

GINNA STATION
UNIT #1
COMPLETED

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER _____

DATE :-

TIME :-

PROCEDURE NO. SC-1.5

REV. NO. 5

SITE EVACUATION

TECHNICAL REVIEW

PORC REVIEW DATE 1-11-82

J. C. Todina
QC REVIEW

B. J. [Signature]
PLANT SUPERINTENDENT

1-11-82
EFFECTIVE DATE

QA NON-QA CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 3 PAGES

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SC-1.5SITE EVACUATION1.0 PURPOSE:

- 1.1 The purpose of the Site Evacuation procedure is to assign responsibilities and provide guidance to personnel in the event it becomes necessary to evacuate the site because of a fire, chemical hazard, radiation related incident, or other situations which threaten the health and/or safety of personnel on site.

2.0 REFERENCES:

2.1 SC-1.3A

2.2 GS-10

3.0 INSTRUCTIONS:

- 3.1 The decision to evacuate the site may be made by the Shift Supervisor or the Emergency Coordinator if the Emergency Plan has been activated.
- 3.1.1 The decision to evacuate the site dictates that the Emergency Plan be activated at, or elevated to, a Site Emergency Classification.
- 3.2 Control Room Personnel will actuate the Site Evacuation Alarm when directed by the Shift Supervisor to initiate a Site Evacuation.

3.3 Upon hearing the Site Evacuation alarm, personnel shall take the following actions:

3.3.1 The on duty Operators, Shift Supervisor, Shift Technical Advisor, and H.P. Technician will report to the Control Room.

3.3.2 Those personnel with assigned function for a Site Emergency will report to the Technical Support Center or Survey Center as appropriate.

3.3.3 Health Physics Technicians not on shift will pick up survey instruments and SWP-RWP sign in sheets from the Health Physics Office and report to the Survey Center.

3.3.4 If a fire is coincident with the Site Evacuation the Fire Brigade will respond to the fire unless directed otherwise by the Shift Supervisor.

3.3.5 All other personnel will evacuate the site and proceed to the Training Center Auditorium.

3.3.5.1 Guides assigned to visitors are responsible for escorting the visitor to the Training Center Auditorium.

3.4 Evacuation Procedure

3.4.1 Personnel shall immediately secure any potentially hazardous devices such as power tools and equipment, grinders, welders, cutting torches, etc.

3.4.2 Personnel shall exit the site through the guard house, retain their personnel dosimetry, deposit their "card key" at the guard house, and WALK to the Training Center Auditorium.

3.4.2.1 Personnel who are outside of buildings shall WALK by the most direct route to the guard house.

3.4.2.2 Personnel who are inside of buildings but NOT in Controlled Radiation Area shall exit the building by the most convenient door and WALK by the most direct route to the guard house.

- 3.4.2.3 Personnel who ARE IN a Controlled Radiation Area shall exit the area and building by the most convenient door and remove protective shoe coverings, or follow the instructions of the Health Physics Department Personnel if present. WALK by the most direct route to the guard house.

Personnel who did not remove their protective clothing and perform a Personnel Survey when leaving the Controlled Radiation Area will proceed to the Training Center Basement for removal of protective clothing and Personnel Survey.

- 3.5 Personnel in the Training Center Auditorium are under the direction of the Survey Center Manager and shall remain there until directed otherwise.

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PROCEDURE NO. SC-1.3E

REV. NO. 2

STAFFING THE OPERATIONAL SUPPORT CENTER

TECHNICAL REVIEW

PORC REVIEW DATE 1-11-82

JC Bodine
QC REVIEW

Bruce Adams
PLANT SUPERINTENDENT

1-11-82
EFFECTIVE DATE

QA NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-1.3ESTAFFING THE OPERATIONAL SUPPORT CENTER1.0 PURPOSE:

- 1.1 The purpose of this procedure is to provide guidance and define the responsibilities for personnel who will staff the Operational Support Center (OSC). The OSC is a location near the Control Room which shall be used during an incident as an assembly and briefing point for personnel who will be utilized in the control and mitigation of abnormal events, and recovery of the plant.

2.0 REFERENCES:

- 2.1 SC-1
2.2 SC-1.9
2.3 SC-1.11
2.4 SC-1.11A
2.5 SC-1.14B

3.0 INSTRUCTIONS:

- 3.1 The Auxiliary Operators Office is designated as the OSC.
- 3.2 Personnel who are to be assigned to the OSC will have initially assembled at the Training Center Auditorium because they have evacuated the Site, or because they have been directed to report by telephone notification.
- 3.3 Personnel at the Training Center Auditorium will be under the direction of the Survey Center Manager until they have been specifically assigned to the OSC or an other designated function.

- 3.4 As the need for special skills or abilities are identified, personnel in the Training Center Auditorium will be directed to report to the OSC by the Survey Center Manager.
- 3.4.1 The Survey Center Manager will provide instructions on the method, route, and any necessary radiological precautions to be used in going from the Training Center to the OSC.
- 3.5 When personnel are assigned to the OSC they will be under the direction of the Plant Maintenance Assessment Manager or his designated representative.

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DATE :-

TIME :-

PROCEDURE NO. SC-1.7I

REV. NO. 0

EMERGENCY OFF-SITE RADIATION SURVEY TEAMS

TECHNICAL REVIEW

PORC REVIEW DATE 1-11-82

JC Bodine
QC REVIEW

Bruce Jones
PLANT SUPERINTENDENT

1-11-82
EFFECTIVE DATE

QA NON-QA CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 29 PAGES

**EMERGENCY
OFF-SITE
RADIATION SURVEY TEAMS**

1.0 PURPOSE:

- 1.1 The prime objective of the Emergency Off-Site Radiation Survey Teams is to rapidly survey areas downwind of the plant site in order to determine the extent and magnitude of any uncontrolled release of radioactive materials following an incident. It should be stressed that the initial off-site survey is of great importance. Decisions regarding the extent and types of protective actions required will be based upon data reported by the survey teams.

2.0 REFERENC :

- 2.1 SC-1 Radiation Emergency Plan
2.2 SC-1.7B Determination of Iodine or Particulate

3.0 INSTRUCTIONS:

- 3.1 Obtain appropriate Off-Site Survey Team footlocker as directed by Tag Board Assignment. If seal is broken, use equipment list inside footlocker to inventory equipment. Request the assistance of the Survey Center Manager in obtaining replacement equipment if necessary.

- 3.2 Obtain following equipment which is not stored in footlocker.
 - 3.2.1 Personnel film badge and TLD.
 - 3.2.2 One full face mask and charcoal filter for each team member. Mask will be donned upon instructions of the Dose Assessment Manager.
 - 3.2.3 One 0-500 mr dosimeter for each team member. Sign-in on dosimeter log sheet.
 - 3.2.4 Pack of 12 environmental TLD's from lead storage container.
 - 3.2.5 Hand-held radio and magnetic mount car antenna.
 - 3.2.6 RADECO H-809C Portable High Volume Air Sampler with filter holder.
 - 3.2.7 RM-14 Radiation Monitor with HP-190 Probe.
 - 3.2.8 Auto-Digimaster or RO-2 dose rate meter.
- 3.3 Complete the following items prior to departing on the assigned survey route.
 - 3.3.1 Check operation of radio system, portable air sampler, radiation count rate monitor, and dose rate meter using equipment check-out procedures in Appendix I.
 - 3.3.2 Obtain transportation and check vehicle for contamination by taking a swipe survey or end window survey on the horizontal surfaces with an HP-190 probe and count rate meter. If survey indicates surface contamination of more than 250 CPM above background contact the Survey Center Manger for decontamination instructions.
 - 3.3.3 Load survey equipment into vehicle, fill in Survey Team Status Board, and inform Survey Center Manager of your departure.
 - 3.3.4 Log time, date, and survey team members on survey map.
 - 3.3.5 Establish radio communications with the Technical Support Center Radio Operator and advise of teams departure.

- 3.4 Perform radiation surveys using the appropriate instructions of Appendix II while following the Primary Survey Route instructions contained in Appendix III.
- 3.4.1 At each assigned survey point the team should report the following information to the Radio Operator:
- Location
 - Completed Actions
 - Results of Surveys
 - Departure for next Survey Point
- 3.4.2 If radio contact can not be made, report using a telephone.
- | | |
|--------------|-----------------------------|
| 315-524-4446 | Primary numbers from Wayne |
| 315-524-4984 | County. Secondary numbers |
| 315-524-4973 | from Monroe County (call |
| | collect). |
| 716-546-7845 | Primary numbers from Monroe |
| 716-546-4015 | County. Secondary numbers |
| | from Wayne County (call |
| | collect). |
- 3.4.3 Upon completion of Primary Survey Route inform radio operator. The Dose Assessment Manager will assign an Alternate Survey Route or direct you to return to the Survey Center.
- 3.5 Full face masks with charcoal filters will be worn as directed by the Dose Assessment Manager. Potential internal contamination will be determined by a Whole Body Count after the survey.
- 3.6 Upon returning to the Survey Center perform a survey of team personnel for contamination. If any contamination greater than 100 CPM above background is found contact the Survey Center Manager for decontamination instructions.
- 3.6.1 Conduct a survey of the vehicle for contamination. If any contamination greater than 250 CPM above background is found contact the Survey Center Manager for decontamination instructions.
- 3.6.2 Give all filter cartridges, particulate filters, survey maps, and data records to Survey Center Manager.
- 3.6.3 Dispose of contaminated and potentially contaminated waste in an approved manner.

- 3.6.4 Re-stock, inventory, and seal Survey Team Equipment Footlocker, stow in Survey Team Room.
- 3.6.5 Return radio system, portable air sampler, radiation count rate meter, and dose rate meter to the Survey Team Room and place on charge as appropriate.
- 3.6.6 Return 0-500 mr dosimeters and sign-out on dosimeter log sheet.
- 3.6.7 Fill out Survey Team Status Board and inform Survey Center Manager.

A P P E N D I X I

EMERGENCY OFF-SITE RADIATION SURVEY TEAM

EQUIPMENT CHECKOUT AND OPERATION

RADIO SYSTEM

The radio system consists of a hand-held radio and magnetic mount car antenna. To checkout and operate the system, complete the following steps.

1. Ensure the vehicle roof is free of ice and snow.
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 the vehicle roof.
4. Lower the mount onto the vehicle roof. It will be held in place by magnetic force.

******* 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.**

******* CAUTION *******

5. Route the antenna lead wire into the vehicle between the door and door jamb. With any amount of weather stripping the lead should not be damaged.
6. Affix the lead wire near the head liner with a piece of tape.
7. Unscrew the telescoping or black flexible antenna from the radio and store it in the footlocker.
8. At the upper left rear corner of the radio (when viewed from the top) there is a rubber plug covering a hole marked "ANT". Remove the plug and tape it where it will not get lost.
9. Insert the jack from the mobile antenna into the hole from step 8.
10. Turn the channel selector switch to channel 1.
11. Turn the squelch knob fully CCW.

12. Turn the volume knob CW to turn the radio on and adjust the volume level. A rushing sound should be heard. (NOTE: If no sound is heard unit is inoperable. Obtain new unit and inform Survey Center Manager.)
13. Adjust squelch knob CW just enough to quiete radio. If squelch knob is turned too far CW weak signals will not be heard.
14. The general procedure for communicating on the radio should be as follows.
 - a) Station Called
 - b) Red/Green/Orange Team
 - c) Message
 - d) "Over"

During a drill or exercise all fictitious data will be preceded with the words "This is a drill....".

Examples:

"TSC, Red Team, At location number 1, Over"

"TSC, Green Team, This is a drill, Results of the general area survey at location 36 are 6,500 Counts Per Minute above background, Over"

15. To transmit depress the push-to-talk switch on the side of the radio. Speak in a normal voice into the speaker/mike.
16. To receive, release the push-to-talk switch.
17. There may be times that the TSC or EOF will be receiving communications from a team that you can not 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. Remember this is one big party line; everyone can't talk at once.
18. When you have been directed to secure your Survey Team, turn the radio off, disconnect the antenna lead, install the rubber plug in the "ANT" hole, install the antenna removed in step 7, and remove the magnetic mount antenna from the vehicle by lifting up at the rear of the mount.

Place the radio in the charger located in the Survey Team Room at the Survey Center, and place the magnetic mount antenna on the bench.

RADECO H 809C HIGH VOLUME AIR SAMPLER**EQUIPMENT CHECK**

1. Ensure power switch on air sampler is off.
2. Ensure battery charger is de-energized and in the 12 volt position.
3. Connect air sampler power cables to the battery charger, RED clip to positive and BLACK clip to negative.
4. Energize 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. De-energize battery charger and disconnect air sampler power cables.

EQUIPMENT OPERATION FROM VEHICLE

1. Ensure power switch on air sampler is off.
2. Connect BLACK power clip to vehicle ground (engine block, chassis, etc.) and RED power clip to positive post of vehicle battery.
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 1.5 CFM) on a sample envelope.
5. Run sampler for approximately 10 minutes.
6. Record air flow rate and time.
7. Turn air sampler off.

RM-14 RADIATION SURVEY METER**EQUIPMENT CHECK**

1. Disconnect power cord from back of meter taking care not to turn test switch on.
2. Ensure that an HP-190 probe is connected to the detector jack.
3. Turn range switch to battery. Meter should read in the "BATT-OK" area.
4. Turn range switch to off.

EQUIPMENT OPERATION

1. Turn range switch to X1.
2. Place response switch in the "SLOW" position.
3. Adjust the volume control so that the audio indication (a click) can be heard.
4. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.
5. All readings must be multiplied by the range switch setting (X1, X10, X100).
6. 2,200 CPM is approximately 1 mrem/hour.
7. Upon completion of the survey turn the unit off and return to the Survey Team Room. Unit should be recharged before the next use.

AUTO DIGI-MASTER DOSE RATE METER**EQUIPMENT CHECK**

1. Turn unit on to be sure that the digital display lights..

EQUIPMENT OPERATION

1. Allow unit to complete one cycle (display will blink) before reading when turning unit on or when radiation level changes significantly.
2. Unit will automatically change from one range to the next. The reading is always direct.
3. The Digi-Master may be used to detect the presence of Beta but cannot be used for dose measurement of Beta. Also, Beta detection is only effective when the unit is operating in the mrem/hr range.
 - a. Take a reading with the Beta window closed and record.
 - b. Take a reading with the Beta window opened and record.
 - c. If the reading with the Beta window open is greater than the reading with the Beta window closed there is Beta radiation present.
 - d. If a Beta dose rate is needed a survey with an R0-2 or equivalent instrument must be made.
4. Upon completion of the survey turn the unit off and return to the Survey Team Room. Unit should be recharged before the next use.

RO-2 DOSE RATE METER**EQUIPMENT CHECK**

1. Turn the function selector switch to the "BATT 1" and "BATT 2" positions. Meter should indicate above the battery cut-off line.

EQUIPMENT OPERATION

1. Zero the meter by turning the function selector switch to "ZERO" and turning the "ZERO ADJ" knob as necessary. The zero adjust may be made in a radiation field by placing the function selector switch at "ZERO ADJ".
2. To measure the radiation field position the function selector switch to the lowest range which provides a mid-scale deflection of the meter.
3. With the Beta shield closed the meter will read the whole body Gamma dose rate.
4. To obtain a Beta dose rate measurement perform the following:

CAUTION: THE FACE OF THE BETA WINDOW IS VERY THIN. WHENEVER THE BETA SHIELD IS OPEN GUARD THE SHIELD AGAINST DAMAGE BY PUNCTURE OR CONTAMINATION BY DUST OR DIRT.

- a. Take an area measurement with the Beta shield closed.
 - b. Open the sliding Beta shield on the bottom of the case and take an area measurement.
 - c. Subtract the closed shield reading from the open shield reading and multiply by the Beta correction factor marked on the instrument.
 - d. This number is the Beta dose rate for that area.
5. When the survey is completed turn the function selector switch to OFF.

APPENDIX II

RADIATION SURVEY INSTRUCTIONS

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 an RM-14 Radiation Monitor with an HP-190 probe.
3. When conducting a moving survey the HP-190 probe should be installed in the mounting bracket and positioned outside a vehicle window. The detection window of the HP-190 probe should be horizontal and pointed to the rear of the vehicle to protect the detector from the elements and wind.
4. Vehicle speed should not exceed 15 mph during a mobile survey.
5. If the RM-14 reading changes more than 1,000 CPM stop and conduct a survey for Beta using the Auto Digi-Master or RO-2.
6. Report the results of the mobile survey to the Radio Operator at the next survey point, or after completion of the Beta survey.

**SURVEY TO DETERMINE PRESENCE
OF BETA RADIATION**

1. If the General Area Radiation Survey shows a change of 1000 CPM on the RM-14, 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 an Auto Digi-Master, or RO-2 dose rate meter conduct the follow surveys.
 - a. With the detector window aimed up:
Beta shield open _____
Beta shield closed _____
Difference #1 = (open reading - closed reading)
 - b. With the detector window aimed down:
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 #1 is positive, this is an indication that the plume is overhead.
4. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.

INTALLATION 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 into a utility pole at the specified location. The nail should be positioned on the pole at head height and on the side closest to the site.
3. Affix a TLD to the nail using tape. Ensure the TLD window is oriented towards the site.
4. 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.

HIGH VOLUME AIR SAMPLE

1. Draw approximately 15 cubic feet of air through a GY-130 silver zeolite cartridge and particulate filter using a RADECO H 809C High Volume air sampler. This will take approximately 10 minutes.
2. Record the sample date, time, and location (either survey point number or road intersections) on two sample envelopes, and on the back of the survey map.
3. Determine the background radiation level using the RM-14 Radiation Monitor and HP-190 probe. Record the reading on each envelope, and on the survey map.
4. Using onion skins remove the GY-130 silver zeolite cartridge from the sample holder and read the activity level with the RM-14 Radiation Monitor and HP-190 probe by holding the probe window on the inlet side of the cartridge filter. **DO NOT TOUCH THE PROBE WINDOW WITH THE CARTRIDGE.** Record the reading on one envelope and place the cartridge in the envelope. Record the reading on the back of the survey map.
5. Read the activity level of the particulate filter using the RM-14 Radiation Monitor and HP-190 probe. **DO NOT TOUCH THE PROBE WINDOW WITH THE PARTICULATE FILTER.** Record the reading on the other envelope and place the particulate filter in the envelope. Record the reading on the back of the survey map.
6. Remove the onion skins and discard in a plastic bag. Treat as contaminated material.
7. Report the following information to the Radio Operator:
 - a. Sample location
 - b. Time sample was taken
 - c. Volume of air sample in CF
 - d. Background count rate in CPM
 - e. GY-130 silver zeolite cartridge count rate in CPM
 - f. Particulate filter count rate in CPM

NOTE: Field calculations of the airborne activity level may be performed as follows:

Iodine-131 (GY-130 cartridge)

$$\frac{(\text{CPM Sample} - \text{CPM Background}) (3.0 \times 10^{-9})}{(\text{Volume of Sample in Cubic Feet})} = \frac{\quad}{\quad} \begin{array}{l} \text{uCi/cc} \\ \text{Iodine-131} \end{array}$$

Particulate

$$\frac{(\text{CPM Sample} - \text{CPM Background}) (8.38 \times 10^{-10})}{(\text{Volume of Sample in Cubic Feet})} = \frac{\quad}{\quad} \begin{array}{l} \text{uCi/cc} \\ \text{Particulate} \end{array}$$

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. Gasmeter reading (cubic feet)
 - e. Total hour meter (record in column marked "OFF")
2. Turn pump off
3. Using onion skins 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 cartridge was in use transfer the information on the particulate filter envelope to a new envelope and place the charcoal cartridge in the envelope.
6. Place a new GY-130 silver zeolite cartridge in the sample head.
7. Place a new particulate filter in the holder, replace the retaining ring and reconnect holder to the pump at the quick disconnect joint.
8. Remove onion skins and place in a plastic bag. Treat as contaminated.
9. Turn the pump on.
10. Record the following information on two new envelopes. Mark one envelope "GY-130 silver zeolite".
 - a. Station number
 - b. Date
 - c. Time
 - d. System vacuum (inches)
 - e. Gasmeter reading (cubic feet)
 - f. Total Hour meter (record in the "ON" column)

11. Place the new envelopes inside the monitor cabinet.
12. Bring the envelopes containing the cartridge/filter removed to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.

APPENDIX III

OFF SITE RADIATION SURVEY TEAM INSTRUCTIONS

RED TEAM**PRIMARY SURVEY ROUTE****INSTRUCTIONS**

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the Training Center driveway travel east on Lake Road to Knickerbocker Road (1.1 miles). Place a TLD near the intersection of Lake Road and Knickerbocker Road (#1).
2. Go south on Knickerbocker Road to Brick Church Road (1.0 miles). Place a TLD near the intersection of Knickerbocker Road and Brick Church Road (#2).
3. Continue south on Knickerbocker Road to Kenyon Road (1.3 miles). Take a high volume air sample at the intersection of Knickerbocker Road and Kenyon Road (#9).
4. Go west on Kenyon Road to Slocum Road (1.9 miles).
5. Go north on Slocum Road to Brick Church Road (1.3 miles). Place a TLD near the intersection of Slocum Road and Brick Church Road (#4).
6. Continue north on Slocum Road to Lake Road (1.0 miles).
7. Report to Radio Operator for further instructions.

RED TEAM**ALTERNATE SURVEY ROUTE
(WEST OR NORTHWEST WINDS)****INSTRUCTIONS**

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the intersection of Lake and Slocum Road.
2. Go south on Slocum Road to State Route 104 (3.1 miles).
3. Go east on State Route 104 to State Route 350/Ontario Center Road (1.0 miles).
4. Go south on State Route 350 to State Route 441/Walworth Road (6.3 miles).
5. Go east on State Route 441/Walworth Road to main intersection in Village of Walworth (Walworth-Ontario Road, 1.0 miles). Place a TLD near the intersection (#26).
6. Report to Radio Operator for further instructions.

RED TEAM**ALTERNATE SURVEY ROUTE****(EAST OR NORTHEAST WINDS)****INSTRUCTIONS**

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the intersection of Lake and Slocum Road.
2. Go south on Slocum Road to Route 104 (3.1 miles).
3. Go east on Route 104 to Route 350/Ontario Center Road (1.0 miles).
4. Go south on Route 350 to Plank Road (3.2 miles).
5. Go west on Plank Road to County Line Road (4.1 miles). Place a TLD near the intersection of Plank Road and County Line Road (#46).
6. Continue west on Plank Road to Salt Road (1.5 miles). Place a TLD near the intersection of Plank Road and Salt Road (#39).
7. Go north on Salt Road to Schlegel Road (4.1 miles). Place a TLD near the intersection of Salt Road and Schlegel Road (#42).
8. Report to Radio perator for further instructions.

GREEN TEAM

PRIMARY SURVEY ROUTE

INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. Travel west on Lake Road to Lakeside Road (1.7 miles). Place a TLD near the intersection of Lake Road and Lakeside Road (#17).
2. Go south on Lakeside Road to Boston Road (1.0 miles). Take a high volume air sample near the intersection of Lakeside Road and Boston Road (#16).
3. Continue south on Lakeside Road to Route 104 (2.0 miles).
4. Go east on Route 104 to Ontario Center Road (1.6 miles).
5. Go north on Ontario Center Road to Brick Church Road (2.1 miles). Place a TLD near the intersection of Ontario Center Road and Brick Church Road (#3).
6. Continue north to Lake Road.
7. Report to Radio Operator for further instructions.

GREEN TEAM

ALTERNATE SURVEY ROUTE

(WEST OR NORTHWEST WINDS)

INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road & Ontario Center Road, go east to Pultneyville (7.0 miles). Place a TLD in the Pultneyville area (#28) near white settler monument at the Lake.
2. Go south from Pultneyville on Route 21 to Pound Road (3.4 miles). Place a TLD along Route 21 south of Pound Road (#48).
3. Continue south on Route 21 to Farnsworth Road (4.6 miles). Place a TLD near the intersection of Route 21 and Farnsworth Road (#47).
4. Continue south on Route 21 and into the Village on Marion (3.0 miles).
5. Return to Main Street in the Village of Williamson on Route 21 (5.3 miles). Turn left onto Main Street and then left into driveway about 300' from intersection leading to substation #207 behind business buildings.

Using the RG&E substation key enter the substation and change the filter cartridge on environmental monitor #11.

6. Report to Radio Operator for further instructions.

GREEN TEAM**ALTERNATE SURVEY ROUTE****(EAST OR NORTHEAST WINDS)****INSTRUCTIONS**

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road and Ontario Center Road, go west to Route 250. Place a TLD near intersection of Lake Road and Route 250 (#45) (6.0 miles).
2. Continue west on Lake Road to Whiting Road (1.8 miles).
3. Go south on Whiting Road to Klem Road (1.8 miles).
4. Go west on Klem Road to Five Mile Line Road (0.4 miles).
5. Go south on Five Mile Line Road to Plank Road (3.4 miles). Place a TLD near the intersection of Five Mile Line Road and Plank Road (#51).
6. Continue south on Five Mile Line Road to Penfield Four Corners (intersection with Penfield Road, Route 441) (3.6 miles). Place a TLD near back of Baptist Church parking lot, 500' east of intersection on north side of Penfield Road.
7. Report to Radio Operator for further instructions.

ORANGE TEAM
PRIMARY SURVEY ROUTE
INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. Travel east on Lake Road to Fisher Road (2.7 miles).
2. Go south on Fisher Road to Shepherd Road (0.7 miles). Take an air sample near the intersection of Fisher Road and Shepherd Road (#19).
3. Place a TLD near the intersection of Fisher Road and Shepherd Road (#19).
4. Continue south on Fisher Road to Trimble Road (1.1 miles). Place a TLD near the intersection of Fisher Road and Trimble Road (#20).
5. Continue south on Fisher Road to Kenyon Road (0.7 miles). Go west on Kenyon Road to Furnace Road (1.1 miles). Place a TLD near the intersection of Kenyon Road and Furnace Road (#49).
6. Go north on Furnace Road to Lake Road (2.7 miles) and radio operator for further direction.

ORANGE TEAM
ALTERNATE SURVEY ROUTE
(WEST OR NORTHWEST WINDS)

INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road & Furnace Road, go south to Ridge Road.
(4.2 miles)
2. Go south on Walworth-Ontario Road to Trummonds Road
(2.3 miles).
3. Go east on Trummonds Road to Arbor Road (1.1 miles).
Place a TLD near the intersection of Trummonds Road and
Arbor Road (#22).
4. Go north on Arbor Road to Ridge Road (2.3 miles).
5. Go east on ridge Road to Eddy Ridge Road (2.2 miles).
Place a TLD near the intersection of Ridge Road and Eddy
Ridge Road.
6. Continue east on Ridge Road to Tuckahoe Road (0.3 miles).
7. Go north on Tuckahoe Road to Salmon Creek Road (2.5 miles).
Place a TLD near the intersection of Tuckahoe Road and
Salmon Creek Road.
8. Report to Radio Operator for further instructions.

ORANGE TEAM

ALTERNATE SURVEY ROUTE

(EAST OR NORTHEAST WINDS)

INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road & Furnace Road, go west on Lake Road to Roder Parkway (access road to Ontario on the Lake) (5.1 miles from #19). Go north on Roder Parkway to intersection with Ontario Drive and place TLD near intersection (#18) (0.5 miles.)
2. Return to Lake Road, continue west to County Line Road (2.4 miles).
3. Go south on County Line Road to Berg/Schlegel road (2.0 miles). Place a TLD near the intersection of County Line Road and Berg/Schlegel Road (#36).
4. Continue south on County Line Road to Route 104 (1.2 miles). Turn right onto Route 104 and go to Salt Road (1.2 miles). Turn left onto Salt Road go to State Road (1.1 miles).
5. Go west on State Road to Route 250 (2.8 miles). Place a TLD at the intersection of State Road and Route 250 (#38).
6. Go south on Route 250 to Plank Road (1.2 miles).
7. Go west on Plank Road to RG&E Eastern Monroe Service Center, 1270 Plank Road. Report results of surveys to radio operator.
8. Return to Route 250 and go north to Main Street in the Village of Webster (2.3 miles).
9. Go east on Main Street to Phillips Road (0.6 miles).
10. Go north on Phillips Road to substation #74 driveway which is 20' north of access road to Route 104.
11. Using the special substation key, change the filter cartridge at environmental monitor #9 located in the substation.
12. Report to Radio Operator for instructions.

GINNA STATION
UNIT #1
COMPLETED

ROCHESTER GAS AND ELECTRIC CORPORATION

DATE :-

GINNA STATION

TIME :-

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-1.7J

REV. NO. 0

EMERGENCY ON-SITE RADIATION SURVEY TEAMS

TECHNICAL REVIEW

PORC REVIEW DATE

1-11-82

JC Bodine
QC REVIEW

Bruce L. ...
PLANT SUPERINTENDENT

1-11-82

EFFECTIVE DATE

QA NON-QA CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 20 PAGES

EMERGENCY
ON-SITE
RADIATION SURVEY TEAMS

1.0 PURPOSE:

- 1.1 The prime objective of the Emergency On-Site Radiation Survey Teams is to rapidly survey areas immediately surrounding the restricted area in order to determine the extent and magnitude of any uncontrolled release of radioactive materials following an incident. It should be stressed that the initial on-site survey is of great importance. Decisions regarding the extent and types of protective actions required will be based upon data reported by the survey teams.

2.0 REFERENCES:

- 2.1 SC-1 Radiation Emergency Plan
- 2.2 SC-1.7B Determination of Iodine or Particulate

3.0 INSTRUCTIONS:

- 3.1 Obtain appropriate On-Site Survey Team footlocker as directed by Tag Board Assignment. If seal is broken, use equipment list inside footlocker to inventory equipment. Request the assistance of the Survey Center Manager in obtaining replacement equipment if necessary.

- 3.2 Obtain following equipment which is not stored in footlocker.
 - 3.2.1 Personnel film badge and TLD.
 - 3.2.2 One 0-5 R dosimeter for each team member. Sign-in on dosimeter log sheet.
 - 3.2.3 One full face respirator with charcoal filter for each Survey Team member. Mask will be donned upon instructions of the Dose Assessment Manager.
 - 3.2.4 Hand-held radio.
 - 3.2.5 Victoreen Portable Low Volume Air Sampler with filter holder.
 - 3.2.6 RM-14 Radiation Monitor with HP-190 Probe.
 - 3.2.7 Auto Digi-master or RO-2 dose rate meter.
- 3.3 Complete the following items prior to departing on the assigned survey route.
 - 3.3.1 Check operation of radio system, portable air sampler, radiation count rate monitor, and dose rate meter using equipment check-out procedures in Appendix I.
 - 3.3.2 Load survey equipment onto equipment belts and canvas bags, fill in Survey Team Status Board, and inform Survey Center Manager of your departure.
 - 3.3.3 Log time, date, and survey team members on survey map.
 - 3.3.4 Establish radio communications with the Technical Support Center Radio Operator and advise of teams departure.
- 3.4 Protective clothing and full face masks with charcoal filters will be worn as directed by the Dose Assessment Manager. Potential internal contamination will be determined by a Whole Body Count after the survey.
- 3.5 Perform radiation surveys using the appropriate instructions of Appendix II while following the Survey Route instructions contained in Appendix III.

3.5.1 At each assigned survey point the team should report the following information to the Radio Operator:

- Location
- Completed Actions
- Results of Surveys
- Departure for next Survey Point

3.5.2 Upon completion of Survey Route inform radio operator. The Dose Assessment Manager will assign an additional Survey Route or direct you to return to the Survey Center.

3.6 Upon returning to the Survey Center perform a survey of team personnel for contamination. If any contamination greater than 100 CPM above background is found contact the Survey Center Manager for decontamination instructions.

3.6.1 Give all filter cartridges, particulate filters, survey maps, and data records to Survey Center Manager.

3.6.2 Dispose of contaminated and potentially contaminated waste in an approved manner.

3.6.3 Re-stock, inventory, and seal Survey Team Equipment Footlocker, stow in Survey Team Room.

3.6.4 Return radio system, portable air sampler, radiation count rate meter, and dose rate meter to the Survey Team Room and place on charge as appropriate.

3.6.5 Return 0-5 R dosimeters and sign-out on dosimeter log sheet.

3.6.7 Fill out Survey Team Status Board and inform Survey Center Manager.

A P P E N D I X I

EMERGENCY OFF-SITE RADIATION SURVEY TEAM

EQUIPMENT CHECKOUT AND OPERATION

RADIO SYSTEM

The radio system consists of a hand-held radio and attached antenna. To checkout and operate the system, complete the following steps.

1. Ensure the antenna is securely screwed into the connection on the top of the radio. If a telescoping antenna is installed ensure it is extended to its full length when operating the radio.
2. Turn the channel selector switch to channel 1.
3. Turn the squelch knob fully CCW.
4. Turn the volume knob CW to turn the radio on and adjust the volume level. A rushing sound should be heard. (NOTE: If no sound is heard unit is inoperable. Obtain new unit and inform Survey Center Manager.)
5. Adjust squelch knob CW just enough to quiet radio. If squelch knob is turned too far CW weak signals will not be heard.
6. The general procedure for communicating on the radio should be as follows.
 - a) Station Called
 - b) Blue/Yellow Team
 - c) Message
 - d) "Over"

During a drill or exercise all fictitious data will be preceded with the words "This is a drill....".

Examples:

"TSC, Blue Team, At location number 1, Over"

"TSC, Yellow Team, This is a drill, Results of the general area survey at location 6 are 6,500 Counts Per Minute above background, Over"

15. To transmit depress the push-to-talk switch on the side of the radio. Speak in a normal voice into the speaker/mike.
16. To receive, release the push-to-talk switch.

17. There may be times that the TSC or EOF will be receiving communications from a team that you can not 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. Remember this is one big party line; everyone can't talk at once.
18. When you have been directed to secure your Survey Team, turn the radio off and place it in the charger located in the Survey Team Room at the Survey Center.

RM-14 RADIATION SURVEY METER**EQUIPMENT CHECK**

1. Disconnect power cord from back of meter taking care not to turn test switch on.
2. Ensure that an HP-190 probe is connected to the detector jack.
3. Turn range switch to battery. Meter should read in the "BATT-OK" area.
4. Turn range switch to off.

EQUIPMENT OPERATION

1. Turn range switch to X1.
2. Place response switch in the "SLOW" position.
3. Adjust the volume control so that the audio indication (a click) can be heard.
4. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.
5. All readings must be multiplied by the range switch setting (X1, X10, X100).
6. 2,200 CPM is approximately 1 mrem/hour.
7. Upon completion of the survey turn the unit off and return to the Survey Team Room. Unit should be recharged before the next use.

AUTO DIGI-MASTER DOSE RATE METER**EQUIPMENT CHECK**

1. Turn unit on to be sure that the digital display lights.

EQUIPMENT OPERATION

1. Allow unit to complete one cycle (display will blink) before reading when turning unit on or when radiation level changes significantly.
2. Unit will automatically change from one range to the next. The reading is always direct.
3. The Digi-Master may be used to detect the presence of Beta but cannot be used for dose measurement of Beta. Also, Beta detection is only effective when the unit is operating in the mrem/hr range.
 - a. Take a reading with the Beta window closed and record.
 - b. Take a reading with the Beta window opened and record.
 - c. If the reading with the Beta window open is greater than the reading with the Beta window closed there is Beta radiation present.
 - d. If a Beta dose rate is needed a survey with an R0-2 or equivalent instrument must be made.
4. Upon completion of the survey turn the unit off and return to the Survey Team Room. Unit should be recharged before the next use.

RO-2 DOSE RATE METER**EQUIPMENT CHECK**

1. Turn the function selector switch to the "BATT 1" and "BATT 2" positions. Meter should indicate above the battery cut-off line.

EQUIPMENT OPERATION

1. Zero the meter by turning the function selector switch to "ZERO" and turning the "ZERO ADJ" knob as necessary. The zero adjust may be made in a radiation field by placing the function selector switch at "ZERO ADJ".
2. To measure the radiation field position the function selector switch to the lowest range which provides a mid-scale deflection of the meter.
3. With the Beta shield closed the meter will read the whole body Gamma dose rate.
4. To obtain a Beta dose rate measurement perform the following:

CAUTION: THE FACE OF THE BETA WINDOW IS VERY THIN. WHENEVER THE BETA SHIELD IS OPEN GUARD THE SHIELD AGAINST DAMAGE BY PUNCTURE OR CONTAMINATION BY DUST OR DIRT.

- a. Take an area measurement with the Beta shield closed.
 - b. Open the sliding Beta shield on the bottom of the case and take an area measurement.
 - c. Subtract the closed shield reading from the open shield reading and multiply by the Beta correction factor marked on the instrument.
 - d. This number is the Beta dose rate for that area.
5. When the survey is completed turn the function selector switch to OFF.

BATTERY POWERED LOW VOLUME AIR SAMPLER**EQUIPMENT CHECK**

1. Turn power switch on.
2. Observe totalizer for movement.
3. Turn power switch off.

EQUIPMENT OPERATION

1. Record on sample envelopes following information;
 - a. Date
 - b. Time
 - c. Location
 - d. Totalizer Reading (A)
2. Ensure filter cartridge contains a GY-130 Silver Zeolite cartridge and a particulate filter. Connect filter cartridge to sampler.
3. Turn sampler ON and run sampler for approximately 30 minutes.
4. Turn sampler OFF and record following information on sample envelopes;
 - a. Time
 - b. Totalizer Reading (B)
5. Sample volume in cubic centimeters (cc) =
(Totalizer Reading B - Totalizer A) X (Calibration Factor)

NOTE: Calibration Factor is noted on side of sampler.

APPENDIX II

RADIATION SURVEY INSTRUCTIONS

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 an RM-14 Radiation Monitor with an HP-190 probe.
3. When conducting a moving survey the HP-190 probe should be held in a horizontal position and protected from the elements and wind.
5. If the RM-14 reading changes more than 1,000 CPM stop and conduct a survey for Beta using the Auto Digi-Master or RO-2.
6. Report the results of the survey to the Radio Operator at the next survey point, or after completion of the Beta survey.

**SURVEY TO DETERMINE PRESENCE
OF BETA RADIATION**

1. If the General Area Radiation Survey shows a change of 1000 CPM on the RM-14, 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 an Auto Digi-Master, or RO-2 dose rate meter conduct the follow surveys.
 - a. With the detector window aimed up:
Beta shield open _____
Beta shield closed _____
Difference #1 = (open reading - closed reading)
 - b. With the detector window aimed down:
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 #1 is positive, this is an indication that the plume is overhead.
4. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.

LOW VOLUME AIR SAMPLE

1. Draw air through a GY-130 silver zeolite cartridge and particulate filter using a low volume air sampler for approximately 30 minutes.
2. Record the sample date, time, and location on two sample envelopes and the back of the survey map.
3. Determine the background radiation level using the RM-14 Radiation Monitor and HP-190 probe. Record the reading on each envelope, and on the survey map.
4. Using onion skins remove the GY-130 silver zeolite cartridge from the sample holder and read the activity level with the RM-14 Radiation Monitor and HP-190 probe by holding the probe window on the inlet side of the cartridge filter. **DO NOT TOUCH THE PROBE WINDOW WITH THE CARTRIDGE.** Record the reading on one envelope and place the cartridge in the envelope. Record the reading on the back of the survey map.
5. Read the activity level of the particulate filter using the RM-14 Radiation Monitor and HP-190 probe. **DO NOT TOUCH THE PROBE WINDOW WITH THE PARTICULATE FILTER.** Record the reading on the other envelope and place the particulate filter in the envelope. Record the reading on the back of the survey map.
6. Remove the onion skins and discard in a plastic bag. Treat as contaminated material.
7. Report the following information to the Radio Operator:
 - a. Sample location
 - b. Time sample was taken
 - c. Volume of air sample in CC
 - d. Background count rate in CPM
 - e. GY-130 silver zeolite cartridge count rate in CPM
 - f. Particulate filter count rate in CPM

NOTE: Field calculations of the airborne activity level may be performed as follows:

Iodine-131 (GY-130 cartridge)

$$\frac{(\text{CPM Sample} - \text{CPM Background}) (2.4 \times 10^{-5})}{(\text{Volume of Sample in Cubic Centimeters})} = \frac{\quad}{\quad} \text{uCi/cc Iodine-131}$$

Particulate

$$\frac{(\text{CPM Sample} - \text{CPM Background}) (8.34 \times 10^{-5})}{(\text{Volume of Sample in Cubic Centimeters})} = \frac{\quad}{\quad} \text{uCi/cc Particulate}$$

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. Gasmeter reading (cubic feet)
 - e. Total hour meter (record in column marked "OFF")
2. Turn pump off
3. Using onion skins 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 cartridge was in use transfer the information on the particulate filter envelope to a new envelope and place the charcoal cartridge in the envelope.
6. Place a new GY-130 silver zeolite cartridge in the sample head.
7. Place a new particulate filter in the holder, replace the retaining ring and reconnect holder to the pump at the quick disconnect joint.
8. Remove onion skins and place in a plastic bag. Treat as contaminated.
9. Turn the pump on.
10. Record the following information on two new envelopes. Mark one envelope "GY-130 silver zeolite".
 - a. Station number
 - b. Date
 - c. Time
 - d. System vacuum (inches)
 - e. Gasmeter reading (cubic feet)
 - f. Total Hour meter (record in the "ON" column)
11. Place the new envelopes inside the monitor cabinet.
12. Bring the envelopes containing the cartridge/filter removed to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.

APPENDIX III

ON SITE RADIATION SURVEY TEAM INSTRUCTIONS

BLUE TEAM

SURVEY ROUTE INSTRUCTIONS

1. From the Survey Center proceed northeast to the edge of the grass.
2. Turn south across the lawn and proceed to environmental station #4 and change the filter cartridge.
3. Proceed southeast to Manor House driveway, follow driveway to where it turns north, proceed east out of trees into orchard.
4. Go through orchard, then turn north and proceed to environmental station #3 and change the filter cartridge.
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 cartridge.
8. Proceed west along the lake shore to the plant fence.
9. Proceed along the plant fence to the Guard House.
10. If the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) are manned contact CAS on the radio for access to the site. Otherwise use "hard key" to gain access to the site.
11. Proceed east from the Guard House along access road and across south side of plant building.
12. Circle across grass towards Upper-Radwaste Storage Area, continuing to plant fence.
13. Continue west along plant fence to the Screen House.
14. Proceed south along side of plant building and return to Guard House.
15. Report to Radio Operator for instructions.

YELLOW TEAM

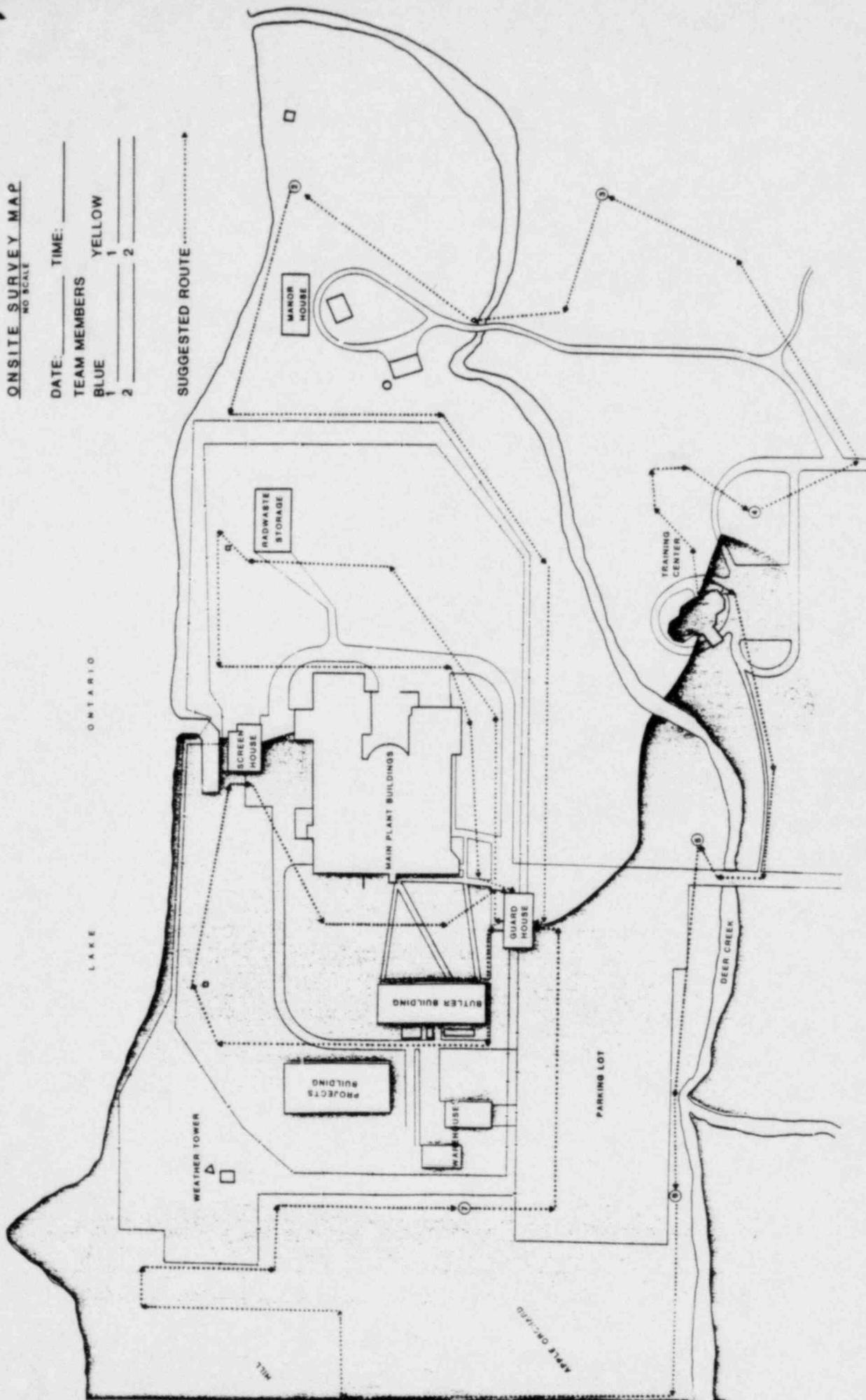
SURVEY ROUTE INSTRUCTIONS

1. Proceed west from the Survey Center to plant site road.
2. Continue north across the bridge to environmental station #5 and change the filter cartridge.
3. Proceed west along Deer Creek and the parking lot to environmental station #6 and change the filter cartridge.
4. Proceed west through the apple orchard approximately 100 yards.
5. Turn north and continue through the apple orchard, towards the hill, to the northeast corner of the plant fence.
6. Proceed south along the plant fence to environmental station #7 and change the filter cartridge.
7. Continue along the plant fence to the Guard House.
8. If the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) are manned contact CAS on the radio for access to the site. Otherwise use "hard key" to gain access to the site.
9. Proceed west from Guard House to the access road.
10. Continue north on the access road and across the grass to the plant fence.
11. Proceed east along the plant fence to the discharge canal.
12. Proceed south along the west side of the plant building and return to the Guard House.
13. Report to Radio Operator for instructions.

ONSITE SURVEY MAP
NO SCALE

DATE: _____ TIME: _____
 TEAM MEMBERS
 BLUE 1 _____
 YELLOW 2 _____

SUGGESTED ROUTE



ONTARIO

LAKE

AREA OUTLINED