



GUIDE TO INCIDENT INVESTIGATIONS



NECA GUIDE TO INCIDENT INVESTIGATIONS

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NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

OVERVIEW

Accident or Incident investigations are a sensitive and complex subject. Even the terminology (incident vs. accident) sparks controversy leading to questions on what warrants an investigation and the extent to which an event classified as either should be investigated. Questions, such as how should one protect the company from potential access to the investigation by a plaintiff in a subsequent lawsuit require much consideration. Decisions will need to be made on a case by case basis. In many instances an employer isn't made aware of an event until days after, compromising any effort for a thorough investigation. Whatever the circumstances surrounding the event, employers must use their best judgment and should seek legal counsel as needed.



OVERVIEW (continued)

For the purpose of this Guide, the following definitions will apply:

- *Accident* - An unplanned, unwanted, but controllable event, which disrupts the work process and causes injury to people.
- *Incident* - An unplanned and unwanted event which disrupts the work process and has the potential of resulting in injury, harm, or damage to persons or property.

The incident investigation goal is to prevent future incidents. The information provided will offer guidance on how to perform an investigation to:

- Identify and eliminate hazards,
- Expose deficiencies in process and/or equipment so corrective action can take place, and
- Fulfill legal and workers compensation requirements



WHAT GETS INVESTIGATED

Ideally, all incidents should be investigated. In essence, all reported incidents are investigated to some degree. Consider a worker that slices a finger with a small blade having little potential for a deep wound. If a request is made for a Band-Aid with an explanation to the supervisor, several facts are provided regarding the incident. The supervisor might unconsciously analyze the circumstances, determine the cause is lack of cut resistant gloves and take corrective action issuing gloves.

Obviously, much may have been missed by this process, but a judgment must be made to balance the cost and benefits. It may be best to consider the following factors to determine the degree of investigation.

- availability of staff with skills and knowledge needed for the investigation
- equipment needed to perform testing and/or collect other evidence

- time needed for the investigation
- budget available for staffing, equipment or purchasing/ hiring external resources for the investigation
- severity of the injury (fatalities and lost time injuries must be investigated)
- potential severity of the injury
- accident history (if minor hand cuts are frequent the issue may be of greater significance).



WHO SHOULD INVESTIGATE

Applying the concept that all incidents are investigated to a degree, the first determination is what the degree of investigation will be and who will perform it.

INCIDENT TYPE	INVESTIGATIVE TEAM
Fatalities	Company Safety Representative, consultants expertise related to incident, legal counsel
OSHA Reportable (amputations, etc.), serious injuries (ex. lost time) and significant property loss (ex. crane collapse)	Company Safety Representative, health and safety committee, union rep (if applicable), consultants with expertise related to incident, legal counsel
No actual injury, but high potential for injury/significant property loss	Employees with knowledge of work, supervisor, Company Safety Representative, health and safety committee, union rep (if applicable)
OSHA Recordable	Employees with knowledge of work, supervisor, Company Safety Representative, health and safety committee, union rep (if applicable)
No actual injury and potential for only minor injury/low property loss	Employees with knowledge of work, supervisor, Company Safety Representative (optional)

*Investigative teams are merely suggestions. Companies may want to involve legal counsel in all investigations and union representation may be required at more levels. Team members should be selected based on work knowledge, investigative skills and appropriate attitudes. Review **Appendix B Checklists of Recommended Investigator Attributes**. Provide training for all investigators regarding expectations and the skills needed related to their investigative level.*

WHAT SHOULD THE RESULTS BE

Regardless of who performs the investigation, focus needs to be maintained on its purpose, preventing future incidents. With that in mind, the results of the investigation should yield cause and precursors leading to the event.

Causes

- *Direct Cause* – unplanned release of energy or hazardous materials
- *Indirect Cause* – unsafe acts and/or unsafe conditions
- *Root Cause* – policies and decisions, personal factors, environmental factors

Precursors

- Reasonably detectable event, condition, or action that serves as a warning sign of an event
- An unmitigated High Risk situation that will eventually result in a serious injury or fatality if allowed to continue



SIMPLIFIED ROOT CAUSE APPROACH

Getting to the root cause requires looking beyond the immediate or direct and even indirect causes. The investigator needs to dig deeper. The easiest way to do this is use a procedure called the “five whys”. Typically, after asking “why” that many times one reveals the root cause. Consider the following example:

Material on the scaffold deck fell and hit me on the head.

- 1) *Why?* – Someone kicked the materials and it fell from the scaffold.
- 2) *Why?* - Material was allowed to accumulate and there was no toeboard.
- 3) *Why?* – No one inspected the scaffold to ensure it was erected and used properly.
- 4) *Why?* - A competent person for scaffolding was not assigned to the jobsite.
- 5) *Why?* - There is no safety and health program addressing the safe use of scaffolds.

This concept should be applied to the investigation interviews, data collection and analysis offered later in the Guide.



PRELIMINARY RESPONSE TO AN INCIDENT

Depending on the incident, as suggested earlier, quick action may be taken to collect evidence, analyze and correct the situation. For a more severe or complex incident, a higher degree of investigation will be needed. Emergency action must be taken and a preliminary response provided by those who are not investigators. Keep in mind, depending on the severity of the incident, the scene may be chaotic. To ensure appropriate action is taken and the investigation is not compromised, the workers and supervisors on scene first must know what to do until investigators arrive. This includes:

- 1)** The safety of all is paramount. Remove potential threats to self and others.
- 2)** Care for the injured and contact emergency medical personnel as needed. Make note of anything said by the injured.
- 3)** Contact the Company Safety Representative or other appropriate contact.

4) Preserve all potential evidence.

- a)* Direct the emergency personnel to enter via a pathway that least disturbs the scene.
- b)* Keep all others away from the area and ensure they do not remove items or physically change the scene in anyway.

5) Record as much information as possible; what was seen, what was done, and who was there. Take photos to help document and preserve the scene for the investigators (See Appendix D).

6) Quickly identify witnesses and keep them at the scene, but separate them to avoid collaboration until investigators arrive.

STEPS OF INVESTIGATION

To help investigators better organize their work, a structured approach is needed. The investigation can be broken down into a number of tasks. A simplified logical approach consists of five steps:

- 1 Prepare**
- 2 Collect Evidence**
- 3 Analysis**
- 4 Report**
- 5 Corrective Action**



STEPS OF INVESTIGATION — 1) Prepare

Each investigation is unique and needs to be dealt with on a case-by-case basis. However, there are a few elements that need to be in place to ensure investigators are better prepared to begin their investigation. They are:

- Develop an Incident Investigation Program (See Appendix A).
- Prepare an Investigation Kit (See Appendix C).
- Assess the preliminary response and be prepared to take additional action as needed.

(Make sure the scene has been made safe and appropriate care given. Determine the status of the witnesses - support needed and what interaction has taken place before arrival.)

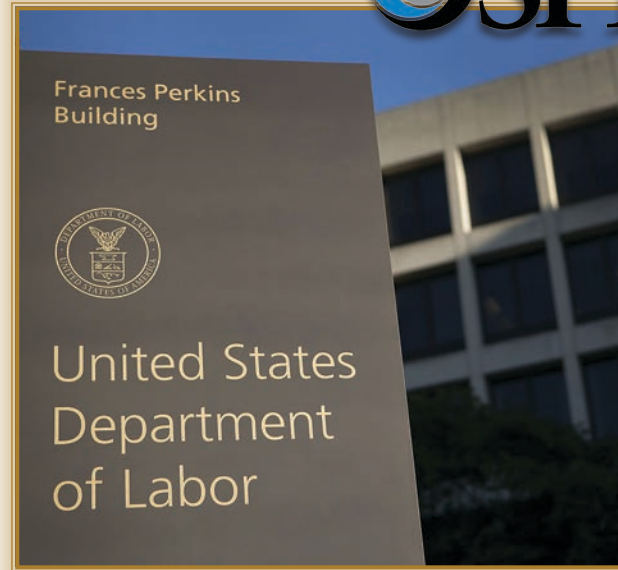
- Establish a plan for returning the scene to normal use.
(Disinfecting the area if blood, body parts, or other bodily fluids have spilled, checking equipment, dealing

with emotional trauma and getting employees back to work, etc.). Notify the management immediately to cease operation. If in doubt about the functionality of equipment, materials or process, have it checked by those who are technically qualified — preferably those external to the organization.

- Report the incident to management. Discuss the level of investigation and any additional resources needed.
- Notify OSHA

STEPS OF INVESTIGATION — 1) Prepare (continued)

- OSHA Notification
 - All work-related fatalities within 8 hours
 - All work-related inpatient hospitalizations within 24 hours
 - All amputations within 24 hours
 - All losses of an eye within 24 hours



STEPS OF INVESTIGATION — 2) Collect Evidence

The next step in the investigation is evidence collection. Evidence to be collected is classified into two types and fits within a framework of five incident categories. For each category the “Who, What, When, Where, Why and How” need to be answered. And, keep in mind the “Five Whys”. Each answer should be followed-up with an “If not, why not?” or a “Why?” to get to the root causes.

Incident Categories

- Task
- Material
- Work Environment
- Personnel
- Management

Types of Evidence

- Physical Evidence
- Witness Statements



Collect Evidence: Task

Task evidence is information on actual procedures used when the incident occurred. Collect what is needed to determine:

- Was a safe work procedure used?
- Had conditions changed to make the normal procedure unsafe?
- Were the appropriate tools and materials available?
- Were they used?
- Were safety devices working properly?
- Was lockout used when necessary?



Collect Evidence: Material

Evidence in the material category offers the relationship of equipment, tools and materials to the incident. Evidence should help determine:

- Was there an equipment failure?
- What caused it to fail?
- Was the machinery poorly designed?
- Were hazardous products involved?
- Were they clearly identified?
- Was a less hazardous alternative product possible and available?
- Was the raw material substandard in some way?
- Should personal protective equipment (PPE) have been used?
- Was the PPE used?
- Were users of PPE properly educated and trained?



Collect Evidence: Work Environment

Work environment is evidence that will provide a perspective on the physical environment when the incident occurred and its affect.

- What were the weather conditions?
- Was poor housekeeping a problem?
- Was it too hot or too cold?
- Was noise a problem?
- Was there adequate light?
- Were toxic or hazardous gases, dusts, or fumes present?



Collect Evidence: Personnel

Evidence related to personnel will reveal the role of human factors such as worker capabilities and emotional status (tired, stressed, etc.) when the incident occurred.

- Did the worker follow the safe operating procedures?
- Were workers experienced in the work being done?
- Had they been adequately educated and trained?
- Can they physically do the work?
- What was the status of their health?
- Were they tired?
- Was fatigue or shiftwork an issue?
- Were they under stress (work or personal)?
- Was there pressure to meet a deadline/by-pass safety procedures?
- Was the pressure self-imposed or applied by supervision/management? How?



When employees are fatigued they can make simple mistakes like failing to wear safety glasses.

Collect Evidence: Management

Evidence for management should provide insight into the impact of supervisory oversight, application of safety policies and enforcement.

- Were safety rules communicated to and understood by all employees?
- Were written procedures and orientation available?
- Were the safe work procedures being enforced?
- Was there adequate supervision?
- Were workers educated and trained to do the work?
- Had hazards and risks been previously identified and assessed?
- Had procedures been developed to eliminate hazards or control risks?
- Were unsafe conditions corrected?
- Was regular maintenance of equipment carried out?

- Were regular safety inspections carried out?
- Had conditions/concerns been reported beforehand and action taken?



Collect Evidence: Physical Evidence

Incident category questions can be answered through witness statements and physical evidence. Physical evidence includes:

- tools/equipment or parts/pieces
- photos (see Appendix D Photo Tips)
- samples
- design specifications
- operating logs
- purchasing records
- previous reports/procedures
- equipment manuals
- job safety analysis reports
- training records
- drug testing in accordance with regulations and labor agreements



Collect Evidence: Sketches

In collecting the physical evidence, develop a sketch of the scene. Sketches will not only help the investigator understand the scene, they can be used during interviews to help interviewees identify their location before, during or after the incident. The following offers suggestions for sketch development.

- Make sketches large; at least 8" x 10" and clear, be sure to print legibly
- Include "Incident Details" (i.e., time, date, injured, location, conditions)
- Include measurements (distances, etc.) and use permanent points
- Indicate directions – N=North; E=East; W=West; S=South
- Make notes on the sketch to provide additional information such as the photo location and/or where people were at the time of the incident



Collect Evidence: Witness Statements

Interviews following an incident are very sensitive. First and foremost there needs to be an understanding that depending on the severity of the incident, the victim and witnesses experienced a significant trauma. In addition, the interviewees have certain rights. Labor agreements must be honored. And, as of 1975 the Supreme Court upheld Weingarten Rights for union employees. Weingarten Rights offer that union employees have a right to be accompanied by union representation during an investigatory interview by the employer, if the employee "reasonably believes" the interview "might result in disciplinary action." The National Labor Relations Board has wavered on whether an employer must allow a non-union co-worker to accompany the employee during the interview. Their position has changed four times since 1975 on non-union Weingarten Rights.

Focusing on the accuracy, the best strategy is to develop a rapport with the interviewee. Rapport has been defined as "the experience of a relationship and a connection with another person; a connection on a social, cognitive, emotional, and/or behavioral level the relational context or chemistry that makes us "click" or get along." Developing rapport can put the interviewee at ease which may help to overcome cognitive memory loss caused by trauma and can break down barriers that might cause interviewees to offer false information. For best results, investigators should receive more training on interview techniques. The following offers some simple suggestions for conducting interviews.

Collect Evidence: Witness Statements (continued)

Interviewing - “DOs”...

- Conduct interviews as soon as possible
- Put the witness, who is probably upset, at ease
- Emphasize the reason for investigation, determine what happened and why
- Make short notes or ask someone else to take them during interview
- Ask if it is okay to record the interview, if you are doing so
- Let the witness talk, listen
- Confirm that you have the statement correct
- Try to sense any underlying feelings of the witness
- Close on a positive note



Collect Evidence: Witness Statements (continued)

Interviewing - “DON'Ts”...

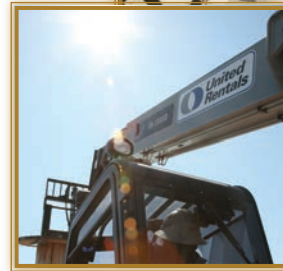
- Intimidate the witness
- Interrupt
- Prompt
- Ask leading questions
- Show your own emotions
- Jump to conclusions



Collect Evidence: Witness Statements (continued)

Interviewing - Ask open-ended not “yes” or “no” questions

- Where were you at the time of the incident?
- What were you doing at the time?
- What did you see, hear?
- What were work environment conditions (weather, light, noise, etc.)?
- What was (were) the injured worker(s) doing at the time?
- In your opinion, what caused the incident?
- How might similar incidents be prevented in the future?



STEPS OF INVESTIGATION — 3) Analysis

Once the evidence (witness statements, records and physical) has been collected, it's time to analyze. While the immediate causes may be apparent, a thorough examination of all evidence is needed. The following steps must be taken.

- Assemble all information to be able to review at one time
 - Look for all pertinent facts
 - Separate facts from opinion. Direct evidence from circumstantial evidence. Witness testimony from hearsay.
 - Review, correlate and pose hypothetical causes
 - Keep an open mind to all possibilities
 - If gaps in understanding, re-interview or look for other data
 - Outline potential direct, indirect, contributing and root causes
- Have a second individual conduct an independent review
 - Test potential causes — Review again and affirm or reject each
 - Check conclusions to see if:
 - it is supported by evidence
 - the evidence is direct (physical or documentary) or based on eyewitness accounts, or
 - the evidence is based on assumption.



STEPS OF INVESTIGATION — 4) Report

The purpose of the investigation, and therefore the report, is to effect change. It should explain what happened, identify the causes, include rationale for conclusions made and provide specific recommendations to prevent recurrence of an incident. The audience for the report needs to be considered. Legal counsel can provide recommendations on what should and should not be included for certain target groups. A general outline for an incident report is as follows:

A. Administrative

- 1) Incident Identification** (Use nomenclature typically or other information such as project number or title, location, etc. to briefly identify the incident)
- 2) Investigation Team** (Identify lead and roles of other individuals on the team, include job titles)
- 3) Investigation Completion Date**
- 4) Report Audience** (Individuals and Titles)



STEPS OF INVESTIGATION — 4) Report (continued)

B. Basic Incident Information

- 1) Who was injured and details of the injury
- 2) Incident logistics (where and when)
- 3) Affected property and extent of any damage
- 4) Medical response (first aid, additional treatment as allowed)*

**Employers are not covered entities under the Health Insurance Portability and Accountability Act (HIPPA). However, other privacy laws may apply. Consult legal counsel*



STEPS OF INVESTIGATION — 4) Report (continued)

C. Description of the Incident

- 1) Description of what happened in detail

D. Evidence

- 1) Physical Evidence
 - a) Sketch of the incident scene
 - b) Photographs and diagrams
 - c) Other (maintenance records, tests, etc.)
- 2) Witness Statements



STEPS OF INVESTIGATION — 4) Report (continued)

E. Causes *(include rationale for conclusions)*

- 1) Direct causes
- 2) Indirect or root causes
- 3) Contributing factors

F. Corrective Action *(Provide specifics such as offering hand tools will be inspected weekly by the supervisor rather than management should ensure tools are periodically inspected)*

- 1) Immediate actions taken
- 2) Short term action with target completion dates
- 3) Long-term actions with target completion dates



STEPS OF INVESTIGATION — 4) Report (continued)

Incident Result Complications

While every attempt needs to be made to avoid placing blame, an investigation may reveal human error, negligence or intentional acts of misconduct. The person or persons responsible may be management, immediate supervisor(s), and the workers. Regardless of who is at fault, these acts or errors must be pointed out. Corrective action cannot be taken if the true cause is not acknowledged and dealt with.

While the report must include conclusions related to these factors, it should not recommend discipline. These actions should be taken by management in accordance with the company disciplinary policies. Normal personnel procedures should be followed. These policies must be well documented and the disciplinary action taken must reference any work rules violated as the cause for action taken. Cause for action should ensure no action was taken in retaliation for an injury or the reporting of it.



STEPS OF INVESTIGATION — 5) Corrective Actions

Once the report is distributed, the corrective actions recommended should be completed. Be prepared to:

- Respond to recommendations given by explaining what can and cannot be done (and why or why not)
- Monitor that the scheduled actions have been completed
- Check the condition of injured worker(s)
- Educate and train other workers at risk
- Re-orient worker(s) on their return to work
- Review to assure correction is effective

If the review of corrective actions demonstrates resolution of any issues with no potential for repeat of the incident, the investigation can be complete. If not, take additional action as needed.



APPENDIX A — Incident Investigation Program

I. Purpose

This Incident Investigation Program shall ensure all incidents, which include injuries and potential injury or property damage, are investigated at the appropriate level, to prevent recurrence. All incidents resulting in an injury or incidents in which there was a potential for serious or fatal injury will be thoroughly investigated.

II. Responsibilities

The supervisor on scene will take all action necessary to ensure the safety of all, including employees and visitors on site. First aid will be provided and Emergency Response Services will be contacted, if needed.

A) Timely Reporting

The Supervisor will notify the Company Safety Representative as soon as possible when an incident occurs involving a serious injury or fatality.

The Company Safety Representative will notify management immediately and ensure OSHA is notified as follows:

- All work-related fatalities within 8 hours
- All work-related inpatient hospitalizations within 24 hours
- All amputations within 24 hours
- All losses of an eye within 24 hours

For all other incidents, the Supervisor's First Report of Loss will serve as notification to the Company Safety Representative.

APPENDIX A — Incident Investigation Program (continued)

B) Initial Investigation

The Company Safety Representative is responsible for oversight of the program. Investigations will be performed in accordance with the Investigation Levels in this program. Supervisors will always perform an initial investigation and maintain control of the scene. This may be until the Company Safety Representative and/or other assigned investigators arrive, if an expanded investigation is needed. The Company Safety Representative will ultimately determine the level of investigation needed and assist in completing expanded investigations with the Safety Committee. The Company Safety Representative will recruit and assign additional expertise as needed to the Investigative Team.

APPENDIX A — Incident Investigation Program (continued)

C) Expanded Investigations

The Company Safety Representative shall determine the level of investigation based on the following categories, involve the appropriate individuals and coordinate investigative actions:

INCIDENT TYPE	INVESTIGATIVE TEAM
Fatalities	Company Safety Representative, consultants expertise related to incident, legal counsel
OSHA Reportable (amputations, etc.), serious injuries (ex. lost time) and significant property loss (ex. crane collapse)	Company Safety Representative, health and safety committee, union rep (if applicable), consultants with expertise related to incident, legal counsel
No actual injury, but high potential for injury/significant property loss	Employees with knowledge of work, supervisor, Company Safety Representative, health and safety committee, union rep (if applicable)
OSHA Recordable	Employees with knowledge of work, supervisor, Company Safety Representative, health and safety committee, union rep (if applicable)
No actual injury and potential for only minor injury/low property loss	Employees with knowledge of work, supervisor, Company Safety Representative (optional)

APPENDIX A — Incident Investigation Program (continued)

III. Reports

The Supervisor will complete the first report of loss as soon as possible for all incidents and submit it to the Company Safety Representative. If no further investigation is needed, the Company Safety Representative will complete a simplified Incident Investigation report and provide a copy to management upon request. For expanded investigations, a comprehensive report will be developed, reviewed by management and elements distributed as agreed upon by Management, the Safety Committee and Legal Counsel.

Representative will review comprehensive reports with the Safety Committee and Management to coordinate the direction of the corrective actions and the company's incident prevention plans.

IV. Review of Investigation Reports

The Supervisors, the Safety Committee, and Company Safety Representative should review all incident investigations. The Company Safety

APPENDIX B — Checklists of Recommended Investigator Attributes

- Good communication style
- Nonjudgmental
- Able to act with diplomacy
- Experienced in incident causation models
- Experienced in investigative techniques
- Knowledgeable of any legal or organizational requirements
- Knowledgeable in occupational health and safety fundamentals
- Knowledgeable in work processes and environment for situation
- Able to use interview/other person-to-person techniques
- Knowledgeable of requirements for records and data collection
- Able to analyze data gathered and reach recommendations

APPENDIX C — Sample Items Investigators Kit

- Camera
- Charged Batteries (phones, cameras, equipment, etc.)
- Video / Audio recorder
- Measuring devices
- Leveling rod
- Clipboard and writing pad
- Pens, pencils, markers
- Graph paper
- Paint stick (yellow/black)
- Straight-edge ruler (scale reference in photos)
- Incident investigation forms
- Flashlight
- Strings, stakes, warning tape
- Photo marking cones
- PPE
- Magnifying glass
- High visibility plastic tapes to mark off area
- First aid kit
- Latex gloves
- Containers with seals
- Identification tags

APPENDIX D — Photo Tips

- Take notes for each photo taken
- Begin your photo shoot taking distance shots first then; move in for the closer photos
- Take photos from different angles
- Be sure to include panoramic photos so the entire scene can be represented, top-bottom/side-side
- Identify and document photo
- Add an item in each photo that will add a known dimension
- Identify in notes who is taking the photos
- Mark the locations where photos were taken on the sketch of the accident scene

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