SCHOOL OF
ENGINEERING
& APPLIED SCIENCE

NUCLEAR REACTOR FACILITY
Department of Mechanical,
Aerospace & Nuclear Engineering

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Charlottesville, VA 22903-2442

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May 12, 1993

U.S. Nuclear Regulatory Commission
Document Control Desk
(Emergency Operations Center via Mr. Marvin Mendonca)
Washington, D.C. 20555

Dear Sir:

Enclosed please find Revision #15 (dated May 10, 1993) to the University of Virginia Emergency Plan Implementing Procedures.

Please acknowledge the receipt and filing of this revision by returning the completed cover sheet to our facility.

Thank you.

Sincerely,

Donald R. Krause

Donald R. Krause
Emergency Planning Coordinator

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UNIVERSITY OF VIRGINIA REACTOR FACILITY
EMERGENCY PLAN IMPLEMENTING PROCEDURES

REVISION # 15 DATED: MAY 10, 1993

REVISION RECEIPT

Date Received: _____ Date Filed: _____

Signature: _____ Copy Number: _____

Name (printed): _____

Title or Position: _____

Affiliation: _____

PLEASE COMPLETE AND RETURN TO:

Donald R. Krause
Dept. of Mechanical, Aerospace and Nuclear Engineering
Nuclear Reactor Facility
University of Virginia
Charlottesville, Virginia 22903-2442

UNIVERSITY OF VIRGINIA REACTOR FACILITY
EMERGENCY PLAN IMPLEMENTING PROCEDURES

REVISION # 15 DATED: MAY 10, 1993

LIST AND SUMMARY OF CHANGES

Remove the following page numbers and replace with the new page of the same number			Summary of change
E. Plan,	Appendix 5,	page A-3	Titles of E. Plan Implementation Procedures
E. Plan,	Appendix 4, Attachment 1 (NEW) insert after page A-4		Emergency Supplies/Communication Inventory
EPIP-6		page 2 of 4	Phone list updates and responder status
EPIP-6	attachment 1	page 1 of 2	Phone updates, reformatted
EPIP-6	attachment 1	page 2 of 2	Reformatted, paragraph slide pg.1 to pg. 2
EPIP-7		page 4 of 10	Delete reference to EPIP-17
EPIP-9		page 7 of 9	Clarify Emergency Control Center location hierarchy
EPIP-10		page 2 of 5	Delete references to EPIP-15
EPIP-12		page 1 of 4	Delete reference to EPIP-15
EPIP-14		page 3 of 4	Delete reference to EPIP-17
EPIP-15	Remove entire procedure replace with deletion notice		Deleted, established as E. Plan Appendix 4 - Attachment 1, delete Scott Air Packs from inventory
EPIP-16		page 1 of 3	Delete reference to EPIP-15
EPIP-17	Remove entire procedure replace with deletion notice		Deleted, established as E. Plan Appendix 4 - Attachment 1
EPIP-20		page 4 of 4	Deleted reference to EPIP-17

f. "Radiation Emergency Plan", prepared by the University of Virginia Medical Center

g. "Nuclear Reactor Response Procedures", prepared by the University of Virginia Police Department

h. Notifications

i. Radiological Surveys

j. Personal Monitoring and Decontamination

k. Evacuation of On-site Areas

l. Personnel Accountability

m. Assessment Actions

n. First Aid and Medical Care

o. Firefighting

p. Reentry

q. Facility Security

r. Recovery

s. Documentation and Records

t. Notification of Unusual Events Emergency

u. Alert Emergency

v. Site Area Emergency

w. General Emergency

6. Basis for the Emergency Plan and Related Implementation Procedures

Based on the reactor design and safety features, previously evaluated for the UVAR and CAVALIER SAR's, it is considered very

Emergency Supplies Inventory

1. Fire Extinguishers

   Portable Fire Extinguishers are located in the following areas:

   1. UVAR reactor room
   2. UVAR control room
   3. CAVALIER control room
   4. First floor corridor (2)
   5. Mezzanine radiochemistry lab (M-19)
   6. Mezzanine hallway
   7. Ground floor experimental area (2)
   8. Machine shop
   9. Counting room

2. First Aid Supplies

   1. Emergency lockers
   2. Mezzanine (near lavatory)

3. Decontamination Supplies and Protective Clothing

   1. Emergency lockers
   2. Health physics lab

4. Dosimeters

   1. Emergency lockers

Emergency Supplies Inventory

2. Front lobby rack

5. Emergency Showers

1. Health physics lab (M005)
2. Student lab (M008)
3. Ground floor lavatory (G003)

6. Emergency Communications

1. Facility intercom system (8 site to site units)
2. Building public address system (battery back-up & telephone tied-in)
3. Telephone (conventional)
4. Telephone (cellular - transportable)
5. Two-way radio
   a. Police Department (4)
   b. Fire Department (1)
   c. Talk around (4)

On-Site Emergency Response Personnel	Home Telephone	Time Notified
Primary Responders		
R.U. Mulder, Director	296-6588	_____
J.P. Farrar, Reactor Administrator	973-3110	_____
P.E. Benneche, Services Supervisor	979-3286	_____
B. Hosticka, Research Scientist**	977-0416	_____
D.R. Krause, Senior Reactor Operator	295-4245	_____
L.L. Scheid, Senior Reactor Operator	979-0312	_____
T.E. Doyle, Reactor Operator	293-4774	_____
Support Staff		
V.S. Thomas, Senior Secretary	832-5847	_____
W.N. Wilson, Reactor Operator (in Training)	977-0452	_____

** Not a Primary Responder for Medical Emergencies

(2) Record above the time notification has been completed.

(3) Inform Emergency Director that notification of on-site emergency response personnel has been completed.

3. Notification of Off-Site Emergency Support Organizations:

a. Emergency messages will be transmitted with text to be approved by the Emergency Director.

b. Notify off-site support organizations as directed by the Emergency Director giving priority to those whose services may be required immediately. Use the list given on the next page.

EMERGENCY #'S

INITIAL EMERGENCY ACTIONS
UNIVERSITY OF VIRGINIA REACTOR FACILITY

In the unlikely event of a radiological emergency at the Reactor Facility the building evacuation alarm will be activated and the UVAR and CAVALIER reactors will be shut down. All occupants will exit the Facility and the senior individual on site will notify the Director of the Reactor Facility or a Reactor Supervisor. If none of them are present, the senior staff member will be in charge until the Director or Supervisor arrive. In addition to calling the people listed below, the Emergency Director should consult the Emergency Plan's Implementing Procedures (EPIP's).

REACTOR FACILITY STAFF	Home Telephone
R.U. Mulder, Director	296-6588
J.P. Farrar, Reactor Administrator	973-3110
P.E. Benneche, Services Supervisor	979-3286
B. Hosticka, Research Scientist	977-0416
D.R. Krause, Senior Reactor Operator	295-4245
L.L. Scheid, Senior Reactor Operator	979-0312
T.E. Doyle, Reactor Operator	293-4774
V.S. Thomas, Senior Secretary	832-5847
W.N. Wilson, Reactor Operator (in Training)	977-0452

OTHER EMERGENCY NUMBERS	OFFICE	HOME/ALT
Deborah Steva, Reactor Health Physicist	2-4911	296-2035
Richard Piccolo, Radiation Safety Officer	2-4911	977-6232
James Gilchrist, Alternate RSO	2-4911	973-2402
University Police	9911	4-7166
Va. Office of Emergency Services, Local Office	9911	
Rescue Squad, Fire Dept., City & County Police	9911	
University Relation, UVA News Office	4-7116	
UVA Hospital MEDCOM/Emergency Room	4-9287	4-2231
Poison Center	9911	4-5543
Va. State Police	800/552-0962	804/352-7128
Va. Dept. of Emergency Services	800/468-8892	804/674-2400
Va. Dept. of Health, Radiological Div.	804/786-5932	804/786-1864
Nuclear Regulatory Commission - Region 2	404/331-4503	

Following evacuation of the Reactor Facility, the evacuees will assemble at the primary assembly area under supervision of a Senior Operator. The area will be surveyed with a portable survey instrument and its suitability for occupancy determined by the Senior Operator.

Upon notification of an emergency at the Reactor Facility, the Health Physicist and personnel of the Radiation Safety Office will proceed immediately to the Reactor site and at the direction of the Emergency Director conduct surveys. They will determine which areas, if any, are unsafe and will issue any specific instructions necessary for protection of personnel. They will also monitor the airborne activity, if any, until it has dispersed to negligible levels.

It is anticipated that any radioactive releases will be confined primarily within the reactor room. However, to ensure that protective and corrective actions are taken in the event that levels of radioactivity exceed the limits specified for unrestricted areas by 10 CFR part 20, the radiation levels at the site boundary downwind from the reactor building will be monitored (the wind direction and velocity are indicated by instruments located on the main floor of the reactor building).

If it is determined that airborne activity releases greater than those allowed in unrestricted areas by 10 CFR 20 having occurred or are likely, as indicated by radiation dose rates exceeding 2 mrem/hr at the site boundary, additional surveys will be made beyond the reactor site boundary to determine the extent of the affected area. If the affected area cannot be determined in a timely manner, this area will be assumed to be the area in the downwind sector (a sector is 22.5 degrees) and the adjacent two sectors to a distance of 2,000 feet radius from the Reactor Facility. Installations within this radius include the Aerospace Research Laboratory, McCormick Observatory, the Filtration Plant, the High Energy Physics Laboratory, the National Radio Astronomy Observatory Building, the Highway Research Council Building, the Mineral Resources and Forestry Building, the University Maintenance Shops, the Students' Dormitories extending to the entrance to Scott Stadium, the Slaughter Recreation Center and the Special Materials Handling Facility.

Once the affected area has been defined, the University Police will, at the E. Director's request, notify personnel in this area that a release of radioactive material has occurred and provide instructions to minimize the effect on the public. The most likely instructions will be personnel to remain indoors with all windows and doors closed and ventilation systems turned off, awaiting further instructions. Evaluation of specific areas will also be considered. The University Police will control access to the affected areas.

In the event that individuals at the reactor site are injured in an accident, the Charlottesville-Albemarle Rescue Squad and University Hospital will be notified. An ambulance with advanced life support capability will be sent immediately to the scene of the accident. If the condition of the injured patient has been stabilized, the patient will be decontaminated to the extent necessary or possible at the reactor site prior to transfer to the Emergency Medical Service. The University Hospital is prepared to receive and treat at once any individual who has received a significant radiation over-exposure.

The Emergency Director will notify the University Police and other organizations of the termination of an emergency.

Copies of these initial emergency response actions will be posted in prominent places at the Reactor Facility, the Office of the University Police and the Special Materials Handling Facility. Further detailed emergency procedures are to be found in the Reactor Facility's Emergency Plan and Emergency Plan Implementing Procedures (EP and EPIP's).

8. Update meteorological data approximately every 15 minutes.

9. Record remarks:

   a. Obtain remarks from the Emergency Director or Emergency Coordinator regarding the emergency and record them in Item 9 of Attachment 1 to EPIP-7

10. Record you Name and Title:

   a. Place this information in Item 10 of Attachment 1 to EPIP-7

11. Obtain approval to Transmit Message to State and Local Governments:

   a. Show completed Attachment 1 to EPIP-7 to Emergency Director.

   b. Receive Emergency Director's approval to transmit message.

12. Transmit Message to State and Local Governments:

   a. Use telephone system (or back-up radio if telephone system is not operating).

   b. Call the following local governments in the order listed below:

      1. Charlottesville-Albemarle Emergency Services 9-911.

      2. Virginia Office of Emergency Services 1-800-468-8892.

   c. If time permits, call UVA Director of Information to transmit updated messages 4-7116.

13. Record time message sent:

   a. Record time at the bottom of Attachment 1 to EPIP-7.

Director of the Reactor Supervisor projects that Emergency Action Levels at the site boundary may be exceeded.

4. Emergency Control Center Location Hierarchy:

A. The primary Emergency Support Center (ESC) will be the front office of the UVA Reactor Facility.

B. An alternate primary ESC within the Reactor Facility may be established, at the Emergency Director's discretion, when the front office is unusable and off-site response is minimal.

C. The Office of Environmental Health and Safety (OEHS) will be designated as the secondary ESC and be utilized as such when major off-site agency response has occurred and evacuation of the primary ESC be deemed necessary by the Emergency Director.

The rest of page intentionally left blank

Call emergency team if they are not at the Facility as noted in EPIP-6, "Notification of Emergency Response Personnel". Obtain self-reading dosimeters and portable survey instruments for key emergency response personnel. Attempt to identify the cause or source of high radiation, Check radiation levels at site boundary to determine if unrestricted areas are affected. Activated EPIP-9, "Radiological Surveys" when Health Physics personnel arrive or earlier if required.

b. Responses to Personnel Injury

Administer first aid as noted in EPIP-13 and determine if outside medical help is needed. If radioactive contamination is present or suspected notify Health Physics personnel and activate EPIP-12. If injured personnel are in a high radiation area, move them to a safe location and cordon off the high radiation area.

c. Evacuation due to Fire

If the emergency situation involves a fire, attempts should be made to extinguish the fire with existing equipment, if feasible. Make fire emergency announcement of Facility intercom. A call should also be made for assistance from the local Fire Department. Determine if the fire involves possible radioactive contamination and outside assistance is needed. Follow recommenced procedures in EPIP-16 on fire fighting, if feasible.

EPIP-12 Personnel Monitoring and Decontamination

Purpose: Provide guidance for decontamination of personnel.

User: Health physics personnel.

Entry Conditions:
Activated by another major EPIP (2, 3, 4, or 5).

1. Initiate Procedure:

   a. Initiated by: _____

      Time: _____

      Date: _____

2. Obtain Monitoring Equipment:

   a. Obtain necessary portable monitoring equipment from Health Physics lab, emergency lockers, or designated areas within the Reactor Facility and proceed immediately to designated decontamination area or monitoring area.

3. Contaminated Personnel with Injuries:

   a. If a contaminated individual is injured and requires first aid activate EPIP-13 after notifying the E. Director.

      1. If injury is serous, the first priority is to provide rapid medical treatment for the affected person.

e. If outside assistance is required call UVA police at 4-7166.

f. Personnel should assemble at the east end of the Reactor Facility building, near the entrance gate, (Primary Assembly Area). If it is determined that this site should also be evacuated, direct personnel there to re-assemble at the Special Materials Handling Facility at the bottom of Observatory Hill. Assign a staff member to stand by at the gate to the Reactor Facility to prevent visitors from entering the site.

Personnel assigned to gate: _____

Dosimeter No. issued: _____

g. When personnel have assembled at the Special Material Handling Facility, Initiate EPIP-11 "Personnel Accountability" again:

Time: _____ By: _____

h. If data from EPIP-9 indicated radiation levels or activity beyond the site boundary in excess of one of the Emergency Action Levels described in EPIP-1, notify police to evacuate the affected areas outside the site boundary. Phone numbers of the building near the facility are attached.

4. Termination of EPIP-14 "Evacuation of On-Site Areas":

a. Forward completed EPIP-14 to E. Director for review and record keeping.
b. Return to initiating EPIP.
c. Close-out:

EPIP 15
Deleted
Revision 15: May 1993

EPIP-16: Firefighting

Purpose: Provide guidance for actions to be taken in the event of a fire.

User: Members of Emergency Team

Entry Conditions:
Activated by another EPIP or by Emergency Director or his designee.

Initiate Procedure:

Initiated by: _____

Time: _____

Date: _____

1. Assessment:

If a fire is detected at the Reactor Facility, immediately announce over the intercom the location of the fire and ask for any assistance needed. Activate emergency team such as a call to the Fire Department. Make the following assessments and take action as indicated.

A. Verify whether:

_____ 1. Is the fire small and controllable?

If it is, attempt to combat fire with existing fire extinguishers. Locations of extinguishers are listed in EPIP 16.3.

NOTE: Various types of fires and suggested extinguishing agents are listed in Attachment 1 to this EPIP-16, "Suggested Fire Extinguishers for Several Fire Classes."

EPIP 17
Deleted
Revision 15: May 1993

4. Ascertain who received phone call. If person receiving call has had time to fill out a "Bomb Threat Check-list", turn a copy of this list over to the police to aid in their investigation.

c. If event is due to an intruder take the following actions:

1. If intruder is still in the Facility, try to reason with him or her and attempt to alert another staff member to notify police.

2. If intruder is armed, do not attempt to take action on your own that might endanger your life. Let police handle the situation.

3. If intruder forces you to unlock a security area, do so but do not bypass alarm system.

4. When event is terminated, perform physical inventory of all SNM in facility.

d. Resume normal operation after threat has been eliminated.

5. Terminate EPIP-20 "Recovery":

a. Forward completed EPIP-20 to E. Director for review and record keeping.

b. Return to initiating EPIP.

c. Close-Out:

1. Completed by: _____

Time: _____

Date: _____