	_____
16.8.7	Contact RP prior to entry	_____
16.9	Step off pads	



16.9.1 Remove protective clothing before stepping here (10-units) \_\_\_\_\_

16.10 Contaminated waste/clothing containers, 55 gallon drums  
(min. 2-units) \_\_\_\_\_

16.11 Stanchions for radiological barriers (min. 6) \_\_\_\_\_

**NOTE: PERFORM INVENTORY IN JANUARY OR JULY, IF SEAL  
IS BROKEN, PER ENCLOSED PROCEDURE.**

16.12 Decontamination kits, RMC (1-case) \_\_\_\_\_

16.13 Thyroid Block Tablets (min. 25-units)  
Expiration Date: \_\_\_\_\_

16.14 Survey Team Maps - (min. 15-each) \_\_\_\_\_

**17.0 Administrative Supplies**

17.1 Pens and pencils (min. 10-each) \_\_\_\_\_

17.2 Extension cords (min. 3-units) \_\_\_\_\_

17.3 Scissors (min. 1-pair) \_\_\_\_\_

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

17.4 Masking Tape (min. 4-rolls). \_\_\_\_\_

**18.0 Backpacks** (min. 6-units) \_\_\_\_\_

**19.0 Survey Team Foul Weather Locker**

19.1 Rain Hoods (min. 6-units) \_\_\_\_\_

19.2 Rain coats (min. 6-units) \_\_\_\_\_

19.3 Rain boots (min. 6-units) \_\_\_\_\_

19.4 Cold weather coveralls (Carhart - type) (min. 3-units) \_\_\_\_\_

Performed by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT PER SURVEY BOX - SURVEY CENTER****TEAM BOX \_\_\_\_\_****NOTE: USE ONE ATTACHMENT FOR EACH TEAM BOX INVENTORY.****1.0 Radiation Protection Supplies****1.1 Protective Clothing**

1.1.1 Inner Gloves (2 pair) \_\_\_\_\_

1.1.2 TYVEC Suit (min. 2-units) \_\_\_\_\_

1.1.3 TYVEC Hood (min. 2-units) \_\_\_\_\_

1.1.4 Work Gloves (2 pair) \_\_\_\_\_

1.1.5 Booties (2 pair) \_\_\_\_\_

1.1.6 Disposable Gloves (12 Pair) \_\_\_\_\_

1.1.7 Orange Safety Vests (2)  
(Offsite and spare boxes only) \_\_\_\_\_

1.1.8 12 Volt Yellow Beacon (Offsite Boxes only) \_\_\_\_\_

**1.2 Survey Route Maps (min. 2-units)** \_\_\_\_\_**1.3 Air Sample Filters/Envelopes**

1.3.1 Particulate (min. 5-units) \_\_\_\_\_

1.3.2 Silver Zeolite (min. 5-units)  
Expiration Date: \_\_\_\_\_

1.3.3 Air Sample Filter Envelopes (min. 10-units) \_\_\_\_\_

1.3.4 Environmental Air Sample Envelopes  
(ONSITE AND SPARE BOXES ONLY) (min. 5-units) \_\_\_\_\_

1.4 Smears (min. 20-units) \_\_\_\_\_

1.5 Thyroid Block Tablets (min. 3-units)  
Expiration Date: \_\_\_\_\_

1.6 Tweezers (min. 1-unit) \_\_\_\_\_

**2.0 Equipment bag with belt  
(ONSITE AND SPARE BOXES ONLY)** \_\_\_\_\_



**NOTE: CHANGE BATTERIES IN JANUARY AND JULY. IF BATTERIES ARE DATED AND IT IS AT LEAST 6 MONTHS PRIOR TO EXPIRATION, REPLACEMENT IS NOT NECESSARY.**

**3.0 Flashlight with Batteries** (min. 1-unit) \_\_\_\_\_

3.1 Spare D Cell Batteries (min. 2-units) Expiration Date: \_\_\_\_\_

**4.0 Plastic Bags** (min. 2-units) \_\_\_\_\_

**5.0 Administrative Supplies**

5.1 Pencils/pens (min. 2-units) \_\_\_\_\_

5.2 Pencil sharpener (min. 1-unit) \_\_\_\_\_

5.3 Tablet, writing (min. 1-unit) \_\_\_\_\_

5.4 Clipboard (min. 1-unit) \_\_\_\_\_

5.5 Ruler, scale in inches (min. 1-unit) \_\_\_\_\_

5.6 Tags with wire ties (min. 10-units) \_\_\_\_\_

5.7 Quarters for phone calls. (OFFSITE AND SPARE BOXES ONLY)  
(min. 10-units) \_\_\_\_\_

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

5.8 Masking tape (min. 1-roll) \_\_\_\_\_

5.9 Scissors (min. 1-unit) \_\_\_\_\_

**6.0 Respirator Hip Pouch** (ONSITE AND SPARE BOXES ONLY)  
(min. 2-units) \_\_\_\_\_

**7.0 Tools**

7.1 Hammer (OFFSITE AND SPARE BOXES ONLY) (min. 1-unit) \_\_\_\_\_

7.2 Nails (OFFSITE AND SPARE BOXES ONLY) (min. 10-units) \_\_\_\_\_

7.3 Trowel, garden (min. 1-unit) \_\_\_\_\_

7.4 Screwdrivers, packet (min. 1-unit) \_\_\_\_\_

7.5 250ml Poly bottles for liquid samples  
(OFFSITE AND SPARE BOXES ONLY) (min 2-units) \_\_\_\_\_



**NOTE: PLACE NEW PROCEDURES IN BOXES IN JANUARY AND JULY AND WHEN SEAL HAS BEEN BROKEN.**

**8.0 Procedures**

- 8.1 EPIP 2-11, Onsite Surveys (ONSITE AND SPARE BOXES ONLY) \_\_\_\_\_
- 8.2 EPIP 2-12, Offsite Surveys (OFFSITE AND SPARE BOXES ONLY) \_\_\_\_\_
- 8.3 EPIP 2-14, Post Plume Environmental Sampling  
(ALL BOXES) \_\_\_\_\_

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT IN CONTROL ROOM****1.0 Respiratory Equipment**

- 1.1 Scott Air Pack (SCBA). Perform monthly inspection per SC-3.15.7 on each unit. (min. 2-units) \_\_\_\_\_
- 1.2 Voice Emitters for SCBA units. Check operation (one per unit). \_\_\_\_\_
- 1.3 Local Mask use sheets for SCBA, Attachment "A" from REP-JC-AIRSAMPLE, ATT.1 - Air Sample Job Coverage Record (min. 5-units) \_\_\_\_\_
- 1.4 Shaving kit with razor, blades, shaving cream, beard trimmer and two (2) AA batteries. \_\_\_\_\_

**2.0 Survey Meters** Battery check, check calibration date, source check and document using RP-JC-DAILY-SRC-CHECKS. \_\_\_\_\_

- 2.1 Low Range RM-14 with Pancake Probe or equivalent (min. 1-unit)  
Expiration Date: \_\_\_\_\_
- 2.2 High Range, Eberline RO-20 or equivalent (min. 1-unit).  
Expiration Date: \_\_\_\_\_

**3.0 Dosimeter charger**

- 3.1 Battery operated - check operation (min. 1-unit) \_\_\_\_\_

**4.0 Self-Reading Pocket Dosimeters** - check calibration.

- 4.1 0-500 mr (min. 12 units)  
Expiration Date: \_\_\_\_\_
- 4.2 0-5 R or 0-10 R (min. 12 units)  
Expiration Date: \_\_\_\_\_

**5.0 Air sample Equipment**

**NOTE: RUN SAMPLERS FOR SEVERAL MINUTES TO CHECK OPERATION. ENSURE FILTERS ARE NOT LEFT IN HOLDERS.**

- 5.1 Low volume, Gilian or equivalent. Ensure units are plugged into charger after test (min. 1-unit). Expiration Date: \_\_\_\_\_



5.2 RADECO "Gooseneck" high volume air sampler. Run for 5 minutes. (min. 1-unit) Expiration Date: \_\_\_\_\_

**6.0 Radiation Protection Supplies**

6.1 Air Sampler Filters

6.1.1 Particulate (min. 3-units)

6.1.2 Silver Zeolite (min. 3-units)  
Expiration Date: \_\_\_\_\_

6.2 Air Sample Envelopes (min. 10-units)

6.3 Smears (min. 1-box)

6.4 Plant survey maps (min. 3-sets)

6.5 RWP Daily Exposure Record sheets, Figure 2 from A-1.8 (min. 5-units)

6.6 Anti-contamination clothing -sets are to consist of inner gloves, 1-Tyvek hood, 1-Tyvek suit, 1-pair work gloves, 1-pair shoe covers. (min. 6-sets)

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

6.7 Masking Tape.(min. 1-roll)

6.8 Hewlett Packard calculator. Turn on to check batteries. (min. 1-unit)

6.9 Thyroid block tablets (min. 10 units)  
Expiration Date: \_\_\_\_\_

**7.0 Batteries, alkaline**

7.1 AA (min. 4-units)

7.2 D (min. 2-units)



**8.0 Communication Equipment**

8.1 Electrosound II Headset (1) \_\_\_\_\_

8.1.1 Electrosound II Headset Cord (1) \_\_\_\_\_

8.1.2 Telex Headset (1) \_\_\_\_\_

**8.2 Telephone Checks**

8.2.1 New York State Hotline (RECs) Monthly Test

8.2.1.1 Pick up handset and depress "A" then "\*" for All Call. \_\_\_\_\_

8.2.1.2 After ten seconds, depress the "Push to talk" bar on the handset and state "**THIS IS A TEST**. This is the Ginna Station Control Room calling the State and County warning points. Please stand by for roll call." \_\_\_\_\_**NOTE: RELEASE THE "PUSH TO TALK" BAR WHEN NOT SPEAKING.**

8.2.1.3 Then announce the following roll call: \_\_\_\_\_

**WAYNE COUNTY WARNING POINT****MONROE COUNTY WARNING POINT****NEW YORK STATE WARNING POINT**

8.2.1.4 Recall warning points, if necessary, until they answer roll call. \_\_\_\_\_

8.2.1.5 At completion of test, state "THIS IS THE END OF THE TEST." Depress "A" then "#". Report any problems to the Onsite Emergency Planner. \_\_\_\_\_

**8.3 FAX MACHINE**

8.3.1 Test fax machine by faxing a test message using button on fax machine for RECS notifications to the TSC. \_\_\_\_\_

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT IN OPERATIONAL SUPPORT CENTER,  
RADIATION PROTECTION OFFICE, PASS (in Hot Shop)  
AND INTERMEDIATE BUILDING (SPING LOCKER)**

**NOTE: PERFORM INVENTORY ON LOCKER IN JANUARY AND JULY OR IF SEAL ON LOCKER HAS BEEN BROKEN, OTHERWISE N/A STEPS 1.0 INCLUSIVE.**

**1.0 Operational Support Center Emergency Equipment Locker**

**1.1 Radiation Protection Supplies**

**1.1.1 Anti-Contamination Clothing - sets are to consist of 1-pair inner gloves, 1-Tyvek Hood, 1-Tyvek suit, 1-pair work gloves, 1-pair shoe covers. (min. 6-sets)**

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

**1.1.2 Masking Tape (min. 1-roll)**

**1.1.3 Air Sample Envelopes (min. 50-units)**

**1.1.4 Air Sample Filters**

**1.1.4.1 Particulate (min. 50-units)**

**1.1.4.2 Silver Zeolite (min. 10-units)  
Expiration Date: \_\_\_\_\_**

**1.5 Thyroid Block Tablets (min. 15-units)  
Expiration Date: \_\_\_\_\_**

**1.2 Respiratory Equipment**

**1.2.1 Full Face Respirator (min. 6-units)**

**1.2.1.1 Inspect and label per RP-RES-M-RESP.**

**1.2.2 Respirator Charcoal Filters (min. 6-units)  
Expiration Date: \_\_\_\_\_**

**1.2.3 Local Mask use sheets for Scott A Respirators,  
RP-JC-AIRSAMPLE, ATT.1 - Air Sample  
Job Coverage Record (min. 6-copies).**

**1.2.4 Current Mask Qualification List**



## 1.3 Air Sample Equipment

**NOTE: RUN SAMPLERS FOR SEVERAL MINUTES TO CHECK OPERATION. ENSURE FILTERS ARE NOT LEFT IN HOLDERS.**

1.3.1 Low volume Gilian or equivalent (min. 3-units)  
Expiration Date: \_\_\_\_\_

1.3.1.1 Ensure units are plugged into charger following test. \_\_\_\_\_

## 1.4 Stationary Supplies

1.4.1 Clipboards with pens (min. 4-units) \_\_\_\_\_

1.4.2 Pens (min. 5-units) \_\_\_\_\_

## 1.5 Portable Flood Lights

1.5.1 Minimum 2-flood lights \_\_\_\_\_

1.5.2 Verify satisfactory operation of each light. \_\_\_\_\_

**2.0 OSC Satellite Locker in Boiler Room by Maintenance Conference Room**

2.1 Spool of rope (1-unit) \_\_\_\_\_

2.2 Barrier ropes with clips (2-units) \_\_\_\_\_

2.3 7 Radiation signs with 4 pockets each. 7 inserts including  
Restricted Area, Contamination Area, Locked High Rad Area,  
Radiation Area, Full Anti-C's Required, Contact RP Prior to Entry \_\_\_\_\_

2.4 Charcoal Cartridges (10-units) \_\_\_\_\_

2.5 Particulate filters (1 box) \_\_\_\_\_

2.6 Air Sample envelopes (50-units) \_\_\_\_\_

2.7 Radiation Material labels (20-units) \_\_\_\_\_

2.8 Planchetes (1 bag) \_\_\_\_\_

2.9 Smears ( 1 box) \_\_\_\_\_

2.10 Duct Tape (1 roll) \_\_\_\_\_



**NOTE: REPLACE MASKING TAPE IN JANUARY.**

- |  |  |       |
|--|--|-------|
| 2.11   | Masking Tape (1 roll)  | _____ |
| 2.12   | Disposable Gloves (1 box)  | _____ |
| 2.13   | Markers (1 box)  | _____ |
| 2.14   | Clipboard (1-unit)   | _____ |
| 2.15   | Pens (3-units)   | _____ |
| 2.16   | "Removable Protective Clothing" Step Off Pads (3-units)                                | _____ |
| <br><b>3.0 Radiation Protection Office Equipment</b>             |  |       |
| 3.1  | Scott Air Packs (SCBA) and spare bottles   |       |
| 3.1.1  | Perform Monthly Inspection Per SC-3.15.7 on each unit.<br>(min. 3-units)               | _____ |
| 3.2  | SCBA Voice Emitters (one per SCBA)   |       |
| 3.2.1  | Verify operation of each SCBA Voice Emitter  | _____ |
| <br><b>4.0 Post Accident Sample System Panel Area (Hot Shop)</b> |  |       |
| 4.1  | Cascade Manifold and Cylinder  |       |
| 4.1.1  | Verify Hydrostatic Test on Cascade Cylinder has been performed<br>within last 5 years. | _____ |
| 4.1.2  | Open cylinder valve and verify pressure >4000 psig.                                    | _____ |
| 4.1.3  | Close cylinder valve and bleed off manifold pressure.                                  | _____ |
| 4.1.4  | Verify there are two (50' x 3/8") hoses to connect SCBA to<br>cascade manifold.        | _____ |



**5.0 Intermediate Building North**

**5.1 SPING Iodine Cartridge Holder**

**5.1.1** Verify a SPING Iodine Cartridge Holder with silver zeolite cartridge heat sealed in plastic is located at sping unit.  
Expiration Date: \_\_\_\_\_

\_\_\_\_\_

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT IN TECHNICAL SUPPORT CENTER**

**NOTE: PERFORM INVENTORY ON LOCKER IN JANUARY AND JUNE OR, IF SEAL ON LOCKER HAS BEEN BROKEN, OTHERWISE N/A STEP 1.0 INCLUSIVE.**

**1.0 TSC Emergency Equipment Locker****1.1 Radiation Protection Supplies**

1.1.1 Anti-Contamination Clothing - sets are to consist of 1-pair inner gloves, 1-Tyvek Hood, 1-Tyvek suit, 1-pair work gloves, 1-pair shoe covers (min. 25-sets)

1.1.2 Surgeons Gloves (1-box)

1.1.3 Step Off Pads (min. 10-units)

1.1.4 Large Radioactive Material Plastic Bags  
(min. 5-units)

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

1.1.5 Masking Tape (min. 4-rolls)

1.1.6 Radiation Hazard Signs with Inserts

1.1.6.1 Signs (min. 10-units)

1.1.6.2 "RADIATION AREA" INSERT (10)

1.1.6.3 "HIGH RADIATION AREA" INSERT (10)

1.1.6.4 "CONTAMINATION AREA" INSERT (10)

1.1.6.5 "RADIOACTIVE MATERIAL AREA (10)

1.1.6.6 "RESTRICTED AREA" (10)

1.1.7 Radiation Rope (1-roll)

1.1.8 Radiation Marker Tape (min. 2-rolls)

1.1.9 Alkaline Batteries

1.1.9.1 AA (min. 24-units)

1.1.9.2 D Cell (min. 2-units)



- 1.1.10 Smears (min. 1-box) \_\_\_\_\_
- 1.1.11 Air Sample Envelopes (min. 50-units) \_\_\_\_\_
- 1.1.12 Air Sample Filters \_\_\_\_\_
- 1.1.12.1 Particulate (min. 4-units) \_\_\_\_\_
- 1.1.12.2 Silver Zeolite (min. 4-units)  
Expiration Date: \_\_\_\_\_
- 1.1.13 Thyroid Block Tablets (min 25-units)  
Expiration Date: \_\_\_\_\_
- 1.2. Headset Equipment
- 1.2.1 Electrosound II Headset (2) \_\_\_\_\_
- 1.2.2 Electrosound II Headset Cord (2) \_\_\_\_\_
- 1.2.3 Telex Headsets(4) \_\_\_\_\_
- 1.3 Respiratory Equipment
- 1.3.1 Full Face Respirators (min. 10-units) \_\_\_\_\_
- 1.3.1.1 Inspect and label per RP-RES-M-RESP. \_\_\_\_\_
- 1.3.2 Respiratory Charcoal Filters (min. 10-units)  
Expiration Date: \_\_\_\_\_
- 1.3.3 Local Mask use sheets for Scott A Respirators  
RP-JC-AIRSAMPLE, ATT.1 - Air Sample  
Job Coverage Record (min. 10-copies) \_\_\_\_\_
- 1.3.4 Shaving kit with razor, blades, shaving cream, beard trimmer,  
and two (2) AA batteries. \_\_\_\_\_



**NOTE: PRECEDE ALL COMMUNICATIONS WITH "THIS IS A TEST" AND PERFORM RADIO CHECKS WITH SECURITY.**

**2.0 Communications Equipment**

2.1 Portable radios (min. 2 units) \_\_\_\_\_

2.1.1 Verify portable radios are on charge and that status lights are illuminated. \_\_\_\_\_

2.1.2 Perform Radio Check with Security \_\_\_\_\_

2.2 Telephone Checks

2.2.1 NRC Emergency Notification System (ENS).  
Call (301) 816-5100, tell party "This is Ginna Station TSC Communications check". Request a return call to verify check. \_\_\_\_\_

2.2.2 New York State Hotline - (RECS) Monthly Test.

2.2.2.1 Pick up handset and depress "A" then "\*" for All Call. \_\_\_\_\_

2.2.2.2 After ten seconds, depress the "Push to talk" bar on the handset and state that "THIS IS A TEST. THIS IS THE GINNA STATION TECHNICAL SUPPORT CENTER CALLING THE STATE AND COUNTY WARNING POINTS. STANDBY FOR ROLL CALL." \_\_\_\_\_

**NOTE: RELEASE THE "PUSH TO TALK" BAR WHEN NOT SPEAKING.**

2.2.2.3 Then announce the following roll call: \_\_\_\_\_

**Wayne County Warning Point**

**Monroe County Warning Point**

**New York State Warning Point**

2.2.2.4 Recall warning points, if necessary, until they answer roll call. \_\_\_\_\_

2.2.2.5 At the completion of the test, state "THIS IS THE END OF THE TEST." Depress "A" then "#". Report problems to Onsite Emergency Planner. \_\_\_\_\_

**NOTE: SHOULD ANY OF THE NRC EMERGENCY TELEPHONES BE INOPERABLE, INITIATE A MAINTENANCE WORK REQUEST TO HAVE THE PHONE REPAIRED AND NOTIFY THE NRC OPERATIONS CENTER AT (301) 951-0550.**



- 2.2.3 From any FTS-2000 telephone system, call the other extensions and verify satisfactory communication. \_\_\_\_\_

TSC Phone Locations:

Emergency Notification System (ENS)  
716-771-6783 \_\_\_\_\_

Administration Area

- Health Physics Network (HPN)  
716-771-6784 \_\_\_\_\_

Technical Assessment Area

- Reactor Safety Counterpart Link (RSCL)  
716-724-8695 \_\_\_\_\_

Dose Assessment Area

- Protective Measures Counterpart  
Link (PMCL) 716-724-8696 \_\_\_\_\_

NRC Office Phone Locations:

- Reactor Safety Counterpart Link (RSCL)  
716-724-8695 \_\_\_\_\_
- Health Physics Network (HPN)  
716-771-6784 \_\_\_\_\_
- Emergency Notification System (ENS)  
716-771-6783 \_\_\_\_\_

## 2.3 FAX MACHINES

- 2.3.1 Test each fax machine by faxing a test message using button on fax machine for RECS notification. \_\_\_\_\_

## 3.0 **Survey Meters** Battery check, check calibration date, source check and document using RP-JC-DAILY-SRC-CHKS.

- 3.1 Low Range RM-14 with Pancake Probe or equivalent (min. 2-units) Expiration Date: \_\_\_\_\_

- 3.2 Area Radiation Monitor (min. 1-unit)  
Expiration Date: \_\_\_\_\_



**4.0 Air Sample Equipment**

**NOTE: RUN SAMPLERS FOR SEVERAL MINUTES TO CHECK OPERATION.  
ENSURE FILTERS ARE NOT LEFT IN HOLDERS.**

4.1 RADECO "Gooseneck" High Volume Air Sampler (min. 1-unit)  
Expiration Date: \_\_\_\_\_

4.2 AMS - 4 Calibration Due Date: \_\_\_\_\_

**5.0 Computer Checks**

5.1. Obtain and perform EPIP 2-6, Section 6.2, Use of MIDAS Computer Program, to determine if computer program is operating properly. \_\_\_\_\_

5.1.1 Report any problems to the Onsite Emergency Planner or Corporate Nuclear Emergency Planner immediately and make note of problem on the discrepancy sheet. \_\_\_\_\_

5.2 Obtain and perform EPIP 2-2, Sections 6.2.2 and 6.2.3. \_\_\_\_\_

5.2.1 Report any problems to the Onsite Emergency Planner or Corporate Nuclear Emergency Planner immediately. \_\_\_\_\_

**6.0 Emergency Coordinator Portable Loudspeaker**

**NOTE: CHECK BATTERIES IN JANUARY AND JULY.**

6.1 Check operability of unit. \_\_\_\_\_

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT IN WAREHOUSE**  
**AND SECURITY ACCESS CONTROL AREA (GUARDHOUSE)**

**1.0 Warehouse Emergency Equipment Locker**

1.1 Radiation Protection Supplies

1.1.1 Anti-Contamination Clothing - Sets are to consist of 1-pair inner gloves, 1-Tyvek Hood, 1-Tyvek suit, 1-pair work gloves, 1-pair shoe covers (min. 10-sets)

\_\_\_\_\_

1.1.2 Step Off Pads (min. 5-units)

\_\_\_\_\_

1.1.3 Large Radioactive material plastic bags (1-roll)

\_\_\_\_\_

1.1.4 Stanchions ( min. 3-units)

\_\_\_\_\_

**NOTE: REPLACE MASKING TAPE IN JANUARY.**

1.1.5 Masking Tape (min. 2-rolls)

\_\_\_\_\_

1.1.6 Radiation Hazard Signs with Inserts

1.1.6.1 Signs (min. 10-units)

\_\_\_\_\_

1.1.6.2 "RADIATION AREA" (10)

\_\_\_\_\_

1.1.6.3 "CONTAMINATED AREA" (10)

\_\_\_\_\_

1.1.6.4 "RADIOACTIVE MATERIAL AREA" (10)

\_\_\_\_\_

1.1.7 Radiation Rope (1-roll)

\_\_\_\_\_

1.1.8 Survey Center Dosimetry Log, EPIP 1-11, Attachment 2  
(min. 5-units)

\_\_\_\_\_

1.2 Self Reading Pocket Dosimeters

1.2.1 0-1500mr (min. 40-units)  
Expiration Date:\_\_\_\_\_

\_\_\_\_\_

1.2.2 Battery Operated Dosimeter Charger - check operation  
(min. 1-unit)

\_\_\_\_\_

1.2.3 AC Operated Dosimeter Charger - check operation  
(min. 1-unit)

\_\_\_\_\_



- 1.3 TLD's
- 1.3.1 Thermoluminescent Dosimeters (TLD) - anneal TLD's and check ECF's in January, April, July and October.  
(min. 40-units) \_\_\_\_\_
- 1.4 Survey Meters - Battery Check, check calibration, date, source check and document using RP-JC-DAILY-SRC-CHKS.
- 1.4.1 Low Range RM-14 with Pancake Probe or equivalent  
(min. 1-unit) Expiration Date: \_\_\_\_\_
- 1.4.2 High Range Eberline RO-20 or equivalent (min. 2-units)  
Expiration Date: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_
- 2.0 Security Access Control Area**
- 2.1 Self Reading Pocket Dosimeters
- 2.1.1 0-1500 mr (min. 12-units) Expiration Date: \_\_\_\_\_
- 2.1.2 Battery operated Dosimeter Charger - check operation  
(min. 1-unit) \_\_\_\_\_

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**EMERGENCY EQUIPMENT IN ENGINEERING SUPPORT CENTER**

- |     |  |                       |       |
|-----|--|-----------------------|-------|
| 1.0 | Radiation Monitors   |                       |       |
| 1.1 | Survey Meters - Battery check, response check and document on RP-JC-DAILY-SRC-CHCKS. |                       | _____ |
| 1.2 | RM-14SA or Equivalent (One)  | Calibration due _____ | _____ |
| 1.3 | XETEX 501A or Equivalent (one)   | Calibration due _____ | _____ |
| 1.4 | Air Monitoring System (AMS-4)  | Calibration due _____ | _____ |
| 2.0 | Protective Clothing  |                       |       |
| 2.1 | Shoe covers (min. 12-units)  |                       | _____ |
| 2.2 | Surgeon gloves (min. 12-units)   |                       | _____ |
| 3.0 | Consumable Supplies  |                       |       |
| 3.1 | Survey Maps  |                       | _____ |
| 3.2 | Smears (min. 50-units)   |                       | _____ |
| 3.3 | Air Sample Envelopes (min. 5-units)  |                       | _____ |
| 3.4 | Iodine Filters (min. 5-units)  |                       | _____ |
| 4.0 | Radiological Posting   |                       |       |
| 4.1 | Radiation Boundary Rope (min. 1-unit)  |                       | _____ |
| 4.2 | Radiation Hazard Signs (min. 2-units) with the following inserts (min. 2 each):      |                       | _____ |
|     | - "Restricted Area"  |                       |       |
|     | - "Radioactive Material Area"  |                       |       |
|     | - "Contaminated Area"  |                       |       |
|     | - "Radiation Area"   |                       |       |
|     | - "Frisk Hands & Feet to Enter"  |                       |       |
| 4.3 | Miscellaneous Signs (non-radiological) (min. 3-units)                                |                       | _____ |
|     | - "Enter at East (basement) Door"  |                       |       |
| 4.4 | Step Off Pad ("Remove Protective Clothing") (min. 2-units)                           |                       | _____ |
| 5.0 | Extension Cord (min. 1-unit)   |                       | _____ |



**EMERGENCY EQUIPMENT IN ENGINEERING SUPPORT CENTER**

(Continued)

- |      |   |       |
|------|---|-------|
| 6.0  | Ginna Technical Specifications (one copy)                           | _____ |
| 7.0  | Ginna UFSAR (one copy)  | _____ |
| 8.0  | Rochester, Wayne and RG&E Phone Directories                         | _____ |
| 9.0  | Test fax machine by sending fax to TSC fax machine at<br>ext. 3927. | _____ |
| 10.0 | Ginna P&ID's (one set)  | _____ |

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



**CELLULAR MOBILE TELEPHONE EQUIPMENT CHECK**

**NOTE: IT MAY BE NECESSARY TO EXIT THE BUILDING IN ORDER TO USE THE CELLULAR PHONE EFFECTIVELY.**

1. Disconnect telephone from charging unit, if on charger.
2. Turn the unit on by pressing the PWR button on the handset.
3. To place a call, press the appropriate number buttons and verify the number displayed is correct.
4. Press the SND button to activate the call.
5. Press END button to end the test call..
6. To turn unit off, press PWR button. Ensure display is blank.
7. Return the unit to storage and ensure unit is plugged into the battery charger, if necessary.



**EMERGENCY EQUIPMENT MONTHLY INSPECTION LOG****DISCREPANCIES NOTED**Survey Center      Date \_\_\_\_\_      Initials \_\_\_\_\_Survey Boxes      Date \_\_\_\_\_      Initials \_\_\_\_\_  
Survey CenterControl Room      Date \_\_\_\_\_      Initials \_\_\_\_\_Technical      Date \_\_\_\_\_      Initials \_\_\_\_\_  
Support  
Center**DISCREPANCIES CORRECTED**

Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Reviewed By Onsite Emergency Planner: \_\_\_\_\_ Date: \_\_\_\_\_



EMERGENCY EQUIPMENT MONTHLY INSPECTION LOGDISCREPANCIES NOTEDDISCREPANCIES CORRECTEDRP Office      Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Operational  
Support Center      Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Warehouse      Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Engineering  
Support Center      Date \_\_\_\_\_      Initials \_\_\_\_\_

Date \_\_\_\_\_      Initials \_\_\_\_\_

Reviewed By Onsite Emergency Planner: \_\_\_\_\_ Date: \_\_\_\_\_



**EQUIPMENT CALIBRATION EXPIRATION NOTIFICATION**

LOCATION OF EQUIPMENT	EQUIPMENT/ INSTRUMENT TYPE	S/N	DUE DATE	COMMENTS

**FORWARD A COPY OF THIS ATTACHMENT TO THE LEAD TECHNICIAN RP  
INSTRUMENTS / TLD's.**

Technician: \_\_\_\_\_

Onsite Emergency Planner: \_\_\_\_\_