U.S. Department of Homeland Security
Region VI
800 N. Loop 288
Denton, TX 76209-3698

FEMA

December 14, 2011

Mr. Elmo E. Collins, Jr.
Regional Administrator, U.S. NRC, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

Dear Mr. Collins:

Enclosed is a copy of the radiological emergency preparedness final report for the Comanche Peak Nuclear Power Plant (CPNPP) Emergency Worker Monitoring and Decontamination drill evaluated on November 15, 2011, by the U.S. Department of Homeland Security/Federal Emergency Management Agency Region 6. My staff evaluated Hood County's Emergency Worker Monitoring and Decontamination drill at the City Park Pool. There were no Deficiencies and one Area Requiring Corrective Action (ARCA) identified and corrected during the drill. One Plan Issue was also identified as a result of the drill.

Based on the results of the drill, the offsite radiological emergency response plans and preparedness for the CPNPP 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 approvals of the offsite radiological emergency response plans and preparedness for the State of Texas site-specific to CPNPP will remain in effect.

A copy of this report was provided to Ms. Lisa Gibney at NRC Headquarters as well as the NRC Headquarters Document Control Desk. Should you have questions, please contact me at (940) 898-5199, or Linda Gee, Radiological Emergency Preparedness Site Specialist, at (940) 898-5368.

Sincerely,

Lisa R. Hammond
RAC Chair

Enclosure

cc: DHS/FEMA Headquarters - Vanessa Quinn
TDEM - W. Nim Kidd - CEM
TX DSHS, Radiation Control Program - Dr. David Lakey
CPNPP Manager of Emergency Preparedness - Robert Kidwell

Comanche Peak Nuclear Power Plant

After Action Report/ Improvement Plan

Drill Date - November 15, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

Published December 15, 2011

This page is intentionally blank.

Comanche Peak Nuclear Power Plant

After Action Report/Improvement Plan

Published December 15, 2011

Contents

This page is intentionally blank.

EXECUTIVE SUMMARY

On November 15, 2011, an Emergency Worker Monitoring and Decontamination drill was conducted for the Comanche Peak Nuclear Power Plant (CPNPP), located near Glen Rose, Texas. Personnel from the U.S. Department of Homeland Security/Federal Emergency 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 the CPNPP.

Personnel from Indian Harbor Volunteer Fire Department, Granbury Volunteer Fire Department, Hood County Sheriff's Office, and CPNPP participated in the drill. Evaluation Areas demonstrated included: Emergency Operations Management, Portective Action Implementation, and Support Operations/Facilities. Cooperation and teamwork of all participants was evident during the drill, and DHS/FEMA Region VI 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 and adequately implemented them. There were no Deficiencies and one Areas Requiring Corrective Action (ARCAs), corrected during the drill. In addition, one Plan Issue was identified as a result of the drill.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Comanche Peak Nuclear Power Plant

Type of Exercise
Drill

Exercise Date
November 15, 2011

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
Technological Hazards Branch Chief
800 North Loop 288
Denton, Texas, 76209
940-898-5199
lisa.hammond@dhs.gov

Linda Gee
Federal Planning Team Lead
FEMA Region VI
Techological Hazards Program Specialist
800 N. Loop 288

Denton, Texas, 76209
940-898-5368
linda.gee@fema.dhs.gov

Glenn Corbin
State Planning Team Lead
Texas Department of State Health Services
State Health Emergency Planner
Radiation Control Program, Environmental Monitoring
P. O. Box 149347
Austin, Texas, 78714
512-834-6770
glenn.corbin@dshs.state.tx.us

James "Jim" Ogden
Utility Exercise Planner
Comanche Peak Nuclear Power Plant
Offsite Emergency Planner
P. O. Box 1002
Glen Rose, Texas, 76042
254-897-6470
jogden2@luminant.com

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Comanche Peak Nuclear Power Plant drill:

- Risk Jurisdictions
  - Granbury Volunteer Fire Department
  - Hood County Fire Marshall | Emergency Management Office
  - Hood County Sheriff's Office
- Support Jurisdictions
  - Indian Harbor Volunteer Fire Department

Private Organizations

Comanche Peak Nuclear Power Plant

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region VI Office evaluated the drill on November 15, 2011 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 Comanche Peak Nuclear Power Plant (CPNPP). 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 C.

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 10-mile Emergency Planning Zone surrounding Comanche Peak Nuclear Power Plant. The drill scenario provided for the evaluation of the Hood County Emergency Worker Monitoring and Decontamination operation and the ability to test monitoring, decontamination of emergency workers, vehicles and equipment.

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 August 15, 2011, drill evaluation to test the offsite emergency response capabilities of local governments in the 10-mile Emergency Planning Zone surrounding Comanche Peak Nuclear Power Plant.

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 C 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: 2011-11-15 SITE: Comanche Peak Nuclear Power Plant, TX M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Granbury EW Decon
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	P
Temporary care of evacuees	6c1	
Transportation and treatment of contaminated injured individuals	6d1	

3.3 Criteria Evaluation Summaries

3.3.1 Texas Jurisdictions

3.3.1.1 Granbury Emergency Worker Monitoring/Decontamination Station

In summary, the status of DHS/FEMA criteria for this location is as follows:

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

ISSUE NO.: 14-11-6b1-A-01

CRITERION: Facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG_0654, K.5.b)

CONDITION: The vehicle monitor held probe with the window facing away from the area to be monitored, the probe was moved too quickly, and the survey meter cord and probe cover were dragged across the vehicle's surface.

POSSIBLE CAUSE: The monitor did not follow procedures concerning proper survey technique or lacked proper survey technique training.

REFERENCE: NUREG-0654, K.5.b

EFFECT: Any contamination present might not be detected by moving the probe too quickly over the surface and having the probe window face away from the surface. Also, any contamination present would be spread to uncontaminated areas by dragging the survey meter cord and probe cover across the vehicle surface.

CORRECTIVE ACTION DEMONSTRATED: The vehicle monitor demonstrated proper survey technique procedures after additional training was provided.

c. DEFICIENCY: None

d. PLAN ISSUES: 6.b.1.

ISSUE NO.: 14-11-6b1-P-02

CRITERION: Facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG_0654, K.5.b)

CONDITION: There are no provisions provided in the Hood County's procedure (Annex W/Tab E/Appendix 4) for vehicles and equipment that cannot be decontaminated; specifically a designated controlled area for vehicles and equipment found to be contaminated.

Additionally, the procedure does not include a method for record keeping or documenting contamination found on emergency workers, and emergency worker vehicles and equipment.

POSSIBLE CAUSE: The vehicle monitoring and decontamination team members did not have a procedure to follow for handling contaminated emergency worker vehicles and equipment. The procedure also did not include a reference to a body survey form or a vehicle summary form, or some other type of record keeping method to document contamination.

REFERENCE: NUREG-0654, K.5.b

EFFECT: Since there's no provision for handling contaminated vehicles in the procedure (Hood County Annex W/Tab E/Appendix 4), it's unclear as to where a designated parking location will be set up and how emergency workers manage this. Therefore, there's a potential that contamination could be spread from the contaminated vehicles and equipment.

In addition, the current procedure doesn't provide any record keeping method for processing contaminated emergency workers, vehicles and equipment. This could result in delays and confusion while processing potentially contaminated emergency workers, vehicles and equipment.

RECOMMENDATION: Revise the procedure to include specific details for handling contaminated vehicles and equipment; specifically a designated controlled area for vehicles and equipment found to be contaminated. In addition, include a record keeping method to document contaminated emergency workers, vehicles and equipment.

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 Texas 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 Texas site-specific to Comanche Peak Nuclear Power Plant will remain in effect.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 14-11-6b1-P-02	**Criterion: 6b1**
ISSUE: There are no provisions provided in the Hood County's procedure (Annex W/Tab E/Appendix 4) for vehicles and equipment that cannot be decontaminated; specifically a designated controlled area for vehicles and equipment found to be contaminated. Additionally, the procedure does not include a method for record keeping or documenting contamination found on emergency workers, and emergency worker vehicles and equipment.	
RECOMMENDATION: Revise the procedure to include specific details for handling contaminated vehicles and equipment; specifically a designated controlled area for vehicles and equipment found to be contaminated. In addition, include a record keeping method to document contaminated emergency workers, vehicles and equipment.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

APPENDIX B: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2011-11-15, SITE: Comanche Peak Nuclear Power Plant, TX

LOCATION	EVALUATOR	AGENCY
Granbury Emergency Worker Monitoring/Decontamination Station	Scott Flowerday *Linda Gee Timothy Pflieger	FEMA RVI FEMA RVI FEMA RVI
* Team Leader		

APPENDIX C: EXERCISE PLAN

STATE OF TEXAS & COMANCHE PEAK
FEMA EVALUATED EXERCISE – November 15, 2011
EMERGENCY WORKER DECONTAMINATION
EVALUATION AREAS AND EXTENT-OF-PLAY (EOP) AGREEMENT

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:
Granbury City Park Pool
Extent of Play: Instrument calibration will be specific to each manufacturer's specification. Equipment not required for demonstrating exercise evaluation criterion may be left at the staging area to allow for additional space within the vehicles. Access to Personal Protective Equipment (PPE) clothing will be demonstrated; however it will not be worn. The use of PPE will be demonstrated in accordance with applicable procedures. Request the option to correct issues immediately (Correction-on-the-spot).
ARCA: 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, 3.b)

Locations:
Granbury City Park Pool
Extent of Play: Request the option to correct issues immediately (Correction-on-the-spot).
ARCA: 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.; K.5.b)

Locations:
Granbury City Park Pool

Extent of Play: Request the option to correct issues immediately (Correction-on-the-spot).None
ARCA: None

Sub-Element 6.b -Monitoring and Decontamination of Emergency Worker Equipment

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG-0654, K.5.b)

Locations:
Granbury City Park Pool
Extent of Play: The designated emergency worker decontamination location will be setup at the Granbury City Park Pool located at 400 North Park Street Granbury, TX 76048. All personnel and equipment decontamination measures will be simulated. All contamination levels will be via controller injects. Free play of this activity is not permitted. Request the option to correct issues immediately (Correction-on-the-spot).
ARCA: None

Contaminated Emergency Worker Drill
November 15, 2011 (Rev. 2)

1.0 Introduction

This drill will verify that Hood/Somervell Counties can decon emergency workers arriving at the established Decontamination Station located at and near the Granbury City Park Pool.

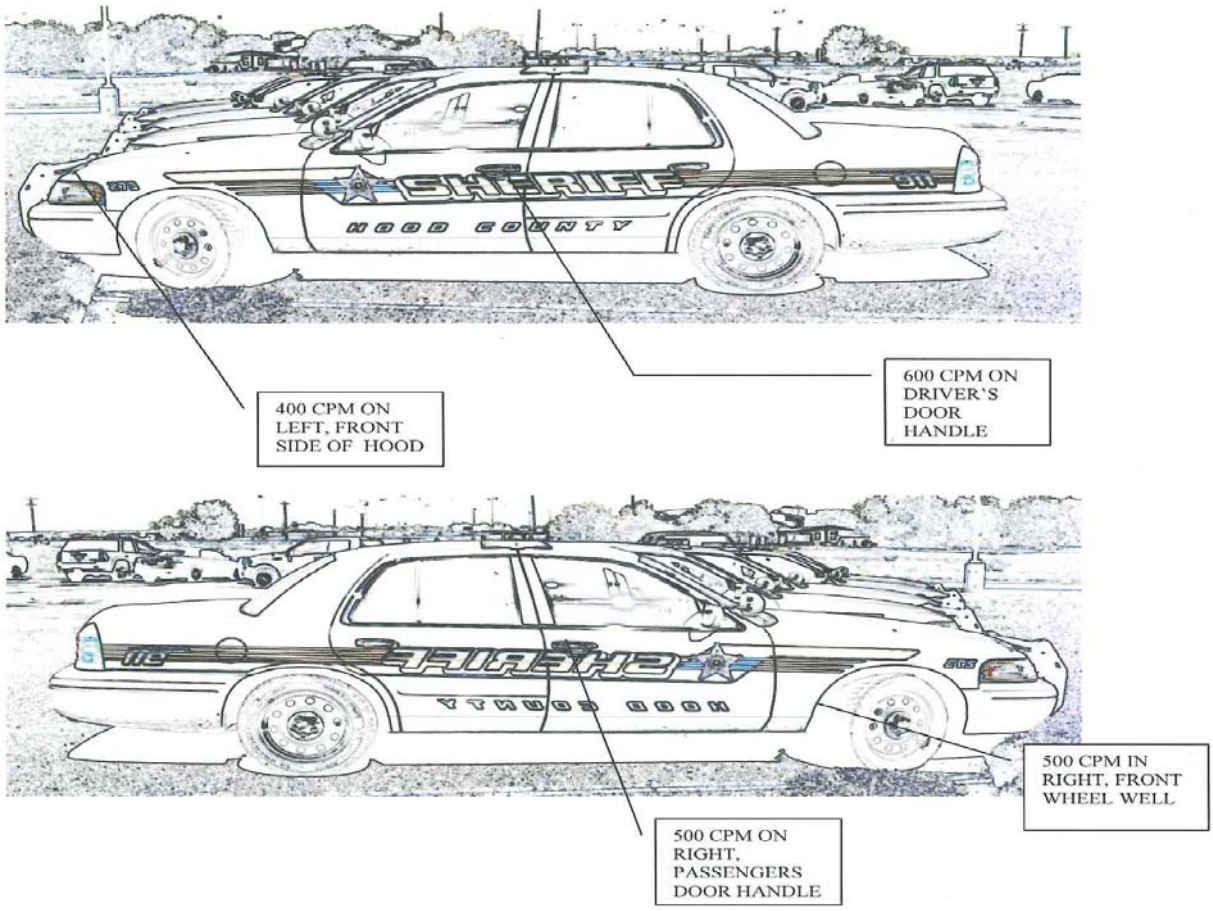
2.0 Initial Conditions

An event at the Comanche Peak Nuclear Power Plant (CPNPP) near Glen Rose, Texas began approximately 4 hours ago. A radioactive release has prompted the use of Hood County Deputies to direct traffic at established Traffic/Access Control Points (T/ACP) in the county. The Texas Department of State Health Services (DSHS) is enroute to Annex I but has NOT established their portal monitor for screening surveys of Emergency Workers.

3.0 Narrative Summary

Two (2) Hood County Sheriff's Deputies were directing traffic at a TACP when the plume came over the area they were located. DSHS told the Hood County Deputies to move from the area. The Hood County Deputies went to the Hood County staging area (Annex I) where they discovered that DSHS had not yet arrived. The County RSO directed the deputies to Park Road for survey and potential decontamination by Volunteer Fire Department from DeCordova Bend-Acton Volunteer Fire Department, Granbury Volunteer Fire Department, Indian Harbor Volunteer Fire Department, and Tolar Volunteer Fire Department. They will be surveyed for contamination by handheld instruments maintained by the Hood County EOC. During the initial survey of both deputies they indicate contamination and both are sent to City Park Pool for decontamination by local VFDs. Both deputies and their vehicle are found to be contaminated.

VEHICLE CONTAMINATION DETAILS FOR CONTROLLERS



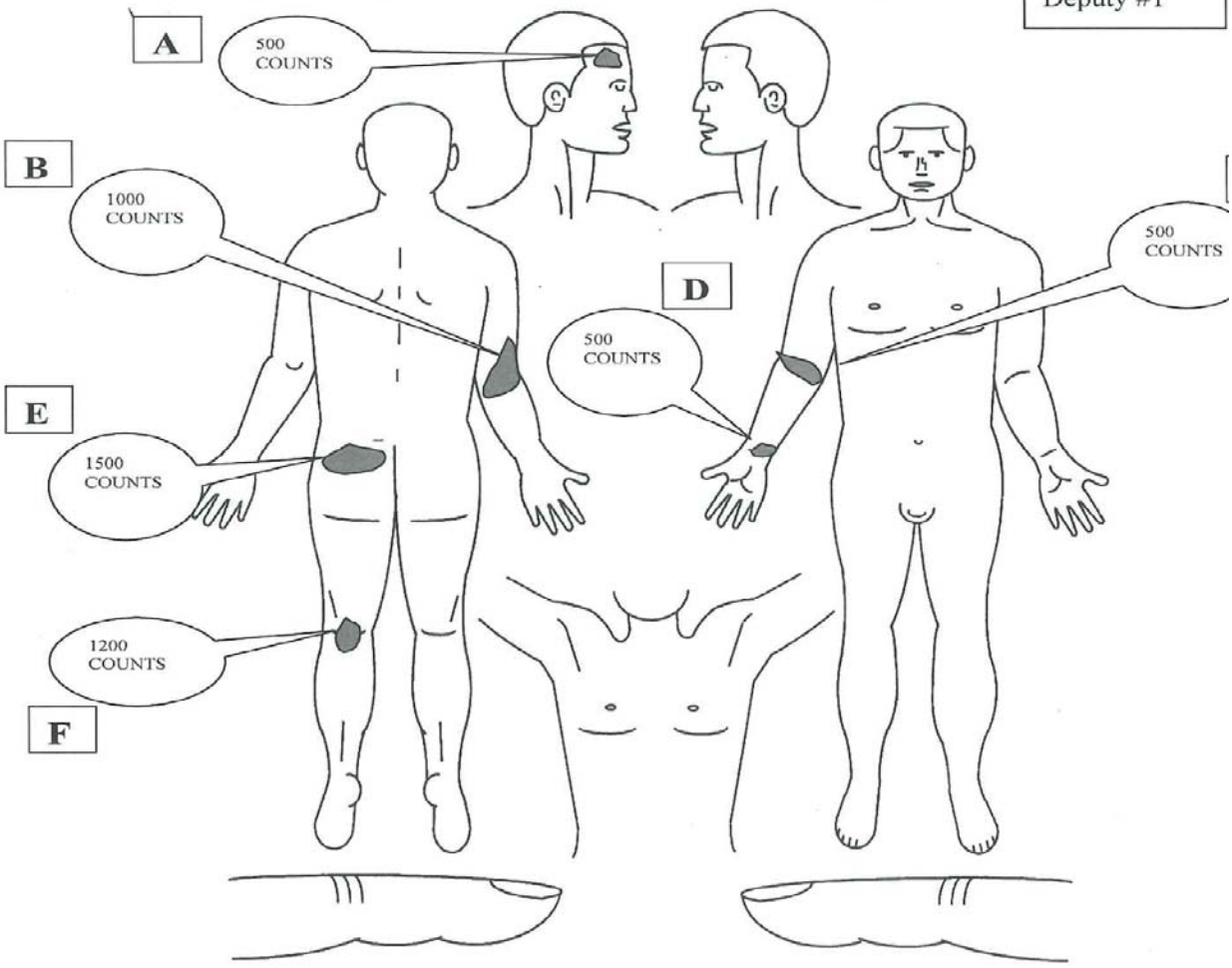
No interior contamination is found. The vehicle will be decontaminated by the fire trucks set up at the City Park Pool Decontamination Station.

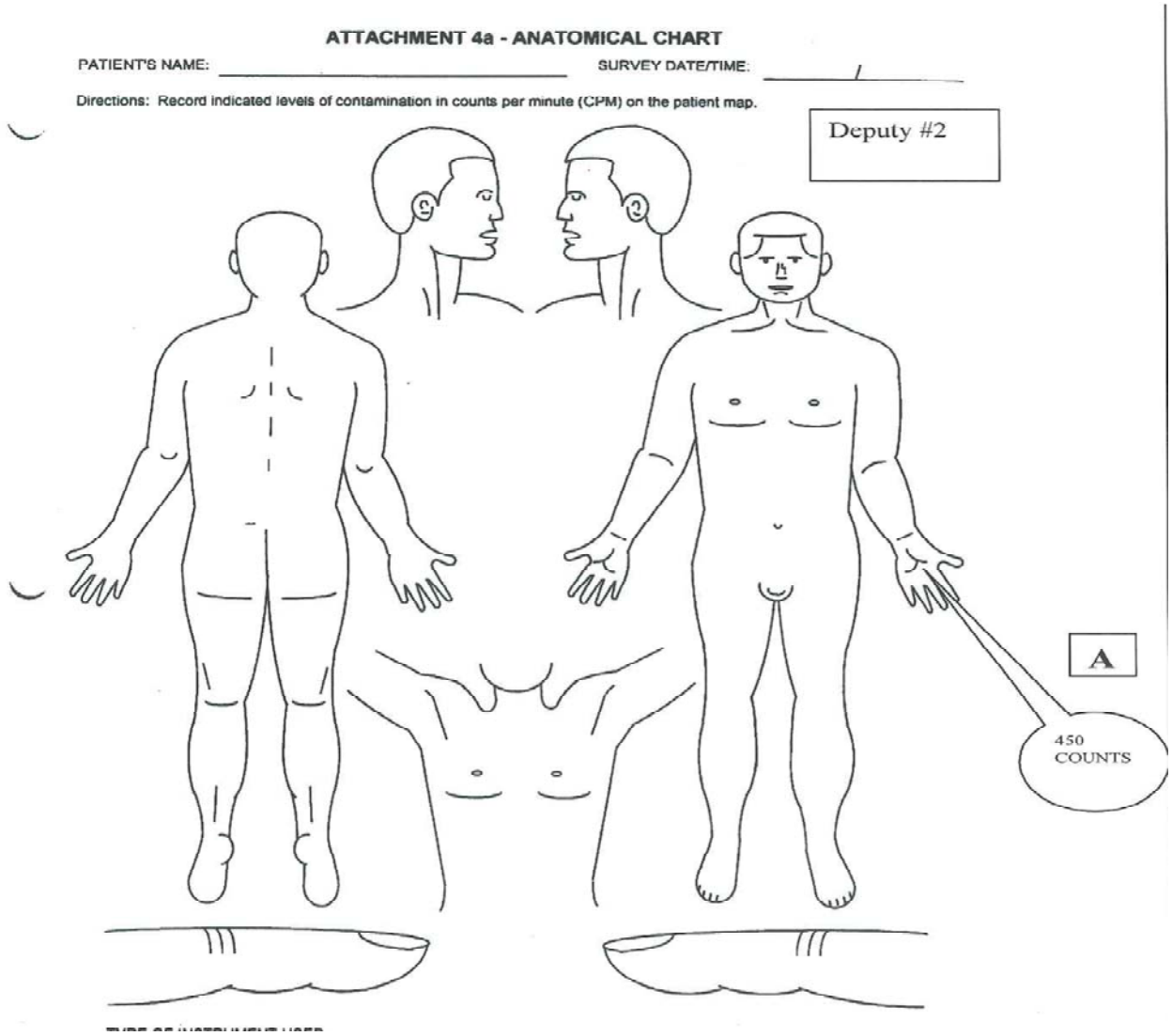
ATTACHMENT 4a - ANATOMICAL CHART

PATIENT'S NAME: _____ SURVEY DATE/TIME: _____/_____

Directions: Record indicated levels of contamination in counts per minute (CPM) on the patient map.

Deputy #1




ATTACHMENT 4a - ANATOMICAL CHART
PATIENT'S NAME:
SURVEY DATE/TIME:
Directions: Record indicated levels of contamination in counts per minute (CPM) on the patient map.
Deputy #2
A
450
COUNTS

CONTAMINATION MAP ADDITIONAL INFORMATION FOR RADIOLOGICAL CONTROLLER (Emergency Worker Decontamination)

INSTRUCTIONS FOR PROVIDING DECONTAMINATION LEVELS (Letters below correspond to Anatomical Chart for Deputy #1)

The Deputy driving the Sheriff's vehicle will be directed to the City Park Pool Showers for decontamination.

A. Allow the decontamination on the forehead to be completed with baby wipes as follows:
1. After the first attempt, 350 cpm remain
2. After the second attempt, the reading should be background

B. Allow the decontamination of the right elbow and bicep/arm to be completed with baby wipes as follows:
1. After the first attempt, 500 cpm remain
2. After the second attempt, the reading should be background

C. Allow the decontamination of the crease of the right arm to be completed with baby wipes in one effort.

D. Allow the decontamination of the right wrist to be completed with baby wipes in one effort.

E. Allow the decontamination of the left buttock to be completed as follows:
1. The deputy will be instructed to remove his weapon and accessories and have them surveyed. They will then be placed in a bag and labeled with his name, and date/time.
2. The Deputy will then be instructed to remove his clothing and place it in a bag in the hamper. He will then be re-surveyed to determine if just his uniform was contaminated.
3. Removal of his clothing for shower removes the contamination. Contamination is only on clothing because the Deputy closed his car door near the door handle with his backside. Nothing further is required and this Deputy does NOT require a shower.

F. Allow decontamination of the crease of the left knee to be completed as follows:
1. This contamination is also resolved by removal of the Deputy's trousers.
2. Same as 2 and 3 above.
2. Contamination was only on clothing from brushing against something.

NOTE: The Deputy will be issued a change of temporary clothing for return to duty.

CONTAMINATION MAP ADDITIONAL INFORMATION FOR RADIOLOGICAL CONTROLLER
(Emergency Worker Decontamination)

INSTRUCTIONS FOR PROVIDING DECONTAMINATION LEVELS
(Letters below correspond to Anatomical Chart for Deputy #2)

The Deputy riding as passenger in the Patrol vehicle will be directed to the City Park Pool for survey and potential decontamination.

A. Allow the decontamination on the palm of the right hand to be completed with baby wipes as follows:

1. After the first attempt, 350 cpm remain
2. After the second attempt, the reading should be background

NOTE: The Deputy does NOT require a change of clothing and is returned to duty after decontamination of his hand.

This page is intentionally blank.