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NLS2003025

February 19, 2003

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Emergency Plan Implementing Procedures
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Pursuant to the requirements of 10 CFR 50, Appendix E, Section V, "Implementing Procedures," Nebraska Public Power District is transmitting the following Emergency Plan Implementing Procedures (EPIPs):

EPIP 5.7.15	Revision 16	"OSC Team Dispatch"
EPIP 5.7.18	Revision 20	"Off-Site and Site Boundary Monitoring"

Should you have any questions concerning this matter, please contact me.

Sincerely,

J. A. Hutton
Plant Manager

/rer
Enclosures

cc: Regional Administrator w/enclosures (2)
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The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
None	

CNS OPERATIONS MANUAL EPIP PROCEDURE 5.7.15 OSC TEAM DISPATCH	USE: REFERENCE EFFECTIVE: 1/28/03 APPROVAL: SORC/IQA OWNER: EP MGR DEPARTMENT: EP

1. PURPOSE

[ ] 1.1 This procedure provides guidance to dispatch survey, repair, and rescue teams while maintaining personnel accountability and safety.

[ ] 1.2 Topics covered are:

[ ] 1.2.1 Dispatch and control of survey, repair, and rescue teams.

[ ] 1.2.2 Precautions to be observed by survey, repair, and rescue teams.

[ ] 1.2.3 Equipment to be carried during survey, repair, or rescue operations.

[ ] **CAUTION** - During any emergency involving radiological hazards, exposure to personnel should be minimized, consistent with the nature of emergency response required.

[ ] **NOTE 1** - All team members who may exceed 25 rem must be volunteers and be briefed on the hazards of radiation exposures in excess of 25 rem.

[ ] **NOTE 2** - The Chemistry/Radiological Protection (Chem/RP) Coordinator shall make a determination, based on current available information and future trends, as to the need for Radiological Protection (RP) Technicians to accompany each team.

2. REPAIR ACTIVITIES

[ ] 2.1 TEAMS DISPATCHED THROUGH OPERATIONS SUPPORT CENTER (OSC)

[ ] 2.1.1 The Maintenance Coordinator shall:

[ ] 2.1.1.1 Obtain specifics concerning the problem, location, and corrective actions to be taken from the TSC Director.

[ ] 2.1.1.2 Brief the OSC Supervisor on tasks to be accomplished and their respective priority.

[ ] 2.1.1.3 Provide TSC Director with team progress reports.

[ ] 2.1.2 OSC Supervisor shall:

[ ] 2.1.2.1 Initiate Team Dispatch/Tracking Form (Attachment 1).

[ ] 2.1.2.2 Contact the appropriate OSC Lead or Engineering Lead personnel with task assignments.

[ ] 2.1.2.3 Provide Maintenance Coordinator with team progress reports.

[ ] 2.1.2.4 Resolve any resource allocation conflicts that may arise.

[ ] 2.1.2.5 Continuously account for OSC personnel.

[ ] 2.1.3 OSC Lead and Engineering Lead personnel shall:

[ ] 2.1.3.1 Select team members for the assigned task.

[ ] 2.1.3.2 Brief teams per Attachment 2.

[ ] 2.1.3.3 Complete Section 1.0 of Team Dispatch/Tracking Form.

[ ] 2.1.3.4 Contact the Team Leader periodically to check the work in progress and team safety.

[ ] 2.1.3.5 Debrief team members when they return to the OSC and complete Section 2.0 of the Team Dispatch/Tracking Form.

[ ] 2.1.3.6 Inform the OSC Supervisor of the Team's status.

[ ] 2.1.4 Team Leader shall:

[ ] 2.1.4.1 Receive a copy of Team Dispatch/Tracking Form from OSC Lead.

[ ] 2.1.4.2 Pick up and test radio from the OSC, if instructed.

[ ] 2.1.4.3 Report arrival time at work site.

[ ] 2.1.4.4 Report work status as required.

[ ] 2.1.4.5 Return to the OSC.

[ ] 2.1.4.6 Debrief with the OSC Lead.

[ ] 2.1.5 Chem/RP Coordinator shall keep the Chem/RP OSC Lead informed of any changing radiological conditions that may affect team safety (i.e., High Area Radiation Alarms, steam leaks, etc.).

[ ] 2.2 TEAM DISPATCHED FROM CONTROL ROOM

[ ] 2.2.1 When Operators are going to be dispatched directly from the Control Room, the Shift Supervisor shall contact the Chem/RP Coordinator to determine if RP support is required.

[ ] 2.2.2 If RP support is not required, the Shift Supervisor dispatches the Operator following station procedures.

[ ] 2.2.3 If RP support is required, the Shift Supervisor shall instruct the Operator to meet the RP Technician at a pre-determined location.

[ ] 2.2.4 Chem/RP Coordinator shall:

[ ] 2.2.4.1 Contact Chem/RP OSC Lead and direct him to assign RP Technician to meet the Operator at the pre-determined location.

[ ] 2.2.5 Chem/RP OSC Lead shall:

[ ] 2.2.5.1 Complete Section 1.0 of Team Dispatch/Tracking Form (i.e., team designation, personnel, time briefed, destination, objectives).

[ ] a. Give a copy to the RP.

[ ] b. Post a copy of form on the Team Tracking Status Board.

[ ] 2.2.5.2 Notify the OSC Supervisor that an RP Technician has been assigned to an Operator for a particular task.

[ ] 2.2.5.3 File completed Team Dispatch/Tracking Form with the OSC Supervisor.

[ ] 2.2.6 RP Technician shall:

[ ] 2.2.6.1 Receive a copy of team dispatch/tracking form from Chem/RP OSC Lead.

[ ] 2.2.6.2 Pick up and test radio from TSC, if instructed.

[ ] 2.2.6.3 Meet Operator at pre-determined location.

[ ] 2.2.6.4 Report arrival/departure times at work site.

[ ] 2.2.6.5 Inform Chem/RP OSC Lead of task completion.

[ ] 2.2.6.6 Return to the OSC.

3. PERSONNEL SEARCH AND/OR RESCUE

[ ] 3.1 Upon identifying missing personnel after the accountability check, the Security Coordinator shall attempt to determine if missing personnel are injured or isolated in some area of the plant or plant site. If the missing individuals cannot be found:

[ ] 3.1.1 The TSC Director shall direct the Chem/RP Coordinator and Maintenance Coordinator to assemble a OSC Rescue Team.

[ ] 3.1.2 The OSC Rescue Team will assemble at the OSC for a briefing.

[ ] 3.1.3 If time allows, Attachment 1 should be completed by the OSC Lead and be utilized to document the search and rescue effort.

[ ] 3.1.4 The OSC Rescue Team will conduct a search, keeping all members of the team in the same general area (i.e., frequent visual checks, each searching independently).

[ ] 3.1.5 When a victim or victims are located, the team will notify the OSC immediately, unless directed otherwise.

[ ] 3.1.5.1 This should be followed up with additional relevant information (i.e., nature and extent of injuries, dose rates encountered, etc.) as this information develops.

[ ] 3.1.6 The exposure of rescuers shall be limited to as low as reasonably achievable.

[ ] 3.1.7 Treat victims per Procedure 5.7.24, if required.

[ ] 3.2 IMMEDIATE LIFE-SAVING RESCUE REQUIRED

[ ] 3.2.1 Within the limits allowed by the urgency of the situation, make every reasonable effort to obtain:

[ ] 3.2.1.1 Pertinent information (i.e., what happened, what may happen, what hazards are present, what can be done, etc.).

[ ] 3.2.1.2 Available protective and monitoring equipment and rescue devices.

[ ] 3.2.1.3 Assistance from others nearby.

[ ] 3.2.2 Evaluate available information and discuss best apparent rescue approach with the Chem/RP Coordinator prior to the rescue attempt if practical.

[ ] 3.2.3 If time allows, Attachment 1 should be completed by an OSC Lead and be utilized to document the rescue.

[ ] 3.2.4 If available, other personnel in the area should render assistance and monitor the team exposure time in a High Radiation Area.

[ ] 3.2.5 Perform rescue mission consistent with good first aid practices and as dictated by dose rates encountered and the limits discussed above.

[ ] 3.2.6 Attempt to limit exposure of Rescuers to as low as reasonably achievable.

R381-1202EF

Nebraska Public Power District

Retention Code A32

COOPER NUCLEAR STATION
TEAM DISPATCH/TRACKING FORM

1.0 DISPATCHING

Date: _____ Team Designation: _____

Time _____ Briefed By: _____

Team Personnel: _____

Precautions/Areas to Avoid.

_____

_____

Dose Limits: _____ Turnback Rate _____ Stay Time: _____

Respirator Protection ( ) SCBA ( ) Full Face ( ) Other: _____

Work To Be Performed

_____

_____

_____

2.0 DEBRIEFING

Debriefing Time. _____

Team Findings/Comments:

SAMPLE

_____

_____

_____

DOSE RECEIVED:

Name	Dose Received (mrem)	Name	Dose Received (mrem)

OSC Phone Numbers: Chem/RP x5630 Maintenance x5623 I&C x5619 Elec x5091 Utility x5528

Team Number: _____

NOTE - All Team members must be volunteers if the exposure will exceed 25 rem. Volunteers shall be briefed on the possible effects of such exposure.

- Early Affects: Possible vomiting, nausea, diarrhea.
- Late Affects: Possible increase in cancer probability. Possible decrease in total life expectancy.

Pre-Job Work Briefing

YES	NO	
[ ]	[ ]	Team Destination
[ ]	[ ]	Work To Be Performed
[ ]	[ ]	Team Leader
[ ]	[ ]	Copy Of Team Dispatch Tracking Form
[ ]	[ ]	Radio/Cell Phone
[ ]	[ ]	Keys
[ ]	[ ]	Flashlights
[ ]	[ ]	Tools
[ ]	[ ]	Procedures Required
[ ]	[ ]	TCCs
[ ]	[ ]	Clearance Order
[ ]	[ ]	Personnel Safety Equipment
[ ]	[ ]	Equipment Safety
[ ]	[ ]	Drawings

Radiation Protection Briefing

YES	NO	
[ ]	[ ]	Dose Limits: _____
[ ]	[ ]	Stay Time: _____
[ ]	[ ]	Protective Clothing Full Dress Shoe Covers & Gloves
[ ]	[ ]	Respirator Requirements SCBA FF Other: _____
[ ]	[ ]	Potassium Iodide (KI) Procedure 5.7.14, Att. 1 & 2 Signed
[ ]	[ ]	Dosimetry
[ ]	[ ]	RWP
[ ]	[ ]	Air Sampler
[ ]	[ ]	Survey Instruments
[ ]	[ ]	Keys (High Rad Area)
[ ]	[ ]	Procedures
[ ]	[ ]	Radiological Areas To Avoid: _____ _____ _____ _____

1. DISCUSSION

1.1 During a station emergency, abnormally high levels of radiation and/or radioactivity may be encountered. These levels may range from slightly above those experienced during normal station operation to life-endangering levels of several hundred rem in a short period of time. Under all emergency situations, whether it is immediate action to regain control of the emergency or for life-saving purposes, care should be taken to minimize exposure from external and internal sources of radiation.

1.2 Attachment 1, which is an example of the Team Dispatch/Tracking Form, shall be used to carry out the purpose of this procedure.©

2. REFERENCES

2.1 CODES AND STANDARDS

2.1.1 10CFR20.

2.1.2 NPPD Emergency Plan for CNS.

2.1.3 NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.1.4 Environmental Protection Agency EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, May 1992.

2.2 PROCEDURES

2.2.1 Emergency Plan Implementing Procedure 5.7.14, Stable Iodine Thyroid Blocking (KI).

2.2.2 Emergency Plan Implementing Procedure 5.7.24, Medical Emergency.

2.2.3 Radiological Protection Procedure 9.RESP.1, Respiratory Protection Program.

2.3 MISCELLANEOUS

2.3.1 © NRC Inspection Report 91-12, Emergency Preparedness Annual Inspection Report. Affected Step 1.2 on Attachment 3.

2.3.2 NRC Inspection Report 93-24.

CNS OPERATIONS MANUAL EPIP 5.7.18 OFF-SITE AND SITE BOUNDARY MONITORING	USE: REFERENCE EFFECTIVE: 1/29/03 APPROVAL: SORC/IQA OWNER: S. C. REZAB DEPARTMENT: EP

1. PURPOSE

This procedure describes the emergency off-site and site boundary monitoring and sampling activities to be undertaken in the event of a release of radioactive material from CNS.

2. PRECAUTIONS AND LIMITATIONS

[ ] 2.1 Be aware that air samples or retrieved filter-cartridge assemblies may be highly radioactive. Exercise ALARA techniques when handling.

[ ] 2.2 Vehicle air cleaners may become a significant radiation source when driving in airborne radioactivity areas. Consideration should be given to removing the air cleaner cartridge prior to traversing a radioactive plume.

[ ] 2.3 Clearly label all radioactive material (samples) with the dose rate, time taken, location taken, and person sampling-at a minimum.

3. REQUIREMENTS

[ ] 3.1 A release of radioactive material has occurred or has the potential to occur.

[ ] 3.2 Operationally check all instruments prior to departure and leave instruments on.

[ ] 3.3 Ensure communications between Survey Teams and Field Team Coordinator (FTC) has been established prior to leaving the site.

[ ] 3.4 Check with the FTC to see if thyroid blocking has been authorized by the Emergency Director (ED).

[ ] 3.5 Obtain survey vehicle(s) keys from Access Control or Emergency Preparedness.

[ ] 3.6 Ensure vehicles to be used are properly fueled.

[ ] 3.7 Ensure the following equipment and materials are available, as needed:

[ ] 3.7.1 Survey vehicles (Primary - AWD window vans; Alternate - Radio equipped station vehicles).

[ ] 3.7.2 Thermoluminescent Dosimeter (TLD).

[ ] 3.7.3 Equipment and materials as per Procedure 5.7.21, Emergency Equipment Inventory.

4. GENERAL INSTRUCTIONS FOR SURVEY TEAMS

[ ] 4.1 Off-Site Radiological Survey Team(s) are under the direction of the Radiological Assessment Supervisor (RAS) and will communicate through the FTC. The RAS will be reviewing meteorological information to estimate the plume location. The RAS should dispatch the available survey teams to sample the following locations in order:

[ ] 4.1.1 ELEVATED RELEASE

[ ] 4.1.1.1 ~ 2 miles downwind.

[ ] 4.1.1.2 ~ 5 miles downwind.

[ ] 4.1.2 GROUND LEVEL RELEASE

[ ] 4.1.2.1 Site Boundary.

[ ] 4.1.2.2 2 miles downwind.

[ ] 4.2 A minimum of two persons shall be on each survey team. Teams will be formed from personnel assembled at the OSC, EOF, or AEOF. All teams shall receive an initial briefing on current plant status and radiological conditions prior to being dispatched. A team leader shall be designated for each team.

[ ] NOTE - KI use may only be authorized by the ED per Procedure 5.7.14. KI use will be discussed and appropriate attachment(s) of Procedure 5.7.14 will be completed.

[ ] 4.3 KI will be taken voluntarily at the direction of the Radiological Control Manager or Chemistry/RP Coordinator.

[ ] 4.4 Once the plume is located, a team shall traverse it (travel across it at right angles to the wind direction). Dose rates will increase as the centerline is reached, peak at the centerline, and decrease as the opposite edge is reached.

5. BOUNDARY SURVEYS

[ ] NOTE - Steps 5.1.1 through 5.1.8 may be performed by one survey team or several survey teams, depending on the plume location(s).

[ ] 5.1 BOUNDARY MONITORING

[ ] 5.1.1 Leave survey instruments on while traveling to survey starting point. Relay any increased readings to the FTC. Observation of the meter during transit will also establish a background reading.

[ ] 5.1.2 Survey the site area boundary as directed by the FTC. The extent of the boundary survey may be affected by conditions such as weather, river water level, and radio contact.

[ ] 5.1.3 At the monitoring location(s), perform Beta-Gamma dose rate measurement(s) at 3' and at 3" above the ground. Record the results on Attachment 1.

[ ] 5.1.3.1 High Gamma to Beta ratio indicates the plume is overhead.

[ ] 5.1.3.2 High Beta contribution indicates the plume is at ground level.

[ ] 5.1.3.3 A high 3" Beta reading compared to the 3' Beta reading indicates there is ground deposition.

[ ] 5.1.4 While traversing the plume, the centerline is determined as the location where dose rates peak. Air sampling should be performed at centerline per Step 6.2, when Beta readings indicate the plume is at ground level or there has been a ground deposition. A silver zeolite cartridge shall be used to obtain a gross iodine air sample.

[ ] 5.1.5 Attempt to approximate locations indicated on the survey map (Attachment 4 of this procedure) and take readings at each point. Record the results on Attachment 1.

[ ] 5.1.6 Record dosimetry readings on Attachment 1 periodically and whenever plume affected areas are exited.

[ ] 5.1.7 Exit plume and determine the iodine and particulate concentrations using Section 7.

[ ] 5.1.8 Relay survey results to the FTC.

[ ] 5.1.9 Teams shall be provided further sampling instructions by the RAS via the FTC.

[ ] 5.2 DOWNWIND MONITORING

[ ] 5.2.1 Conduct surveys at distances of ~ 2 and 5 miles downwind. Pre-determined monitoring locations at or near these distances may not correlate well with highways or roads. Approximations will need to be made. Communicate clearly when relaying location information to and from downwind survey teams.

[ ] NOTE - Steps 5.2.2 through 5.2.6 may be performed by one survey team or several survey teams, depending on the plume location(s).

[ ] 5.2.2 At monitoring location(s), teams shall traverse the plume and perform Beta/Gamma dose rate measurement(s) at 3' and at 3" above the ground. Record the results on Attachment 1.

[ ] 5.2.2.1 High Gamma to Beta ratio indicates the plume is overhead.

[ ] 5.2.2.2 High Beta contribution indicates the plume is at ground level.

[ ] 5.2.2.3 A high 3" Beta reading compared to the 3' Beta reading indicates there is ground deposition.

[ ] 5.2.3 While traversing the plume the centerline is determined as the location where dose rates peak. Air sampling should be performed at centerline per Step 6.2, when Beta readings indicate the plume is at ground level or there has been a ground deposition. A silver zeolite cartridge shall be used to obtain a gross iodine air sample.

[ ] 5.2.4 Record dosimetry readings on Attachment 1 periodically and whenever plume affected areas are exited.

[ ] 5.2.5 Having exited the plume, the team shall determine iodine and particulate concentrations using Section 7.

[ ] 5.2.6 Relay survey results to the FTC.

[ ] 5.2.7 Teams shall be provided further sampling instructions by the RAS via the FTC.

6. FIXED ENVIRONMENTAL AIR STATION FILTER RETRIEVAL/CHANGEOUT

[ ] 6.1 If requested by the RAS, retrieve/changeout the filter/cartridge assemblies at fixed environmental air sampling stations.

[ ] 6.1.1 Assemble the filter and appropriate cartridge(s) in their holders as directed by the RAS prior to approaching the station.

[ ] **CAUTION** - The retrieved filter-cartridge assemblies may be highly radioactive. Exercise ALARA techniques when handling.

[ ] **NOTE** - Key (J423) for sampling station gates is available on the vehicle key rings for the primary survey vehicles.

[ ] 6.1.2 Bag (separately) and label the retrieved filter and cartridge(s). Shield as required.

[ ] 6.2 PORTABLE AIR SAMPLING

[ ] **NOTE 1** - Assemble the filter and appropriate cartridge(s) in their holders and attach to the air sampler prior to entering the affected area. Use silver zeolite cartridges for radioiodines. Use charcoal cartridges for gross activity (iodines and noble gases). An estimate of noble gas activity may be obtained by subtracting the activity on a silver zeolite cartridge from the activity on a charcoal cartridge collected at the same place and time.

[ ] **NOTE 2** - Always install a particulate filter upstream of any cartridge(s).

[ ] **NOTE 3** - Ensure proper orientation (flow direction) of cartridge(s) if marked, or mark the cartridge if not marked.

[ ] 6.2.1 At the sampling location(s), draw air sample(s) as directed by the FTC.

[ ] 6.2.2 Record location(s) and results on Attachment 1.

[ ] 6.2.3 Separate, bag, and label the filter and cartridge(s).

[ ] 6.2.4 Leave the area of airborne radioactivity.

[ ] 6.2.5 Notify the FTC that the sample has been collected.

[ ] 6.2.6 For radioiodine and particulate concentration determinations, proceed to Section 7.

7. IN-FIELD AIR SAMPLE CONCENTRATION DETERMINATION

[ ] 7.1 GROSS IODINE

[ ] 7.1.1 Take a contact reading (through the bag) on the upstream face of the silver zeolite cartridge.

[ ] 7.1.2 On the appropriate figure of Attachment 2 (**Figure 1** for E-140 with pancake probe, **Figure 2** for ion chamber), find the reading obtained in Step 7.1.1 along the horizontal axis. Go up the chart until the appropriate sample volume line is reached, then left to a point on the vertical axis.

[ ] 7.1.3 If results cannot be obtained, proceed to Step 7.3.

[ ] 7.2 GROSS PARTICULATE

[ ] 7.2.1 Take a contact reading (through the bag) on the upstream face of the particulate filter.

[ ] 7.2.2 On the appropriate figure of Attachment 3 (**Figure 3** for E-140 with pancake probe, **Figure 4** for ion chamber), find the reading obtained in Step 7.2.1 along the horizontal axis of the graph. Go up the chart until the appropriate sample volume line is reached, then left to a point on the vertical axis of the graph. Record the gross particulate concentration in Attachment 1.

[ ] 7.2.3 If results cannot be obtained, proceed to Step 7.3.

[ ] 7.3 CONCENTRATION HAND-CALCULATION (ATTACHMENT 5)

[ ] 7.3.1 Take a contact reading (through the bag) on the upstream face of a sample.

[ ] 7.3.2 Use Attachment 5 to hand calculate the concentration of the air sampled. Be sure to use the correct correction factor for the sample media, instrument, and probe used to read the sample.

8. SOIL SAMPLING

[ ] 8.1 At the sampling location(s), collect one square meter of surface (< 1/4") soil and place in a bag.

[ ] 8.2 Double bag and label the sample.

9. WATER SAMPLING

[ ] 9.1 At the sampling location(s), select a standing body of water of sufficient depth to submerse the sample bottle. If a body of water is not sufficiently deep enough in the area to be sampled, scoop water using one bottle and deposit it into a second, until the second bottle is filled.

[ ] 9.2 Vertically submerse the sample bottle until the mouth of the bottle is just below the surface of the water. If the size of the body of water permits, move the bottle around carefully to skim as much surface water as possible.

[ ] 9.3 Cap the bottle, dry it, double bag, and label.

10. VEGETATION SAMPLING

[ ] 10.1 At the sampling location(s), select an area of vegetation of uniform height.

[ ] 10.2 Carefully collect one square meter of vegetation, cutting to within an inch of the ground.

[ ] 10.3 Double bag and label the sample.

11. SNOW SAMPLING

[ ] 11.1 At the sampling location(s), select an area which is undisturbed.

[ ] 11.2 Collect one square meter of surface (< 1/4") snow and place in bag.

[ ] 11.3 Double bag and label the sample.

12. SHIFT TURNOVER/TERMINATION

[ ] 12.1 SHIFT TURNOVER

[ ] 12.1.1 Contact the FTC to determine the desired location for delivery of the sample media and turnover location.

[ ] 12.1.2 Inform the FTC of supplies/equipment needed to continue monitoring. The relieving survey team should bring these items with them to the turnover location.

[ ] 12.1.3 Deliver sample media to the designated location.

[ ] 12.1.4 Meet the relieving survey team at the turnover location.

[ ] 12.1.5 Fully brief the relieving survey team on radiological conditions, samples taken, problems encountered, etc.

[ ] 12.1.6 Report to the RAS for a final debrief.

[ ] 12.2 TERMINATION

[ ] 12.2.1 Contact the FTC to determine the desired location for delivery of the sample media.

[ ] 12.2.2 Deliver sample media to the designated location.

[ ] 12.2.3 Report to the RAS for a final debrief.

[ ] 12.2.4 Return equipment/supplies to emergency lockers or other storage locations.

[ ] 12.2.5 Perform inventory of equipment using Procedure 5.7.21 and replace, as necessary.

[ ] 12.2.6 Return the survey vehicles to their designated parking areas or to a decon facility and return the keys to Access Control or Emergency Preparedness.

ATTACHMENT 1 FIELD MONITORING DATA

DATE: _____

TEAM DESIGNATION: _____

TEAM LEADER: _____ TEAM MEMBER: _____

MONITORING LOCATION	SURVEY TIME	NET DOSE RATE (mrem/hr)				AIR SAMPLE DATA			INTEGRATED DOSE	
		AT 3'		AT 3"					NAME	NAME
		GAMMA SHIELD CLOSED	BETA/ GAMMA SHIELD OPEN	GAMMA SHIELD CLOSED	BETA/ GAMMA SHIELD OPEN	SAMPLE VOLUME FT^3	GROSS IODINE µCi/cc	GROSS PART. µCi/cc	DOSIMETER READING	DOSIMETER READING

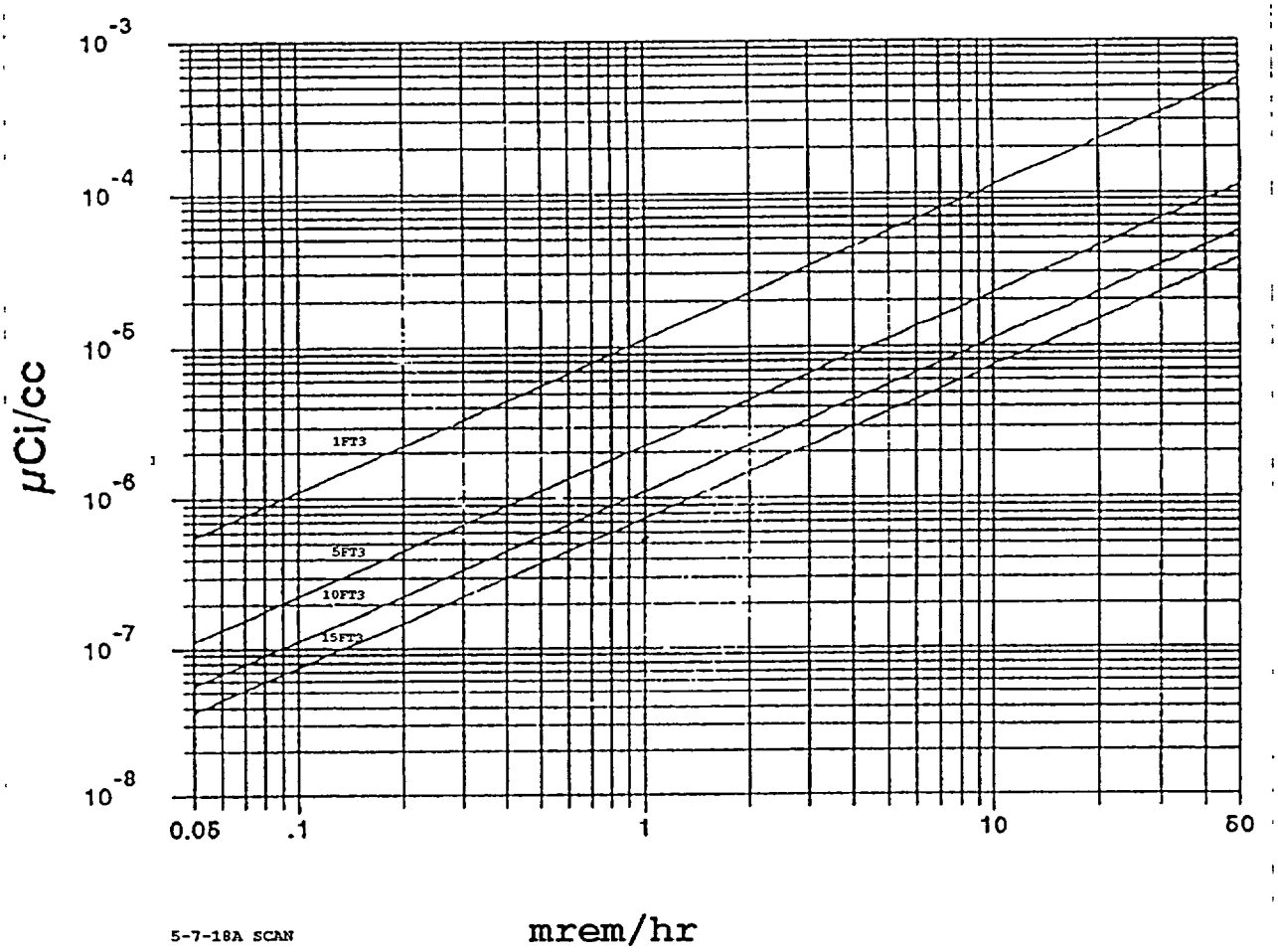


Figure 1 - E-140, PANCAKE PROBE; SILVER ZEOLITE CARTRIDGE

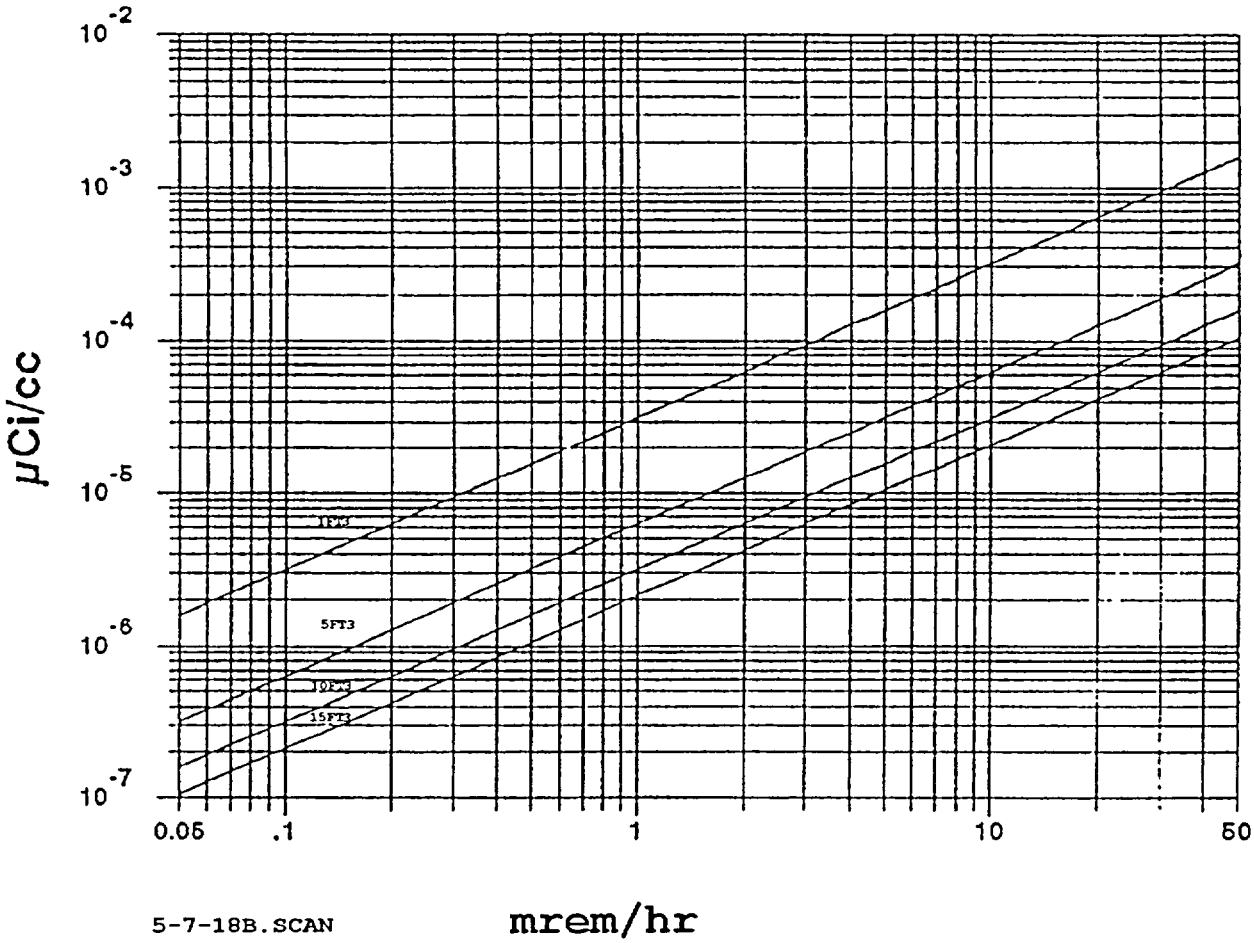


Figure 2 - ION CHAMBER; WINDOW OPEN SILVER ZEOLITE CARTRIDGE

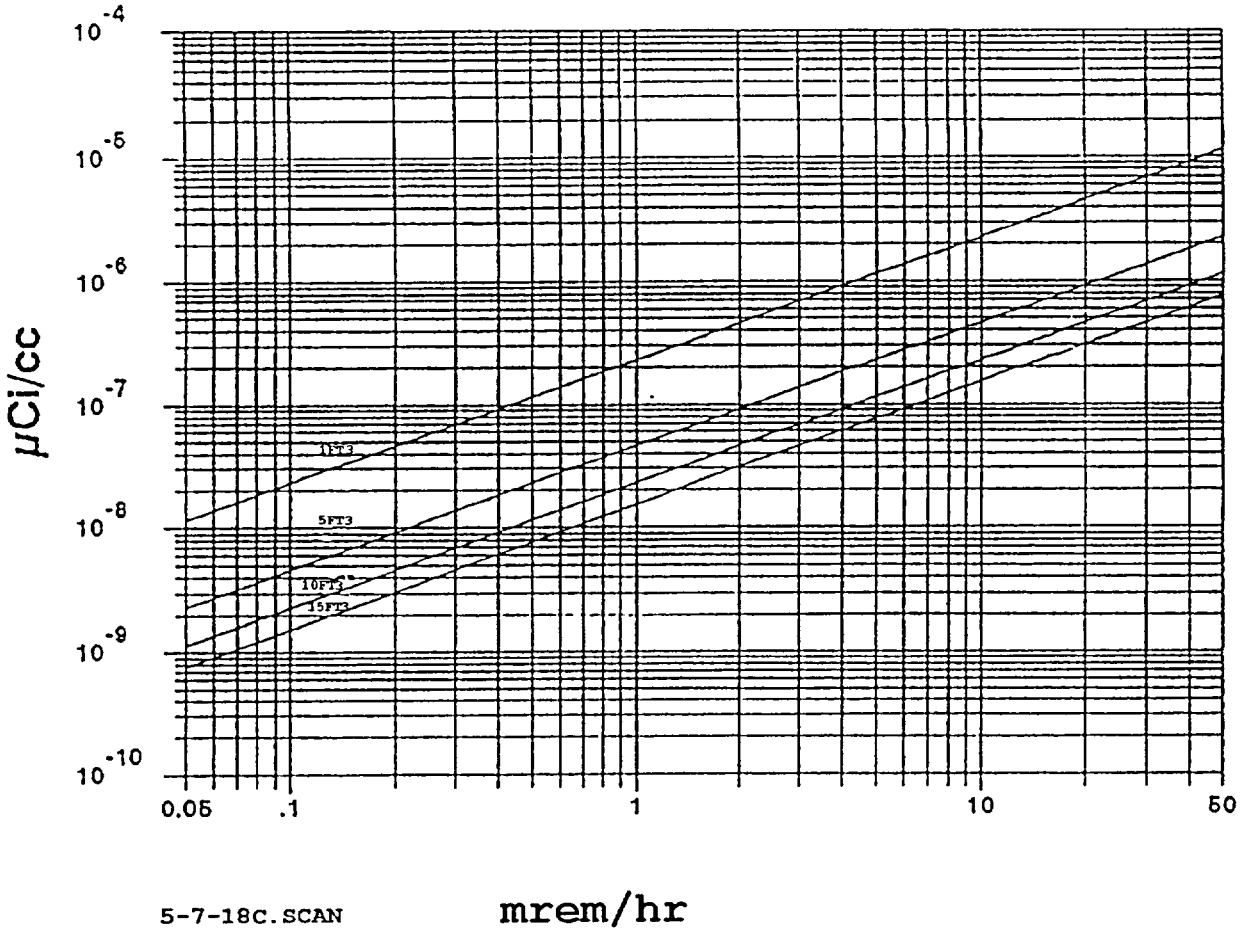


Figure 3 - E-140, PANCAKE PROBE; PARTICULATE FILTER

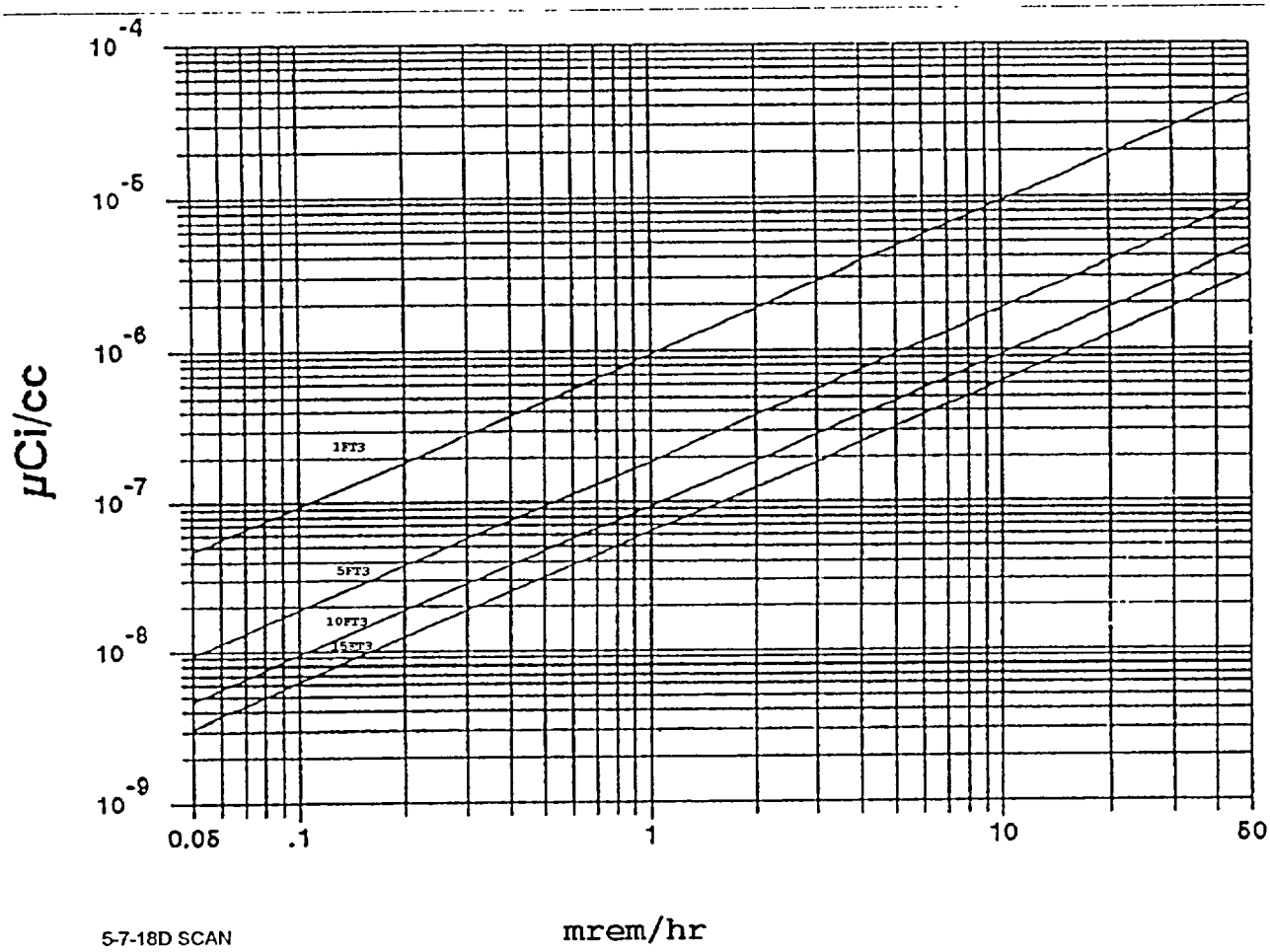
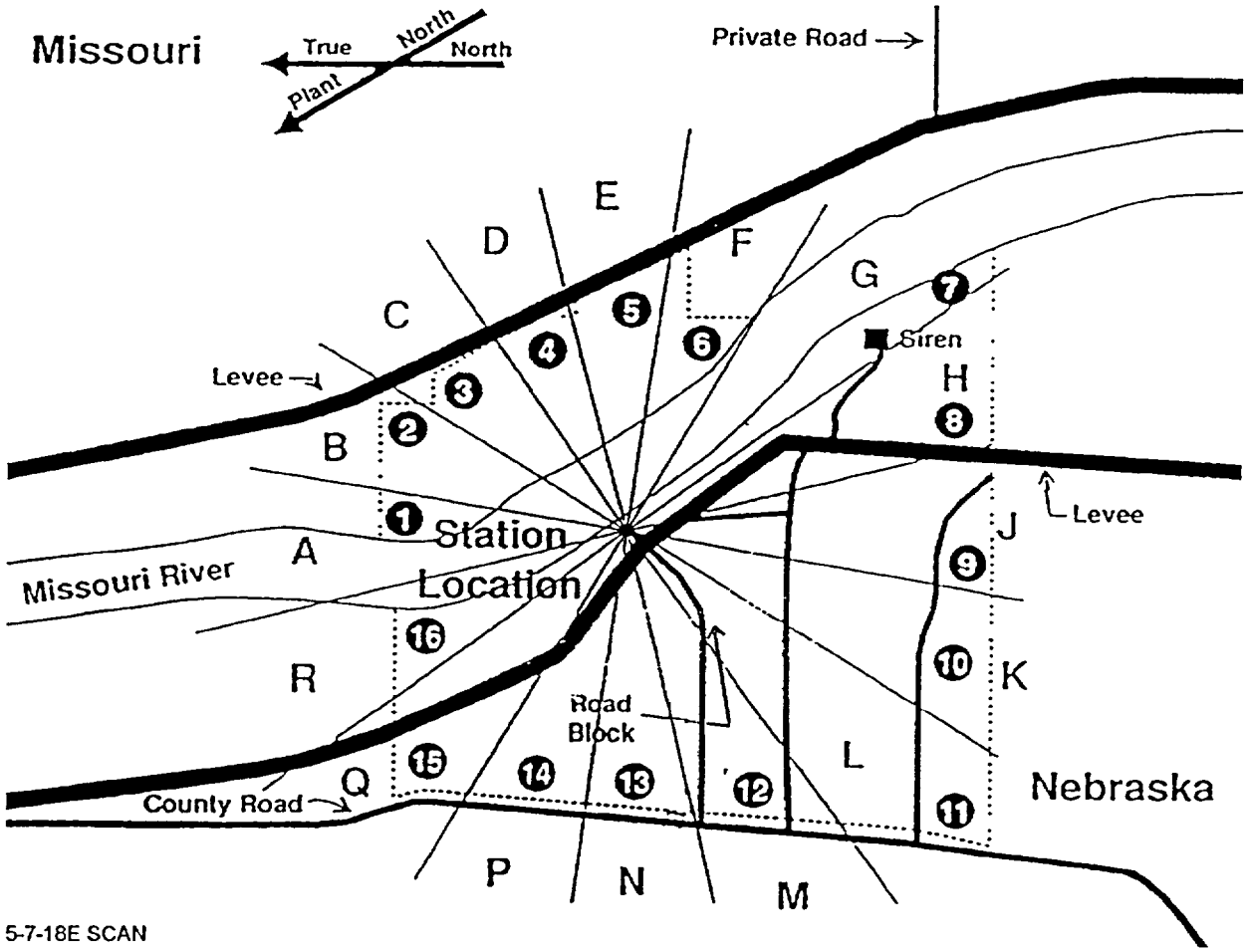


Figure 4 - ION CHAMBER; WINDOW OPEN PARTICULATE FILTER

STATION	DIRECTION	STATION	DIRECTION	STATION	DIRECTION	STATION	DIRECTION
1	N	5	E	9	S	13	W
2	NNE	6	ESE	10	SSW	14	WNW
3	NE	7	SE	11	SW	15	NW
4	ENE	8	SSE	12	WSW	16	NNW



5-7-18E SCAN

Concentrations of radioisotopes may be determined using the following formula:

Concentration of radioisotopes (μCi/cc)

$$= \frac{(3.53 \times 10^{-5}) \times (\text{mrem/hr contact reading})}{(\text{Cf}) \times (\text{sample volume in cubic ft})}$$

$$= \frac{(3.53 \times 10^{-5}) \times (\quad\quad)}{(\quad\quad) \times (\quad\quad)}$$

= _____ μCi/cc

where:

Cf is a correction factor dependant on:

1. Instrument type.
2. Probe type.
3. Sample collection media (particulate filter or cartridge).
4. Isotope/form of interest.

Cf values for the instruments and probe types used at CNS for particulates and iodides are listed below.

Instrument/Probe/Media	Cf	
Ion Chamber, Silver Zeolite	1.12	Iodides
E-140, Pancake Probe, Silver Zeolite	3.16	
Ion Chamber, Particulate Filter	37.7	Particulate
E-140, Pancake Probe, Particulate Filter	154.2	

The above Cf values were determined experimentally in the Laboratory using I-131 for iodides and Cs-137 for particulate.

1. DISCUSSION

1.1 In the event of a radiological release, data obtained from off-site surveys shall be used to verify projected release rates, concentrations, and doses. This data also provides a basis for making or modifying Protective Action Recommendations (PARs) per Procedure 5.7.20.

1.2 Once a release is in progress, downwind survey teams shall be used to make gross iodine determinations based upon air sample results. These gross iodine determinations will be correlated against projected iodine concentrations to verify the adequacy of Protective Action Recommendations (PARs). Correlations between actual field sample readings and projected concentrations should be made periodically as long as a release is in progress.

1.3 Once the release is terminated, additional field sampling results (i.e., soil, vegetation, water) shall be taken to determine the radiological impact and aid in re-entry decision making. These determinations and decisions will involve State and Federal agencies.

2. REFERENCES

2.1 CODE AND STANDARDS

2.1.1 Environmental Protection Agency (EPA) 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, May 1992.

2.1.2 FEMA-REP-2, Guidance on Off-Site Emergency Radiation Measurement Systems.

2.1.3 NPPD Emergency Plan for CNS.

2.1.4 NUREG 0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.2 PROCEDURES

2.2.1 Emergency Plan Implementing Procedure 5.7.14, Stable Iodine Thyroid Blocking (KI).

2.2.2 Emergency Plan Implementing Procedure 5.7.20, Protective Action Recommendations.

2.2.3 Emergency Plan Implementing Procedure 5.7.21, Emergency Equipment Inventory.

2.3 MISCELLANEOUS

2.3.1 NRC Inspection Report 91-12, Emergency Preparedness Annual Inspection Report.

2.3.2 QA Audit QA-86-06.

2.3.3 QA Audit QA-89-03.