

Medical Management of Radiation Accidents

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PLANT AND HOSPITAL PROCEDURES MANUAL

for

YANKEE ROWE NUCLEAR POWER STATION

AND

NORTH ADAMS REGIONAL HOSPITAL

This manual has been prepared by Radiation Management Corporation using documents and data supplied by the plant, the supporting hospital, and RMC.

Revisions will be distributed by RMC as they become necessary by supplying new sheets or sections.

Date of latest revision: DEC 10 1975

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DECONTAMINATION AND TREATMENT
OF
THE RADIOACTIVELY CONTAMINATED PATIENT
AT
NORTH ADAMS REGIONAL HOSPITAL

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DECONTAMINATION & TREATMENT OF THE
RADIOACTIVELY CONTAMINATED PATIENT AT
NORTH ADAMS REGIONAL HOSPITAL

A. PURPOSE

1. By agreement between Yankee Atomic Electric Company and North Adams Regional Hospital, personnel at Yankee Rowe sustaining injuries from ionizing radiation or injuries complicated by radiation exposure or radioactive contamination will be provided care and treatment at North Adams Regional Hospital.
2. Most of these injury cases will present no hazard to hospital personnel and will be admitted and provided care and treatment in accordance with our standard operating procedures. However, in the event that an accident victim is radioactively contaminated, he will be admitted, decontaminated and treated in accordance with these procedures.
3. The purpose of these procedures is to assure the radiation protection of the hospital staff, other patients and visitors during admission and treatment of the radioactively contaminated patient. The hospital's protection program starts at the nuclear station with an alert or warning telephone call to the hospital informing us that there has been a radiation accident, and one or more injured and contaminated persons may require treatment. On receipt of such a call, our staff will prepare to admit the patient(s) through our Radiation Emergency Area (REA) that has been established in the Clark House. The REA will be set-up in accordance with the directions given in Section F, "Procedure".
4. Hospital personnel will utilize protective clothing and personnel radiation dosimeters in accordance with directions contained in Appendix A, "Procedure for the Use of Protective Clothing and Dosimeters". Such

A. Continued)

contamination of the patient as may be required, and the collection of contamination samples will follow the directions given in Appendix B, "Procedures for Patient Decontamination and Sample Taking".

5. A radiation accident medical consultant organization, RMC has been retained by Yankee Atomic Electric Company to provide radiation medicine and health physics consultation. RMC services are available 24-hours a day.

B. REFERENCES - None

C. PREREQUISITES

1. Alert/Notification

As soon as it has been established by the nuclear power station personnel that a patient may be referred to the hospital for treatment, an alert call to this effect will be given. As soon as it has been established that admission to the hospital will be required, station personnel will notify the hospital. The alert and notification calls will be directed to the Hospital Switchboard Operator, 413-663-3701 (see paragraph F.1 below).

2. Prior Action at Nuclear Power Station

Before sending the patient(s) to the hospital, the nuclear station personnel will execute the following procedures:

- Administer first-aid
- Consult with the Nuclear Station Coordinating Physician
- Decontaminate the patient(s) to an extent compatible with injuries

PREREQUISITES (Continued)

- Inform the hospital of expected arrival time
- Describe the apparent injuries
- Assign station personnel qualified in radiation protection procedures to accompany the patient(s).

D. PRECAUTIONS

There are three major types of radiation exposure which may cause injury:

- 1) penetrating radiation exposure from a source external to the body (gamma rays, neutrons);
- 2) internal exposure to radionuclides by ingestion, inhalation, or through a skin break;
- 3) skin and superficial tissue exposure by contamination of the surface of the body with radioactive materials.

These three types of radiation exposure may occur together.

A patient who has been excessively exposed to external radiation will not present a hazard to attending personnel. Radiation that has injured a patient will no more harm the attendant than heat that has injured a burn patient will harm the attendant.

Equally without hazard to others is the patient who has received an overdose of radionuclides by ingestion or inhalation. He is no more hazardous than the patient who has been given diagnostic radioisotopes in the hospital clinic.

However, the individual whose clothing, skin and/or wounds are contaminated with radioactive material may present a radiation hazard to attending personnel in the absence of adequate procedures to prevent the spread of the contaminant, or control the radiation exposure in the event of radioactive shrapnel wound. Since radiation injuries are not immediately life-threatening,

D. PRECAUTIONS (Continued)

primary attention should always be directed to traumatic life-threatening injuries, e.g. severe bleeding, airway obstruction, shock. Concomitantly, or as soon as possible, the patient should be decontaminated.

If practical, the condition of an injured person who is also contaminated will be discussed on the phone with the Nuclear Power Station Attending Physician before he is sent to the hospital. In all instances, the hospital will be given as much warning as possible of the impending arrival of the patient.

E. LIMITATIONS AND ACTIONS

1. All decontamination of hospital personnel, equipment, and facilities shall be supervised by Nuclear Power Station personnel.
2. North Adams Regional Hospital is the only treatment facility where radioactively contaminated accident casualties from Yankee Power Station may be treated without explicit approval of Yankee Atomic Electric Co.

F. PROCEDURE

1. Notification

In accordance with paragraph C.1, Nuclear Power Station personnel will alert the hospital by calling the Hospital Senior Nursing Supervisor. It will be the responsibility of the Senior Nursing Supervisor to take the following action:

- a) Obtain the following information from the caller:
 1. How many patients will be sent to North Adams Regional Hospital?
 2. Is each patient contaminated?

F. PROCEDURE (Continued)

3. What are their injuries?
4. What is the expected time of arrival at the hospital?
5. Will special equipment be required by hospital personnel?

If so, specify.

6. Has the Nuclear Power Station Physician been notified?

- b) The Switchboard Operator will call a Code Magenta, notify the following and brief them:

1. Supervisor of Nurses
2. Williamstown Medical Associates, 413-458-8182

2. Emergency Room Radiation Team

Personnel working in the Emergency Room will form a Radiation Team and be responsible for the following:

- a) Prepare medical and nursing personnel for entry into a contaminated area (See Appendix A, Procedure for the Use of Protective Clothing and Dosimeters).
- b) Open and prepare the Radiation Emergency Area - Housekeeping.

3. Maintenance

- a) Make sure waste disposal cans with plastic liners are available for use in the treatment room.
- b) Be available to assist Housekeeping in area, if needed.
- c) Erect the rope barriers separating the Buffer Zone from the Uncontrolled Area.
- d) Post barriers with: "CAUTION - RADIATION AREA - RADIOACTIVE MATERIALS AUTHORIZED ENTRY ONLY" signs.

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F. PROCEDURE (Continued)

3. Maintenance (Continued)

- e) Cover the walls of the treatment room with plastic and seal with masking tape (when specified by the nuclear power station personnel).

4. Housekeeping

The Housekeeping Manager or his designee will be responsible for supplying additional material from his department.

5. Control Point Attendant's Duties

- a) Restrict access to personnel authorized entry by the attending physician or the nurse-in-charge.
- b) Assure that personnel entering the REA are wearing protective clothing and personnel dosimeters.
- c) Maintain a record showing each person entering REA, personnel dosimeter number and time of ingress and egress from REA.
- d) Assure that no person or thing is allowed to leave the REA (after the radioactively contaminated patient is admitted) until it has been monitored by nuclear station personnel and found to be "clean", i.e., free of detectable radioactive contamination.
- e) Assist nurse-in-charge and attending physician in the set-up of the REA.

6. Attending Physician's Duties

- a) Assure that the Radiation Emergency Area is set-up for admission of a radioactively contaminated patient.
- b) Assure that hospital personnel are wearing protective clothing and personnel dosimeters.

F. PROCEDURE (Continued)

6. Attending Physician's Duties (Continued)

c) Upon arrival of the patient:

1. Question the accompanying nuclear station personnel concerning the patient's contamination status and precautions that should be taken by the hospital staff.
2. Administer emergency treatment.
3. Decontaminate the patient and collect samples of the contaminant in accordance with Appendix B of this procedure.
4. Following decontamination and emergency treatment, transfer the patient from the REA to the appropriate section of the hospital for care or further treatment.
 - (a) Provide pathway of freshly laid kraft paper from the Control Point to the doorway of the treatment room.
 - (b) Wheel a stretcher across this pathway to location immediately adjacent to the doorway of the treatment room.
 - (c) Transfer the patient to the "clean" stretcher by lifting him on a "clean" sheet, or by utilizing the stretcher insert.
 - (d) Monitor the patient and stretcher in the Buffer Zone to assure that they did not become contaminated in the transfer. Decontaminate, if required, and move patient into the "clean" area of the hospital.

d) When the patient has left the REA:

1. Assure that all involved personnel are monitored and decontaminated if necessary prior to leaving the REA.
2. Assure that the nuclear power station personnel are provided such assistance as they may need to monitor and decontaminate the REA and to restore it to operational condition.

F. PROCEDURE (Continued)

NOTE: Everything and everybody entering the controlled area must stay there until properly monitored, decontaminated, and cleared through Control Point.

7. Nuclear Station Health Physics Personnel

1. *Accompany all referred cases with surface radioactive contamination to hospital;*
2. Direct vehicle to hospital entrance of Radiation Emergency Area;
3. Control radiation exposure at hospital:
 - a. Determine adequacy of traffic control in emergency area;
 - b. Supervise and regulate protection of involved personnel throughout the emergency;
 - c. Collect pocket dosimeters, monitor, and evaluate personnel exposure upon completion of emergency;
 - d. Collect used protective clothing and all other contaminated material and wastes. Package and return to the station for laundering or disposal;
 - e. Monitor equipment and property after the emergency;
 - f. Decontaminate equipment and hospital areas as required;
 - g. Re-open the Radiation Emergency Area when "clean".
4. Assist in the decontamination of the patient when treatment of injury permits as determined by M.D.
5. Save and label all specimens of urine, vomitus, feces, blood, tissue and metals from the patient until their use in radiation evaluation has been completed.
6. Record radiation survey findings of personnel and property.
7. Accompany to hospital all non-contaminated cases referred for radiation injury.
 - a. Direct to accident ward;
 - b. Assist M.D. with accident history, estimate of radiation exposure, and bioassay studies.

DIAGRAM I TO BE SUPPLIED
AT A LATER DATE.

Covered with Precut Canvas

→ Patient

Covered with
Vinyl Tile

S
T
O
R
A
G
E

Medical
Personnel
Decontamination
Area

Monitoring
Station

Covered with
Vinyl Tile

Medical Personnel
Assembly Area

Not to Scale.

NORTH ADAMS REGIONAL HOSPITAL

DIAGRAM II

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APPENDIX A

PROCEDURES FOR THE USE OF PROTECTIVE CLOTHING
AND DOSIMETERS

Appendix A

PROCEDURES FOR THE USE OF PROTECTIVE CLOTHING AND DOSIMETERS

- A. To prevent personnel from becoming contaminated with radioactive material, protective clothing will be issued at the Control Point.
- B. Two kinds of protective clothing are available:
 - 1. Standard Protective Clothing, essentially consisting of the same items normally used by surgeons in the operating room, i.e. a scrub suit, surgical gown, latex gloves, and a surgical mask and cap, augmented by shoe covers and a vinyl apron;
 - 2. Full protective clothing, consisting of some or all of the following items: coveralls, full rubber suit, hood, protective footwear and rubber gloves.
- C. Conditions requiring protective clothing
 - 1. All work past the Control Point requires protective clothing, independent of the degree of contamination present on the patient or his clothing.
 - a. Standard Protective clothing will suffice in all cases where gross decontamination has been performed (i.e. where very little "loose" contamination is present) or where the contamination is confined to a relatively small area;
 - b. Full protective clothing is only necessary when the patient has a relatively large amount of removable contamination on body and/or clothing.
 - 2. Without specific instructions to the contrary, standard protective clothing may be assumed to suffice. In case the plant health physicist, accompanying the patient, judges the use of full protective clothing necessary, mask, gown, and apron will be removed, coveralls put on over the scrub suit, and hood, rubber gloves, and shoe protectors. donned to replace the items removed.
 - 3. For complete protection, taping of full protective clothing around the hood, and at the wrists and ankles may be required. For this purpose, 3-inch wide gray tape is available. Taping will only be done upon instructions by the health physicist.

D. Removing contaminated protective clothing

1. Upon completion of their activities in the contamination and treatment room, personnel will proceed to the rope between the contaminated area and the buffer zone (See Diagram II), take off the outer layer of the protective clothing and deposit garments in a plastic laundry bag, in the following order:
 - a. remove tape and hood, if any;
 - b. remove apron and gown, or coveralls, turning them inside out;
 - c. remove shoe covers, one at a time, stepping out of the contaminated area - over the rope - with the uncovered shoe;
 - d. remove gloves, mask, and cap.
2. After removal of the outer layer, personnel proceed to the Control Point (without crossing the rope between the buffer zone and the uncontrolled hospital area) to have their dosimeters removed and to be monitored for any contamination.

E. Clearance procedures

1. In case no contamination is found, personnel may proceed to the change area and put on their normal clothing. After a final check at the Control Point, they will be cleared to enter the uncontrolled hospital area.
2. In case persons are found to be contaminated, they will take a shower, be monitored again, and, if free from contamination, be supplied with disposable garments; then proceed as described above.

F. Use of dosimeters

1. Dosimeters will be supplied at the Control Point to all personnel entering the Radiation Emergency Area
2. Dosimeters are of three types:
 - a. Direct reading dosimeters ("pen-dosimeters"), which are supplied to all personnel;
 - b. Badge dosimeters (TLD type), also supplied to all personnel;
 - c. Ring dosimeters (TLD's), which are only supplied to surgeons (and their assistants, if any) in case they have to remove highly radioactive foreign bodies.

3. Dosimeters are to be worn:
 - a. Above the sternum, clipped to the scrub suit (pen and badge dosimeters) i.e. under the outer layer of the protective clothing.
 - b. On the ring finger of the right and left hand under the glove (ring dosimeters).
4. Upon leaving the Radiation Emergency Area, the wearer should surrender his dosimeters to the Control Point attendant, who will record the reading of the pen dosimeter and retain the TLD dosimeters for later processing by Radiation Management Corporation.
5. The Control Point attendant must assure that the records clearly show the serial number of each dosimeter worn by each individual who occupied the Radiation Emergency Area and duration of time each individual spent in the REA.

APPENDIX B

PROCEDURES FOR PATIENT DECONTAMINATION AND
SAMPLE TAKING

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Appendix B

PROCEDURES FOR PATIENT DECONTAMINATION AND SAMPLE TAKING

A. General

These procedures cover the use of the RMC Decontamination and Sample Taking Kits. The kits provide all the necessary items for the decontamination of a radioactively contaminated patient and the collection of specimens of this contamination. Identical kits have been furnished to the Nuclear Power Plant and its supporting hospital.

The collection of specimens is a prerequisite for a thorough evaluation of the medical and radiation status of the patient. It should be performed in conjunction with patient decontamination.

Appendix C provides a parts list for each of the two kits. There is also a parts list in each kit. Following use, the lists should be consulted for replenishment. The intended use of several of the items is indicated on the parts list.

Appendix C also contains a copy of "Patient Radiation and Medical Status Record Sheet". This form should be used to record essential data on the patient's medical and radiation status. It should be completed at the Nuclear Power Station and sent with the patient to the hospital. Several copies of this form are contained in each kit.

B. Patient Decontamination Procedures

1. Principles

a. The objectives of decontamination are:

- (1) to prevent injury caused by the presence of radioactive substances on the body.
- (2) to prevent the spread of contamination over and into the patient;
- (3) to protect attending personnel from becoming contaminated themselves or (in extreme cases) from being exposed to a source of radiation.

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- b. Although decontamination should be started as soon as possible, primary attention should be given to the alleviation of life-threatening conditions created by traumatic injury.
- c. Decontamination is essentially the physical removal of radioactive dirt from the skin, wounds, or body orifices. Most decontaminants contain detergents or other chemical agents to facilitate this removal. Therefore, most decontaminants are suitable for decontamination of the intact skin only, i.e., are not appropriate for wound cleansing or irrigation of body orifices.
- d. Decontamination is performed:
 - from the highest level of contamination to the lowest;
 - starting with the simplest procedure (e.g., soap and water) to more complicated procedures;
 - with due regard to contamination of wounds, body orifices, etc. (see below for specific guidelines).
- e. Usually, the effect of decontamination is greatest in the earliest stages, i.e., most of the radioactive material is removed during the first decontamination effort. Continued decontamination may show diminishing effectiveness. At some point, a decision has to be made to either accept some residual contamination, or proceed with the use of more potent decontaminants (more specific guidelines below).

2. Measures to be taken before decontamination

- a. Assuming that gross decontamination has been performed at the Nuclear Power Station, it can be expected that the residual contamination is minor, and/or that serious contamination is localized, e.g. around and in a wound. Before decontamination, the following steps should be taken:
 - (1) judge whether the patient's condition requires immediate intervention; if so, proceed, covering the contaminated area with a plastic drape or a towel;
 - (2) obtain a briefing from the Nuclear Power Station health physicist as to the contamination status of the patient, and as to the specific measures to be taken by attending personnel with regard to their protection.

- (3) monitor the patient with the radiation survey instrument by scanning the entire body (holding the probe about 2 inches from the skin), and record the findings on the PATIENT STATUS RECORD SHEET; decide in which order skin decontamination shall be performed;
 - (4) inspect wounds, inquire about their decontamination at the Nuclear Power Station, and decide whether further wound decontamination or treatment can safely be postponed until completion of skin decontamination;
 - (5) make a decision as to whether certain samples should be taken (see paragraph C for further details).
- b. In case no decontamination has been performed at the Nuclear Power Station (most likely because of an urgent need for emergency surgical treatment):
- (1) perform a gross decontamination by removing all clothing and obvious dirt and debris; if immediate intervention is necessary, cover the contaminated area with a plastic drape and proceed;
 - (2) at the same time: obtain a briefing from the Nuclear Power Station health physicist as to the measures to be taken by attending personnel with regard to their protection;
 - (3) after the emergency treatment; proceed with the applicable steps described under 2a(2) to (5) above.

3. Decontamination techniques

a. General

Two general rules apply to the performance of decontamination:

- (1) check the effectiveness of the technique applied by monitoring periodically;
- (2) avoid the spread of radioactive materials from the area being decontaminated to areas of lesser contamination by covering the adjacent area.

Except when prohibitive degrees of contamination are present on/in any of the locations listed below, decontamination is performed in the following order:

- (1) wounds and adjacent skin;
- (2) body orifices and adjacent skin;
- (3) other skin areas.

b. Decontamination of wounds

- (1) use aperture drape (DW5) (see code in Parts List) to isolate the contaminated area;
- (2) take sample (see paragraph C2 a);
- (3) decontaminate skin adjacent to wound as described below;
- (4) depending on surface and depth of wound, irrigate wound with sterile saline (use DW3, DW4, and DW8), dab with gauze pads and sterile saline (use DW3, DW8, DW1, and DW6), or use applicators (DW7) to cleanse wound; collect all materials used, and place in labeled containers;
- (5) remove obviously necrotic and devitalized tissue surgically; keep all tissue specimens removed (see paragraph C);
- (6) monitor wound; record result on DM7;
- (7) if contamination persists - consult with RMC to determine further course of action;
- (8) if wound clean - treat wound as indicated.

c. Decontamination of body orifices

- (1) take samples of activity in nares, ear canals, and other orifices as indicated (see paragraph C2 a);
- (2) decontaminate area surrounding orifices as described below;
- (3) gently clean orifice using wetted swabs (DW7 or SWN2);
- (4) if nose swab indicates significant radioactivity in nasal cavity, irrigate (DN1 and DN2);
- (5) collect all materials used, and label containers.

d. Decontamination of skin

- (1) take smear sample of area (see paragraph C2 a);
- (2) protect adjacent area by covering with plastic drape or towels;
- (3) cleanse skin area:
 - around wounds and orifices:
tepid water, using large absorbent balls (DSK1); cover entire contaminated surface with a good lather, repeatedly

renewing cotton balls (discard in DSK4); remove lather after 2-3 minutes by wiping repeatedly with wetted cotton balls; monitor; record result on DM7;

- other skin areas: wash thoroughly with Turco decon soap (DSK8) and tepid water, using either cotton balls (DSK1), pre-op sponges (DSK5), or hand brushes (DSK6); cover area with a good lather; rinse off after 2-3 minutes with running water; monitor; record result on DM7.

- (4) if contamination persists: repeat step (3) once;
- (5) if contamination still persists: try gentle application of clorox (DSK9) or hydrogen peroxide (DW9) NOTE:{avoid any of these entering wound or body openings}; repeat a few times using new cotton balls; remove decontaminants with water; monitor; record result on DM7;
- (6) after complete decontamination: dry skin and apply Nivea cream (DM2)
- (7) if residual contamination is present: consult with plant health physicist to decide whether further efforts are indicated (consult with RMC if necessary); if it is decided to accept residual contamination, dry the skin and apply collodion (DM1), mark area involved (DM8); record on DM7;
- (8) collect all materials used and label containers.

NOTES:

- in case of serious contamination around a wound, rapid removal of the bulk of radioactivity can be obtained by shaving (use DM4) the adjacent skin;
- in case of serious contamination of hair, or under nails: clip (use DM3 or DM5).

C. Procedures for Sample Taking

1. Principles

- a. The objectives of collecting specimens from a radiation accident victim are:

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- (1) to evaluate the amount and composition of the radioactive contaminants on and in the body;
 - (2) to obtain data with regard to the patient's exposure to external radiation;
 - (3) to supply information on the biological injury inflicted by the irradiation.
- b. To meet these objectives, the following types of specimens are collected routinely:
- (1) materials containing the external contaminant (swabs, smears, tissue samples, contaminated cleansing fluids, etc.);
 - (2) specimens containing internal contaminant (feces, stools, sputum, etc.);
 - (3) in case of neutron irradiation: materials in which neutron induced radioactivity may be present (gold rings, buttons, hair, nail clippings);
 - (4) hematological specimens (whole blood in heparinized, oxalated, and uncoated tubes; blood smears, leukocyte counts).
- c. As the analysis of radioactive samples with regard to their composition is only possible in samples with a relatively high radioactivity, care should be taken to collect and store these samples separately from the usually bulky samples with rather low radioactivity (such as cleansing fluids, drapes, towels, etc.).
- d. A sample which is not identifiable as to its source (location, time taken) may be practically worthless: therefore, take care to properly collect, store, and mark all samples.

2. Sample taking techniques and indications

a. External contamination

Before decontamination, the following samples shall be obtained:

- (1) skin smears: use SSK1 smear pads, moisten with a few drops of water, and smear a skin area of about 100 cm² (4x4 in.), if possible, by allowing sticky side of the smear to adhere to gloves, and rubbing the smear pad over the surface to be

sampled; place smear on record paper, record location and time, and area smeared if other than 100 cm²;

(2) wound samples: use either one of the following methods:

- large wounds with visible blood or wound fluid: obtain a few cc using dropper from SWN3; transfer to bottle and label;
- superficial wounds: rub gently with cotton swab SWN1, return to tube, label;
- wounds with visible dirt or debris: remove with applicator SWN1 or use tweezers, and transfer sample to small glass vial SSS1; label.

b. Internal contamination

- (1) body orifices: wet Q-tip SWN2 with a few drops of water, swab, store in water-proof envelope SWN4, label;
- (2) in all cases where internal contamination is suspected: collect all urine and feces in containers supplied (SF3 and SF1 respectively), record time of voiding.

c. External exposure

In all cases where a whole body dose of more than 10 rad is suspected:

- (1) obtain a blood smear for differentiation;
- (2) obtain a leukocyte count;
- (3) obtain 30 ml of blood in vacutainers SB1, SB2, and SB3, using SB4 and SB5.

Record time these samples were taken.

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APPENDIX C

PARTS LIST FOR DECONTAMINATION AND SAMPLE TAKING KITS

DECONTAMINATION KIT

Parts List, Instructions for Use

Code:
yellow round
labels marked:

1. Skin Decontamination(a) Utensils:

Absorbent balls, extra large	100	DSK1
Sponge - holding forceps	1	DSK2
Plastic beaker, large (to discard used sponges)	2	DSK4
Pre-op sponges (for large area decontamination)	6	DSK5
Surgical hand brushes (for hands/feet decontamination)		DSK6
Wash bottle (to hold water for decontamination)	1	DSK7

(b) Decontaminants

TURCO decon soap, bottles (for first decon effort, general)	2	DSK8
Clorox, bottle (for second decon effort)	2	DSK9

(see
Instructions
in bottle)

2. Wound Cleaning(a) Utensils:

Sterile gauze pads, 4x4-inch, in box	100	DW1
Surgical gloves, assorted sizes sterile, pair	5	DW2
Solution bowl, plastic	1	DW3
Plungerless syringes, 50 cc, sterile	1	DW4
Cotton tipped applicators	25	DW7

(b) Cleansing agents:

Saline solutions, normal sterile, bottle	1	DW8
Hydrogen peroxide, 3% solution bottle	1	DW9

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3. Miscellaneous materials

Nivea cream, jar (apply on dry skin after complete decon)	1	DM1
Prep Kit (for clipping and shaving)	1	DM2
Nail clippers, pair	1	DM3
Scissors, heavy duty, HARE, paramedic	1	DM4
New Form Patient Radiation and Medical Status Record Sheets (for recording essential data on patients' medical and radiation status)	5	DM5
Plastic bags, assortment (to hold decon materials after use)	1	DM6
Tags, with wire (to indicate contents of container and bags)	10	DM7
Tissue paper, box	1	DM8
Notebook	1	DM9
Pencils	5	DM10

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SAMPLE TAKING KIT

Parts list/instructions for use

- Code:
green round
labels marked:
1. Blood Sampl
Vacutainers, heparinized,
10 ml, sterile 6 SB1 ,green stopper
Vacutainers, uncoated,
10 ml, sterile 6 SB2 ,red stopper
Vacutainers, oxalated,
10 ml, sterile 6 SB3 ,gray stopper
Needle-holder combination,
sterile 12 SB4
Alcohol wipes, sterile,
pre-packaged 12 SB5
 2. Wound Fluid, Nose Swabs
Cotton tipped applicators,
in test tube, sterile SWN1
Envelopes, (for storage of
nose swabs) SWN4
Tissue paper, box
(for nose blows) 1 SWN5
 3. Small specimens (hair, nails,
tissue samples, sputum)
Bottles, wide mouth, 100 ml 5 SSS2
 4. Excreta, irrigation fluids,
vomit
Jar, plastic for feces samples 2 SF1
Urine: specitainers, 2500 5 SF3
Bottles, wide mouth, 500 ml,
for collection of irrigation
fluids 2 SF4
 5. Skin Smears
NUCON smear pads, with
envelopes 50 SSK1

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6. Miscellaneous items

Plastic bags, assorted sized	10	SM1
Tags, with wire	20	SM2
Labels, self-sticking	20	SM3
Patient Radiation and Medical Status Record Sheets (to record specimens collected)	5	SM4
Notebook	1	SM5
Pencils	5	SM6

APPENDIX D

INVENTORY OF RADIATION EMERGENCY AREA SUPPLIES AND EQUIPMENT

ALL MEDICAL ITEMS WILL BE BROUGHT

FROM THE EMERGENCY ROOM AS REQUIRED.

DECONTAMINATION KIT

NOTE: Items specified in this kit are to be used for decontamination of hospital areas and equipment.

<u>Quantity</u>	<u>Item</u>	<u>Remarks</u>
2 each	Sheet Polyethylene (12'x24')	Floor covering
2 each	Sheet Polyethylene (3'x12')	Walkway Covering
2 pair	Coveralls, Cotton	Protective Clothing for Decontamination Personnel
4 pair	Gloves, Rubber	
2 pair	Gloves, Cotton	
6 pair	Poly Shoecovers	
20 each	Poly Bags (Large)	Decontamination equipment and Waste Disposal Supplies
1 roll	Absorbent Paper (3x12)	
2 liter	Decontamination Solution(Concentrated)	
2 pails	Poly (one gallon)	
2 each	Heavy Duty Scrub Brushes	
5 each	Carpenters Crayons	
1 package	Cleaning Rags	
1 roll	Masking Tape (2")	
4 each	Signs "Caution Radiation Area"	For Posting of area and Identification of Contaminated Equipment and Waste
4 each	Signs "Caution Radioactive Material"	
10 each	Stickers, "Contaminated Material"	
1 roll	Barrier Tape	
1 kit	Personnel Decontamination Kit	Decontamination of H.P. Personnel

Portable G.M. Survey Meters and G.M. Counter-scalers will be supplied from the Nuclear Power Station as required to support the decontamination operation.

APPENDIX E

RADIATION EMERGENCY TELEPHONE DIRECTORY

APPENDIX E

RADIATION EMERGENCY TELEPHONE DIRECTORY

North Adams Regional Hospital 413-663-3701

Yankee Atomic Electric Company 617-366-9011

John G. Robinson 617-366-9011
Henry B. Buchanan 617-366-9011

Yankee Rowe Nuclear Power Station 413-625-6393
Night

Herbert A. Autio 413-339-4819
Plant Superintendent

William G. Jones 413-339-4295
Asst. Plant Superintendent

Shift Supervisor/Control Room 413-625-6393

Health Physicist/Chem. and H.P. Office 413-625-6393

Coordinating Physicians

Day

Night

Robert Davis, M.D.	Limited Answering	413-458-5933
	413-458-8182	
William Everett, M.D.	413-458-8182	413-458-5537
John Merselis, M.D.	413-458-8182	413-458-3060
James Surgenor, M.D.	413-458-8182	413-458-3283

Ambulance Service

Whittingham Ambulance Service 802-368-2323 (Day and Night)

Radiation Management Corporation

215-243-2990 Primary
215-387-5013 Secondary
215-243-2950 Administrative

APPENDIX F_

LOCATION OF MANUALS

LOCATION OF MANUALS

Radiation Management Corporation

Yankee Atomic Electric Company

Yankee Rowe Nuclear Power Station

Plant Superintendent
Health Physicist/Chem. and H.P. Office
Station Treatment Room

North Adams Regional Hospital

Administration Office
Emergency Room
Decontamination Unit
Nursing Supervisor Office
Hospital Engineer

Coordinating Physicians

Robert Davis, M.D.
William Everett, M.D.
James Surgenor, M.D.
John Merselis, M.D.

APPENDIX G
DOSIMETRY LOGS

PERSONNEL DOSIMETRY LOG

[illegible]

50-29

NRC DISTRIBUTION OR PART 50 DOCKET MATERIAL

FILE NUMBER

TO: NRC

FROM: Yankee Atomic Electric Co
Westborough, Mass
J L French

DATE OF DOCUMENT

4-8-76

DATE RECEIVED

4-12-76

☒ LETTER
☒ ORIGINAL
☐ COPY☐ NOTORIZED
☒ UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED

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DESCRIPTION

Ltr re our 10-9-75 ltr....trans the following:

ENCLOSURE

North Adams Regional Hospital Procedures.....
prepared by Radiation Management Corporation..
.....(20 cys encl rec'd)

PLANT NAME: Yankee Rowe

SAFETY

FOR ACTION/INFORMATION

ENVIRO 4-1-3-76 ehl

ASSIGNED AD :
BRANCH CHIEF :
PROJECT MANAGER:
LIC. ASST. :Purple
Burger
S. Sheppard
w/all extrasASSIGNED AD :
BRANCH CHIEF :
PROJECT MANAGER :
LIC. ASST. :

INTERNAL DISTRIBUTION

REG FILE

SYSTEMS SAFETY

PLANT SYSTEMS

ENVIRO TECH

NRC PDR

HEINEMAN

TEDESCO

ERNST

I & E (2)

SCHROEDER

BENAROYA

BALLARD

OELD

LAINAS

SPANGLER

GOSSICK & STAFF

ENGINEERING

IPPOLITO

MIPC

MACCARY

SITE TECH

CASE

KNIGHT

OPERATING REACTORS

GAMMILL

HANAUER

SIHWEIL

STELLO

STEPP

HARLESS

PAWLICKI

HULMAN

OPERATING TECH

PROJECT MANAGEMENT

REACTOR SAFETY

EISENHUT

SITE ANALYSIS

BOYD

ROSS

SHAO

VOLLMER

P. COLLINS

NOVAK

BAER

BUNCH

HOUSTON

ROSZTOCZY

SCHWENCER

J. COLLINS

PETERSON

CHECK

GRIMES

KREGER

MELTZ

HELTAMES

AT & I

SITE SAFETY & ENVIRO

SKOVHOLT Ltr

SALTZMAN

ANALYSIS

RUTBERG

DENTON & MULLER

EXTERNAL DISTRIBUTION

CONTROL NUMBER

LPDR: Greenfield me

NATL LAB

BROOKHAVEN NATL LAB

TIC

REG. V-IE

ULRIKSON(ORNL)

NSIC

LA PDR

ASLB

CONSULTANTS

ACRS HOLDING/SENT

3634