Safety Warden Training

New, Improved and endorsed by the Accelerator Division Safety Warden Task Force!
TINA MENEFEE

Accelerator Division

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Why are you here?

One of the reasons we’ve gotten better at ESH&Q is the influence of a group of informed, diligent people in the workplace to provide guidance and early intervention:

Safety Wardens

This course is designed to give safety wardens the knowledge and skills to be effective in their role. It also will aid supervisors in their support of safety wardens.
What’s in this course?

Part 1: Jefferson Lab’s Approach to ESH&Q, and how Safety Wardens contribute.

Part 2: Conducting workplace inspections and using the information for improvement.
Part 1

Jefferson Lab’s Approach to ESH&Q, and how Safety Wardens contribute.
What are the most serious and most common safety problems in your area of responsibility?

__________________________________________  ______________________________________

__________________________________________  ______________________________________

__________________________________________  ______________________________________
What should a safety warden do (according to the book)?
(From the ESH&Q Manual, Chapter 2210)


All safety wardens shall have responsibility for:

a. Inspecting their areas and tracking resolution of ES&H deficiencies.
b. Requesting resources to bring their areas into compliance and to maintain compliance with established Jefferson Lab ES&H standards.
c. Ensuring that hazards associated with their areas are posted.
d. Maintaining Material Safety Data Sheets (MSDSs) for materials used in the area.*
e. Promoting and enforcing ES&H rules and sound work practices in their areas.
f. Assisting in the resolution of ES&H concerns brought to their attention.
g. Perform weekly inspections of safety shower and eyewash stations in their areas.

* There is no longer a requirement that MSDS be kept in the work area. We rely on the online MSDS & Chemical Inventory System.

http://jlabs.online-msds.com/msdsmanagement.exe/AnonymousSearch
What should a safety warden do (in practical terms)?

- Promote and help enforce good ESH&Q work practices.
- Inspect the local work area.
- Request resources to correct problems and maintain Jefferson Lab ESH&Q standards.
- Track resolution of safety deficiencies.
- Maintain “official” ES&H bulletin board if it’s in the SW’s area.
- Maintain safety information bulletin board
- Ensure work-area hazards are posted.
- Assisted in resolving ESH problems:
  » Facilitate ESH Concern Reports
  » Document Stop-Work actions
  » Provide assistance for accident investigations
  » Propagate lessons-learned

- Inspect safety appliances, fire extinguishers, eye wash, and other safety-related apparatus in their area of responsibility.
- Support the 5 core functions of the ISM

5 Core Functions of Integrated Safety Management (ISM):

1. Define the scope of work;
2. Identify and analyze hazards associated with the work;
3. Develop and implement hazard controls;
4. Perform work within controls; and
5. Provide feedback on adequacy of controls and continue to improve safety management.

Integrated Safety Management

JLab’s Official ESH&Q Strategy

**INTEGRATED SAFETY MANAGEMENT**

7 Guiding Principles

1. Line Management Responsibility for Safety
2. Clear Roles and Responsibilities
3. Competence Commensurate with Responsibilities
4. Balanced Priorities
5. Identification of Safety Standards and Requirements
6. Hazard Controls Tailored to Work Being Performed
7. Operations Authorization

For more information:
http://www.jlab.org/div_dept/dir_off/oa/index.html

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**5 Core Functions**

1. Define the Scope of Work
2. Analyze the Hazards
3. Develop and Implement Hazard Controls
4. Perform Work Within Controls
5. Provide Feedback and Continuous Improvement

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**Emergency Responders** 911

Guard Shack/Security ext 4444, 269-5822

Medical Services ext 7539

Crew Chief 630-7050

Facilities Management ext 7400

ESH&Q Reporting Manager 876-1750

RadCon 876-1743

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Safety Wardens can affect most of these.
What are the benefits of having safety wardens?

- You’re in the area most of the time; you know the work operations and hazards.
- You know the workers involved.
- You’re readily available to give advice on commonplace ESH&Q issues.
- You often can respond quicker to problems than “outsiders.”
- It’s your work area; you benefit directly from your efforts.

A list of current Safety Wardens (and other ESH&Q-related assignments) is available at:
http://www.jlab.org/ehs/manual/PDF/2200R1EHSStaff.pdf
What authority does a safety warden have?

Your authority derives from the Jefferson Lab ESH&Q Manual. It defines the respective safety roles and responsibilities within the entire Lab.

As a safety warden, you have specific duties and responsibilities that go beyond those of the “average” employee.

You are part of a system that gives primary ownership of ESH&Q to line managers, but ensure assistance and resources are available to everyone.

As you perform your safety warden duties, you do so with the authority of the Lab Director.
How do safety wardens and ESH&Q staff work together?

- **Safety wardens normally** provide a “first-line” of observation, information, and quick intervention.

- **ESH&Q staff** are expected to provide more detailed information, interpretation of requirements, and address issues on a programmatic or lab-wide basis.

They are often facilitators and “consultants” to safety wardens and supervisors.

Safety wardens and ESH&Q staff should be **complementary** in their efforts, not redundant or competitive.

This chapter defines the assignment of environmental, safety, and health (ES&H) responsibilities particular to geographical areas at Jefferson Lab. While the laboratory Director is ultimately responsible for ES&H, and each person at Jefferson Lab is responsible for establishing knowledgeable control of the hazards encountered at the laboratory. Particular aspects of coordination and oversight are most conveniently handled on a geographical basis.

In order to ensure clarity, a landlord division is identified for each space within the laboratory. From time to time other organizational units may occupy part of the space. This chapter describes the ES&H responsibilities of each party.

Current lists of landlord divisions, building managers, and safety wardens can be found in Appendix 2210-R1 Current ES&H Staff Assignments, Table 9, Emergency Staff.

http://www.jlab.org/ehs/manual/PDF/2210R1EHSStaff.pdf
Landlord and Tenant Responsibilities

*This section defines the landlord/tenant relationship and related responsibilities.*

The Director shall ensure that each space at Jefferson Lab has assigned to it a designated division or office as *landlord*. The **landlord line management is responsible to:**

**b.** Arrange periodic, **documented ES&H inspections of the space at least quarterly** in accordance with the division self-assessment plan and using a graded approach, correct deficiencies found on those inspections or other inspections conducted by the laboratory, DOE, or other cognizant outside agencies. This may be done via coordinated involvement of tenant safety wardens.

**f.** Ensure that a safety warden, and, if appropriate, a building manager has been **appointed** for each assigned space. These roles are typically collateral duties subject to the individual’s normal line management supervision.

Safety Wardens are typically assigned for functional work areas where they normally spend a large fraction of their work time
The “landlord division” is responsible for appointing safety wardens.

- Supervisors, as part of their own ESH&Q responsibilities, must be aware of and support safety wardens’ activities.
- A safety warden’s immediate supervisor has a particularly important role in providing support and commitment to the safety warden:
  - ensure that the safety warden has the appropriate training
  - allocate time for safety warden duties
  - adjust conventional duties and priorities accordingly
  - recognize efforts via performance appraisal

Managers
- Convey clear expectations
- Provide resources
- Own the outcomes

Supervisors
- Ensure hazards are known and mitigated
- Ensure a safe workplace & safe conduct of work

All Employees
- Know the hazards
- Know relevant procedures & follow them
- Be alert to unsafe conditions and take action to correct them

**Reality check:**

- You, the area safety warden, may be a lightning rod for pent-up frustrations.
- Safety wardens sometimes need to tell people things they don’t want to hear.
- People sometimes resent anything that appears to hinder their own agenda -- production, schedule, budget, etc. -- or anything that challenges their expertise.
- Safety wardens can’t impose discipline.
So what happens if there is a conflict?

**Problems must get fixed.** Safety wardens have the means (and encouragement) to elevate a problem to any level necessary to get action.

- Try to resolve the problem with those involved.
- Talk to the supervisor (following chain of management authority).
- Get guidance from ESH&Q staff who support the activity (They’re available anytime, not just when there is a problem.)
- Inform the Division Safety Officer (DSO).
- In some situations, the building manager may help find a solution.
- Get advice through the Workers Safety Committee.

Safety wardens have access to all of these people.

(And remember your stop-work authority!)
ESH&Q Planning in New Work

- **Risk evaluation** is useful for planning new operations, apparatus, and procedures.
- It **minimizes hazards** during construction, fabrication, installation, and testing.
- It **prevents most long-term liabilities** that may come from poorly planned work: electrical defects, chemical contamination, ventilation problems, Life Safety Code issues, excessive quantities of haz. waste, etc.

*Work-control documents* (SOP, OSP, TOSP) are intended to be aids to planning.

So is good ESH&Q evaluation **before purchasing** new materials and services.
Safety Warden involvement?

1. SW sometimes assists in developing work-control documents. Should be aware of other SOPs, OSPs, TOSPs, etc. that affect their work area.

1-2. Facilitates improvements to work area or to existing equipment to accommodate new activity.


3-4. Knows whom to call for help if and when flawed ideas need “adjustment.”
Work Control Documents

• **Standard Operating Procedures (SOPs):** work procedures that address technical aspects of a job, including ordinary ESH&Q hazards that are discussed in the *Manual*. Expiration date 3 years or less.

• **Operational Safety Procedures (OSPs):** a safety-focused set of procedures for unusual hazards that are not discussed in the *Manual*. The owner division specifies an expiration date, 3 years maximum.


• **Temporary Work Permits** include special written permits for hazards such as Fire Hazard Work Permits, Confined Space Entry Permits, Excavation Permits, Radiological Work Permits, etc.

  They also include **Temporary Operational Safety Procedures (TOSPs)** for unusual hazards or situations. They are usually short duration: hours to a few days.

Primary ESH&Q Performance Measures: TRC and DART

TRC (*Total Recordable Case*)

The number of recordable accidents per 200,000 hours worked. 200,000 hours is about 100 person-years of work - 40 hours per week for 50 weeks times 100. A recordable accident is one that requires more than first aid treatment.

DART (*Cases with Days Away, Restricted or Transferred*)

The number of incidents that result in lost work days, restricted work days (the worker cannot perform all of his/her normal duties) or days in which the worker is transferred to alternate duties to accommodate the injury per 200,000 hours worked.
Occurrence Reporting

{Jefferson Lab has sometimes fumbled this contract requirement. The more people who know even a little bit about the obligation, the more likely someone will remember in the heat of the moment.}

Some mishaps must be reported to DOE. Typical examples:

- non-permitted environmental release of chemicals or radionuclides
- accidents causing or potentially causing loss of life, multiple serious injuries, or a potential mission/business impact
- overexposure of personnel to hazardous agents
- serious transportation incidents
- significant violations of standard operating procedures
- fires taking longer than ten minutes to extinguish
- radiation overexposure of personnel
- other events with “safety significance”

Some incidents must be reported immediately. Remind your supervisor to help make certain the Facility Manager (Craig Ferguson) or ESH&Q Reporting Manager (Carter Ficklen) is informed if any of these mishaps occur in your area.

## JLab’s Primary ESH&Q Performance Measures:

### Current ESH&Q

<table>
<thead>
<tr>
<th>Days Since Last...</th>
<th>Current FYO8 TRC and DART Levels:</th>
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</thead>
<tbody>
<tr>
<td>Recordable Accident: 68</td>
<td>Outstanding (0.0) Excellent (0.65) Good (1.3) Marginal (1.8) Poor (2.4) ▲0.00 TRC</td>
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<tr>
<td>(Lost) Work Day Accident: 387</td>
<td>Outstanding (0.0) Excellent (0.25) Good (0.8) Marginal (1.0) Poor (1.2) ▲0.00 DART</td>
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</table>

### Environmental Safety Health Information

### Issue Cause Codes

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<th>Secondary (107)</th>
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<tbody>
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<tr>
<td>Materials</td>
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<tr>
<td>Personnel</td>
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<tr>
<td>Procedures</td>
<td>11.7%</td>
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<tr>
<td>Management</td>
<td>4.3%</td>
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<tr>
<td>Continuous Improvement</td>
<td>8.5%</td>
</tr>
<tr>
<td>Tracking Only</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

As of 11/26/07

[https://www1.jlab.org/ul/apps/insider/components/ehs.cfm?preview=2](https://www1.jlab.org/ul/apps/insider/components/ehs.cfm?preview=2)

Safety Warden Training (rev 2/07)
Why should Safety Wardens know about JLab’s injury experience?

Knowing what has happened helps focus on chronic or recurring problems.

Comparison of Injuries by Body Part:
JLab & All Industry

- Distribution Pattern All Industry, 2004 (% of all injuries)
- JLab Avg 99-01
- JLab Avg 02-04
- JLab Avg 05-06
Lessons Learned?  
(http://www.jlab.org/div_dept/dir_off/oa/notable/index.html)

- We do lots of manipulative tasks; hands are at risk. Gloves would have prevented or reduced severity of many injuries.
- Over the years, we’ve had excessive eye injuries; most were preventable. Fewer in the last several years. Why?
- Many of our injuries occurred while moving or installing apparatus. Talking it through first ("planning") could have prevented some of these.
- Some injuries have an aspect of people being in a hurry, not paying attention, productivity concerns taking precedence over safety.
- There is no "silver bullet." It takes commitment, planning, and cooperation to make a safe workplace.

"Planning is a conscious decision to worry ahead of time."
GOVSCI 19811709 1.0 $4.33 "Glove Retainer by Glove Guard - 1939 Yellow, Min. Order 24 ea."
Eye-injury case study

- Welding
- Cable splicing
- ~25 feet
Proven Tools for Improving & Sustaining Safety Performance:

- Training, coaching, mentoring
- Expertise, advice
- Optimal equipment, materials, facilities
- Clear expectations and priorities
- Listening to those who do the work
- Accountability & encouragement
  - Supervisor
  - ESH&Q staff
  - Peers – including Safety Wardens

5 Core Functions of ISM:
1. Define the scope of work;
2. Identify and analyze hazards associated with the work;
3. Develop and implement hazard controls;
4. Perform work within controls; and
5. Provide feedback on adequacy of controls and continue to improve safety management.
Safety Training

- Jefferson Lab requires appropriate training for all employees, users, and subcontractors -- **before they are exposed to a hazard**.

- It is usually acceptable for visitors or new staff to be **escorted or directly supervised** in ordinary hazard areas until they can attend the next available training.

- Supervisors/sponsors/SOTRs must prepare an **Individual Training Plan (ITP)** for people under their responsibility.
Training Records Access:

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<tr>
<th>Summary</th>
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<tbody>
<tr>
<td>Training completed:</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Training canceled:</td>
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<tr>
<td>Training in progress:</td>
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<td>0</td>
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<tr>
<td>Earned credit hours:</td>
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<table>
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<tr>
<th>Organization</th>
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</thead>
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<tr>
<td>Directorate</td>
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<td>No</td>
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<table>
<thead>
<tr>
<th>Job</th>
<th>Job Name</th>
<th>Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA/J Lab Employee</td>
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<td></td>
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<tr>
<td>Laboratory Director</td>
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<table>
<thead>
<tr>
<th>Courses</th>
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<th>Delivery Method</th>
<th>Status</th>
<th>Start Date</th>
<th>Completion Date</th>
<th>Credit Hours</th>
<th>Class Hours</th>
<th>Grade</th>
<th>Percentage Grade</th>
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<td>Core Managers Security Briefing</td>
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<td>EHMS Orientation</td>
<td>Self-study</td>
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<td></td>
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<td>8/31/2005</td>
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<td></td>
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<tr>
<td></td>
<td>Giving and Receiving Feedback</td>
<td>Instr-led on-site</td>
<td>Completed</td>
<td>10/8/1999</td>
<td>10/8/1999</td>
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<td>Hall A Safety Awareness Training</td>
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<td>Hall C Worker Safety Awareness Training</td>
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</table>

All hazards are not created equal. Evaluate them to the best of your ability using the two elements...

\[ \text{probability} \times \text{severity} = \text{risk} \]

Why is risk assessment important?

- Serious problems get the priority they deserve.
- We don’t overreact to minor problems.
- We speak of problems in a common language.
- The process of risk evaluation sometimes reveals multiple options for a solution.

See *Manual Chapter 3210, “Hazard Identification and Characterization.”*
## Risk Assessment

### Outcome Severity

<table>
<thead>
<tr>
<th>Personal injury</th>
<th>Property loss, environmental impact</th>
<th>Risk Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death or permanent disability</td>
<td>&gt;$100,000</td>
<td>1 3 4 4</td>
</tr>
<tr>
<td>Hospitalization required or &gt; 5 lost workdays</td>
<td>&gt;$10,000</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>First aid or medical treatment, &lt; 5 lost days</td>
<td>&gt;$500</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>First aid not required</td>
<td>&lt;$500</td>
<td>0 0 1 1</td>
</tr>
</tbody>
</table>

### Likelihood of accident

- > 500 years
- ≤ 500, but > 10 years
- ≤ 10 years
- ≤ 10 days

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**Safety Warden Training (rev 2/07)**
What happens if you (or anyone else) encounters an imminent danger to life, property, or the environment (Risk Code = 4)?

A Stop-Work action is required.

Safety wardens have a key role. They document the condition on the worksheet and ensure the right people know about it.

You do **not** have to agree with the stop-work decision.
Jefferson Lab’s Stop-Work Process

Some important points:

• The first priority is to **prevent injury**.

• Stop-work is used if there is **no other immediate means** to correct a hazard.

• Staff are **not** expected to recognize dangers outside their experience or training, nor direct a stop-work action for those problems.

• There will be **no retaliation** for invoking a well-intended stop-work order, even if subsequent investigation determines it was not needed.

What does the safety warden do as part of a stop-work action?

- Help make the area safe. This may include using administrative lockout/tagout.

- Use the Safety Warden’s Stop-Work Worksheet* to describe the situation. As soon as possible, get copies to the division ESH&Q officer and department manager.

- Make sure the operation does not restart until authorized by the department manager.

- Note corrective actions on your copy of the Worksheet.

You don’t have to agree with the stop-work decision. You do have to make sure the situation is well described on the Worksheet.

* [http://www.jlab.org/ehs/manual/PDF/StopWorkOrder.pdf](http://www.jlab.org/ehs/manual/PDF/StopWorkOrder.pdf)
How about subcontractors?

- Subcontractors can (and are required to) direct stop-work when justified for lower-tier subs or other subs working on the same project.
- Jefferson Lab staff can direct them to stop work, and they have the same responsibility for our activities.
- Contact the SOTR (JLab subcontracting officer’s technical representative) with concerns about subcontractors.

  The SOTR is analogous to a Jefferson Lab supervisor and is the person you should contact about any subcontractor activities.

  You should ask all new subs in your work area who their SOTR is. If they don’t know, you may deny them permission to start work.

SOTR list for service subs:  [http://www.jlab.org/serv/info/service_sub](http://www.jlab.org/serv/info/service_sub)
# Construction Activity Hazard Analysis

**Project:** New Utility Building  
**Subcontractor:** Build-it-Quick, Inc.

<table>
<thead>
<tr>
<th>Project Phase or Activity</th>
<th>Hazard(s) Anticipated</th>
<th>People or Property at Risk</th>
<th>Mitigating Measure(s)</th>
</tr>
</thead>
</table>
| New sidewalk & parking area | Earth-moving machinery  
Sediment run-off | Workers, JLab staff  
Vehicles parked nearby  
Storm-water permit violation | See Company Safety Program, Chapter 4  
Silt fence; prompt removal of unwanted soil |
| Steel erection | Personnel injury from falls  
Falling objects  
Crane swing | Iron workers  
Everyone on site | See attached fall protection plan for project |
| Exterior painting | Falls from ladders  
Inhalation of spray paint mist and vapors  
Paint overspray damage | Painters  
Painters  
Vehicles and adjacent building surfaces | Select suitable cautionary respirator  
MSDS and label information; follow respiratory protection program developed in accordance with OSHA standards  
Coordinate work with SOTR to ensure vehicles are moved and structures are protected. |
| Installation and modification of electrical systems | Electrical shock  
Arc flash | Installers, others in vicinity | Lockout/Lower power source  
De-energize systems before exposing conductors; establish controlled-access zone around work area; PPE suitable for voltage & current |
Jefferson Lab’s ESH&Q Concern Resolution System

• **Who can initiate a concern?**
  Anyone, including a safety warden.

• **Where does the concern go?**
  As far as necessary to get action, but it’s a sign of a healthy system when problems get corrected at the lowest level possible.

• **Who decides that the problem is fixed?**
  Everyone who has been involved, but especially the person who initiated the concern. A Concern Report cannot be closed if the Safety Warden does not concur with the proposed corrective action.

CALL 269-7000 To report a concern

Safety wardens have an important role in the concern-resolution process:

- Often the safety warden is the first point of contact.
- They direct people to the ESH&Q bulletin boards where the ESH&Q Concern Report forms are kept.
- They assist in filling it out.
- They forward the Report to the responsible managers, division ESH&Q officer, ESH&Q reporting manager.

* Appendix 2210-R1 Current ES&H Staff Assignments: http://www.jlab.org/ehs/manual/PDF/2210R1EHSSStaff.pdf
The safety warden does **not** have to agree or disagree with the concern.

But, if you do agree there is a problem, and **you can get action** using your safety warden role, then **offer that option** to the person with the concern.

*A Concern Report suggests that normal ownership of ESH&Q may not be working.*
Accidents & Injuries
Accidents and Injuries – Response Actions

*(Manual Chapter 5200)*

- Get help for injured persons: **911 & 4444**, then 7539 (Medical Services)
- Don’t endanger yourself
- Help make the area safe
- Provide first aid and CPR if you are qualified and willing

DIAL **9-1-1**

Summary of Emergency Procedures for JLab Reception Desks

Important information about all emergency calls (911 or 9-911)
- Dialing 911 or 9-911 will connect you to the City of Newport News Emergency Dispatch Center. The dispatcher is able to see the location of the caller, JLab address, building number, and room. Either number also automatically alerts the main guard station, Medical Services, and other key offices on site that an emergency call was made and its location.
- JLab's telephone system will transmit a 9-911 call faster than a 911 call.
- When calling 911 or 9-911, stay on the phone until the dispatcher tells you it is OK to hang up.
- 44444 contacts the accelerator gate guard who will mobilize on-site emergency response.

<table>
<thead>
<tr>
<th>SPECIFIC EVENT</th>
<th>ACTION 1</th>
<th>ACTION 2</th>
<th>ACTION 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious injury or acute illness</td>
<td>Call 9-911</td>
<td>Call 4444</td>
<td>Call Medical Services (7639)</td>
</tr>
</tbody>
</table>

Direct minor injuries to Medical Services (VARC Rm. 22) during regular business hours.

All major buildings on site have one or more first-aid cabinets. There are pamphlets at the cabinets that explain what to do in the event of an on-site injury – including those that occur after normal work hours.

Refer requests for information about injured person to Medical Services (7539) or Human Resources (7562).

Additional information sources:

 carries on site.

- Sound alarm using the nearest pull box
- Evacuate to muster point (Refer to evacuation diagram for location)
- Call 9-911 and 44444 from safe location
- Be alert to fire & smoke as you evacuate – especially as you open closed doors. Use alternate route if path is blocked by fire or heavy smoke.
- Follow any specific procedures posted on the cover of the fire alarm panel; otherwise call Fire Protection Engineer (7674) or Plant Engineering (7400) to report fire conditions.

Pass the word (Especially to building manager)
- Evacuate or take cover per building procedures.

Bomb threat
- Refer to the yellow Bomb Threat Card for instructions on handling the call
- Call JLab Security: 4444
- Evacuate and take cover per building procedures.

Chemical leak
- Use the fire alarm box if needed to alert all occupants promptly
- Call 4444
- Send evacuees upwind. Await trained and equipped staff to control and contain the spill

Safety Warden Training (rev 2/07)
Locations of Automatic External Defibrillators (AED) on Site

- ARC, 7th Floor at kitchennette
- ARC, 1st Floor at mail boxes
- YARCC, Medical Services
  - 1 outside clinic door
  - 1 in nurses’ emergency
- CEBAF Center, to right of reception desk
- EEL, in main high-bay area
- Test Lab, 1st Floor near roll-up door & magnet test area
- Test Lab, Electronics Shop, right of main entrance
- Test Lab, 1st Floor at elevator
- MCC, to right of control room
- Bldg. 87, lobby
- Bldg. 88, lobby
- FEL, 2nd floor wall opposite control room
- Control Room
- Counting House & Exp. Halls, lower level, near elevator

http://www.jlab.org/intralab/emergency/aed_locations.pdf
Depending on the situation, there may be other actions that are called for such as:

- Evacuate a building or area
- Notify co-workers
- De-energizing a power source (using PPE per NFPA 70E).
- Contain oil or chemical spills if you have the know-how and equipment.
- Help secure the area and preserve evidence
- Assist supervisors and ESH&Q staff in the investigation as requested
Safety Warden’s Role in Investigations?

• You are likely to be a convenient source of information early on. If you were present during the event, your observations will be important.

• You may be able to provide info on equipment, systems, material, people.

• You may know who the subject-matter expert (SME) or system owner is.

• You may be asked to assist in preserving or securing the scene.
Objectives of any good investigation:

- Identify all relevant causes
- Fix the *cause* not the blame.
- Share lessons learned
Injury Causes

- Inexperience or long time lapse since last encounter
- Training (ineffective or lack of)
- Perception of urgency (schedule, cost pressures)
- Haste
- Inattention, distraction
- Intentional disregard for safe practices; risk-taking

Which of these can be affected by a Safety Warden?
Safety Wardens & Workplace ESH&Q Information

Safety Bulletin Boards

• **required items:**
  – DOE/OSHA poster
  – JLab & DOE Concern-Reporting processes
  – Workers Compensation notice
  – JLab ESH&Q Policy Statement
  – OSHA 300A: summary of prior year injuries (posted during the month of February)

• **other, optional stuff:**
  product alerts/recalls your photo and phone number
  work-control documents posters
  lessons-learned info. inspection reports
  fire evac. diagram
  special information (e.g. fire-protection system impairments)
Safety Wardens commonly ensure other kinds of useful ESH&Q-related information is posted:

- access restrictions
- required ESH&Q training
- required PPE
- location of safety signs, barricade materials, chemical-spill clean-up materials
- interpretation of postings & signs
- lockout/tagout information
- whom to call for particular emergencies
- “owners” of systems and equipment; subject-matter experts

Contact the Safety Lab for signs.  
(Jennifer Williams, 7882 or Mary Boggs 7863)
Facilities Management Work-Request System

Topics to be covered:

Locating the Work-Request System on Lab’s web pages
Secure log in
Selecting type of work or service requested
Entering details of work and its location
ES&H elements:
  • Safety training requirements for access into the work area
  • Identifying any special hazards
  • Linking a work request to CATS
Prioritization of requests
Charge codes
Using the Corrective Action Tracking System (CATS)

Topics to be covered:

- Locating CATS on Lab web pages
- Secure log-in
- Entering a new action item
  - Required information
  - Significance level
  - Target close date
  - Making items “closable”
- Entering status updates
- Closing items (how and by whom)
- Search feature
- Modifying close-by dates (how and by whom)
- Links from CATS page

Call Bob Doane (6380) For assistance with CATS.
Part 2

**Inspections, Common ESH&Q Problems, & Assessing the Hazards**
HOW LONG WILL IT TAKE TO FIX ANY PROBLEMS WE FIND IN OUR BETA PRODUCT?

IT IS LOGICALLY IMPOSSIBLE TO SCHEDULE FOR THE UNKNOWN.

TRY TO THINK AS A MANAGER, NOT AS AN ENGINEER. IN THAT CASE, WE'LL FIX THE PROBLEMS BEFORE WE FIND THEM.
WHY ARE YOU PUTTING A SIGN ON THE COFFEE MAKER?

IT'S AN ISO 9000 REQUIREMENT. EVERYTHING MUST BE CLEARLY LABELED. THERE CAN BE NO EXCEPTIONS.

THAT'S STUPID.

BELIEVE ME, I DON'T LIKE IT ANY MORE THAN YOU DO.

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"Iceberg Principle" 
Accident Cost Ratio

Direct Costs:
- medical treatment
- administrative costs
- salary

Indirect Costs (5 to $10^x$ direct costs):
- loss of production by the injured employee during absence
- schedule effects within the work group and on its customers
- productivity impacts from physical-activity restrictions during recuperation
- leadership penalties if it’s the supervisor who’s injured
- overtime costs to maintain group output
- psychological impact on co-workers
- costs of temporary labor to back-fill lost employee, including start-up training, medical evaluation, dosimetry, etc.
- management attention, possible cessation or modification of an activity
- repairs to damaged equipment
- consumption of leave time to supplement the fixed maximum disability payment
**JLab’s safety performance is a **multiplier** in our overall contract performance measures.**

<table>
<thead>
<tr>
<th>TRC Performance Level</th>
<th>DART Performance Level</th>
<th>Adjectival Rating</th>
<th>% of Assigned Points</th>
</tr>
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<td>≤ 1.0</td>
<td>≤ 0.4</td>
<td>Outstanding</td>
<td>90 to 100</td>
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<tr>
<td>1.0 to ≤ 1.3</td>
<td>0.4 to ≤ 0.8</td>
<td>Excellent</td>
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<td>0.8 to ≤ 1.0</td>
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<td>70 to 80</td>
</tr>
<tr>
<td>1.8 to ≤ 2.4</td>
<td>1.0 to ≤ 1.2</td>
<td>Marginal</td>
<td>60 to 70</td>
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<tr>
<td>2.4 to ≤ 3.0</td>
<td>1.2 to ≤ 1.6</td>
<td>Unsatisfactory (poor)</td>
<td>50 to 60</td>
</tr>
<tr>
<td>&gt; 3.0</td>
<td>&gt; 1.6</td>
<td>Unsatisfactory (failing)</td>
<td>0 to ≤ 50</td>
</tr>
</tbody>
</table>
Causal Analysis of 9/26/06 Process Cooling Water Discharge & Resultant HRSD Permit Violation

Chemical injection flow switch apparently stuck in open position after most recent auto-blow-down of tower water

- Excessive amount of CL 1360 in tower water
- pH below normal

Conductivity controller signaled for chemical injection & tower blow-down (appears to have operated normally)

- No automatic alert function for low pH conditions in tower water

Chemical treatment system design & configuration

- Decision to use up on-hand inventory of CL 1360

- Description of conditions (by JLab) to water treatment subcontractor, solicited advice

- Over-the-phone diagnosis & recommendation by subcontractor

- Extreme foaming condition in tower noted by FM staff

- FM employee unaware de-foaming agent was on site which would have mitigated immediate problem

- In this instance, SOTR not on site.

Manual blow-down of tower water

- Flow rate underestimated in this event: 400 gallons total

- Discharge of low pH water to sanitary sewer sufficient quantity to register low pH for total effluent

- No standing procedure for testing water before discharge

- Large volume of low pH water relative to total site effluent

- 2 hours flow via ¾-inch pipe @ 40 psi (est.)

HRSD Discharge Permit Violation

Chemical Selection Criteria
- No heavy metals
- Biodegradable
- Approved by HRSD & DEQ before use
- Effective anti-scale in water >140°

Original selection of acidic anti-scaling product (1)

Outcome
- Causal Factor
- Direct Cause
- Significant Contributing Cause
- Principal (Root) Cause

Equipment
- Procedure
- Decision/Action
- Condition

Rev 11/2/06

Safety Warden Training (rev 2/07)
Paradox of Bucks and Blame

- **Humans**
  - Initial allocation of project funding.
- **Hardware**
  - Allocation of blame after an accident.
- **Humans**
  - Allocation of funding to prevent future accidents.
Objectives of a good investigation:

- Identify all relevant causes
- Fix \textit{cause} not the blame.
- Share lessons learned

\textbf{The Law of Probable Dispersion:}

\textit{“Whatever hits the fan will be unevenly distributed.”}

(also known as the \textit{“How-Come-It-All-Landed-On-Me Principle”})
If it’s an **inter-divisional issue**, it is the job of the respective **ESH&Q officers** to ensure it’s resolved.

If that doesn’t work, it goes to the **Director’s Safety Council** for action.

**The bottom line…**

**Problems must get fixed.** Safety wardens have the means (and encouragement) to elevate a problem to any level necessary to get action.