

# Chapter 3.8

## Emergency preparedness

### 1. Applicability of this chapter

You are required to follow this chapter if you work at JSC or a JSC field site. If you are a line manager, facility manager, fire warden, or director, paragraph 17 of this chapter lists your responsibilities.

### 2. Description of Sub-element 3.8

JSC has procedures for response to emergencies on all shifts. These procedures shall:

- a. Be written.
- b. Be communicated to all employees.
- c. List requirements for personal protective equipment, first aid, medical care, and emergency escape.
- d. Include provisions for emergency telephone numbers and exit routes.
- e. Include provisions for training drills including, at a minimum, annual evacuation drills.

### 3. Emergency preparedness

The emergencies you are most likely to experience at JSC are fire, medical, or weather emergencies. Certain work areas may have the potential for other emergencies such as chemical spills. Planning for major emergencies is covered under JPR 1040.4, “JSC Emergency Preparedness Plan.” Emergency preparedness at JSC involves:

- a. Emergency action – Defining protective actions to take for common emergencies such as fire and medical. Attachment 3.8A of Appendix 3B lists protective measures to take in certain emergency situations that may prevent or limit injury.
- b. Emergency planning – Specific plans for buildings or work areas.

### *Emergency action*

### 4. Reporting emergencies

You shall report any emergency that you see or become aware of. This includes any fire, no matter how small. Report fires that have been extinguished. They may still be smoldering and could reignite.

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Call your emergency number if you see an emergency.

Remember your emergency numbers:

x33333 at JSC, Sonny Carter Training Facility, and Ellington Field

911 at any off-site location

x5911 at White Sands Test Facility.

Keep the emergency scene as undisturbed as possible. If you don't, valuable evidence for the investigators could be destroyed.

#### 5. Notification of an emergency?

You could be told of an emergency in three ways:

- a. A building fire alarm.
- b. Someone telling you or shouting in the vicinity to alert you.
- c. At the JSC main site, the employee alarm system will be activated to alert people in exposed areas (outside) of potential danger. See the diagram in Attachment 3.8A of Appendix 3B for more information.

#### JSC Employee Alarm System



Whoop (low to high siren) - Seek shelter and get more information



3-5 minute Wavering Tone - Attack Warning (nuclear or conventional) (air raid warning)



Wail (single, constant tone) - All Clear



Short Wail (like a noon whistle) - Periodic System Test (1st Thursday of every month at noon)

## 6. Fire wardens

Fire wardens are an important part of JSC's fire response. JSC's building fire warden program provides at least one fire warden per building to oversee building fire safety. The following requirements apply:

- a. Each building at JSC and JSC field sites shall have a chief fire warden, an alternate fire warden, and as many floor fire wardens as needed.
- b. You shall be able to evacuate the building at a rate of no more than 1 minute per floor.
- c. Fire warden coverage shall include as a minimum:
  1. One fire warden per floor.
  2. One fire warden per shift in buildings occupied for more than one shift per day.
  3. Covering each cypher lock area with a fire warden who has access to the area.
  4. Covering each hazardous work area or lab with a dedicated fire warden.
- d. The facility manager will serve as a building's chief fire warden and the alternate facility manager as the alternate chief fire warden if they work in the building or if the building is unoccupied.
- e. As a fire warden, you:
  1. Have the authority to cross organizational lines to enforce fire safety rules and make sure everyone follows the building emergency plan in your assigned areas.
  2. Shall inspect your assigned areas monthly and keep records of your inspections. File the originals of you records and send copies to your facility manager.
- f. Fire wardens shall have fire warden training that covers fire warden responsibilities, recognizing and correcting fire hazards, fire extinguishers, evacuation techniques, and other training deemed necessary. To get this training, contact the Safety and Test Operations Division. At White Sands Test Facility, contact the fire chief. Training is required when you are first assigned as a fire warden and every 3 years thereafter. Fire extinguisher training is recommended yearly.

## 7. Actions if you hear a fire alarm

If you hear a fire alarm, you shall evacuate the building immediately and follow directions from the fire wardens or emergency and security personnel. Assume that all fire alarms are real. JSC doesn't hold fire drills during bad weather. If you hear an alarm during bad weather, it is a real emergency and you must evacuate. Attachment 3.8A of Appendix 3B lists specific actions to take if you hear a fire alarm. If you don't evacuate, facility managers and fire wardens will be clearing each floor during the evacuation and will ask you to leave. If you still choose not to evacuate, you will be reported to your Director for appropriate action.

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### 8. If you need help evacuating a building

You shall follow these procedures:

- a. Notify your supervisor before an emergency that you need help during an evacuation. You and your supervisor shall jointly decide whether you require help evacuating. Examples of physical conditions (temporary or permanent) that may hinder your evacuation are:
  1. Use of wheelchair, crutches, or walkers
  2. Hearing or visual impairments
  3. Pregnancy
  4. Heart or lung conditions
  5. Disabilities hindering mobility
  6. Temporary injuries
- b. Have your supervisor arrange for a “buddy” to help you in an evacuation and notify the Facility Manager of the “buddy arrangement.” The buddy should have enough physical strength to help you.
- c. When an alarm sounds, evacuate the building through areas free from smoke or fire with your buddy. If you are on an upper floor, you shall:
  1. Go to the primary area of rescue assistance with your buddy and wait for emergency personnel. Move to a secondary area of rescue assistance if smoke, heat, or fire become apparent.

Areas of rescue assistance are located near elevator lobbies or stairwells, are marked with distinctive signs, and can be found on facility evacuation plans (FEPs). These areas have been selected to protect you from heat and smoke.

2. Make sure someone notifies the fire warden or emergency personnel of your location.
  3. DON'T use the elevator without emergency personnel; you could become trapped.
  4. Obey directions from fire wardens or emergency personnel.
- d. If you visit another building, become familiar with that building's area of rescue assistance. If you hear an alarm, tell other employees in that building that you need a buddy to evacuate. If you can't find a buddy, let the facility manager and fire wardens know you need help when they come to clear the floor.
- e. Get your supervisor's permission to work off hours. If you can't physically activate a pull box or use a telephone, you will not be allowed to work off hours. Also, inform the Emergency Operations Center (EOC) when and where you will be working during off hours.

## 9. Using fire extinguishers

Don't try to fight a fire that you can't safely put out with a handheld fire extinguisher unless you are a member of a trained fire brigade or fire department.

Fire extinguishers are installed in JSC facilities regardless of the fire control measures. You may use a fire extinguisher if:

- a. You or someone else has first called the emergency number and started an evacuation. Don't depend on the fire extinguisher alone to put out the fire.
- b. The fire is small enough for the extinguisher to be effective.
- c. You are trained to use a portable fire extinguisher. Otherwise, you could put yourself in danger by using the wrong extinguisher or using it improperly. Retraining is recommended yearly to keep your knowledge current.
- d. The extinguisher is nearby, in good working order, and the proper type of extinguisher for the class fire that occurs. See the glossary for "classes of fire" definitions.
- e. There is no risk to your safety and the fire isn't between you and an exit. Always keep a clear path to an exit.
- f. You know you can safely put out the fire.

## 10. Emergency response at JSC

JSC and JSC field sites provide adequate emergency response personnel and equipment to deal with all potential emergencies. These personnel and equipment may be provided by civil servants, a contractor, or local fire departments through mutual aid agreements. All emergency response personnel shall be trained to do their jobs safely and effectively. At JSC, the following organizations or individuals are available to respond to emergencies:

- a. Fire protection specialists who act as liaisons with local fire departments
- b. Security
- c. Paramedics and Emergency Medical Technicians from the JSC Clinic
- d. Spill response teams from the Environmental Services Office
- e. Houston Fire Department and mutual aid agreements with other surrounding communities on site at JSC
- f. Ellington Fire Department at Ellington Field

If you work at a JSC field site, see your site emergency planning personnel for information on emergency response.
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## *Emergency planning*

### **11. What you need to know about emergency planning as a JSC employee**

As a JSC employee, you shall:

- a. Know the hazards in your workplace and how to recognize them.
- b. Be trained in how to protect yourself if you are in danger.
- c. Know the exit routes to take to evacuate safely.
- d. Know any special emergency procedures for your work area if you are assigned to “safe” the area or systems before evacuating.
- e. Know where you can find the emergency action plan for your work area.
- f. Follow those procedures if an emergency happens.

### **12. Emergency planning**

JSC and JSC field sites shall:

- a. Identify all hazards that could happen in the workplace and how to respond to them.
- b. Have a site-wide emergency plan. JPR 1040.4, “JSC Emergency Preparedness Plan,” describes JSC’s overall emergency response plans.
- c. Have the Houston Fire Department or local fire department review the emergency plan.
- d. Review the emergency plan yearly or after each major emergency.
- e. Have a site-wide emergency drill yearly.
- f. Evaluate the site emergency plan after each yearly drill or after each major emergency. Update the plan if necessary.
- g. Have a fire drill for each occupied building yearly.

### **13. Facility evacuation plans**

An FEP is a schematic drawing showing you how to evacuate a building. All JSC buildings shall have an FEP except small single-story buildings or buildings with fewer than ten occupants that (a building is considered “small” if you can walk out of your office or workstation and see two exit doors.):

- a. Are based on the floor plan and show the preferred and secondary exit routes from all occupied areas of the building. Usually, the following conventions apply:
  1. A solid red line marks the primary exit routes and a dashed red line marks the secondary exit routes.
  2. Red boxes mark manual pull stations.

3. Yellow triangles indicate locations for fire department standpipe connections that usually house fire extinguishers.
  4. Include “EXIT,” “YOU ARE HERE,” triangles, and box stickers.
  5. Firefighter-operated elevators for the physically impaired are outlined in red.
  6. Show Automatic External Defibrillator locations.
  7. Show Areas of Rescue Assistance.
- b. Include details on evacuating disabled persons.
  - c. Are posted on the wall, usually at the elevator on each floor. The building’s complexity will determine where the plans need to be posted. Recommended conventions to follow are posted on north walls, where north is up on the drawings, or on west walls, where west is to the right on the drawing.

NOTE: You can get an FEP from the Facilities Management & Operations Division.

#### **14. Emergency action plans**

Each facility at JSC shall have an emergency action plan to protect employees and property if an emergency occurs that:

- a. Tells you what to do in an emergency.
- b. Covers the following:
  1. Emergency escape procedures and routes
  2. Procedures for employees who stay behind to do critical tasks before they evacuate
  3. Procedures to account for employees after evacuation
  4. Rescue and medical duties for those who perform them
  5. How to report emergencies
  6. Who to contact for more information
- c. Establishes the following:
  1. The employee alarm (warning) system
  2. The type of evacuation to be used in emergency circumstances
  3. Training of a sufficient number of persons to carry out the plan
- d. Is available during fire drills to allow the Fire Protection Specialists to review it and upgrade their records as follows:
  1. The employee alarm (warning) system
  2. The type of evacuation to be used in emergency circumstances
  3. Training of a sufficient number of persons to carry out the plan

NOTE: To get a copy of the “Emergency Action Plan Assessment Tool,” contact the JSC

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Office of Emergency Management or your building's facility manager. This document helps you in evaluating your emergency action plan, but please be aware that there may be questions on the checklist that do not apply to your particular facility. Just use the elements that apply to your facility.

#### **15. Planning for critical or hazardous areas inside or around JSC facilities**

Critical or hazardous areas within or around JSC facilities shall have a more detailed emergency action plan. Critical areas are locations where an emergency could require a unique response from workers in the area, safety, security, firefighters, or emergency medical personnel. The following requirements apply:

- a. These critical or hazardous areas include:
  1. Areas with essential electronic equipment
  2. Aircraft hangars
  3. Areas with transformers
  4. Routes used to transport hazardous materials
  5. Any area that stores vital records
  6. Any area that uses or stores hazardous materials
  7. Test areas that involve human subjects
- b. You shall add additional information Emergency Action Plans for these unique areas that describes unique emergencies and emergency actions, similar to what is required in paragraph 14 above.

Read the individual chapters that apply to your work area for more details on emergency actions to take in your work area.

For help, contact the Emergency Operations Center Office at JSC or your site's emergency planners. They will give you advice and review your emergency action plan.

#### **16. For more information on emergency planning**

You can find more information on emergency planning in these documents:

- a. 29 CFR 1910.38, "Employee Emergency Plans and Fire Protection Plans"
- b. NPD 8710.1, "NASA Emergency Preparedness Program"
- c. NPR 8715.2, "NASA Emergency Preparedness Plan Procedural Requirement"
- d. NPR 8715.3, "NASA General Safety Program Requirements," Chapter 5
- e. NASA-STD-8719.11, "Safety Standard for Fire Protection"
- f. JPR 1040.4, "JSC Emergency Preparedness Plan," including all annexes
- g. National Fire Protection Association Standard 101, "Life Safety Code"

Check with your community city hall for information on developing a personal emergency action plan to protect your family and loved ones.

## *Responsibilities, records, and measurement*

### **17. Responsibilities for emergency preparedness**

- a. If you are a *line manager*, you are responsible for:
  1. Encouraging your employees to participate in emergency planning.
  2. Training your employees in your emergency action plan.
  3. Making sure each of your buildings has an emergency action plan. Review the emergency action plan each year and Email a current copy (MS Word) each year to JSC-S&TH-Web-Team on the Global (jsc-sthweb@mail.nasa.gov) so that the Office of Emergency Management can review it.
  4. Assuring that a specific outside gathering point for your employees is designated at a safe location and made known to the employees.
  5. Accounting for your employees after an evacuation.
  6. Making sure your employees follow the emergency action plan including evacuation.
  7. Making sure your employees follow instructions from fire wardens and emergency response personnel during an emergency.
  8. Being aware of your employees' current physical conditions and whether or not they may have trouble evacuating the building as described in paragraph 8 above. Contact your facility manager to discuss evacuation details. Make arrangements for any of your employees who need help exiting their building; they are required to have a "buddy" and not to be left unattended.
  9. Training newly assigned or employed disabled persons in the general emergency evacuation procedures from JSC buildings.
  10. Supporting your building fire warden program and evacuation plans as required. This includes supporting requests from your facility managers for fire wardens to cover your floor as described in paragraph 6 of this chapter.
  11. Holding a safety meeting with employees after each drill or emergency to verify whether the emergency action plan worked well. Solicit employee recommendations to improve the emergency action plan and report them to the Facility Manager for updates. Retrain all employees in the revised procedures to make sure they understand them.
  12. Reviewing the emergency action plan and evacuation procedures with employees who were absent during the drill.
  13. Documenting employee participation in emergency drills and make-up training.
- b. If you are a *facility manager*, you are responsible for:

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1. Making sure each floor of your building has an evacuation plan as described in paragraph 13 of this chapter.
  2. Being aware of any special hazards in your building. Make sure any critical or hazardous areas listed in paragraph 14 above have separate emergency action plans.
  3. Making sure your building occupants have copies of, and are trained on, your emergency action plan for their workplace.
  4. Knowing the evacuation routes in your facility and making sure they are kept clear.
  5. Being aware of employees in your facility who need help exiting the building. Make sure they have made arrangements with their supervisors.
  6. Working with your building fire wardens and line managers to develop rapid, safe evacuation procedures and quick employee accountability.
  7. Reporting to responding emergency personnel to brief them on the situation at your facility and telling them if anyone needs to be rescued. Stay at the emergency command post to help emergency responders and act as a liaison between the emergency personnel and facility employees who may need more information.
  8. Having a sign-in and sign-out sheet for maintenance personnel working in locked areas. Pick up the sheet when exiting during an emergency and carry it with you outside so you will know who is behind locked areas. Report that information to the Fire Protection Specialist or security officer.
  9. Reporting any missing employees who may be in danger in the evacuated facility to arriving emergency personnel, preferably to the Fire Protection Specialist or a security officer.
- c. If you are a *chief fire warden*, you are responsible for:
1. Delegating fire warden responsibilities to someone who works in the building if you aren't resident in the building. You may delegate these responsibilities to a JSC contractor if no civil service employees work in the building.
  2. Appointing as many floor fire wardens as you need to carry out the building emergency evacuation plan and other fire warden duties, and that meet the minimum requirements of subparagraph 6.a above. This includes keeping documentation that shows fire warden responsibilities in your building.
  3. Assigning a designated area for the fire wardens to report to you during an evacuation.
  4. Making sure your fire wardens are trained on fire extinguishers and building emergency evacuation plans. The Safety and Test Operations Division will train selected individuals from each floor at your discretion.
  5. Making sure your fire wardens and safety representatives are familiar with the location of fire equipment such as fire extinguishers and fire alarm boxes.
  6. Critiquing each fire drill in your building within 3 working days after each drill or evacuation to review the good or bad points of the drill or evacuation. Update your

- emergency plan as needed.
7. Holding meetings with your floor wardens throughout the year to discuss fire drill critiques and other fire safety issues.
- d. If you are a **fire warden**, you are responsible for:
1. Gathering at elevators or other specified areas to determine which other floor wardens are present.
  2. Canvassing your assigned areas. Knock on the mechanical room and restroom doors and remind anyone inside to evacuate the building.
  3. Indicating to other floor fire wardens that their area(s) have been cleared and you all can leave the floor (using voice or hand signals).
  4. Reporting to the chief fire warden or facility manager when exiting the building at the designated area. Give them an “all clear” or tell them of any problems encountered such as people waiting in an area of rescue assistance or people not evacuating.
- e. As a **contracting officer**, you are responsible for concurring on the delegation of fire warden responsibilities to any contractor employees on your contracts. Make sure contractor managers meet their fire safety responsibilities.
- f. If you are an **organizational director** at JSC, you are responsible for:
1. Making sure that your facilities have emergency action plans.
  2. Making sure that your facility managers are trained in emergency action and planning.
  3. Making sure that your employees are trained about all possible hazards in the workplace and how to protect themselves for each possible emergency.
- g. The **JSC Office of Emergency Management** is responsible for:
- Serving as the office of primary responsibility for emergency planning and response, to include emergency action plans.
  - Reviewing emergency action plans.
- h. The **Safety and Test Operations Division** is responsible for monitoring the building fire warden program and providing initial and refresher fire warden training.

## 18. Safety and health records

The following records document emergency preparedness:

- a. Center-level – JPR 1040.4, “JSC Emergency Preparedness Plan,” including all annexes, which is the responsibility of the JSC Office of Emergency Management.
- b. Organizational-level:
  1. Facility emergency action plans, which are the responsibility of the facility manager.
  2. Work area emergency action plans, which are the responsibility of the manager for areas mentioned in paragraph 15 above.

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### **19. Measurement**

JSC measures emergency preparedness by whether or not each facility and critical or hazardous work area has an emergency action plan that is reviewed yearly.