

Section 3: Emergency Preparedness and Response

Even in the best-managed facilities, accidents and emergency situations can and do occur. Today's post 9/11 threats and realities require that facilities remain vigilant and prepare for an entirely new variety of changing pressures and risks. Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, many local utilities are now required by the U.S. Environmental Protection Agency to conduct **vulnerability assessments** and to certify that updated emergency response plans exist. The EMS process offers enormous potential for water providers to proactively identify and successfully manage environmental as well as security risks and vulnerabilities.

The intent of the EMS Emergency Preparedness and Response element is to ensure that effective plans for preparing for and responding to emergencies are available, easily accessible, and clearly understood by everyone that might need them.

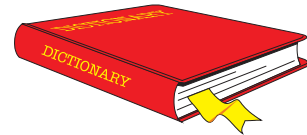
Emergency response is fundamentally integrated into everyday operations, activities, and services, guiding an organization to continuously improve the management of their risks and threats over a short and long-term basis. The ultimate goal is to protect employees and the community, to prevent and minimize environmental impacts, and to reduce operational damage. Those wastewater and drinking water utilities who have conducted vulnerability assessments will find that this point in the EMS process is also a great place to incorporate plans for ensuring the security of their facilities.

Step-by-Step Guide to Emergency Preparedness and Response

- Step 1) Identify Existing Emergency Plans and/or Procedures
- Step 2) Identify Potential Accident and Emergency Scenarios
- Step 3) Define How Your Organization Can Prevent Emergency Incidents and Mitigate Impacts
- Step 4) Develop EMS System Procedures/Plans for Emergency Preparedness and Response
- Step 5) Check Your Procedures/Plans to Ensure Conformance to EMS Requirements



Key Section Terms



Emergency Situation – Condition (e.g., spills, releases, fires, etc.) that can have an environmental impact and that requires an emergency response or action.

Emergency Response – Actions taken to address an environmental incident.

Emergency Response Plan – A detailed plan that describes the logistics, procedures, who to contact, roles and responsibilities, reporting requirements, etc. in the event of an emergency or spill.

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 - Federal requirements for public water and wastewater utilities to conduct a vulnerability assessment and to certify to the U.S. EPA that emergency response plans have incorporated the assessment information and have been fully integrated into their operations.

Vulnerability Assessment – A tool to assist water utilities in systematically evaluating their susceptibility to potential threats and identifying corrective actions that can reduce or mitigate the risk of serious consequences from adversarial actions (e.g., vandalism, insider sabotage, terrorist attack, etc.). For more information please see the Vulnerability Assessment Fact Sheet.

Common Emergency Contacts

- Police
- Local Emergency Responders
- Fire Department
- Medical Services
- Internal Emergency Coordinator(s)

Three Keys to Success

(from wastewater facilities):



1. Evaluate the effectiveness of your emergency response plans on a regular (at least annually) basis by conducting drills and exercises. Ensure that all emergency response actions are reviewed and documented.

2. Make emergency response plans available, easily accessible, and clearly understood by everyone who might need them. Effective training and well communicated plans will help prevent and minimize potential environmental impact that could occur as a result of the accident or emergency.

3. Evaluate the effectiveness of your emergency response procedures/plans and vulnerability assessments on a regular basis (at least annually). Consider using your wastewater staff in your emergency and security drills as part of their training program.

NOTE



Emergency preparedness and response is a heavily regulated area for wastewater facilities. The importance of this EMS element should be communicated and trained to all employees and contractors.

In order to fulfill EMS requirements, you need to establish and implement procedures that describe how your organization:

1. Identifies potential for and responds to accidents and emergency situations;
2. Prevents and mitigates the environmental impacts that may be associated with them;
3. Reviews and revises, where necessary, emergency preparedness and response procedures after the occurrence of accidents and emergency situations; and,
4. Periodically tests such procedures where practicable.

Step 1) Identify Existing Emergency Plans and/or Procedures

Most organizations will find that they already have a number of emergency response plans in place. For example, most wastewater facilities must have Spill Prevention, Control, and Countermeasure (SPCC) plans in place. Sticking with the Keep It Simple, Simple (KISS) rule, review what you already have in place first and evaluate how they address the EMS requirements. Your emergency and response procedures/plans ensure that potential accidents and emergency situations are identified, avoided, and mitigated if they do occur. By all means, if you have plans in place that work, keep them and build from them to develop a comprehensive approach.

In reviewing your existing emergency plans, consider:

- ✓ Are the plans current?
- ✓ Have contact information or telephone numbers changed?
- ✓ When was the last time we tested them?
- ✓ Is training adequate and up-to-date?
- ✓ Are new and temporary employees being trained?
- ✓ Are there gaps between what is in place and what the EMS requires?

NOTE



Review previous spills and other emergencies and your responses as a guide to where future accidents or incidents could occur and be prevented. Take the lessons learned from previous emergencies to review if your plans are effective.

Step 2) Identify Potential Accident and Emergency Scenarios

When you have reviewed your existing emergency preparedness and response plans, take a moment to brainstorm potential emergency situations that could arise from your organization's everyday activities and operations. You may also want to consider the potential risks from accidents and/or hostile acts. Your EMS can help ensure that your employees are adequately prepared for potential scenarios, including security risks.

NOTE



FIRST RESPONDERS

More often than not, frontline (i.e., shop floor) employees will be the first responders to an incident and must know what procedures to take to manage potential emergency scenarios effectively.

Remember, your organization's response plans may overlap (i.e., who to call, who to report to, etc.) for a number of emergency situations. It's good to ensure that personnel know exactly what to do in each different situation. In addition, if you have already conducted a vulnerability assessment to identify your security risks, you may want to include this information in your emergency plans as well.

COACH'S CORNER



Communicate with local officials (fire department, hospital, etc.) about potential emergencies at your wastewater facility and how they can support your response efforts. Involving local responders in mock drills is an excellent way to reinforce training, keep them informed of any changes to operations, and get feedback on the effectiveness of your plans/procedures.



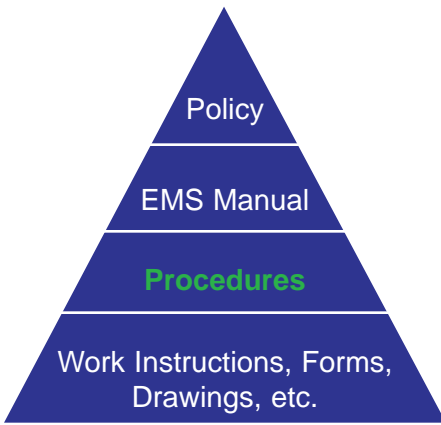
Three Things to Avoid

(from wastewater facilities):

1. Not inviting local emergency response agencies into your facility for emergency reviews and drills. Local responders need to know the layout and any changes to operations of your facility. In addition, response agencies can assist you in developing and updating your response plans.
2. Thinking only about response – focus on how to prevent accidents and emergencies in the first place.
3. Starting your emergency preparedness and response procedures/plans from scratch. Build on what you currently have in place for responding to emergencies and accidents.

Incident reviews give an organization the opportunity to step back and evaluate what went right and what went wrong after an emergency situation. These reviews facilitate positive change and continual improvement.

Rick Bickerstaff
Charleston, South Carolina
Commissioners of Public Works



*Emergency Preparedness and Response **Procedures/Plans** are required for this element. A system procedure defines the purpose (why the procedure is needed), scope (to what operations/areas/staff the procedure applies), roles & responsibilities (who needs to complete the tasks), and the tasks that need to be completed for this element.*

Focus on both internal and external response criteria. Team build with local and state emergency response agencies. Coordinate exercises involving both employees and external agencies together. This tests the response of both parties and promotes team work. In addition, conduct bi-annual drills (or more frequent) to test your system.

James Naber
Buncombe County, North Carolina
Metropolitan Sewer District

Step 3) Define How Your Organization Can Prevent Emergency Incidents and Mitigate Impacts

As your facility puts this EMS element in place, focus on emergency response and do not overlook and forget that accident prevention is equally important. Spend time looking at ways to prevent environmental accidents in the first place. However, emergencies still happen in the best planned and managed operations. Therefore, ask:

How can we mitigate the potential impacts of these situations?
Are there adequate controls in place now?

Step 4) Develop EMS System Procedures/Plans for Emergency Preparedness and Response

Being prepared for emergencies means that you have identified all potential emergency situations that could arise, and have developed, put in place, and tested emergency response procedures.

Effective emergency preparedness and response plans are a core element of an EMS. They should be readily available, easily accessible, and clearly understood by everyone who might need them. From a practical perspective, your plans should include up-to-date emergency contact information, including current contact names (POCs) and current phone numbers. Make this information available **throughout** your facility, especially in areas where there is potential for accidents and emergencies.

Your emergency response procedures/plans should include actions that will minimize any environmental impact that could occur as a result of an accident, emergency or threat (e.g., in the case of security plans, this might include alternative water supply secured, public notice created and ready for immediate distribution, etc.).

COACH'S CORNER



A systems approach can successfully integrate environmental and security considerations into everyday business operations. Roles and responsibilities are defined based upon activities related to your priority risks and vulnerabilities, empowering employees to analyze, control, and mitigate impacts related to their daily work. These designations can also be utilized to control and monitor access to critical areas and processes within a facility that relate to operations identified in vulnerability assessments. In essence, employees throughout an organization take on a real sense of ownership for emergency response in their daily responsibilities and within the organization as a whole.

Your EMS leadership team will periodically review your emergency response plans and verify that they are realistic operationally, environmentally, technologically, and financially, and in the case of security response plans, that they meet any regulatory requirements imposed under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

For samples of emergency preparedness and response procedures from wastewater facilities, see Appendix A.

NOTE



FIRST RESPONDERS

Each organization should test their emergency response plans regularly in order to verify their effectiveness, to apply lessons learned, and to apply any new technological enhancements.

Step 5) Check Your Emergency Procedures/Plans to Ensure Conformance to EMS Requirements

Check ✓

1. Have you reviewed environmental operations and activities for potential emergency situations?
2. Are personnel trained and aware of their roles and responsibilities during an emergency?
3. Do you conduct emergency drills and document the results?

REMEMBER



Don't think only about emergency **response**—focus on how you can **prevent** accidents in the first place by conducting drills, training, and communicating with local responders.

Look back at accidents and emergency situations that have occurred in the past. Are there any lessons learned or noticeable patterns?

Three Lessons Learned

(from wastewater facilities):

1. Be very clear on staff roles and responsibilities related to emergency prevention and response. For example, what do you do as a member of the response team versus as an employee that works in the laboratory or in the front office?
2. Be specific about who in your organization will conduct your emergency response training and when it will be conducted. Where practical, consider conducting training in cooperation with relevant external parties and first responders, including local and regional emergency response agencies.
3. Post copies of your emergency plans (or at least critical contact names and phone numbers) around your facility, especially in areas where potential hazards exist. Include phone numbers for your on-site emergency coordinator, local fire department, local police, hospital, and rescue squad members as appropriate.

Involving Contractors and Temporary Staff

Make sure that contractors and temporary staff are communicated with and trained on their roles and responsibilities during an emergency. If they are the ones to first identify a spill or accident, do they know what phone number to call and what to do? This should be part of the basic training they are provided if they come on to your wastewater facility.

Water Security Legislation

EPA's Water Protection Task Force (WPTF) and Regional Offices, working with many partners, are taking actions to improve the security of the nation's drinking water and wastewater infrastructure in line with EPA's Strategic Plan for Homeland Security. Federal Legislation impacting water security includes the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Title IV), which amends the Safe Drinking Water Act and specifies required actions of community drinking water systems and the responsibilities of the U.S. EPA must take to improve the security of the nation's drinking water infrastructure.

For additional information, visit www.epa.gov/safewater/security.

U.S. EPA Water Emergency Response/Security Resources and Guidance Documents

[Vulnerability Assessment Fact Sheet](#), produced by the U.S. EPA Office of Water in November 2002. Describes the purpose and six basic elements of vulnerability assessments to help water systems evaluate potential threats and identify corrective actions to prepare for and respond to an attack.

[Instructions to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act](#), Produced by the U.S. EPA Office of Water in January 2003.

[Protecting Your Community's Assets: A Guide for Small Wastewater Systems](#), Produced by the National Environmental Training Center for Small Communities.

[Security Vulnerability Self-Assessment Guide for Small Drinking Water Systems Serving Populations of 3,300 and 10,000](#), The guide was developed by the Association of State Drinking Water Administrators (ASDWA) and the National Rural Water Association (NRWA) in May 2002.

[Model Emergency Response Guidelines](#), Produced by the U.S. EPA Office of Water in April 2002.

[Water Information Sharing and Analysis Center \(Water ISAC\)](#), Information service to provide water systems with a secure web-based environment for early warning of potential threats and a source of knowledge about water system security.

Checklist for Emergency Preparedness & Response

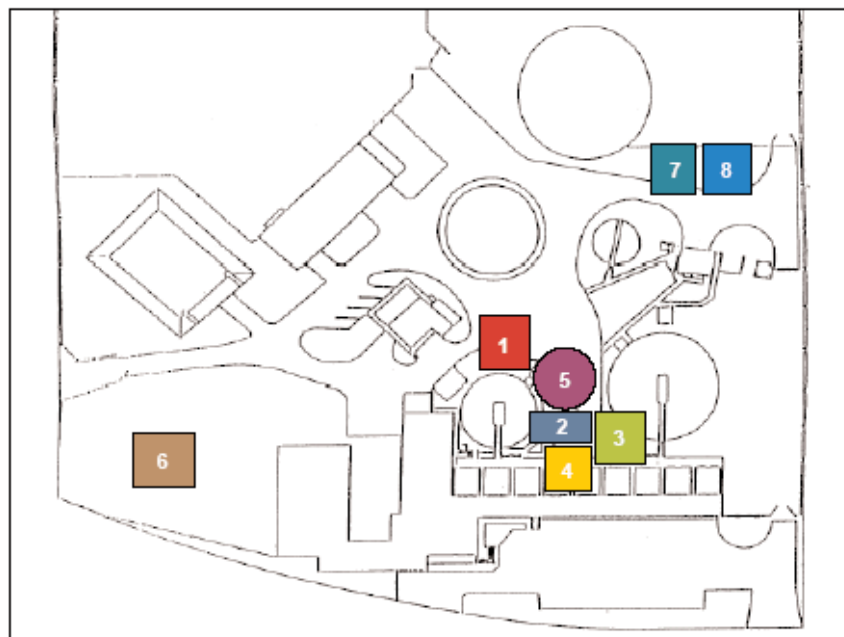
Does your plan describe the following?	
X	Potential emergency situations (such as fires, explosions, spills or releases of hazardous materials, and natural disasters)?
X	Hazardous materials used on-site (and their locations)?
X	Key organizational responsibilities (including emergency coordinator)?
X	Arrangements with local emergency support providers?
X	Emergency response procedures, including emergency communication procedures?
X	Locations and types of emergency response equipment?
X	Maintenance of emergency response equipment?
X	Training/testing of personnel, including the on-site emergency response team (if applicable)?
X	Testing of alarm/public address systems?
X	Evacuation routes and exits (map), and assembly points?

CASE STUDY

Security Management

Recently, a wastewater facility identified a large chemical storage area as a high priority (significant) environmental issue that it wanted to manage as part of its EMS. Using a parallel approach, the facility integrated its security issues into the Plan-Do-Check-Act system and identified the chemical storage tank as a high priority security risk as well. The facility's objective was to determine how to manage this environmental and security issue in an efficient and cost-effective way. Drawing on the experiences of employees up, down, and across the organization, and on best practices information and product substitutions gathered from a variety of state, trade association and federal web sources, the wastewater facility determined that product substitution could be a technologically realistic, operationally feasible, and cost-effective solution. Until the new product was fully implemented, trainers updated existing training with "need to know" environmental and security competency training for employees who worked with the chemical tanks and provided awareness training for others about the risks involved. This example shows how the plan-do-check-act process can work effectively for both environment and security (vulnerability) outcomes.

Case Study Example : Anytown, USA Water Plant



LEGEND

1. Chlorine Storage Shed
2. Anhydrous Ammonia Storage Tank
3. Hydrofluosilicic Acid Tank
4. Carbon Dioxide Storage Tank
5. Calcium Oxide Silo
6. Diesel Fuel (aux. generator)
7. Hydrochloric Acid Shed
8. Calcium Hypochlorite Shed



Emergency Preparedness and Response

(Cut out this section for handy reference)




The **Purpose** of this EMS element is to:

- Establish or modify emergency preparedness and response procedures/plans that address the potential for and response to accidents and emergency situations.

The **Result** of this EMS element is:

- Verification that your organization's emergency preparedness and response procedure(s)/plan(s) (EMS Document) are effective in relation to the significant environmental aspects and objectives and targets of your organization.

Before you Begin this EMS element:

- Complete your significant environmental aspects analysis.
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ISO 14001 Requirements	Links to Other EMS Elements	Required Documents & Records	Optional Documents & Records
<p><i>Emergency Preparedness and Response</i></p> <p>The organization shall establish and maintain procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.</p> <p>The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.</p> <p>The organization shall also periodically test such procedures where practicable.</p>	<p>Environmental Aspects - Environmental aspects are reviewed for potential emergency situations.</p> <p>Legal and Other Requirements - Spills, fires, and other emergency events that are likely to have legal (e.g., reporting) requirements.</p> <p>Training & Awareness - Employees that respond to emergencies are trained and certified.</p> <p>Communication - All employees understand what they need to do in case of an emergency.</p> <p>Document Control - Emergency response procedures/plans are controlled so that the most recent version(s) are being utilized.</p>	<p>Emergency Procedures/Plans</p> <p>Records of Emergency Incidents, Training, and Drills</p>	<p>None</p>