Grand Gulf Nuclear Station

After Action Report/ Improvement Plan

Drill Date - November 05, 2009

Radiological Emergency Preparedness (REP) Program

FEMA

Published December 04, 2009

This page is intentionally blank.

Grand Gulf Nuclear Station

After Action Report/Improvement Plan

Published December 04, 2009

Contents

This page is intentionally blank.

EXECUTIVE SUMMARY

On November 5, 2009, an out-of-sequence Reception Center drill was conducted for the Grand Gulf Nuclear Station (GGNS), located in Port Gibson, Claiborne County, Mississippi. Personnel from the U.S. Department of Homeland Security/Federal Emergnecy Management Agency (DHS/FEMA) Region VI evaluated all activities. The purpose of the drill was to assess the level of preparedness of local responders to react to a simulated radiological emergency at GGNS. This was the first time Richmond Civic Center in Tallulah was used as a reception center. The previous plume exercise was conducted on September 9, 2009.

Personnel from the State of Louisiana, Tensas Parish, Madison Parish, and Grand Gulf Nuclear Station participated in the drill. Cooperation and teamwork of all the participants was evident during the drill and DHS/FEMA wishes to acknowledge these efforts.

This report contains the final evaluation of the out-of-sequence drill. The participants demonstrated knowledge of their emergency response plans and procedures. There were no Deficiencies or Planning Issues identified and one Area Requiring Corrective Action (ARCA) corrected during the drill.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Grand Gulf Nuclear Station

Type of Exercise
Drill

Exercise Date
November 05, 2009

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radiological Emergency

1.2 Exercise Planning Team Leadership

Lisa Hammond
RAC Chair
FEMA Region VI
Technical Hazards Branch Chief
800 N. Loop 288
Denton, Texas, 76209
940-898-5199
lisa.hammond@dhs.gov

Bill Bischof
Lead Planner
FEMA Region VI
Technical Hazards Specialist
800 N. Loop 288
Denton, Texas, 76209
940-898-5562
bill.bischof@dhs.gov

Greg Gothard
State Planner
Louisiana Department of Environmental Quality
Environmental Scientist
602 N. Fifth St.
Baton Rouge, Louisiana, 70802
225-219-3627
greg.gothard@la.gov

Rick Foster
Parish Planner
Tensas Parish Office of Homeland Security and Emergency Preparedness
Emergency Management Director
P.O. Box 768
St. Joseph, Louisiana, 71366
318-766-3992
tpoep1@bellsouth.net

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Grand Gulf Nuclear Station drill:

- Risk Jurisdictions
  - Tensas Parish
- Support Jurisdictions
  - Madison Parish
  - Village of Richmond
  - Tallulah Fire Department
  - Bear Lake Fire Department
  - Northeast Louisiana Ambulance Service
  - Tallulah Police Department
- Private Organizations
  - Grand Gulf Nuclear Station
  - American Red Cross - Northeast Louisiana Chapter

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region VI Office evaluated the drill on November 5, 2009 to assess the capabilities of local emergency preparedness organizations in implementing their Radiological Emergency Response Plans and procedures to protect the public health and safety during a radiological emergency involving Grand Gulf Nuclear Station (GGNS). The purpose of this report is to present the results and findings on the performance of the offsite response organizations during a simulated radiological emergency.

2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and identified Capabilities/REP Criteria selected to be exercised are discussed in the Exercise Plan (EXPLAN), Appendix D.

2.3 Scenario Summary

The drill scenario was developed to evaluate the response of drill participants to an incident requiring evacuation of the public from the Louisiana portion of the 10-mile Emergency Planning Zone surrounding the Grand Gulf Nuclear Station. The drill scenario provided for the evaluation of the Madison Parish Reception Center's ability to conduct monitoring, decontamination and registration of evacuees. A separate walk-through of the congregate care facility was conducted to ensure that services and accommodations provided at the Tallulah Community Center were consistent with established American Red Cross guidelines.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Drill Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities that participated in the November 5, 2009, drill evaluation to test the offsite emergency response capabilities of local governments in the 10-mile Emergency Planning Zone surrounding the Grand Gulf Nuclear Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in the exercise evaluation areas as outlined in the April 25, 2002, Federal Register, Radiological Emergency Preparedness: Evaluation Methodology. Detailed information on the exercise evaluation area criteria and the extent of play agreement used in this drill are found in Appendix D of this report.

3.2 Summary Results of Drill Evaluation

The matrix presented in Table 3.1 on the following page, presents the status of all exercise evaluation area criteria that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status is indicated by the use of the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercise)

D - Deficiency assessed

A - ARCAs assessed or unresolved ARCAs from previous exercises

P - Plan Issue

N - Not Demonstrated

Table 3.1 - Summary of Drill Evaluation

DATE: 2009-11-05 SITE: Grand Gulf Nuclear Station, MS M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Madison RC
Emergency Operations Management		
Mobilization	1a1	
Facilities	1b1	
Direction and Control	1c1	
Communications Equipment	1d1	
Equip & Supplies to support operations	1e1	M
Protective Action Decision Making		
Emergency Worker Exposure Control	2a1	
Radiological Assessment and PARs	2b1	
Decisions for the Plume Phase -PADs	2b2	
PADs for protection of special populations	2c1	
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1	
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1	
Protective Action Implementation		
Implementation of emergency worker exposure control	3a1	M
Implementation of KI decision	3b1	
Implementation of protective actions for special populations - EOCs	3c1	
Implementation of protective actions for Schools	3c2	
Implementation of traffic and access control	3d1	
Impediments to evacuation are identified and resolved	3d2	
Implementation of ingestion pathway decisions - availability/use of info	3e1	
Materials for Ingestion Pathway PADs are available	3e2	
Implementation of relocation, re-entry, and return decisions.	3f1	
Field Measurement and Analysis		
Adequate Equipment for Plume Phase Field Measurements	4a1	
Field Teams obtain sufficient information	4a2	
Field Teams Manage Sample Collection Appropriately	4a3	
Post plume phase field measurements and sampling	4b1	
Laboratory operations	4c1	
Emergency Notification and Public Info		
Activation of the prompt alert and notification system	5a1	
Activation of the prompt alert and notification system - Fast Breaker	5a2	
Activation of the prompt alert and notification system - Exception areas	5a3	
Emergency information and instructions for the public and the media	5b1	
Support Operations/Facilities		
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1	M
Mon / decon of emergency worker equipment	6b1	
Temporary care of evacuees	6c1	M
Transportation and treatment of contaminated injured individuals	6d1	

3.3 Criteria Evaluation Summaries

3.3.1 Support Jurisdictions

3.3.1.1 Madison Reception Center

a. MET: 1.e.1, 3.a.1, 6.a.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 1.e.1.

ISSUE NO.: 28-09-1e1-A-01

CRITERION: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.

CONDITION: The Personnel Monitoring Team did not perform an operational check on the portal monitor according to procedure.

POSSIBLE CAUSE: The Personnel Monitoring Team may not have been sufficiently trained and did not refer to the documented procedure.

REFERENCE: NUREG-0654 H.10

EFFECT: An evacuee entering the reception center through the portal monitor could have been found to be free of contamination, but actually be contaminated. Contamination could have then been spread throughout the reception center.

CORRECTIVE ACTION DEMONSTRATED: Additional coaching was provided to the Personnel Monitoring Team on the proper technique to perform an operational check on the portal monitor.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

SECTION 4: CONCLUSION

Based on the results of the drill, the offsite radiological emergency response plans and preparedness for the State of Louisiana and the affected local jurisdictions are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency. Therefore, 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Louisiana site-specific to GGNS will remain in effect.

APPENDIX A: BEST PRACTICES

1. Northeast Louisiana Ambulance Service

Summary: As part of the reception center support staff and agencies, an ambulance with a 2 man crew were staged and ready to treat evacuees and/or transport a contaminated evacuee to the hospital if needed.

Description: Behind the building there was an exit door from the Monitoring and Decontamination station, an ambulance with a driver and Emergency Medical Technician were staged and ready to treat evacuees and/or transport a contaminated evacuee requiring additional decontamination at a hospital. The ambulance crew were aware of their responsiblities in treating and transporting potentially contaminated individuals. The ambulance was equipped with the necessary medical and radiological equipment and supplies to treat a contaminated individual. They worked closely with the Monitoring and Decontamination station team for emergency worker exposure control.

2. Equipment operational checks

Summary: Operational checks of survey meters and zeroing of dosimeters were performed by one assigned staff member at the equipment distribution table. This practice ensured that all operational checks were performed correctly and all dosimeters were zeroed before distribution.

Description: The Officer-In-Charge at the Madison Parish Reception Center assigned one staff member to perform operational checks on all survey meters and to zero dosimeters in each of the three station kits (vehicle monitoring, personnel monitoring, and personnel decontamination). This practice ensured consistency, operational checks were performed on each survey meter, and all dosimeters in each station kit were zeroed and functioning correctly before distribution. During operational checks, one survey meter was found to be malfunctioning and that survey meter was put aside and a correctly functioning survey meter put into service quickly.

APPENDIX B: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2009-11-05, SITE: Grand Gulf Nuclear Station, MS

LOCATION	EVALUATOR	AGENCY
Madison Reception Center	Bill Bischof Brad DeKorte Elsa Lopez *Tim Pflieger	DHS/FEMA DHS/FEMA DHS/FEMA DHS/FEMA
* Team Leader		

APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ARC	American Red Cross
ARCA	Areas Requiring Corrective Action
DRD	Direct Reading Dosimeters
EMD	Emergency Management Director
EOC	Emergency Operations Center
EOP	Extent of Play
EPZ	Emergency Planning Zone
EW	Emergency Worker
FEMA	Federal Emergency Management Agency
GGNS	Grand Gulf Nuclear Station
NRC	Nuclear Regulatory Commission
OEM	Office of Emergency Management
OEP	Office of Emergency Preparedness
OIC	Officer In Charge
PAA	Protective Action Areas
PPE	Personal Protective Equipment
RAC	Regional Assistance Committee
RC	Reception Center
REP	Radiological Emergency Preparedness
RO	Radiological Officer
TLD	Thermoluminescent Dosimeter

APPENDIX D: EXERCISE PLAN

Madison Reception Center Extent of Play 2009

Richmond Civic Center
589 Wood Street
Tallulah, LA

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.e – Equipment and Supplies to Support Operations

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H.7; J.10.a, b, e; J.11; K.3.a)

Locations

Madison Reception Center

Extent of Play

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted.

ARCAs None

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.a – Implementation of Emergency Worker Exposure Control

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b)

Locations

Madison Reception Center

Extent of Play

Area dosimetry will be used at the reception center vehicle monitoring, personnel monitoring, and personnel decontamination stations.

Personnel at the Madison Reception Center will wear simulated TLDs for the evaluation.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted.

ARCAs None

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.a – Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.a)

Locations

Madison Reception Center

Extent of Play

The capability to monitor 20% of the Tensas Parish evacuees living in the 10-mile EPZ over a 12-hour period will be demonstrated. To meet 20% requires (20% of 3,625 population) a monitoring capability of 1 evacuee per minute.

Six people will simulate evacuees for demonstration. One portal monitor will be set up and the 6 evacuees processed. One of the six will be simulated contaminated. One monitoring station for contaminated evacuees will be set up and the contaminated individual will be processed to the decontamination station. Decontamination will be evaluated by demonstration and further discussion.

Handling of potentially contaminated personal belongings will be demonstrated by discussion.

Note: The reception center emergency workers will setup the female monitoring/decontamination plan for ease of access during the drill. However, the gender monitored and decontaminated will most likely be male for the purposes of this demonstration.

One vehicle will be monitored for contamination. The vehicle will not proceed to the segregated parking area after monitoring. The segregated parking area will not be set up to receive vehicles, but will be available for viewing and discussion.

A roster indicating 24-hour coverage for the reception center will be available. A shift change will not be demonstrated at this location, but may be discussed out of sequence with the Emergency Manager/Officer-in-Charge.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted.

ARCAs None

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.c- Temporary Care of Evacuees

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h; J.12)

Locations

Madison Reception Center, Tallulah Community Center

Extent of Play

The selected shelter will be evaluated by discussion and walk-through on November 5 at Tallulah Community Center.

ARCAs None

GENERAL EXTENT-OF-PLAY (EOP):

1. With regard to last minute additions or changes to any previously approved Extent-of-Play, all suggested changes must be forwarded to the RAC Chair for approval.

2. The goal of all offsite response organizations (ORO) is to protect the health and safety of the public. This goal is achieved through the execution of appropriate plans and procedures. It is recognized that situations may arise that could limit the organizations in the exact execution of these plans and procedures.

3. In the event of an unanticipated situation, OROs are permitted to exercise flexibility in the implementation of their plans and procedures in order to successfully achieve the objective of protection of public health and safety and protection of the environment.

4. As a statement of fact, no ORO will deliberately deviate from its plans and procedures with the intent of avoiding responsibility.

References:

As indicated in the Extent-of-Play Agreement, the State of Louisiana requests the option to correct issues immediately as defined in FEMA Policy Paper, Strategic Review Steering Committee, Initiative 1.5, correct Issues Immediately, effective March 31, 2000, signed by Kay C. Goss, CEM, Associate Director for Preparedness, Training and Exercises. Acceptable locations/activities for on the spot correction are clearly indicated in the extent of play portion under each criterion.

CUE CARDS

Cue Card #: **1**
Time: If the Reception Center did not receive a call from the Tensas Parish EOC

To: Madison Reception Center Director

From: Reception Center Controller

**********THIS IS A DRILL**********

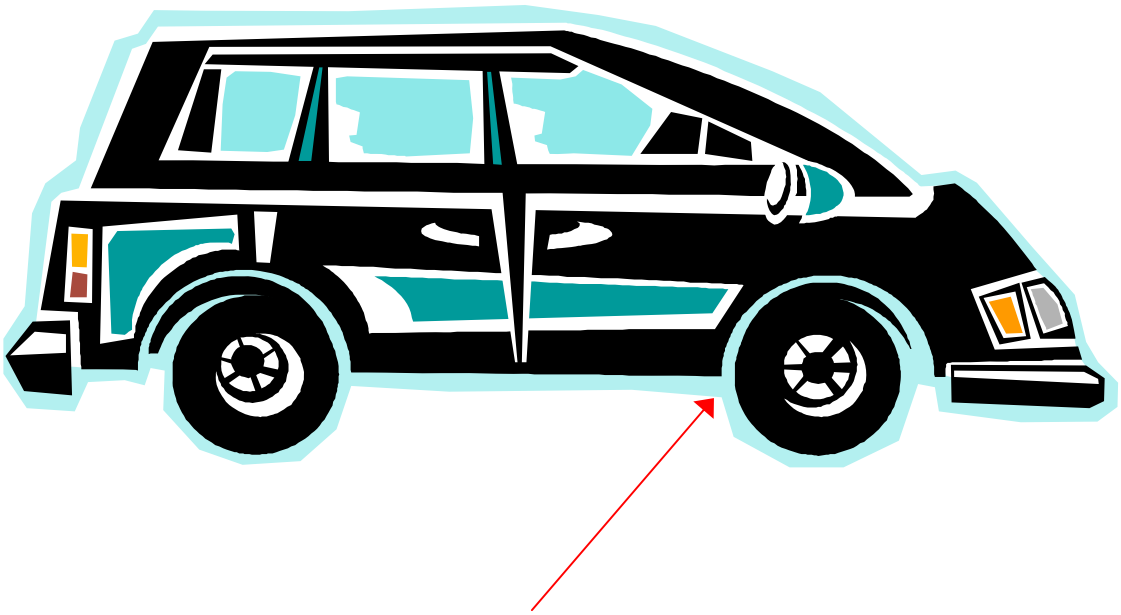
You have just received a request from the Tensas Parish EOC that evacuation process is underway following an emergency at GGNS. The evacuees have been directed to Madison Reception Center in Madison Parish. The Center needs to be activated and its personnel need to be mobilized immediately to respond to this emergency.

**********THIS IS A DRILL**********

Note: Controller! Interject this message only if Tensas Parish EOC fails to initiate the call.

Cue Card #: **2**
Time: While vehicle is being monitored

*****************************THIS IS A DRILL*****************************



At this location show cue card 1-A

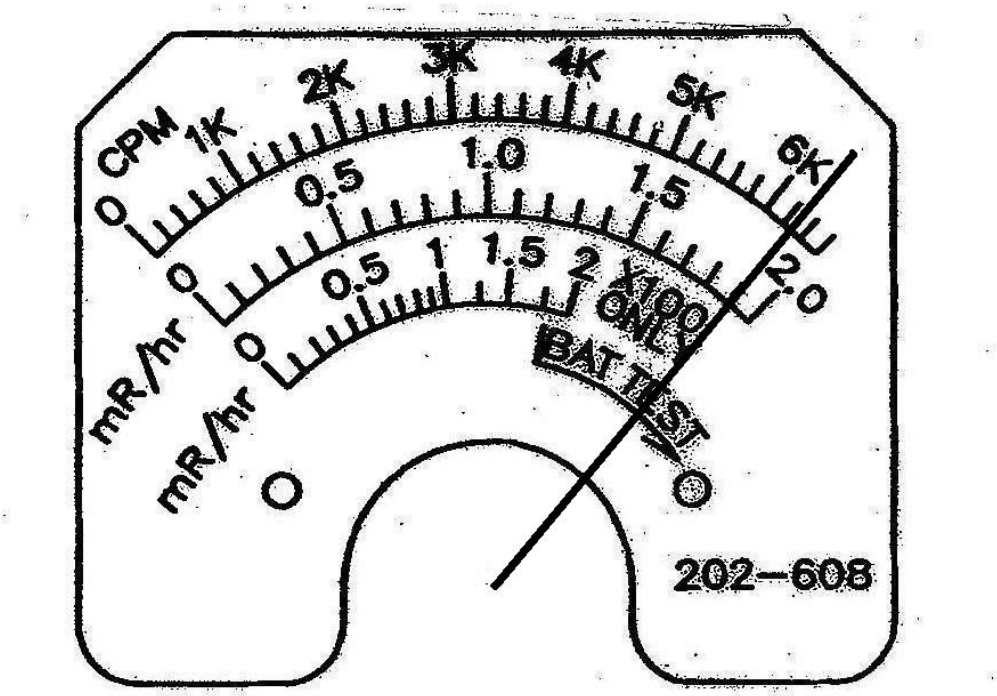
*****************************THIS IS A DRILL*****************************

Cue Card #: 2-A

To: Vehicle Monitor

From: Vehicle Monitor Controller

*********************************THIS IS A DRILL*********************************



X 0.1

*********************************THIS IS A DRILL*********************************

Cue Card #: 2-B

*****************************THIS IS A DRILL*****************************

EXPECTED RESPONSE

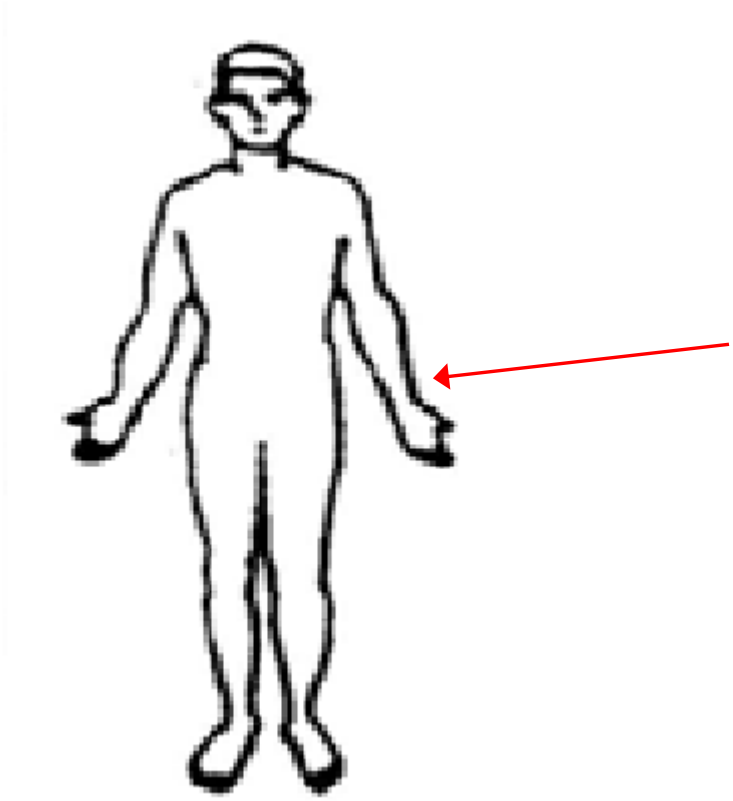
- Vehicle monitor reads survey meter at 0.19 mR/hr near front wheel well.
- Car is considered contaminated.
- Contaminated car procedures should be followed.

*****************************THIS IS A DRILL*****************************

Cue Card #: 3

Time: While person is being monitored

*********************************THIS IS A DRILL*********************************



At this location show cue card 2-A

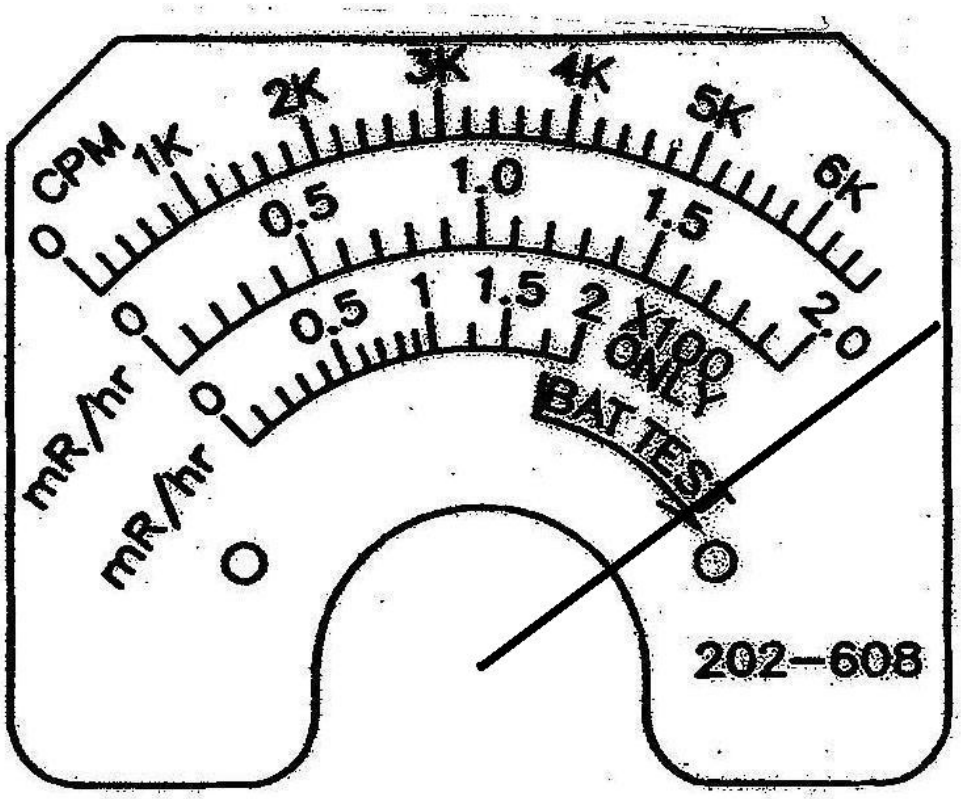
*********************************THIS IS A DRILL*********************************

Cue Card #: 3-A

To: Personnel Monitor

From: Personnel Monitor Controller

*****************************THIS IS A DRILL*****************************



X 0.1

*****************************THIS IS A DRILL*****************************

Cue Card #: 3-B

*****************************THIS IS A DRILL*****************************

EXPECTED RESPONSE

- Personnel monitor will read survey monitor at > 0.2 mR/hr.
- Monitor will recognize the survey meter has exceeded the X 0.1 scale.
- Monitor will change meter from X 0.1 scale to X 1 scale.

- **After personnel monitor has successfully completed, show cue card #2-C**

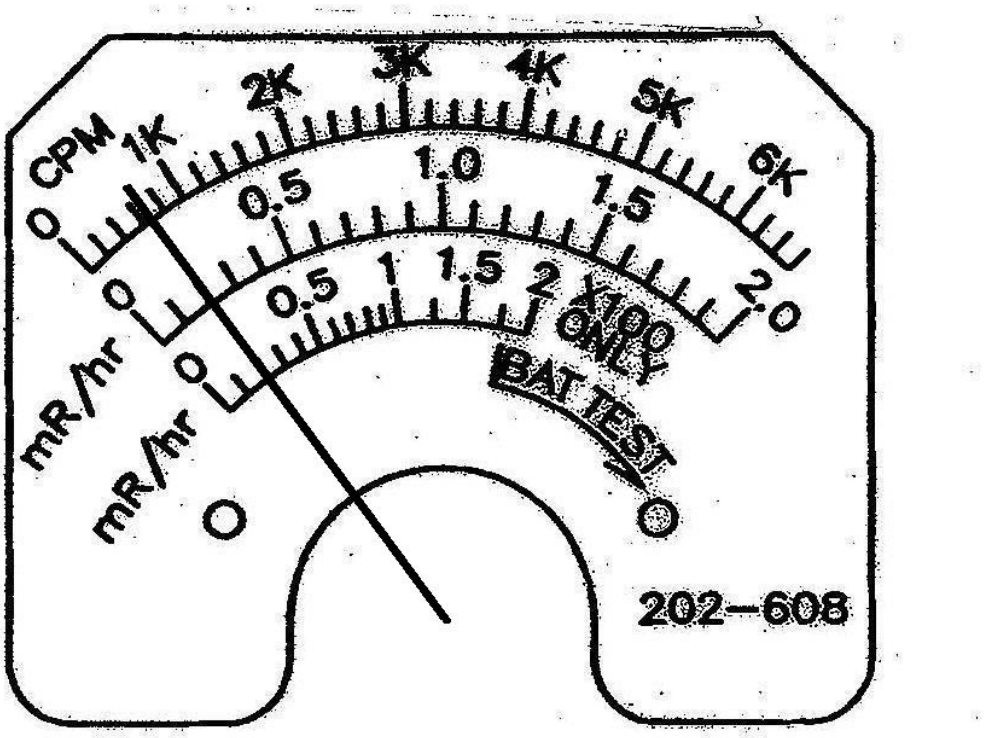
*****************************THIS IS A DRILL*****************************

Cue Card #: 3-C

To: Personnel Monitor

From: Personnel Monitor Controller

*****************************THIS IS A DRILL*****************************



X 1

*****************************THIS IS A DRILL*****************************

Cue Card #: 3-D

*****************************THIS IS A DRILL*****************************

EXPECTED RESPONSE

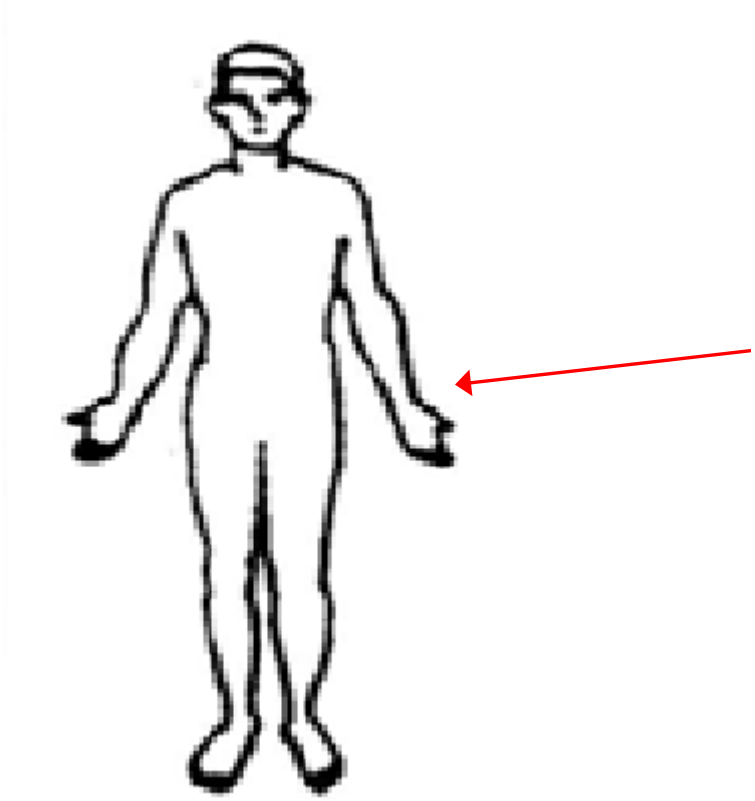
- Personnel monitor reads meter at 0.2 mR/hr near individual's left wrist.
- Personnel monitor continues surveying until complete.
- Individual surveyed is considered contaminated.
- Procedures are followed for contaminated individuals.

*****************************THIS IS A DRILL*****************************

Cue Card #: 4

Time: After individual decontamination

********************************THIS IS A DRILL********************************



Cue card 3-A refers to this location

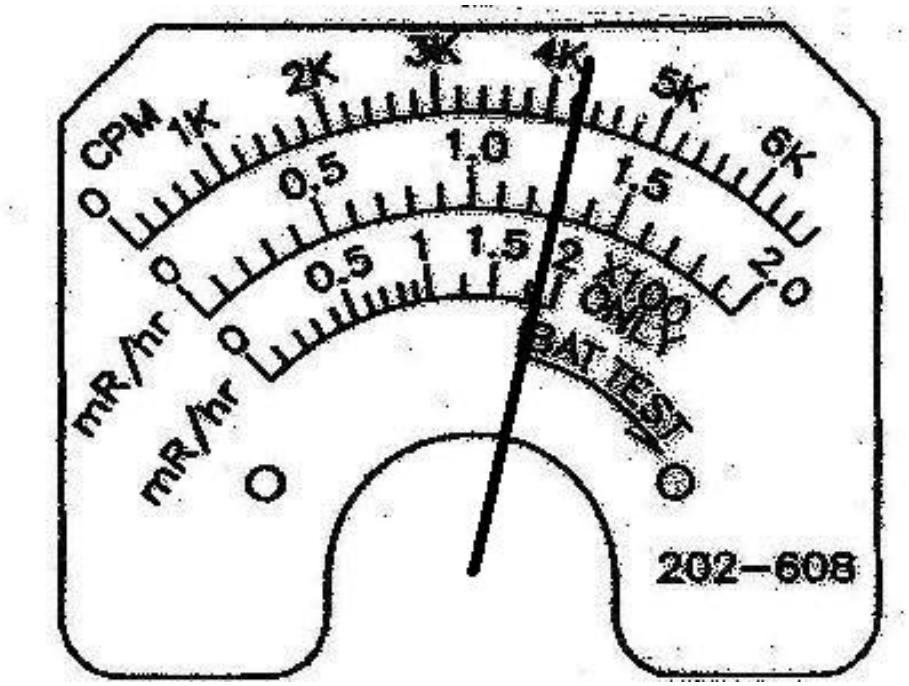
********************************THIS IS A DRILL********************************

Cue Card #: 4-A

To: Decontamination Monitor

From: Decontamination Monitor Controller

*********************************THIS IS A DRILL*********************************



X 0.1

*********************************THIS IS A DRILL*********************************

Cue Card #: 4-B

*****************************THIS IS A DRILL*****************************

EXPECTED RESPONSE

- Decontamination monitor reads meter at 0.13 mR/hr.
- Individual is considered no longer contaminated.
- Procedures are followed for allowing decontaminated individuals to continue to registration.

*****************************THIS IS A DRILL*****************************

This page is intentionally blank.