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TITLE: MEDICAL CARE/TREATMENT OF CONTAMINATED,  
INJURED PERSONNEL

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A045

Procedure No EI-14  
Revision 4  
Effective Date 3/1/04

**PALISADES NUCLEAR PLANT**  
**EMERGENCY IMPLEMENTING PROCEDURE**

**TITLE: MEDICAL CARE/TREATMENT OF CONTAMINATED,  
INJURED PERSONNEL**

Approved: JLFontaine  
Procedure Sponsor

/

2/24/04  
Date

**New Procedure/Revision Summary:**

Editorial Changes to Rev 4

**Specific Changes**

**TITLE: MEDICAL CARE/TREATMENT OF CONTAMINATED,  
INJURED PERSONNEL**

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**USER ALERT  
INFORMATION USE PROCEDURE**

The activities covered by this procedure may be performed from memory.

**1.0 PERSONNEL RESPONSIBILITIES**

- 1.1 The Chemical and Radiological Protection Manager has overall responsibility for radiation exposure and contamination control. | e
- 1.2 Radiation Protection Personnel who have completed American Red Cross Multimedia First Aid shall respond to injuries in a Radiological Controlled Area and administer/direct first aid and personnel decontamination.
- 1.3 When contaminated and injured personnel are transported offsite, the Shift Manager is responsible for ensuring that a 8-hour report is submitted to the NRC as required by 10 CFR 50.72 (b)(3)(XII). | e

**2.0 PURPOSE**

To describe the guidelines for responding to injured personnel who may be contaminated, and assisting ambulance and hospital personnel in radiation exposure and contamination control.

**3.0 REFERENCES**

**3.1 SOURCE DOCUMENTS**

- 3.1.1 Site Emergency Plan, Section 6, "Emergency Measures"

**3.2 REFERENCE DOCUMENTS** | e

- 3.2.1 Health Physics Procedure HP 2.18, "Personnel Contamination"
- 3.2.2 Emergency Implementing Procedure EI-3, "Communications and Notifications"
- 3.2.3 Emergency Implementing Procedure EI-2.1, "Site Emergency Director" | e
- 3.2.4 Palisades Administrative Procedure 10.41, "Procedure and Policy Processes" | e

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**4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS**

**4.1 DEFINITIONS**

**4.1.1 Minor Injuries**

Those injuries that do not require immediate first aid and when the victim(s) is ambulatory (ie, strains, sprains, bruises, minor cuts, etc).

**4.1.2 Major Injuries**

Any injury which involves the airway, breathing, circulatory system, shock, neck, back, fracture of a bone, major bleeding, or any injury that you judge needing immediate first aid.

**4.2** Except for minor injuries, first aid for the victim(s) takes precedence over contamination control.

**4.2.1** Any injury involving the airway, breathing, or circulatory system must be treated immediately. Refer to Section 5.2 of this procedure.

**4.3** Radiation Protection Technicians should respond to the accident scene with the Emergency First Aid Kit, the Emergency Ambulance Kit, and the Emergency Decontamination Kit. Two people are needed to carry the equipment. If only one Technician is available, respond with the First Aid Kit and request assistance from the Control Room. Emergency Medical Technicians may respond with a medical kit of their own.

**4.4** Move the individual only if necessary to prevent further injury. The individual should only be moved for radiological considerations when those considerations become health threatening in themselves.

**4.5** Personnel decontamination shall be done or directed by a qualified Radiation Protection Technician as per Health Physics Procedure HP 2.18, "Personnel Contamination."

**4.6** If emergency facilities are activated (Technical Support Center, Operational Support Center), all communications from Radiation Protection Technicians should go to the Health Physics Supervisor in the Operational Support Center.

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4.7 The Shift Manager (SM) should ensure that the appropriate hospital is notified as per Emergency Implementing Procedure EI-3, "Communications and Notifications," Attachment 2, when contaminated, injured personnel are transported. The one touch autodialer in the Shift Engineer Office may be used to accomplish this notification. |e

5.0 PROCEDURE

**USER ALERT**  
**INFORMATION USE PROCEDURE**

The activities covered by this procedure may be performed from memory.

5.1 MINOR INJURIES WITH CONTAMINATION

5.1.1 After determining that the injury is minor, remove the victim(s) from the contaminated area taking precautions to minimize the spread of contamination.

**NOTE:** If a high background prohibits determining contamination levels, the status sheet for the area may provide good estimates.

**NOTE:** If ambulance assistance is needed, indication should be given as to where the ambulance personnel should report.

5.1.2 Notify the Shift Manager (SM) as soon as possible and give the following information: |e

- a. Offsite assistance needed? Ambulance/Hospital
- b. Location of victim(s)
- c. Number of victims
- d. Extent of injuries
- e. First aid initiated
- f. Level of contamination

5.1.3 In a low background area, perform a whole body frisk on the victim(s).

5.1.4 Remove any contaminated clothing.

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- 5.1.5 IF the victim(s) has skin contamination AND the injuries are sufficiently minor such that decontamination can be performed without causing harm to the victim or without delaying needed care for the injuries, THEN take the victim(s) to the area where skin decontamination and/or showering can be done. | e
- 5.1.6 Perform personnel decontamination as per Health Physics Procedure HP 2.18, "Personnel Contamination."
- 5.1.7 Bag and label samples of contamination for possible future analysis.
- 5.1.8 Cover contaminated wounds with sterile dressings before and after decontamination efforts. Do not attempt to decon wounds.
- 5.1.9 If skin contamination exceeds 10,000 cpm above background, or if the individual cannot be decontaminated to below 100 cpm above background, an evaluation of the Shallow Dose Equivalent (skin of the whole body) will be done per Health Physics Procedure HP 2.42, "Evaluation of Shallow-Dose Equivalent Due to Personnel Skin Contamination."
- NOTE:** See Sections 5.3 and 5.4 of this procedure if ambulance or hospital assistance is needed.
- 5.1.10 If hospital assistance is needed, the victim(s) can be transported by ambulance or private vehicle.
- 5.1.11 If the victim(s) is contaminated, at least one qualified Radiation Protection Technician shall accompany the victim. If possible, a second Technician should report to the hospital to assist hospital personnel in contamination control.
- 5.1.12 Notify the SM and the Duty Radiation Protection (RP) Supervisor prior to leaving the Plant site. | e
- 5.1.13 After returning to the Plant site, update the SM and the Duty RP Supervisor on the condition of the victim(s). | e
- 5.1.14 Document appropriate entries in the Radiation Protection Logbook. | e

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**5.2 MAJOR INJURIES WITH CONTAMINATION**

5.2.1 Preserving vital functions and providing emergency medical care takes precedence over contamination control.

5.2.2 Any injury involving the airway, breathing, or circulatory system must be treated immediately. Assure open airway, assist breathing if impaired or absent with artificial ventilation, apply Cardiopulmonary Resuscitation (CPR) if no pulse is detectable, and control bleeding with direct pressure.

**NOTE:** If a high background prohibits determining contamination levels, the status sheet for the area may provide good estimates.

**NOTE:** If ambulance assistance is needed, indication should be given as to where the ambulance personnel should report.

5.2.3 Notify the SM as soon as possible for ambulance and hospital assistance. Provide the SM with the following information: | e

- a. Location of victim(s)
- b. Number of victims
- c. Extent of injuries
- d. First aid initiated
- e. Level of contamination

5.2.4 A qualified Radiation Protection Technician shall accompany the victim(s) in the ambulance. If possible, a second Technician should report to the hospital to assist hospital personnel in contamination control.

5.2.5 The SM and the Duty RP Supervisor should be notified prior to leaving the Plant site. | e

5.2.6 After returning to the Plant site, update the SM and the Duty RP Supervisor on the condition of the victim(s). | e

5.2.7 Document appropriate entries in the Radiation Protection Logbook. | e

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**5.3 ASSISTING AMBULANCE PERSONNEL**

- 5.3.1 The primary responsibility of the Radiation Protection Technician in the ambulance is contamination control.
- 5.3.2 Survey the victim(s) for contamination levels.
- 5.3.3 Remove contaminated clothing once condition of victim permits.
- 5.3.4 Place contaminated materials in a yellow poly bag to be disposed of later at the Plant, and for possible future analysis.
- 5.3.5 As conditions permit, perform personnel decontamination using the Emergency Decon Kit. Reference Health Physics Procedure HP 2.18, "Personnel Contamination."
- 5.3.6 If skin contamination exceeds 10,000 cpm above background, or if the individual cannot be decontaminated to below 100 cpm above background, an evaluation of the Shallow Dose Equivalent (skin of the whole body) will be done per Health Physics Procedure HP 2.18, "Personnel Contamination."
- 5.3.7 Do a thorough contamination survey and decontamination as needed on ambulance personnel and equipment prior to them leaving the hospital. If extensive decontamination is needed, it should be done at the Plant.
- 5.3.8 Return all contaminated material to the Plant.

**5.4 ASSISTING HOSPITAL PERSONNEL**

- 5.4.1 If possible, two Radiation Protection Technicians should assist hospital personnel in contamination control.
- 5.4.2 Each hospital has a specific procedure for setting up to treat contaminated injuries. Technician assistance may be needed in setting up the facilities.
- 5.4.3 Ensure that hospital personnel are properly suited in protective clothing and are wearing dosimetry as required.
- 5.4.4 Ensure that the step-off-pad is in place at the entrance to the treatment room. Establish other radiological boundaries as needed.

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- 5.4.5 Ensure that radioactive contaminated materials are collected in yellow poly bags to be disposed of at the Plant. Samples of the contaminations may be needed for future analysis.
- 5.4.6 Be aware that most hospital personnel do not routinely work with radiation or radioactive materials. Answer any questions in a manner and tone with which communication will be understood.
- 5.4.7 Act professional, you are the expert in radiation exposure, contamination control.
- 5.4.8 Assist in frisking any personnel or equipment leaving the radiation/contaminated area.
- 5.4.9 After treatment of the victim(s) is complete:
  - a. Collect all dosimetry from victim(s) and ambulance and hospital personnel. Each piece of dosimetry must indicate who it was worn by. Return dosimetry to Plant dosimetry for processing.
  - b. Survey the affected hospital area to ensure it is not contaminated, and decontaminate as needed.
  - c. Document the survey results and forward them to the Duty Radiation Protection Supervisor for review.

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**5.5 EMERGENCY WORKER RADIATION EXPOSURE LIMITS**

- 5.5.1 Emergency Implementing Procedure EI-2.1, "Site Emergency Director," gives requirements for authorizing exposure in excess of the Consumers Energy Administrative Dose Control Levels and 10CFR20 Dose Limits.

**6.0 ATTACHMENTS AND RECORDS**

**6.1 ATTACHMENTS**

None

**6.2 RECORDS**

None

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**7.0 SPECIAL REVIEWS**

The scope of this procedure does not include activities that require a 50.59 review per Palisades Administrative Procedure 10.41, "Procedure and Policy Processes." Therefore, changes to this procedure do not require a 50.59 review.