

50-244

REPORT NO. 01
REPORT: NPSI0200
DOC TYPE: PPREPIP

GINNA NUCLEAR POWER PLANT
PROCEDURES INDEX
EMERGENCY PLAN IMPLEMENTING PROCEDURE

10/23/00 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	025	11/19/97	11/19/97	11/19/01	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	042	09/08/00	09/08/00	09/08/05	EF
EPIP-1-6	SITE EVACUATION	011	07/25/00	07/25/00	07/25/05	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	021	05/16/00	05/16/00	05/16/05	EF
EPIP-1-12	REPAIR AND CORRECTIVE ACTION GUIDELINES DURING EMERGENCY SITUATIONS	007	06/21/00	06/21/00	06/21/05	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	017	08/20/99	08/20/99	08/20/04	EF
EPIP-2-2	OBTAINING METEOROLOGICAL DATA AND FORECASTS AND THEIR USE IN EMERGENCY DOSE ASSESSMENT	009	02/13/98	02/13/98	02/13/02	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	012	06/21/00	06/21/00	06/21/05	EF
EPIP-2-5	EMERGENCY DOSE PROJECTIONS PERSONAL COMPUTER METHOD	010	11/16/99	11/16/99	11/16/04	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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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	014	10/23/00	10/23/00	10/23/05	EF
EPIP-2-12	OFFSITE SURVEYS	017	10/23/00	10/23/00	10/23/05	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	013	08/20/99	08/20/99	08/20/04	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	005	11/16/99	11/16/99	11/16/04	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	014	02/11/00	02/11/00	02/11/05	EF
EPIP-3-2	ENGINEERING SUPPORT CENTER (ESC)	008	02/25/00	02/25/00	02/25/05	EF
EPIP-3-3	IMMEDIATE ENTRY	007	06/21/00	06/21/00	06/21/05	EF
EPIP-3-4	EMERGENCY TERMINATION AND RECOVERY	007	05/28/99	05/28/99	05/28/04	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	015	10/06/00	10/06/00	10/06/05	EF
EPIP-5-1	OFFSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	018	10/06/00	10/06/00	10/06/05	EF
EPIP-5-2	ONSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	022	05/24/00	05/24/00	05/24/05	EF
EPIP-5-5	CONDUCT OF DRILLS AND EXERCISES	011	02/25/00	02/25/00	02/25/05	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	029	10/06/00	10/06/00	10/06/05	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	ANNUAL UPDATE OF NUCLEAR EMERGENCY RESPONSE PLAN	019	12/09/99	12/09/99	12/09/04	EF
TOTAL FOR PREPIP	52					

ROCHESTER GAS AND ELECTRIC CORPORATION

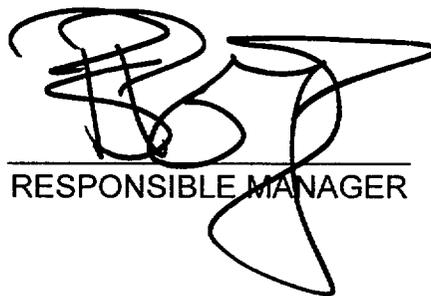
GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-7

REV. NO. 10

MANAGEMENT OF EMERGENCY SURVEY TEAMS



A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

RESPONSIBLE MANAGER

10/23/2000

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 6 PAGES

EPIP 2-7**MANAGEMENT OF EMERGENCY SURVEY TEAMS****1.0 PURPOSE**

The purpose of this procedure is to provide guidance for the Dose Assessment Manager or his designee to efficiently manage the survey teams in the collection of environmental information.

2.0 RESPONSIBILITY

2.1 The Dose Assessment Manager or his designee is responsible for implementing this procedure.

2.1.1 Rochester Gas & Electric, Wayne County and Monroe County have agreed to work together to better exchange offsite survey data when a release of radioactive materials occurs from the Ginna Nuclear Plant and to better allocate our resources to obtain more survey data information.

2.1.2 To achieve this goal, the three organizations have decided to follow a strategy that splits the 10-mile emergency planning zone (EPZ) into 3 areas of responsibility. Rochester Gas & Electric will be responsible for deploying survey teams and obtaining data within 5 miles of the plant. Wayne and Monroe Counties will be responsible for surveys in the areas between 5 and 10 miles from the plant in each of the respective counties.

2.1.3 Each organization has pre-determined survey routes. These routes will normally be run by the teams. However, once a release has started, the routes may be modified to obtain more data in the plume area.

2.1.4 Each of the RG&E teams will be designated as A, B, C, D and so forth using the phonetic alphabet (i.e., alpha, bravo, charlie, delta, etc.). As teams are assembled, members' names will be associated with a team name and route responsibility. As additional teams are assembled, continuation of phonetic alphabet will be used to designate team names (e.g., shift change, environmental sampling, etc.).

3.0 REFERENCES

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.2 Implementing References

3.2.1 EPIP 2-14, Post Plume Environmental Sampling

3.2.2 EPIP 2-11, Onsite Surveys

3.2.3 EPIP 2-12, Offsite Surveys

- 3.2.4 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure
- 3.2.5 EPIP 2-9, Administration of Potassium Iodide (KI)
- 3.2.6 EPIP 1-11, Survey Center Activation
- 3.2.7 EPIP 5-7, Emergency Organization

4.0 **PRECAUTIONS**

None.

5.0 **PREREQUISITES**

None.

6.0 **ACTIONS**

6.1 **Directing Teams Prior to Release**

- 6.1.1 Identify survey team members and log their names under the appropriate team designation on the Ginna Survey Team Status Board in the TSC.
- 6.1.2 Obtain exposure histories for team members.
- 6.1.3 Ensure communications are established between survey teams, Survey Center and TSC. Radio communication will be transmitted on the General Maintenance frequency; however, if interference on this channel is excessive, another channel may be used. Use Attachment 1 to document Survey Team information.
- 6.1.4 Upon notification that teams are staffed and ready, direct teams to perform primary survey routes as described in EPIP 2-11, EPIP 2-12, or EPIP 2-14.
- 6.1.5 Position teams downwind at different distances from the plant for possible release. This might be at one, three or five miles. Have teams survey back and forth across the area where the plume would be expected if a release occurred.
- 6.1.6 Inform teams of the projected location of the center-line of the plume and the wind speed and direction.
- 6.1.7 To exchange the survey team data, each organization will fax data sheets to the others. When one organization receives data from its survey teams, it will review the data and fax it to the other organizations.
- 6.1.8 If an organization can not obtain the data from any other organization, they are not limited to the survey routes or EPZ coverage strategies outlined above. The routes are a planning tool to help provide complete coverage of the 10-mile EPZ. Any organization may deploy its teams to any location within the EPZ as deemed necessary.

NOTE: THIS SECTION WOULD BE FOLLOWED TO RAPIDLY DEPLOY DESIGNATED SURVEY TEAM MEMBERS TO GATHER PRELIMINARY PLUME INFORMATION WHILE OTHER SURVEY TEAMS ARE BEING READIED FOR DEPLOYMENT.

6.2 Rapidly Deploying A Survey Team

6.2.1 Dose Assessment Manager identifies a need to rapidly deploy a survey team.

6.2.2 Inform Survey Center Manager to staff a rapid deployment survey team in accordance with EPIP 2-12 if designated members (refer to checklist in EPIP 5-7) are available.

6.2.3 Evaluate the need for anti-contamination clothing, KI tablets, and respirator use in the field and communicate this information to the Survey Center Manager for team brief and preparation.

6.2.4 Upon notification that the rapid deployment team is staffed and ready, direct team to perform radiation survey at specified location(s) downwind of the plant.

6.2.5 Recall rapid deployment team to the Survey Center when other survey teams are staffed and deployed to designated routes.

6.2.6 Debrief rapid deployment team when they return to the Survey Center.

6.3 Directing Teams During a Release

6.3.1 Inform teams when a release begins, their location in relation to the plume centerline, wind direction and speed, and the projected dose rates at the plume centerline.

6.3.2 Inform teams of the need for respiratory protection in accordance with EPIP 2-8.

6.3.3 If potassium iodide (KI) is necessary, direct team to take KI, per EPIP 2-9.

6.3.4 Position teams downwind at different distances from the plant. This might be at one, three or five miles. Have teams survey back and forth across the area where the plume would be expected during a release.

6.3.5 Direct teams to do a profile of the plume after it arrives. They should be directed to drive across the plume to determine the width and the maximum reading (centerline), and record dose rates as they traverse the plume. More profiles of the plume are made as necessary to provide an accurate picture of the plume location on the dose assessment map.

NOTE: INITIAL SAMPLES THAT ARE COLLECTED THAT HAVE ACTIVITY SHOULD BE RETURNED TO THE SURVEY CENTER TO BE ANALYZED USING THE RP COUNTING EQUIPMENT.

6.3.6 Direct teams to take an air sample (approximately 6 minutes) at the plume centerline.

- 6.3.7 Obtain dosimeter reading from the team members and track exposures during the event.
- 6.3.8 If teams need relief for meals, etc., relieve one team at a time on a rotating basis.
- 6.3.9 Teams on standby should be located in low background areas.

6.4 Directing Teams After Release Termination

NOTE: IF RELEASE TERMINATED BEFORE SURVEY TEAMS ARE DISPATCHED, GIVE THOUGHT TO DELAYING THE START OF PRIMARY ROUTE. INSTEAD, SEND TEAM TO DOWNWIND AREAS TO OBTAIN SAMPLES IN THE PLUME BEFORE THE PLUME DISSIPATES.

- 6.4.1 Direct plume sampling teams to continue mission until relief can be arranged.
- 6.4.2 When dose rates indicate the plume has passed or dissipated, perform the following:
 - a. Establish plan for environmental monitoring with TSC and/or EOF Dose Assessment staff.
 - b. Environmental monitoring should include the following types of samples (contained in EPIP 2-14):
 - 1. Air Samples
 - 2. TLDs
 - 3. Onsite Environmental Sampling
 - 4. Water
 - 5. Milk
 - 6. Snow
 - 7. Ground contamination
 - 8. Grass
 - 9. Non-grassy (soil)
 - 10. Vegetation
- 6.4.3 Implement environmental sampling plan as approved by the Dose Assessment Manager/designee.
- 6.4.4 Ensure an area is prepared for receipt of environmental samples. Samples should be grouped according to radiation levels per EPIP 1-11.
- 6.4.5 If assistance from outside agencies is necessary (e.g.; DOE fly-over or state assistance), contact the Emergency Coordinator or EOF Recovery Manager for approval and coordination, as appropriate.
- 6.4.6 Arrange for the analysis of all samples for preparation of post accident report (e.g.; population dose, dose from ingestion/vegetation, etc.).

6.4.7 When environmental surveying is completed, direct individuals to return for monitoring, and decontamination if needed, in accordance with EPIP 2-11, EPIP 2-12 or EPIP 2-14.

7.0 **ATTACHMENTS**

1. RG&E Emergency Survey Team Data Sheet

RG&E EMERGENCY SURVEY TEAM DATA SHEET

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) CPM MICRO-R/HR MR/HR R/HR B. SURVEY METER: (CIRCLE ONE) CDV-700 CDV-715 EBERLINE RO-20 BICRON
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 A DRILL

THIS IS NOT A DRILL

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE No. EPIP 2-11

REV. NO. 14

ONSITE SURVEYS



RESPONSIBLE MANAGER

10/23/2000
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. Radio System (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. Victoreen Model 450B Dose Rate Meter
4. Gilian 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
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 "wrong" and repeating the message.
4. Confirmation of the acknowledgment by the send 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 functions witch 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 AND BUCK LAPEL 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

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

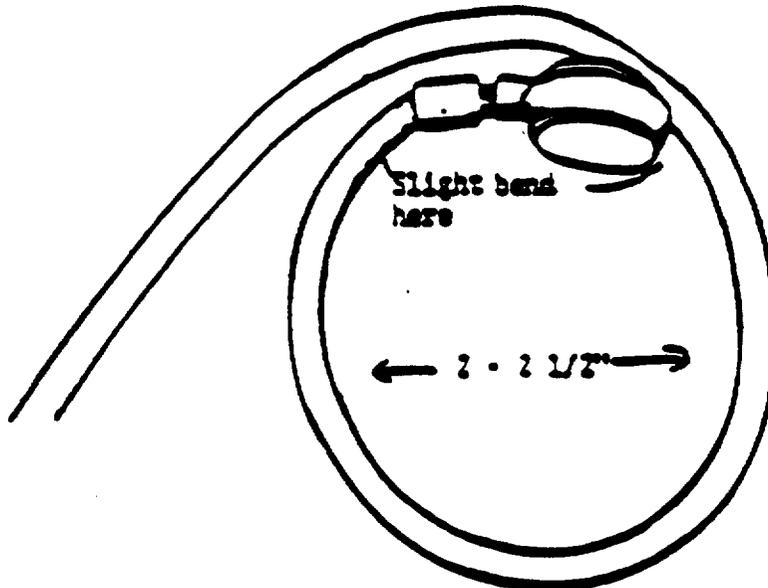
1. Ensure microphone cable is securely connected to jack on voice amplifier.
2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.
3. Securely fasten amplifier unit to belt.

CAUTION

WHEN COMMUNICATING THROUGH RADIO, TELEPHONE, ETC., SPEAK PRECISELY. KEEP SPEAKER AT LEAST 12" FROM THROAT MIC. HOLD MEANS OF COMMUNICATION OFF TO SIDE OF 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 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

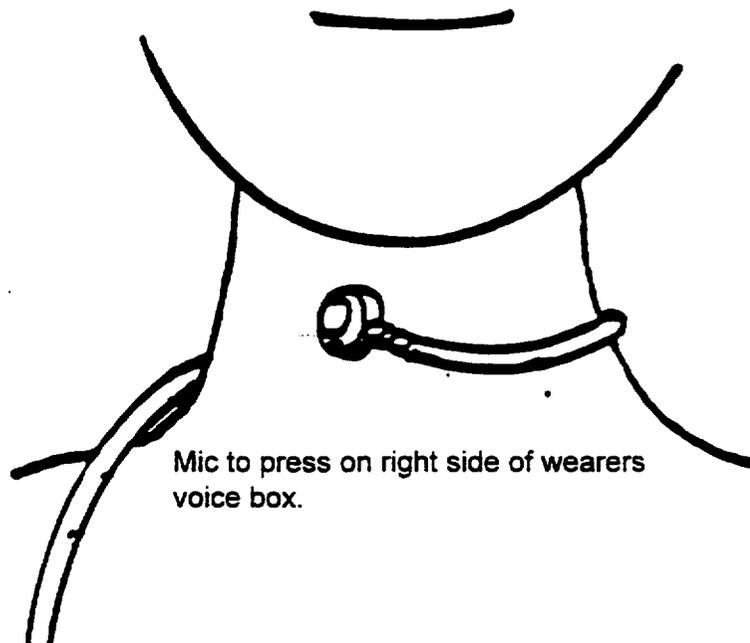


Fig. 2

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. 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.

4. 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

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., with 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., with 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 cm² (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 ½ 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 cm² on the back 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 CPM/100 cm².
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 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 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.

CAUTION

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

SURVEY ROUTE (ONSITE EAST)

1. Proceed north and east from the Survey Center surveying between the training 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.

CAUTION

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

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 _____

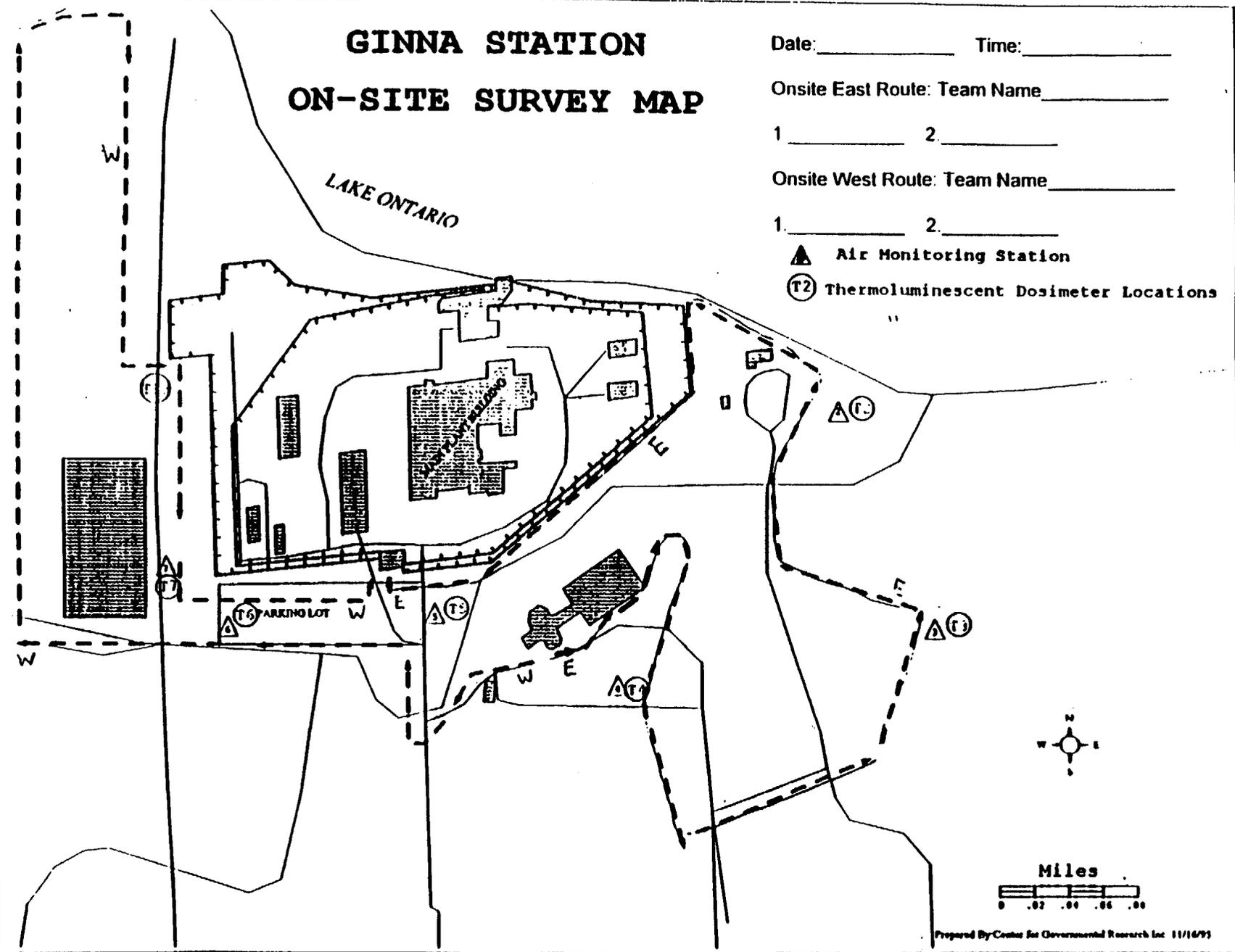
1. _____ 2. _____

Onsite West Route: Team Name _____

1. _____ 2. _____

▲ Air Monitoring Station

Ⓣ Thermoluminescent Dosimeter Locations



Prepared By: Center for Governmental Research, Inc. 11/16/91

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

RADIOIODINE:

$$\frac{(8.50 \text{ E-8}) @ 1''}{(\text{MINUTES RUN}) (\text{LPM AVERAGE})} = \frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (4.13 \text{ E-8}) \text{ ON CONTACT}}{\text{RADIOIODINE}} = \frac{\text{UCI/CC}}{\text{RADIOIODINE}}$$

PARTICULATE:

$$\frac{(9.83 \text{ E-9}) @ 1''}{(\text{MINUTES RUN}) (\text{LPM AVERAGE})} = \frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (3.47 \text{ E-9}) \text{ ON CONTACT}}{\text{PARTICULATE}} = \frac{\text{UCI/CC}}{\text{PARTICULATE}}$$

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

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

PERFORMED BY: _____
NAME

DATE/TIME _____

CHECKED BY: _____
NAME

DATE/TIME _____

RAD. PROTECTION & CHEMISTRY	
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. 17

OFFSITE SURVEYS



RESPONSIBLE MANAGER

10/23/2000

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 47 PAGES

EPIP 2-12OFFSITE 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 six environmental TLD's from lead storage container.
- 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.

- 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. Obtain meteorological and plant status information. 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.
- 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
- 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 NEC M3800 Cellular Mobile 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. NEC M3800 Cellular Mobile 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

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 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 cigarette lighter 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 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."
 - 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 "wrong" and repeating the message.

- d. Confirmation of the acknowledgment by the send 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.

NEC M3800 CELLULAR MOBILE TELEPHONE**Equipment Check**

1. Disconnect telephone from charging unit.
2. Turn the unit on by pressing PWR button on handset.

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 SND button to activate the call.
6. Press END button to end the test call.
7. Turn the unit off by pressing the PWR button 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 CIGARETTE LIGHTER 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 8 HOURS, AND IN THE OPERATING MODE (CALL-CONNECTED) FOR APPROXIMATELY 2 HOURS.

1. Turn the unit on by pressing the PWR button.
2. To place a call, press appropriate number buttons followed by the SND button.
3. To receive a call, press the SND button while phone is ringing.
4. To end a call, press END button.

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 PWR button. 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.
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

THE UNIT SHUTS DOWN AFTER 15-30 SECONDS INTO FAULT CONDITION.

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 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 in continuing, turn the unit off to reset if 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 14.
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. Connect air sampler power cables to the battery charger, RED clip to positive and BLACK clip to negative.
4. Plug in battery charger.
5. Turn power switch on air sampler on.
6. Check flow meter on air sampler. Flow meter should be off scale high with no filters in place.
7. Turn power switch on air sampler off.
8. Unplug battery charger and disconnect air sampler power cables.
9. Separate clips of battery charger and clamp onto cabinet.

Equipment Operation From Vehicle

1. Ensure power switch on air sampler is OFF.
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

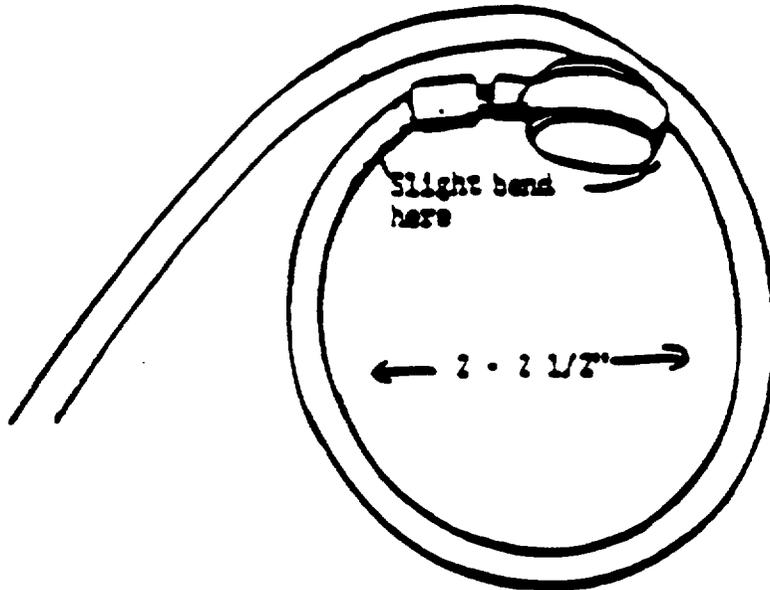
1. Ensure microphone cable is securely connected to jack on voice amplifier.
2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.
3. Securely fasten amplifier unit to belt.

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

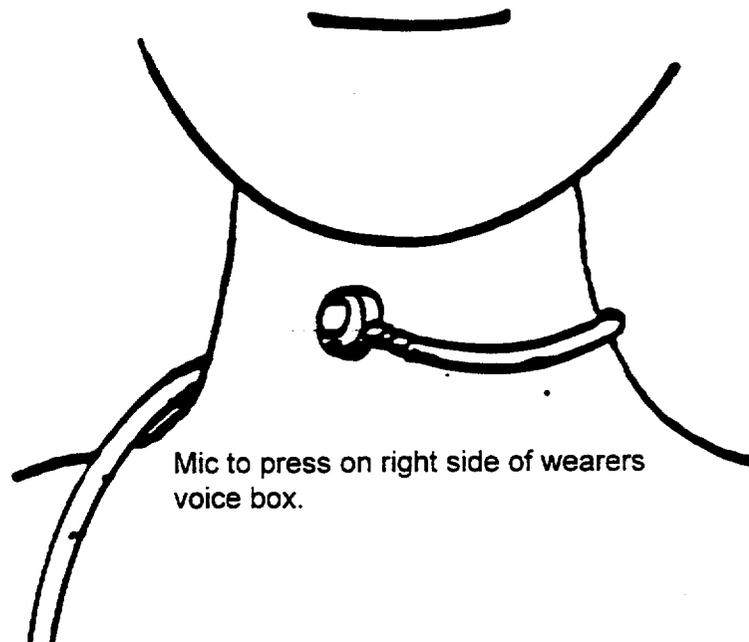


Fig. 2

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. 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.

4. 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

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 cm² (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 ½ 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 cm² on the back 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 CPM/100 cm².
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 by holding the probe window 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 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.

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

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

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

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

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

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 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.

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.

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

**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.

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

**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.

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

**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.

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

**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.

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

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.

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

**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.

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

**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.**

**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.

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

**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.

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

RADIOIODINE:

$$\frac{(8.50 \text{ E-8}) @ 1''}{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (\text{MINUTES RUN}) (\text{LPM AVERAGE})} (4.13 \text{ E-8}) \text{ ON CONTACT} = \frac{\text{UCI/CC}}{\text{RADIOIODINE}}$$

PARTICULATE:

$$\frac{(9.83 \text{ E-9}) @ 1''}{(\text{CPM SAMPLE} - \text{CPM BACKGROUND}) (\text{MINUTES RUN}) (\text{LPM AVERAGE})} (3.47 \text{ E-9}) \text{ ON CONTACT} = \frac{\text{UCI/CC}}{\text{PARTICULATE}}$$

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

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

PERFORMED BY: _____
NAME

DATE/TIME _____

CHECKED BY: _____
NAME

DATE/TIME _____

THIS IS A DRILL

THIS IS NOT A DRILL

RADIATION PROTECTION & CHEMISTRY
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 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 mobile telephone
 - g. Survey map of 10-mile EPZ
 - h. Other equipment (eg., PC's, KI tablets, respirators, etc.) As determine by Dose Assessment Manager.
2. Obtain transportation and check vehicle for contamination by performing a direct frisk survey.
3. Source response check survey meters and document on Attachment 21.
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 Manger.
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.