

Comanche Peak Nuclear Power Plant
After Action Report/
Improvement Plan

Drill Date – September 12, 2018

Radiological Emergency Preparedness (REP) Program



FEMA

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EXECUTIVE SUMMARY

On September 12, 2018 an out-of-sequence 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/FEMA (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. The previous medical drill conducted at Lake Granbury Medical Center was on October 11, 2016.

Personnel from the Texas Department of State Health Services, Lake Granbury Medical Center, Texas Emergency Medical Service, Hood County and CPNPP participated in the drills. Evaluation Areas demonstrated included: Emergency Operations Management, Protective 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 this out-of-sequence drill. The participants demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no findings identified during the evaluation. There were also no planning issues identified.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name: Drill 2018-09-12

Type of Exercise: Drill

Exercise Date: September 12, 2018

Program: Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type: Not Applicable

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

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

State Jurisdictions

Texas Department of State Health Services

Risk Jurisdictions

Hood County

Private Organizations

Lake Granbury Medical Center
Texas Emergency Medical Service
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 September 12, 2018 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 for the medical drill was developed to evaluate the response of drill participants to an incident at Comanche Peak Nuclear Power Plant requiring the transportation, treatment, and decontamination of a radiologically contaminated injured individual. The drill scenario provided for the evaluation of the Texas Emergency Medical Service and Lake Granbury Medical Center.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluation for those organizations that participated in the drill conducted on September 12, 2018.

The Emergency Medical Service, the Hospital and the Ambulance were evaluated on the basis of its demonstration of criteria delineated in the drill evaluation areas as outlined in the FEMA Radiological Emergency Preparedness Program Manual. 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 Exercise Evaluation

The matrix presented in Table 3.1, presents the status of all exercise evaluation area criteria that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities.

Tables 3.1 - Summary of Exercise Evaluation

Table 3.1a – Exercise Evaluation – Criteria Met

Date: 09/12/2018 Site: Comanche Peak Nuclear Power Plant		
Location Abbreviation	Criteria Title	Criteria
LGMC	Equipment and Supplies	1e1
LGMC	EW Exposure Control Implementation	3a1
LGMC	Contaminated Injured Transport & Care	6d1
Texas EMS	Equipment and Supplies	1e1
Texas EMS	EW Exposure Control Implementation	3a1
Texas EMS	Contaminated Injured Transport & Care	6d1

3.3 Criteria Evaluation Summaries

3.3.1 Private Jurisdictions

3.3.1.1 Lake Granbury Medical Center

In summary, the status of DHS/FEMA criteria for the Support jurisdiction is as follows:

- a. Met: 1.e.1, 3.a.1, 6.d.1
- b. LEVEL 1 FINDINGS: NONE
- c. LEVEL 2 FINDINGS: NONE
- d. PLAN ISSUES: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

3.3.1.1 Texas Emergency Medical Service

In summary, the status of DHS/FEMA criteria for the Private jurisdiction is as follows:

- a. Met: 1.e.1, 3.a.1, 6.d.1
- b. LEVEL 1 FINDINGS: NONE
- c. LEVEL 2 FINDINGS: NONE
- d. PLAN ISSUES: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. 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: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 09/12/2018, SITE: Comanche Peak Nuclear Power Plant

LOCATION	EVALUATOR	AGENCY	TEAM LEADER
Lake Granbury Medical Center	Scott Flowerday	FEMA Region VI	Scott Flowerday
Texas Emergency Medical Service	Brad Dekorte	FEMA Region VI	Scott Flowerday

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Description
CPNPP	Comanche Peak Nuclear Power Plant
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EW	Emergency Worker
RPT	Radiation Protection Technician

APPENDIX C: EXERCISE PLAN

As submitted by the State of Texas:

LAKE GRANBURY MEDICAL CENTER – MS-1 HOSPITAL DRILL

September 12, 2018

1.0 Introduction

This drill will verify that the Lake Granbury Medical Center Radiological Emergency Area (REA) and personnel assigned to care for contaminated injured patients can meet FEMA MS-1 drill requirements. The drill will also verify that the TexasEMS Ambulance personnel can interface with the MS-1 hospital.

2.0 FEMA Evaluation Criteria

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

3.a.1: The offsite response organizations (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.)

6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2, H.10., K.5.a.b., L.1., 4.)

3.0 Guidelines

The following guidelines have been developed to instruct drill participants of the extent of play required to fulfill the drill evaluation criteria.

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1. Drill lead controller is responsible for conducting the drill per the drill package.
2. Controllers will be assigned as needed to ensure the completion of drill objectives.
3. This is a FEMA evaluated drill. Therefore, prompting/coaching is not permitted.
4. On-the-spot corrections are allowed in accordance with the REP Program Manual.
5. The controllers should allow free-play. However, free-play will be stopped under the following conditions:
 - a. if the action taken would prevent a drill evaluation criterion from being met or is outside the scope of the drill.
 - b. if the actions are judged to be unsafe or leading to violations of the law.
 - c. if the actions would degrade systems or equipment, or degrade response to a real emergency.
6. If an actual emergency occurs, the drill will be terminated.
7. All radio and telephone communications will begin and end with **THIS IS A DRILL**.
8. All signs and postings at the hospital should be marked either **FOR TRAINING USE ONLY** or **DRILL IN PROGRESS**.

4.0 Extent of Play

These guidelines define the extent of play required to meet an objective and identify planned simulations.

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

EMS personnel will demonstrate the KI portion of this evaluation criterion by interview (i.e. storage, use, precautions). KI **will not** be carried on the ambulance and **is not required** at the hospital. The KI for ambulances is stored at the Hood and Somervell County EOCs and would be distributed at that point in the event of the recommendation to do so by the Texas Department of State Health Services (DSHS).

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 (approximately every 30 minutes) 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.)

No exceptions are requested.

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2, H.10., K.5.a.b., L.1., 4.)

The TexasEMS ambulance with driver and EMT or paramedic and the "contaminated" patient will pre-stage at the TexasEMS Headquarters Building located at 2200 Commercial Ln, Granbury, TX 76048.

All decontamination will be demonstrated to the extent necessary to satisfy evaluator concerns. All medical procedures will be simulated except for decontamination of wounds and or abrasions. The Controller will use the decontamination chart and written guidance to guide the decontamination processes.

All injury and contamination levels will be via controller verbal inject from the "Injury Map for Medical Controllers" (Attachment 4a – Anatomical Charts). **Free play of this activity is not permitted.**

5.0 Participants

This drill will require the participation of the following agencies:

Lake Granbury Medical Center Emergency Room Staff and; support staff as needed

TexasEMS Ambulance Personnel

Texas Department of State Health Services – Radiation Control Program (DSHS-RCP),
Medical Facility Liaison

Comanche Peak Radiation Protection Personnel

Hood County Emergency Management Personnel

6.0 Controller and Role Players

A minimum of four (4) controllers will be required for this drill.

One (1) role player victim will be required for this drill

7.0 Initial Conditions

During a refueling outage at CPNPP, a decontamination technician cleaning a contaminated area of the plant contacted a defective electrical connection and was knocked unconscious when he fell backwards as a result of the electrical shock. The CPNPP medical response personnel determine that the victim should be transported to the hospital and call for offsite medical transport. The Somervell County EMS personnel are already responding to calls and are not available. TexasEMS has been dispatched to pick up and transport the injured person. The CPNPP medical responders prepare the victim for transport and meet the arriving ambulance at the Alternate Access Point (AAP). The ambulance crew picks up the victim who is prepared for transport by the CPNPP medical responders. The victim is conscious and complaining of pain and a lack of mobility in his right arm as well as suffering bruises to his back.

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8.0 Narrative Summary

Upon arrival at the AAP the TexasEMS crew accepts the patient from the CPNPP medical responders. The patient is then transported to Lake Granbury Medical Center (LGMC). The ambulance communicates patient data and the fact that the patient is possibly radiologically contaminated while en route.

LGMC is contacted and activates their Radiation Emergency Area (REA). According to CPNPP procedure and LGMC procedures, a Radiation Protection Technician was dispatched to the hospital ahead of the ambulance and another is accompanying the victim in the ambulance.

9.0 Time Line

- 0930 Drill begins [Message Number 1].
- 0940 Patient data is transmitted to Lake Granbury Medical Center from the Ambulance en-route [Message Number 2].
- 1000 Ambulance arrives at Lake Granbury Medical Center.
- 1100 Drill terminates
- 1115 Critique/ FEMA Exit Brief
- 1145 Activities Concluded

10.0 Facility Addresses/Locations:

TexasEMS Headquarters
2200 Commercial Ln
Granbury, TX 76048

Lake Granbury Medical Center
1310 Paluxy Road (Highway 51 South)
Granbury, TX 76048

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MEDICAL INFORMATION FOR CONTROLLERS

	INITIAL	ENROUTE	HOSPITAL
Blood Pressure	150/90	140/88	136/86
Respiration	35rpm	31	25
Pulse	130	110	100
Breathing	Rapid, Shallow	Rapid	Rapid
Skin Condition	Pale, cold, clammy	cold, clammy	clammy
Blood Glucose Level	110	110	110
Consciousness	Disoriented, but responsive	Disoriented/confused	Oriented and responsive
Pupils	Equal, reactive	Equal, reactive	Equal, reactive
Significant injury	Electrical burn to right thumb and forefinger with strained right shoulder.		

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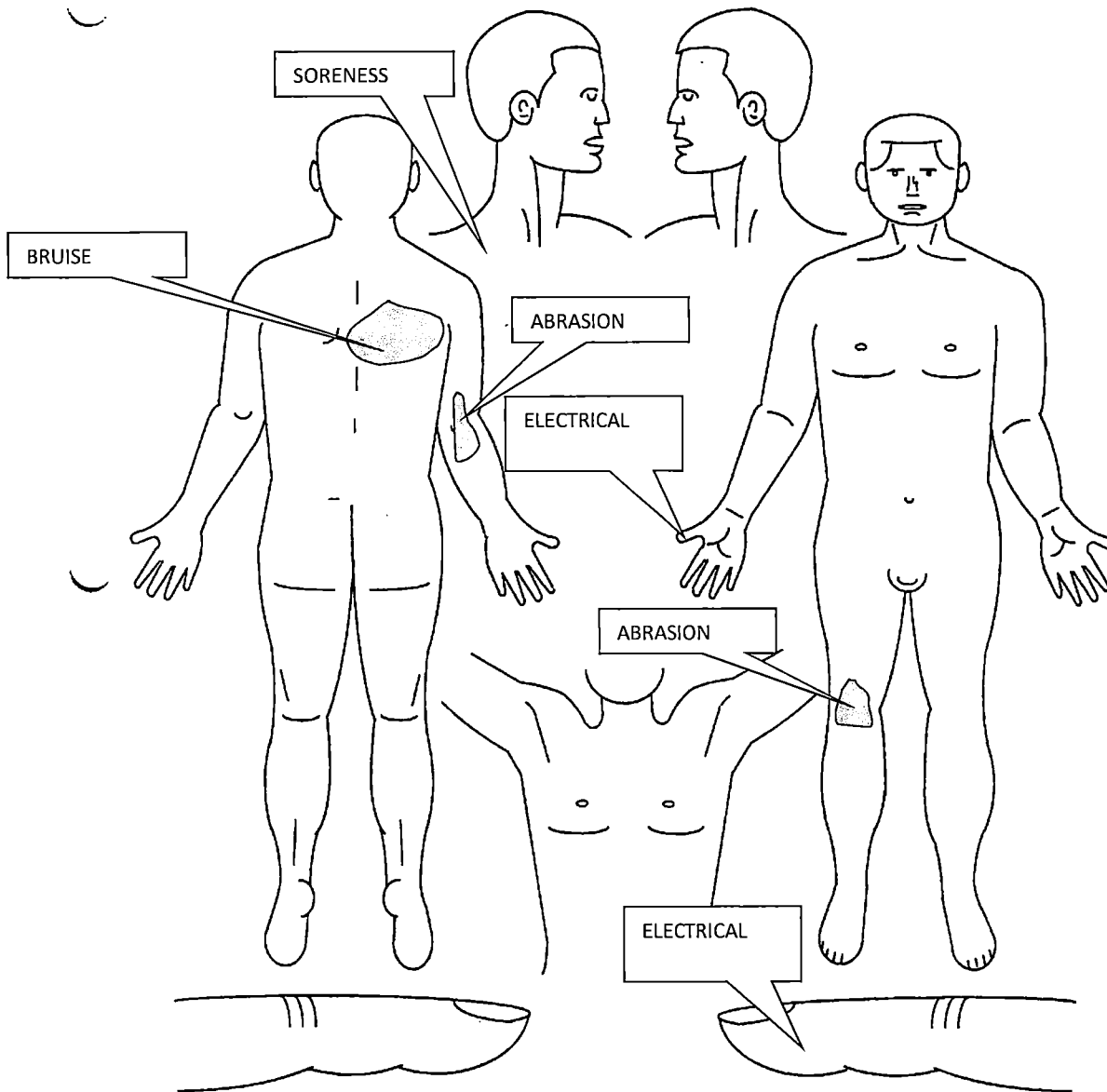
Comanche Peak Nuclear Power Plant

INJURY MAP FOR MEDICAL CONTROLLERS

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.



TYPE OF INSTRUMENT USED: _____ (MODEL AND NUMBER)

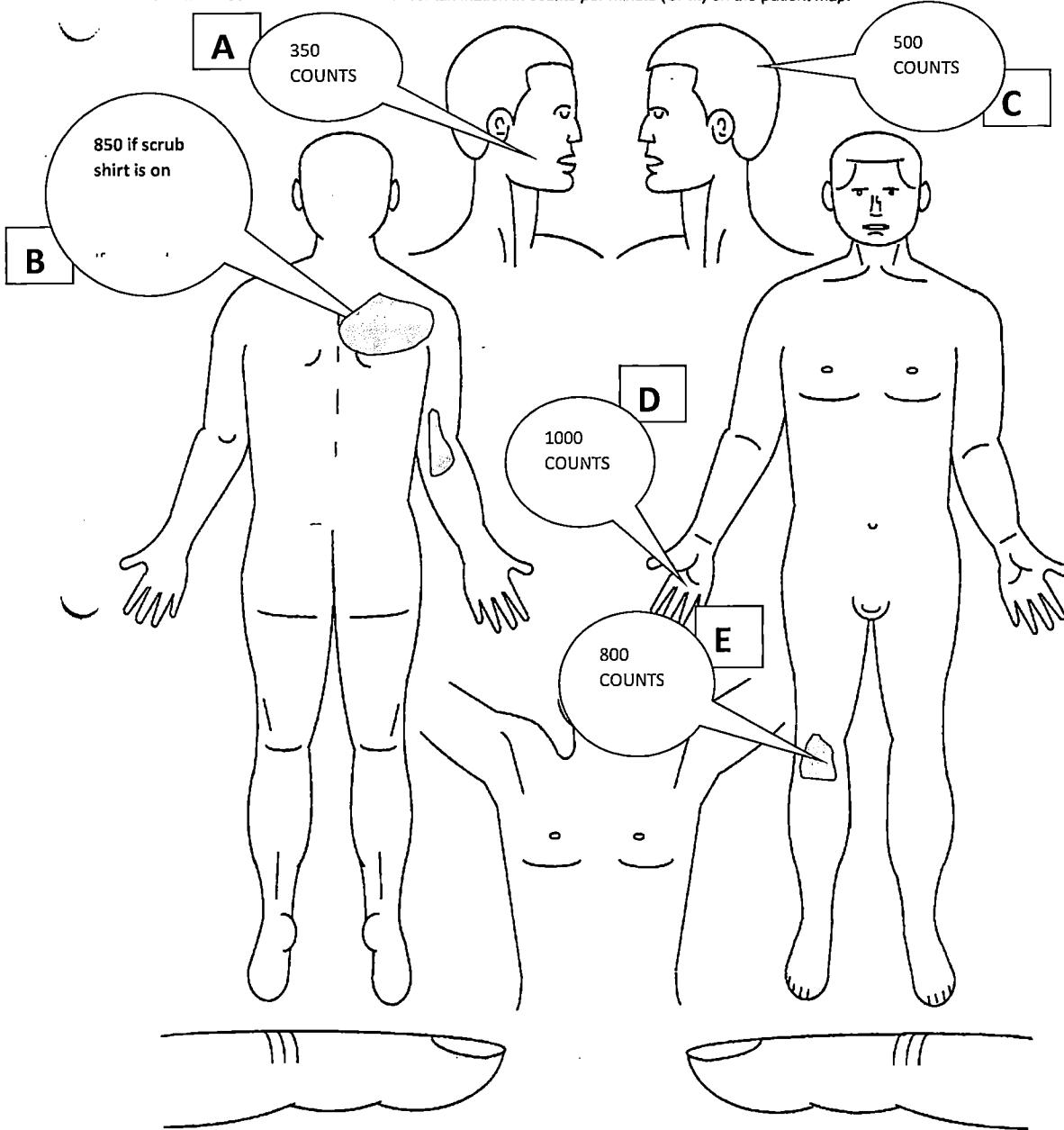
DISTANCE SKIN TO PROBE: _____ INCHES

Revision
06/07/2000

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.



TYPE OF INSTRUMENT USED: _____

DISTANCE SKIN TO PROBE: _____ INCHES (MODEL AND NUMBER)

Revision
06/07/2000

INSTRUCTIONS FOR PROVIDING DECONTAMINATION LEVELS

(Letters below correspond to Anatomical Chart on preceding page)

- . Allow the decontamination on the right cheek to be completed as follows:
 - 1. After the first attempt, the reading should be 30 cpm.

- A. If patient still has on scrub shirt, then controller should give readings in accordance with **bold number** on chart, then proceed to 1 and 2 below. If ER Staff has removed the scrub shirt, then the decontamination is to be completed as follows:
 - 1. After the first attempt, the reading should be 35 cpm.

- B. Allow the decontamination of back of head to be completed as follows:
 - 1. After the first attempt, 140 cpm remain. **Note: They should recognize this reading is considered clean at this point.**

- C. Allow the decontamination of right hand palm to be completed as follows:
 - 1. After the first attempt, 850 cpm remain
 - 2. After second attempt, 590 cpm remain.
 - 3. After third attempt, 40 cpm remain.

- D. Allow the decontamination of right knee to be completed as follows:
 - 1. After the first attempt, 50 cpm remain

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MESSAGE 1

TIME: 0930

FROM: Comanche Peak Control Room

TO: Lake Granbury Medical Center ER (phone # TBD)

TEXT:

THIS IS A DRILL!

THIS IS THE COMANCHE PEAK NUCLEAR POWER PLANT CONTROL ROOM. AN INJURED PATIENT IS BEING TRANSPORTED TO YOUR FACILITY BY TEXAS EMS AMBULANCE.

THE PATIENT IS ASSUMED TO BE RADIOLOGICALLY CONTAMINATED. PLEASE ACTIVATE YOUR RADIATION EMERGENCY AREA FOR RECEIPT OF THE PATIENT.

MY CALL BACK NUMBER IS __979-324-3984_____.

THE AMBULANCE WILL CONTACT YOUR FACILITY WHEN EN-ROUTE.

PLEASE GIVE ME YOUR NAME FOR THE LOG. A RADIOLOGICAL PROTECTION TECHNICIAN IS EN-ROUTE TO THE HOSPITAL TO ASSIST YOU WITH PREPARATION FOR RECEIPT OF THE PATIENT. ANOTHER IS ACCOMPANYING THE PATIENT.

THANK YOU.

THIS IS A DRILL.

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MS-1 Hospital Drill

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MESSAGE 2

TIME: 0940

FROM: Medic 1

TO: Lake Granbury Medical Center ER (Phone TBD)

TEXT:

THIS IS A DRILL!

THIS IS TEXASEMS EN-ROUTE TO YOUR FACILITY WITH A MALE PATIENT APPROXIMATELY 35 YEARS OF AGE WITH A STRAINED RIGHT SHOULDER, BRUISES AND ABRASIONS. THIS PATIENT IS ALSO RADIOLOGICALLY CONTAMINATED.

PATIENT VITAL SIGNS ARE AS FOLLOWS:

Vital Sign	ENROUTE DATA
Blood Pressure	140/88
Respiration	31
Pulse	110
Consciousness	Disoriented, but responsive

OUR ETA IS 20 MINUTES.

THIS IS A DRILL!