

# **EMERGENCY ACTION PLAN (RADIATION RESEARCH BUILDING)**

## **BACKGROUND**

The Radiation Research Building (RRB) is a Government-owned building housing the Notre Dame Radiation Laboratory (NDRL). The University of Notre Dame operates the NDRL under the terms of Cooperative Agreement DE-FC02-04ER15533 between the University and the U.S. Department of Energy.

## **I. AUTHORITY**

Authority for this Action Plan is contained in OSHA regulations as promulgated in 29 CFR 1910.160.

## **II. MISSION**

The mission of the University of Notre Dame, within this Plan, is to minimize the local effects of a disaster or other emergency situation upon the University community through the appropriate use of available personnel, facilities, and equipment. The University has the additional mission of protecting United States Government property located within the RRB.

The objective is to outline a plan of action so that emergencies can be dealt with immediately in a logical and coherent manner. The intention of the Emergency Action Plan is not to establish policy, but to create a framework which will allow an immediate response to an emergency without impeding the initial response or requiring policy decisions to be made first. It provides a mechanism to identify and coordinate available University resources to most effectively respond to the anticipated needs generated by an emergency situation.

## **III. THE ACTION PLAN**

The Emergency Action Plan (EAP) designates Notre Dame Security Police Department (NDSP) as the initial contact for reporting all emergency situations and as the central point of communication during the response and resolution of all emergencies.

Upon receiving the initial contact the Security Officer in Charge (OIC) will make an initial judgment about the level of response necessary and communicate with the appropriate personnel as outlined in the attached plan.

### **Emergency Situations Included:**

- Fire
- Weather Emergency
- Medical Emergency
- Structural Failure
- Utility Emergency
- Bomb Threat
- Intruders
- Chemical/Biological/  
Radiological Hazards
- Disturbance
- Catastrophic/Terrorist Attack-Event
- Missing Person

**These are general guidelines. Each emergency situation will dictate the type of emergency response needed.**

### **EMERGENCY REPORTING AND EVACUATION PROCEDURES:**

All building occupants should be aware of emergency reporting and evacuation procedures. They should learn the location and operation of fire alarms and fire extinguishers in the work area. Employees are authorized and have responsibility to use them in an actual emergency. Each employee should know the location of at least two exits in the building. These are identified through floor plans, demarcation of doors marked "EXIT" and discussion with supervisors or a NDSP representative.

The Office of Risk Management & Safety (RMS), in conjunction with the Notre Dame's Fire and Security/Police Departments, has developed these general emergency evacuation procedures and each organization should supplement these procedures with department specific information. These procedures should be posted in every department and distributed to all building occupants.

Each department is responsible for ensuring that their employees and students are aware of the proper emergency evacuation procedures. Each department is also required to develop procedures to account for activities being conducted in the department and to establish a designated assembly location to account for individuals after evacuation. Risk Management and Safety can assist departments in developing and reviewing these procedures.

With the exception of personnel and crowd evacuation, most operations on campus are not deemed critical to have personnel remain at

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their work sites. Exceptions will be noted as necessary. Note: NDRL has no need to have personnel remain at their worksites during an evacuation.

**General Procedures:** All occupants are required to evacuate the building immediately when a fire alarm sounds or other evacuation signal is given. Fire doors should **never** be blocked open and doors and stairwells should not be obstructed. Personnel who notice **fire, smoke, chemical spill or other emergency situation should:**

1. Notify NDSP Dispatch (911 from a campus phone or 574-631-5555 from a cell phone) and provide:
  - a. Your name
  - b. Building
  - c. Exact location of emergency
  - d. Type and extent of emergency
2. Close all the doors to the room of the fire origin or other hazard when leaving.
3. Activate the fire alarm at the nearest manual station located in the hallway, if necessary.
4. **NEVER USE AN ELEVATOR IN THE CASE OF SMOKE OR FIRE.**
5. Leave the building through the nearest exit. Some buildings have evacuation routes posted in the hallways.
6. Meet at the designated location outside the building. Do not assemble in the fire lanes or near the building.
7. Do not re-enter the building until given clearance from the Notre Dame Fire Department of its designee.

### **B. If you are trapped in a building because of smoke, heat, flames, or other hazard and cannot find an escape route:**

1. Leave the room door closed. Seal door cracks and ventilation grills with cloth or wetted towels or clothing, if possible.
2. Contact NDSP Dispatch and give your exact location to the Dispatcher.
3. Smoke accumulates at the ceiling and works its way down. Stay close to the floor where the air is fresh.
4. Remain calm. Help is on the way.

### **C. Persons Needing Assistance**

During both evacuation drills and actual emergency, persons needing assistance should be helped to the nearest fire escape window or door or stairway door for their increased protection and to make rescue easier for trained emergency personnel. In no case should emergency action obstruct the exit routes for others or subject the participants to injury.

### **D. Rescue/Medical Response**

To the best extent possible, rescue and/or medical duties should be performed only by qualified persons including but not limited to: ND Security Police, ND Fire Department or other trained medical personnel, including Red Cross.

## **NDRL-SPECIFIC EMERGENCY REPORTING PROCEDURES**

1. **Fire.** The RRB has one or more smoke detectors located in every room. Should you encounter a fire which has not activated a smoke detector, pull a manual fire alarm unit, located in the corridors by every stairwell door. This will initiate a building wide evacuation and notify the ND Fire Department. Evacuate the building. Only attempt to extinguish the fire if the fire is small, contained, and you know how to use the fire extinguisher.
2. **Chemical Spill or Release.** If the spill is larger than you can handle with the laboratory spill kit, or if it results in the release of noxious fumes, evacuate and close the room, then pull a manual fire alarm unit, located in the corridors by every stairwell door. This will initiate a building wide evacuation and notify the ND Fire Department.
3. **Gas Leak.** If you notice the odor of natural gas, pull a manual fire alarm unit, located in the corridors by every stairwell door. This will initiate a building wide evacuation and notify the ND Fire Department.
4. **Other Emergencies.** Any situation that has produced or seems likely to produce personal injury or substantial damage should be reported. Call 911 to report it and notify NDRL management.

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**NDRL-SPECIFIC EVACUATION PROCEDURES**

1. **Evacuation notification.** The most likely indicator of the need for evacuation is the building fire alarm, a constant, very loud horn sounding in all corridors. When you hear the alarm, shut down any equipment you are working with and leave the room, closing the door behind you (but don't lock it). If you have an assigned task in connection with the evacuation, carry it out if you can do so without risk. Otherwise proceed to the nearest emergency exit.
2. **Emergency Exits.** There are three exits from the first floor. The north and south doors exit from the building lobby and the west door exits from the loading dock area opposite the elevator. In addition to the main stairwell exits, there are two exits from the basement. At the east end of the building, an exit is reached by going through the Mechanical Room, or by going through the Linear Accelerator Control Room. At the west end of the building, an exit is reached by going through room 025 opposite the elevator. Persons on the second and third floors should use the two stairwells to reach the first floor lobby and exit from there. Do not attempt to use the elevator as it may be disabled by the emergency.
3. **Assembly Locations.** The initial assembly point is the sidewalk by the north door of the building (facing the library). If the weather is harsh, the nature of the emergency requires that evacuees move away from the building, or University Emergency Personnel direct you to leave the immediate area, go to the vestibule of Stepan Chemistry Hall to the west of the Radiation Research Building. **Do not leave** the assembly location unless you have checked in with the Evacuation Monitor.

**WEATHER EMERGENCIES**

**Flood** - In the event of a flood in or around a building, all occupants should evacuate to the highest level of the building with points of exit. Evacuate quickly, quietly, and in an orderly fashion as directed by Emergency Personnel.

**Lightning** - A typical lightning bolt contains several hundred million volts at 30,000 or more amperes.

**If you are inside:**

1. Avoid windows during an electrical storm.
2. Avoid using electrical appliances and stay away from all metal objects during a storm.
3. Do not go outside.

**If you are outside:**

1. Avoid electrical lines.
2. Stay away from flagpoles, towers, trees and metal fences.
3. A closed automobile provides a protective metal shell -if car is struck, don't touch anything metal in the interior.
4. If you are caught out in the open, stay low. If your hair begins to stand on end, crouch low to the ground and balance yourself on the balls of your feet. Do not touch the ground with your hands, knees, elbows, etc.

**Tornadoes** - A tornado warning is issued when the threat of a tornado is imminent, meaning that a tornado has either been spotted in the area or indicated on Doppler radar. The campus tornado warning is an undulating siren. Notification will also arrive via e-mail and phone message as part of the University's emergency notification system. If you are inside the Radiation Research Building when the warning arrives, immediately go to the basement level of the building. The central corridors of the basement are the designated shelter areas during tornado threats. Remain there until notified that an All-Clear status has been declared.

If you are not inside the Radiation Research Building, observe the following guidance.

**If you are inside:**

1. Do not leave the building during a tornado warning.
2. All occupants should move to an interior room or hall on the lowest level avoiding windows and large rooms, auditoriums or gymnasiums.
3. Get in a crouched position, head between knees with hands protecting the back of the head.

**If you are outside:**

1. Take shelter in the nearest substantial building immediately, avoiding windows.

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2. If time does not permit, seek shelter in a ditch or ravine.

### **If you are in your vehicle:**

1. Never try to outrun a tornado in your vehicle.
2. Drive to the nearest building or seek shelter in a ditch or ravine.

**Warning Sirens** - are designed for notifying people outdoors of imminent severe weather.

**All Clear** - The siren will not issue an "All Clear". The signal comes from the Weather Bureau via radio or television.

**Warning sirens are tested at 11:30am on the 1<sup>st</sup> Thursday of each month.**

### **INTERNAL FLOODING**

Within the Radiation Research Building, flooding caused by burst pipes, overflowing sinks, etc., will typically travel along the stairways and fall into the basement. If you can do so safely, power down all electrical equipment in the vicinity or path of the flooding. Evacuate the area. Notify Laboratory Management; after hours call the Building Manager.

For non-weather related flooding originating outside the RRB (e.g., burst water main), await instructions from ND Emergency Personnel.

### **MEDICAL EMERGENCIES**

In case of personnel injury, the first concern is to secure prompt, professional treatment. First aid should be only that which is essential to safeguard the victim until proper professional treatment is secured.

All accidents requiring first aid shall be followed up by taking victim to the Wellness Center. (Exception: All injured Notre Dame students, whether undergraduate or graduate, should be taken to the Infirmary in St. Liam Hall.) The victim will need a signed Supervisor's Report Form for this visit. In general, the following guidance is to be followed in determining where to take the victim:

1. For minor physical injury, take victim to the Wellness Center on campus.
2. For severe physical injury, call 911 to secure an ambulance to take the victim to the Saint Joseph Regional Medical Center.

To summon an ambulance:

- a. Dial 911.
  - b. Give the location of the victim.
  - c. The name of the victim, if known.
  - d. Nature of the injury, if known.
  - e. Stay on the line until dispatcher has made arrangements for the ambulance.
3. Stay with the injured person until help arrives. Notify NDRL management, so that someone can be designated to direct emergency personnel to the location of the injured person.
  4. Do not attempt to move the injured person unless the location is hazardous.

**Note:** Every injured person who is still in possession of his/her faculties wants to think that the injury is not very serious. Consequently, they will frequently try to minimize the incident and decline necessary treatment or examination and may even resent being taken to a doctor. Do not be misled. If the victim requires first aid of any degree, they should be taken to be seen by a medical doctor. **They should not be left alone.**

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**ENTRY CONTROL**

Access to the Radiation Research Building is by electronic key cards that are issued to employees and others with NDRL appointments. During business hours (8 a.m. to noon and 1 to 5 p.m. Monday-Friday), people having business in the Laboratory can request admission via an intercom system.

All members of the laboratory are asked to do their part toward maintenance of security by observing the following rules:

1. When entering or leaving, check the outside door to make certain that it closes and latches.
2. Do not lend or give your building key card to any other person. Return it to the Assistant Director on completion of your appointment.
3. You are responsible for visitors and guests that you bring into the building. Do not permit them to wander unescorted through the building.
4. When entering or leaving the building, do not let other people who do not have cards into the building. Challenge people you do not know. **Intruders:** If you believe an unauthorized person has entered the building, contact the Assistant Director or other senior personnel. If none are available, contact Security (911) to report an intruder. Be prepared to assist in locating and identifying the intruder.

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**APPENDIX A – CONTACTS AND ROLES**

**A. Building Emergency Management Team Contact Information**

Name	Cell	Office Phone	Home Phone	Email
Ian Carmichael	574-339-8930	631-4502		Carmichael.1@nd.edu
Laura Mortlock	574-532-2580	631-6117		Laura.Mortlock@nd.edu
Michael Roberts	574-291-8052	631-9110		Roberts.79@nd.edu

**B. Attributes of Building Emergency Management Team Members**

1. May have authority to make overall decisions for the building and/or department.
2. Has thorough knowledge of the building's operational needs.
3. Able and willing to serve as a liaison to emergency responders and/or University administrators regarding, but not limited to, emergency needs, status reports, communications.
4. May distribute information to building occupants or gather information needed for dissemination to the Office of Public Affairs.
5. May maintain financial and administrative records.
6. Should have understanding of other team member's roles and responsibilities to provide team continuity and support if one or more members are unavailable during emergency.

**C. Roles of Building Emergency Management Team Members**

1. Planning and Preparedness Actions
  - a. Assist with identifying Evacuation Assembly Area(s).
  - b. Assist with identifying Severe Weather location(s).
  - c. Assist with identifying Command Post Location.
  - d. Assist with identifying Areas of Rescue Assistance.
  - e. Identify Floor Coordinators and provide proper training and/or guidance.
  - f. Solicit the list of **Self-Identified** Persons with Functional Needs.
  - g. Prepare and submit BEAP (Building Emergency Action Plan) to Randy Crist in the Office of Campus Safety ([jcrist1@nd.edu](mailto:jcrist1@nd.edu); 631-2484) for approval.
  - h. Review and update BEAP annually.
2. Response Actions
  - a. Deploy Floor Coordinators to evacuate or shelter-in-place as required.

**D. Floor/Department Coordinators and Areas of Responsibility**

Floor Coordinator	Backup Coordinator	Area of Responsibility
Joseph Admave	Daniel Williams&Mike Roberts	Basement RRB
Julie Admave	Kiva Ford	1 <sup>st</sup> Floor RRB
Dave Bartels	Jacob Hoffman	2 <sup>nd</sup> Floor RRB west side
Sylwia Ptasinska	Slavica Grdanovska	2 <sup>nd</sup> Floor RRB east side
Laura Mortlock	Marc Cozzi	3 <sup>rd</sup> Floor RRB west side
Ian Carmichael	Irek Janik	3 <sup>rd</sup> Floor RRB east side

**E. Role of Floor Coordinators**

Floor Coordinators are responsible for assisting with the orderly evacuation or sheltering-in-place of all personnel within their area of responsibility.

1. All actions should be done only if it is safe to do so.
2. Emergency response personnel (police/fire) have full authority to order an evacuation or shutdown. Floor/Department Coordinators and the Building Emergency Management Team can initiate an evacuation and/or shutdown of the building.

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3. Individuals identified as Floor/Department Coordinators assume the role voluntarily and understand they are not considered emergency responders.
4. Floor/Department Coordinators must be physically and emotionally able to perform the necessary functions of providing assistance with notification, evacuation or sheltering-in-place. (This may include assisting persons with functional needs.)
5. Floor/Department Coordinators should report observations of persons in need of rescue assistance to emergency responders or Building Emergency Management Team members.
6. Floor/Department Coordinators should report observed damage of building systems to emergency responders or Building Emergency Management Team members.

**Appendix B- BUILDING SHUTDOWN**

**OSHA Standard 1910.38(c)(3)**

Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

**Employees who may remain to shut down critical operations before evacuating**

Certain equipment and processes must be shut down in stages or over time. In other instances it is not possible or practical for equipment or certain process to be shut down under certain emergency situations. This condition, which is not unusual for certain large manufacturers operating complex processes, is not typical of small enterprises that normally can turn off equipment or utilities if necessary and evacuate. However some small enterprises may require designated employees remain behind briefly to operate fire extinguishers or shut down gas and/or electrical systems and other special equipment that could be damaged if left operating or create additional hazards to emergency responders (such as releasing hazardous materials).

Each employer must review their operation and determine whether total and immediate evacuation is possible for various types of emergencies. The preferred approach, and the one most often taken by small enterprises, is immediate evacuation of all their employees when the evacuation alarm is sounded.

If any employees will stay behind, the plan must describe in detail the procedures to be followed by these employees. All employees remaining behind must be capable of recognizing when to abandon the operation or task and evacuate themselves before their egress path is blocked. In small establishments it is common to include in your plan locations where utilities (such as electrical and gas) can be shut down for all or part of the facility either by your own employees or by emergency response personnel.

**Staff Required for Shutdown during Evacuation**

Name	Office Phone	Cell	Critical Actions Required
Kiva Ford, Glass Shop	631-6443		Shut off gas manifolds in Glass Shop
Jay LaVerne/Downstairs Coordinator	631-5563		Confirm gamma vault is evacuated

**Explanation of Critical Actions Required During Evacuation**

1. Gas manifolds deliver flammable/explosive gases to the glassblower's bench and glass lathe. While exiting Glass Shop, glassblower should shut off supply of gas to manifolds, and the valves to the hydrogen and oxygen tanks in order to reduce the risk of explosion. The Glass Shop gate should remain open so that the shop is accessible to emergency personnel.
2. Gamma vault is secured by a card-lock system and Basement Coordinator is not authorized to enter. Gamma Source Custodian is designated to enter the vault and insure that any occupants have evacuated. Vault will be locked after it has been cleared, as per NRC directive.

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**APPENDIX C- PERSONS NEEDING ASSISTANCE**

The following information has been voluntarily provided by those who have self-identified themselves as having a functional need. This information, since it is part of the BEAP, will be shared with employees within this building.

**Persons with Functional Needs**

The following are **self-identified** persons with functional needs who may request evacuation, shelter-in-place or any other types of reasonable assistance during an emergency:

	Name	Cell	Office Phone	Location
Person	<b>None reported</b>			
Buddy				
Special Need				

	Cell	Office Phone	Location
Person			
Buddy			
Special Need			

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**APPENDIX D – EMPLOYEE EVACUATION PROCEDURE**

**Floor coordinators are responsible for checking each of the rooms for personnel in his or her assigned area as outlined below.** Each floor coordinator must be capable of recognizing when to abandon the operation or task, and evacuate themselves before their evacuation route is blocked.

**Basement Coordinator: Joseph Admave (Daniel Williams/Mike Roberts)**

<b>Area of Responsibility</b>
Room 006: <i>Users of Machine Shop</i>
Room 012: <i>Users of 3 MeV van de Graaff</i>
Room 020: <i>Users of Linear Accelerator</i>
Room 003: <i>Users of 2 MeV van de Graaff</i>
<i>Users of TEM</i>
<i>Users or EPR</i>
Room 003B: <i>Users of gamma sources</i>
Room 007: <i>Users of imaging system</i>
Room 013: <i>Users of laser systems—room 013</i>
Room 025

**First Floor Coordinator: Julie Admave (Kiva Ford)**

<b>Area of Responsibility</b>
Room 101
Room 102
Room 115
Room 119
Room 129
Room 116
Room 120
Auditorium

**Second Floor West Side Coordinator: Dave Bartels (Jacob Hoffman)**

<b>Area of Responsibility</b>	
Room 203D	Room 201
203B	Room 202
Room 209	Room 206
Room 211	Room 210
Room 224	Room 225
Room 229	Room 235

**Second Floor East Side Coordinator: Sylwia Ptasinska (Slavica Grdanovska)**

<b>Area of Responsibility</b>	
Room 216	Room 214
Room 218	Room 215
Room 223A	Room 219
223B	Room 220
Room 239	Room 224
Room 241	Room 237
Room 242	

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**Third Floor West Side Coordinator: Laura Mortlock (Marc Cozzi)**

<b>Area of Responsibility</b>	
Room 301	Room 304
Room 302	Room 309
Room 303A	Room 310
303B	Room 311
303C	Room 325
303D	Room 329
Room 336	

**Third Floor East Side Coordinator: Ian Carmichael (Irek Janik)**

<b>Area of Responsibility</b>	
Room 316	Room 314
Room 319	Room 315
Room 321	Room 320
Room 323	Room 324
Room 343	Room 345
Room 341	
Room 340	
Room 338	

