EMERGENCY PLAN
Part II

MEDICAL PLAN

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RADIATION EMERGENCY MEDICAL PLAN

I. INTRODUCTION

A. PURPOSE

It is the objective of the Radiation Emergency Medical Plan to provide for the selection and delivery of appropriate medical care for personnel who may have been exposed to serious radioactive contamination or radiation injury, possibly concomitant with other injuries, at the Joseph M. Farley Nuclear Plant. In the event of an accident, to ensure a smooth flow of action from initial evaluation and treatment through final disposition, knowledgeable decision making regarding medical priorities is required. Adequate arrangements for transportation of injured personnel and assurance that proper facilities as well as expert professional and paramedical services are immediately available are necessary. Through careful planning, training and practice, this objective will be accomplished.

B. SCOPE

The plan provides for onsite medical support and offsite medical support at three levels: primary care, definitive care, and back-up definitive care. A description of casualty flow to these facilities including action levels, transportation available and notification procedures, is given.

Provisions are made for training at the local level of support to minimize the chance of an accident and to ensure that, in the event of an accident, affected personnel onsite and offsite respond appropriately without compounding the medical or radiological problems present.

II. MEDICAL SUPPORT AND FACILITIES

A. PLANT SITE

1. General
Onsite emergency medical activities are performed by trained and qualified persons immediately available under the direction of the Emergency Director and will consist of:

a. Removal of personnel from hazardous area (high radiation level or contamination levels)

b. First aid for severe physical injuries

c. Personnel decontamination

d. Evaluation of radiation exposure

e. Triage of personnel

An aerial view of the plant site is shown in FIGURE 1.

2. Facilities

The health physics and decontamination facility is located at elevation 155 of the Auxiliary Building as shown in FIGURE 2 and FIGURE 3.

This facility is located near potentially contaminated and high radiation areas so that health physics support, first aid, and personnel decontamination can be effectively administered. A Health Physics technician will normally be available at this facility.

In the event of a Site Area or General Emergency when the health physics and decontamination facility might become untenable, the Nursing Station (FIGURE 4) at the Training/Visitor's Center will normally become the center for personnel first aid and decontamination activity. The necessary first aid and decontamination supplies for these facilities are listed in APPENDIX A.

B. SOUTHEAST ALABAMA MEDICAL CENTER (SAMC)

The Southeast Alabama Medical Center (SAMC) of Dothan, Alabama, has agreed to accept injured, contaminated and/or irradiated casualties (APPENDIX B). This hospital is a 400 bed general hospital fully accredited by the State Hospital Association and Joint Commission for Accreditation of Hospitals and Organizations. It has a modern fully equipped emergency room of sixteen suites with provisions to perform all necessary procedures; complete laboratory and diagnostic x-ray capabilities; and 13 major and 1 minor surgical suites. There are approximately 100+ members on the active staff, the majority board certified or qualified representing all major medical specialties.

Space (FIGURE 5) at the hospital provides a receiving area for potentially contaminated and/or irradiated patients and has a separate entrance from the normally used emergency entrance. This facility is adequate for:

1. Personnel decontamination

2. Emergency treatment

3. Storage of emergency equipment and supplies

A permanent helipad exists for air evacuation of injured or irradiated personnel via helicopter. Communications can be established by FNP with SAMC through the hospital's switchboard or directly with the hospital emergency room.

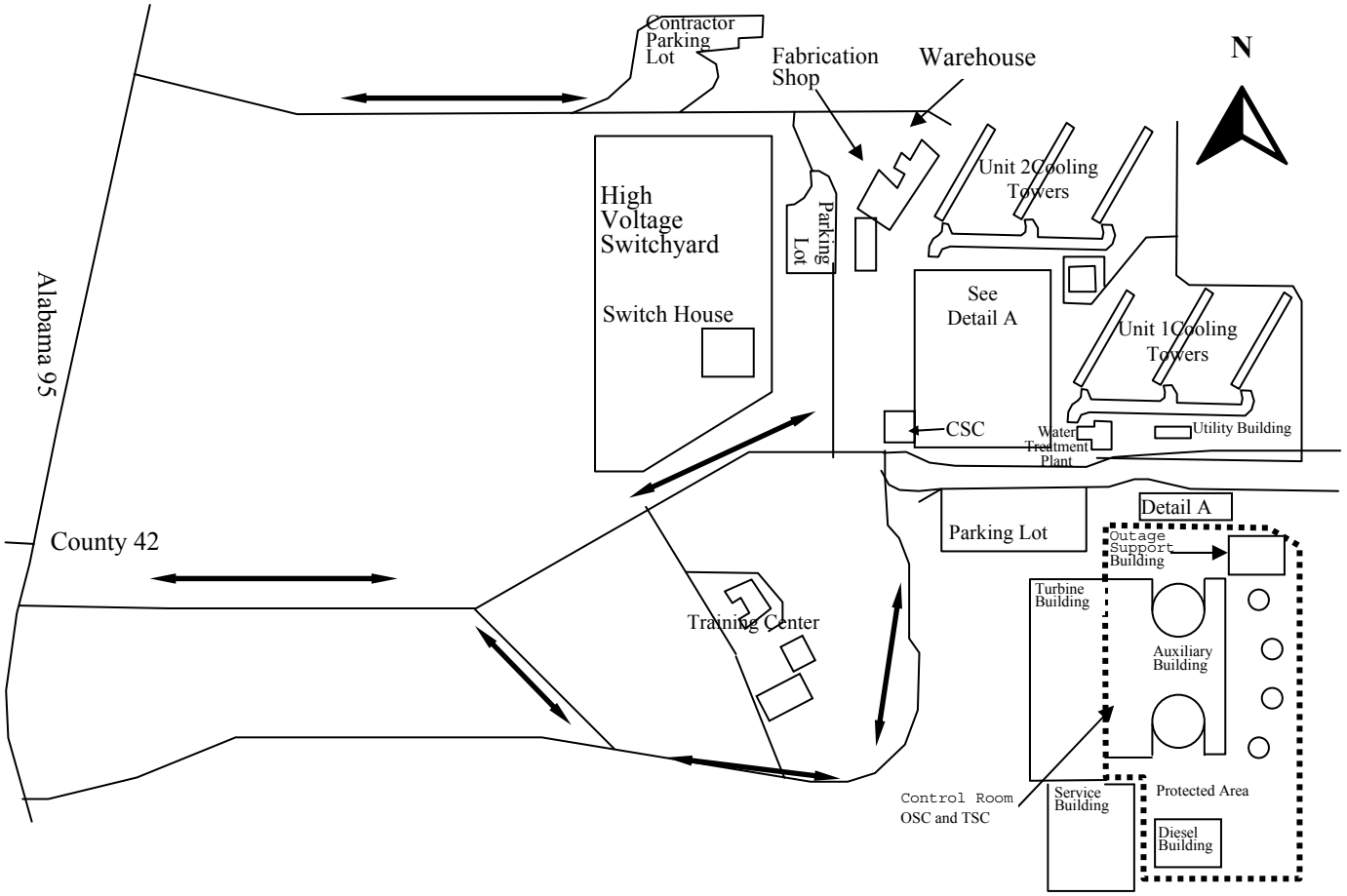
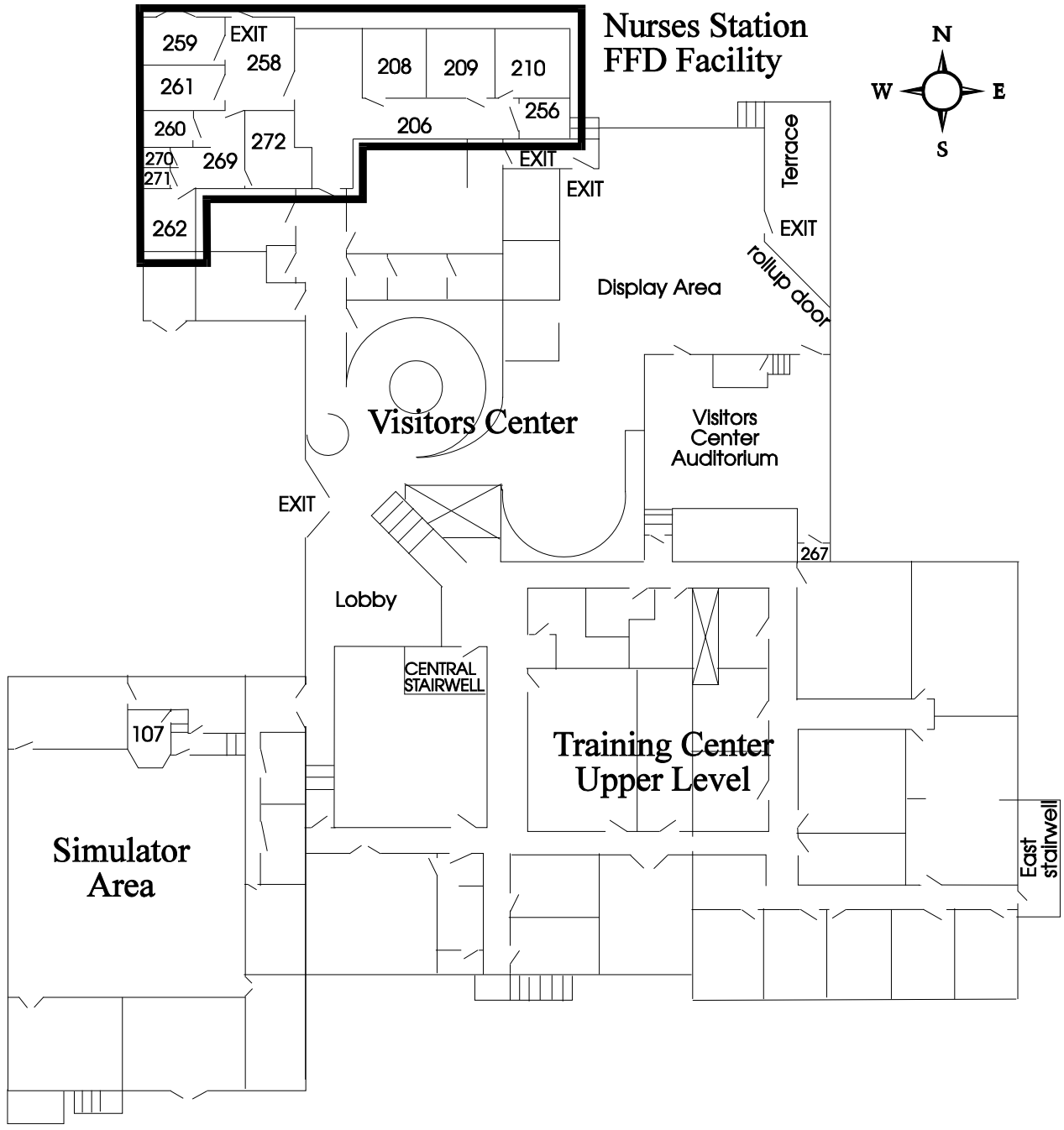


FIGURE 1 Aerial view of plant site

FIGURE 2

FIGURE 3



FITNESS FOR DUTY/NURSE'S STATION

Figure 4

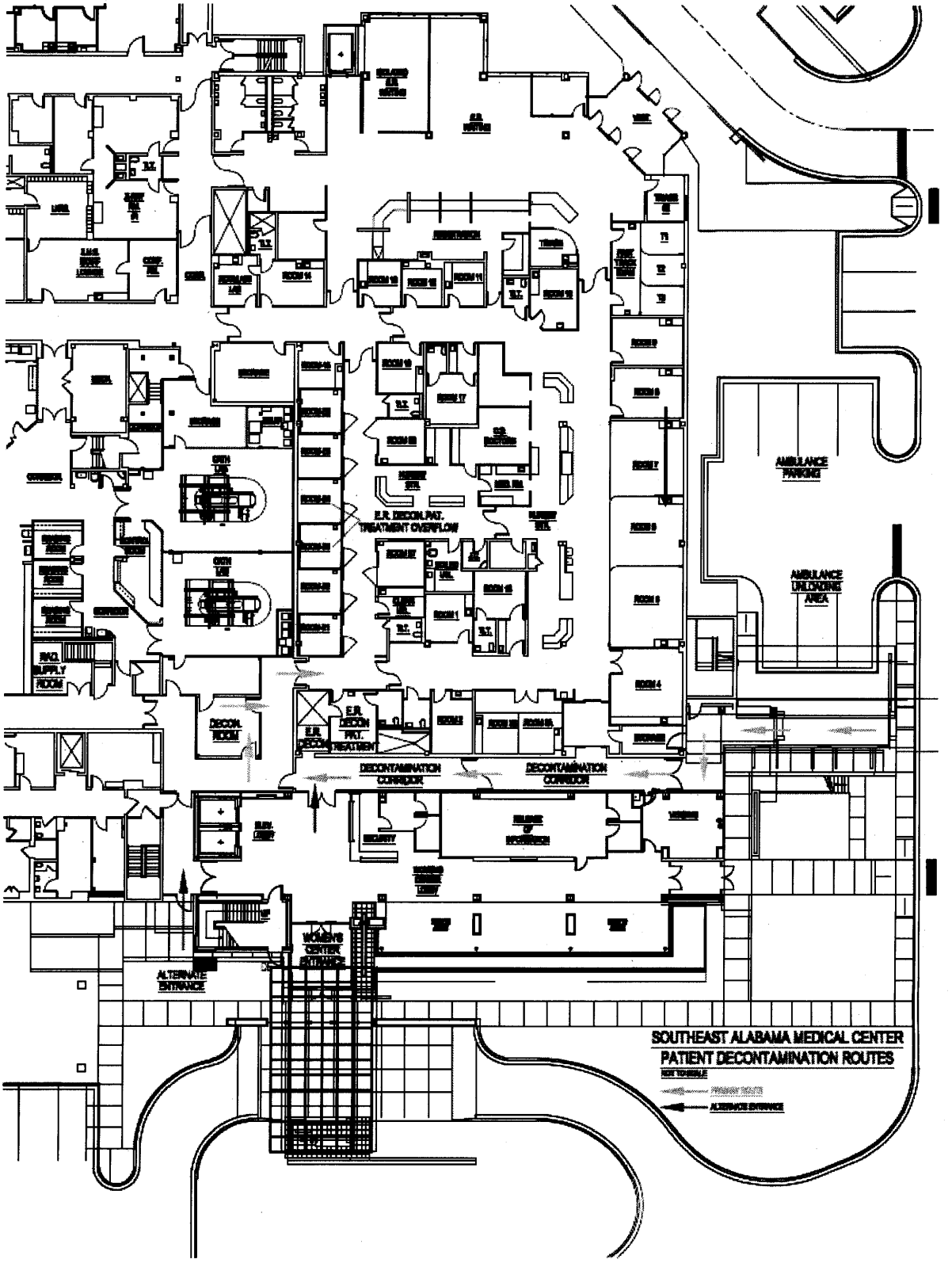


FIGURE 5 Southeast Alabama Medical Center Floor Plan

C. THE UNIVERSITY OF ALABAMA HOSPITAL (RCTF)

The University of Alabama Hospital in Birmingham, Alabama, has agreed to admit and provide on a priority basis definitive care for contaminated and/or irradiated casualties (APPENDIX B). This hospital is a 639 bed teaching institution affiliated with the University of Alabama in Birmingham School of Medicine. It is accredited by the Joint Commission on Accreditation of Hospitals and Organizations and is licensed by the Alabama State Board of Health. It is a member of the American Hospital Association, the Council of Teaching Hospitals and the Alabama Hospital Association. Its specialists in oncology, hematology, infectious disease, endocrinology, gastroenterology, nuclear medicine, radiology, and the surgical specialties render it fully capable of providing effective medical care. Already in existence are portable and fixed isolation units capable of maintaining a sterile environment.

Facilities for the care of radiation emergency casualties have been developed to provide a Radiation Casualty Treatment Facility (RCTF). The RCTF consists of a nine bed unit, a nursing station, utility room, storage room, and a treatment and examination room.

D. OAK RIDGE Institute of Science and Education (ORISE)

Oak Ridge Associated Universities operates a Radiation Emergency Assistance Center Training Site in Oak Ridge, Tennessee. Its specialized facilities and staff are available for the care and treatment of possible radiation casualties from the Joseph M. Farley Nuclear Plant of Alabama Power Company in Dothan, Alabama (APPENDIX B). The ORISE-REAC/TS can accommodate approximately 20 patients who are contaminated or have received external radiation. A laminar flow facility with two sterile rooms is available for patients requiring isolation. Sophisticated whole-body counting equipment, probes for locating radioactive particles in wounds, and computer-based monitoring services are also available. The staff of the ORISE-REAC/TS has considerable experience in total-body irradiation and several have participated in the handling of previous radiation accident casualties. The nursing staff, aides and orderlies, likewise, are experienced in handling patients who have been treated with or accidentally exposed to both external and internal radiation. Full diagnostic laboratory and radiographic back-up facilities are available. A description of their facilities is given in APPENDIX E.

III. RADIATION CASUALTY HANDLING PROCEDURE

A. NOTIFICATION

A general order of notification in the event of an incident at the Farley Nuclear Plant is given in PART I, FIGURE 24. Detailed lines of notification and communication concerning medical support are given in FIGURE 6 of this plan.

B. ONSITE RESPONSIVE ACTION

Actual or suspected radiation casualties, with or without concomitant trauma, will be moved to the primary onsite decontamination area as shown in FIGURE 2 and FIGURE 3. If this primary onsite decontamination area is unavailable as a result of the emergency, the casualties will be moved to the secondary onsite decontamination area as shown in FIGURE 4. The priority order of onsite medical emergency action will then be:

1) First aid of life-threatening or severe physical injury;

2) Personnel decontamination, to the extent that trauma is aggravated;

3) Evaluation of radiation exposure, external and internal, with concomitant first aid of other injuries.

The actual or suspected casualties may be grouped into three classes for triage considerations.

Class I

Criteria

1) Estimated radiation dose greater than applicable 10CFR20 limits but less than 5 rem to whole body (including eyes, gonads, and blood-forming organs); or

2) Estimated radiation dose to the skin of the whole body greater than the 10CFR20 limit but less than 30 rem; or

3) Estimated radiation dose to the feet, ankles, hands, or forearms greater than the 10CFR20 limit but less than 75 rem.

ACTION

1) Without trauma - Send to Southeast Alabama Medical Center (SAMC) for evaluation after clearance by Health Physics for contamination.

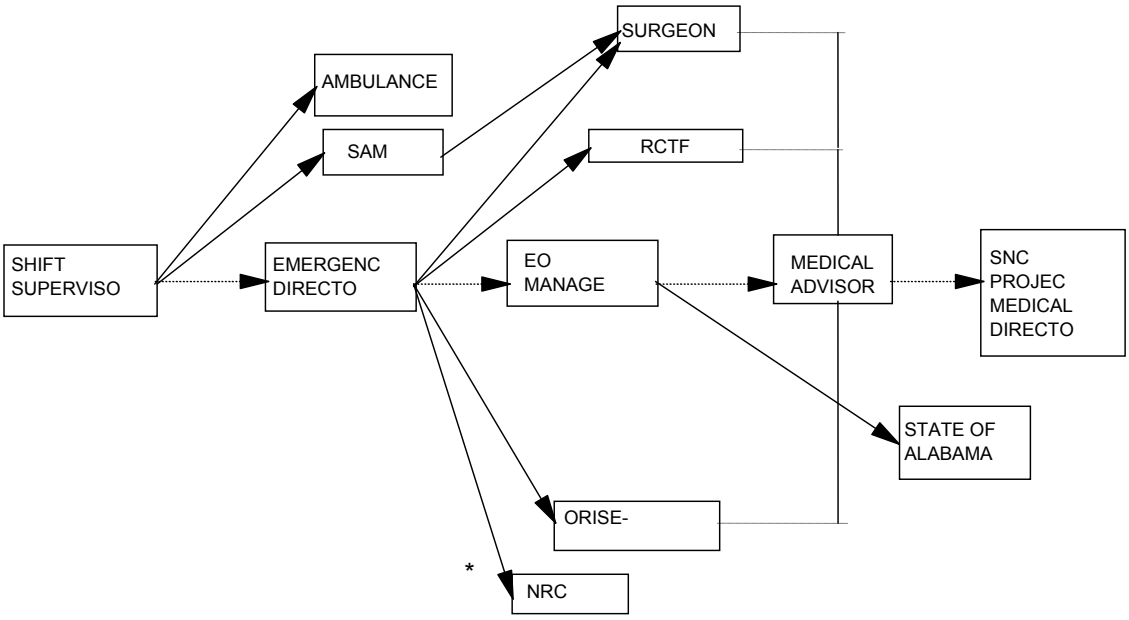
2) With trauma - Apply appropriate first aid then send to SAMC for evaluation. Monitoring for contamination is desirable prior to sending the casualty to SAMC.

Class II

Criteria

1) Estimated radiation dose to the whole body (including eyes, gonads, and blood-forming organs) greater than 5 rem but less than 25 rem, or

MEDICAL NOTIFICATION ORDER



* If injury involves contamination, excessive exposure or if it is anticipated that injured will be admitted to the hospital for observation or treatment in excess of 48 hours duration.

FIGURE 6 - MEDICAL NOTIFICATION ORDER

2) Estimated radiation dose to the skin of the whole body greater than 30 rem but less than 150 rem; or

3) Estimated radiation dose to the feet, ankles, hands, or forearms greater than 75 rem but less than 375 rem.

Action

1) Without trauma send to SAMC for evaluation after clearance by Health Physics for contamination.

2) With trauma apply appropriate first aid, then send to SAMC for evaluation. Monitoring for contamination is desirable prior to sending the casualty to SAMC.

Class III

Criteria

1) Estimated radiation dose to the whole body (including eyes, gonads, and blood-forming organs) of 25 rem or more; or

2) Estimated radiation dose to the skin of the whole body of 150 rem or more; or

3) Estimated radiation dose to the feet, ankles, hands, or forearms of 375 rem or more.

4) Internal radiation exposure estimated to be significant.

Action

1) Without trauma - after proper decontamination by Health Physics, send to SAMC for evaluation and potential transfer to the Radiation Casualty Treatment Facility (RCTF) in Birmingham or to ORISE-REAC/TS in Oak Ridge,Tennessee.

2) With trauma - appropriate first aid, decontamination, and send to SAMC for treatment and potential transfer to RCTF or REAC/TS.

The above estimates of external and internal radiation exposures will be performed by the Health Physics staff on the basis of all available information, including dosimeters, area monitors, air monitors, and survey instruments.

Contaminated casualties sent to SAMC, RCTF, or REAC/TS will be accompanied by a person who is qualified in radiological monitoring and will stay in attendance and maintain radiological control until decontamination is complete. Contaminated casualties will be covered with suitable protective clothing or plastic sheets so as to prevent or minimize the spread of radioactive material. Radiation exposure to the vehicle operator and any attendant personnel will be

minimized to the extent possible, and shadow shields may be used. Inhalation of airborne radioactive material may be minimized through the use of respiratory protective devices.

Each casualty will be identified before leaving the plant with a nonremovable hospital type wristband showing his name and an identification number for use for reference purposes in all communications, to avoid possible confusion in reporting estimates of radiation dose and similar matters.

C. SAMC RESPONSIVE ACTION

All casualties sent to SAMC will enter the Radiation Casualty/Decontamination area and be surveyed by qualified personnel assigned for that purpose. Emergency medical care will be provided if required together with further decontamination.

1) Criteria

Those casualties with estimated radiation doses less than 25 rem to the whole body (including eyes, gonads, and blood-forming organs) and estimated from bioassay measurements and other reasons not to be bearing significant quantities of internal emitters.

Action

Hospitalize if necessary for continued treatment of trauma or illness; otherwise continue minor treatment, observation and evaluation on out-patient basis, after release by Health Physics personnel. Observation and evaluation will include hematological surveys, bioassays of urine and feces, and general physical condition, including opthalmological and dermatological examinations. If evaluation so indicates (e.g., leukopenia), transfer to RCTF or REAC/TS.

2) Criteria

Those casualties with estimated radiation doses of greater than 25 rem to whole body, or thought from bioassay measurements and other reasons to be bearing significant quantities of internal emitters.

Action

Transfer to RCTF or REAC/TS (after emergency treatment of trauma or illness).

In the event of mass casualties, a decision will be made as to which casualties will be sent from SAMC to RCTF, or directly to ORISE REAC/TS. This decision will be made by the Medical Director of the Southern Nuclear Operating Company or his designated alternate, with the advise of staff and consultants.

Contaminated and/or irradiated casualties sent from SAMC to RCTF, ORISE-REAC/TS or elsewhere, will be accompanied by a person qualified in radiological monitoring. This person will stay in attendance and maintain radiological control until the patient is transferred to a similarly qualified person at the receiving institution.

All rooms, equipment, and supplies used to treat contaminated personnel will be made controlled areas and considered to be contaminated until released by the Health Physics staff.

D. RCTF RESPONSIVE ACTION

Casualties sent to RCTF will be met outside the building by an individual qualified in radiological monitoring, will enter through the appropriate emergency room entrance of the University of Alabama Hospital, be surveyed and then transported directly to the RCTF. The staff of the RCTF will have been previously notified and will be ready to accept the patients.

IV. TRANSPORTATION

A. SERVICES AVAILABLE

1. Local Rescue Squads

Ashford Rescue Squad

Columbia Rescue Squad

2. Dothan Ambulance Service (Pilchers Ambulance Service), Inc.

Dothan Ambulance Service, Inc. has agreed to transport potentially contaminated and/or irradiated casualties from the plant site to SAMC and on to the University of Alabama Hospital in Birmingham, Alabama or Radiation Emergency Assistance Center Training Site (REAC/TS) of Oak Ridge Institute for Science and Education (ORISE) in Oak Ridge, Tennessee ORISE-REAC/TS. Their ambulances are equipped with radios so they can be in communication through SAMC with the Control Room.

B. ROUTES

1. Plant Site to SAMC (Figure 7, 8)

Normally, emergency vehicles will proceed west on County Road 42 to County Road 33; southwest on County Road 33 to County Road 55; south on County Road 55 to U.S. 84, west on U.S. 84, until its junction with State Highway 210 (Ross Clark Circle) at which point the Medical Center is located.

If the normal route is unavailable then an alternate route will be directed by the control room. Two such alternate routes are shown on Figure 7.

2. Plant Site or SAMC to the University of Alabama Hospital (FIGURE 9)

As in 1 above, to State Highway 210 (Ross Clark Circle); then north on 210 to its junction with U.S. Highway 231; Highway 231 north to Montgomery and junction with Interstate 65 then north on Interstate 65 to Birmingham. Exit Interstate 65 at 8th Avenue South; east to 19th Street; north to 6th Avenue South; east to University Hospital Emergency Room.

3. SAMC to Oak Ridge, Tennessee (FIGURE 9)

As in 2 above on Interstate 65 to Interstate 59 north to Chattanooga, Tennessee; north on Interstate 75 to Interstate 40; west on Interstate 40 to State Highway 95; north on State Highway 95 to Oak Ridge, Tennessee, then north on New York Avenue to West Tennessee Avenue; east to ORISE-REAC/TS.

V. DRILLS

Radiation emergency practice drills will be conducted annually to maintain the proficiency of the organization and personnel at the plant, SAMC and at the RCTF and to verify the arrangements made with other groups. Drills will be arranged so as to provide quantitative data on response times for each communication, decision and action element of the overall Radiation Emergency Medical Plan. These response times will be used to predict the effectiveness of the Plan and to disclose areas where improvement in training, equipment or organization is needed. Management review of critique comments obtained from drill monitors will be conducted. Identified, necessary, or required alterations in training or for the Emergency Plan/EIPs will be implemented in a timely manner.

VI. TRAINING

A. OPERATIONS AND MAINTENANCE PERSONNEL

Permanently assigned personnel will undergo radiation protection training, the extent of which will depend on the nature of the

specific job. Each employee will be required as part of his training to be familiar with radiation protection practices, facilities and equipment at the plant as described in the Health Physics Manual. At least one person on each shift will be qualified to perform first aid.

B. HEALTH PHYSICS PERSONNEL

All Health Physics Technicians will be thoroughly trained in the principles of radiation protection including personnel dosimetry, decontamination and monitoring.

C. PHYSICIANS

Several physicians in the Houston County area have been retrained to provide care for injured, contaminated, and/or irradiated victims. These physicians are encouraged to attend a training seminar on the care of radiation injuries. The Medical Director for the Southern Nuclear Operating Company has also attended this seminar.

D. PARAMEDICAL PERSONNEL

Ambulance attendants, nurses and hospital technicians will be encouraged to attend annual training sessions. These sessions will be conducted under the direction of the Training Director. Training will include a description of the facility, its health physics program, the spectrum of possible accidents with emphasis on potential resulting casualties and procedures for implementing the Radiation Emergency Medical Plan.

VII. RADIATION EXPOSURE GUIDELINES

The following guidelines are given for the exposure of hospital and ambulance service personnel:

A. 3 REM

If there is an adequate number of attendants such that rotation may be accomplished without further endangering the patient(s).

B. 5 REM

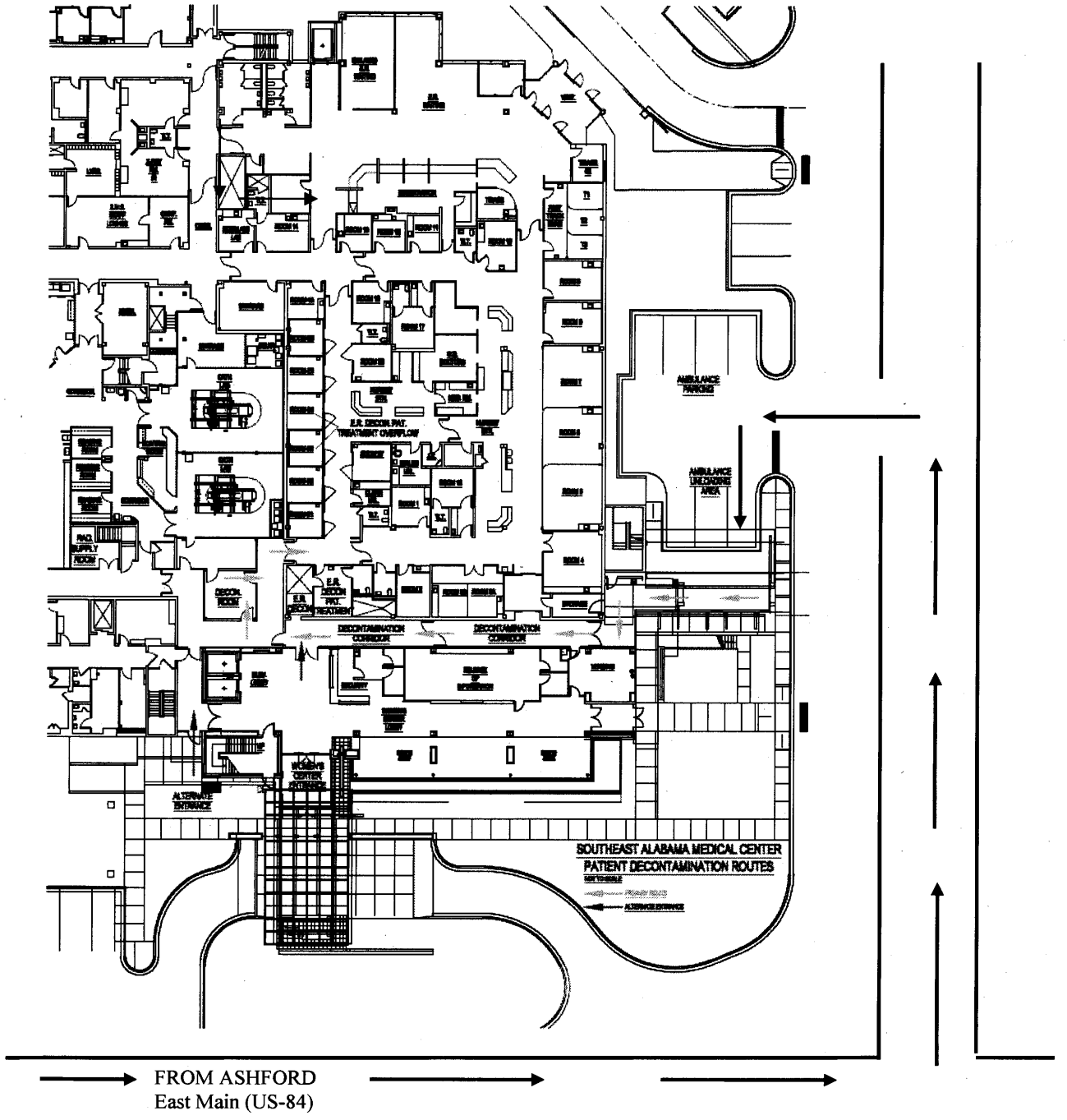
If the number of attendants is limited such that personnel cannot be rotated.

C. 25 REM

To save a life.

The above guideline numbers refer to whole body penetrating radiation. When careful monitoring is provided, the extremities dose may be up to 5 times the value given and the skin dose may be up to 2 times the value given.

Major Route to SAMC
FIGURE 7



RADIATION CASUALTY ENTRANCE TO SAMC

FIGURE 8

Figure 9. Major Routes to Birmingham
and Oak Ridge, Tennessee

APPENDIX A

EMERGENCY EQUIPMENT AND SUPPLIES

I. HP OFFICE

Blankets
First Aid Supplies
Protective Clothing and Supplies
Decontamination Supplies
Wristbands
Survey Meter

II. NURSING STATION

Audiometric Testing Equipment
Pulmonary Testing Equipment
Vision Testing Equipment
Physical Examination Equipment
First Aid Supplies

III. PEV DELETED

IV. AMBULANCE KIT

Protective Clothing
Lead Covering Material
Blankets
Signs and Labels
Wristbands
Dosimetry Devices

V. SOUTHEAST ALABAMA MEDICAL CENTER

Survey Meters and Supplies
Dosimetry Devices
Signs and Labels
Protective Clothing
Surgical Clothing
Decontamination Supplies
Specimen Containers
Disposable Cartons
Logbook and Pencil

APPENDIX B

Letters of Agreement on File

Listing of letters can be found in Appendix 2 (B) Index of Part I of the Farley Emergency Plan.

APPENDIX F

ROSTER OF MEDICAL CONSULTANTS

I. SOUTHERN NUCLEAR MEDICAL DIRECTOR

C. Calvert Dodson, III, M.D.

II. SNC CONTRACT PHYSICIANS (FAIRVIEW CLINIC, DOTHAN)

Earl F. Mazyck, M.D.
James A. Robeson, Jr. M.D.
J. Ryan Conner, M.D.
Christopher L. Miller, M.D.

III. SAMC STAFF

James C. Jones, D.O., Director, Emergency Room

IV. UNIVERSITY OF ALABAMA MEDICAL CENTER STAFF

Chris Roskoe, M.D., Medical Director, Emergency Room