

AUDITING IS A CRITICAL ELEMENT IN ANY ELECTRICAL SAFETY PROGRAM

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D. Ray Crow
Senior Member, IEEE
DRC Consulting, Ltd.
336 36th Street #389
Bellingham, WA 98225
USA
draycrow@aol.com

John D. Aeiker, PE, CSP
Senior Member, IEEE
Aeiker Safety Associates, LLC
1201 Savannah Drive
Mobile, AL 36609
USA
john.aeiker@ieee.org

Abstract - Auditing is a critical element of an electrical safety program. It is the verification of what is working and what is not working within company policies, procedures, and programs. It identifies gaps in a company's standards, programs and work practices that do not meet the local or federal regulations or industry consensus standards, such as NFPA 70E and/or CSA Z462 that apply to the facility. There are three basic types of audits: internal, external and regulatory. This paper will focus on the major elements of an audit which include: 1) pre-audit activities, involving selection of auditors, and scope of audits, 2) on-site audit activities including protocols and criteria involved, and 3) post-audit activities outlining findings and recommendations for improvement. Auditing is important to the electrical safety program because the focus is on continuous improvement in safety. It also verifies that the policies, procedures and work practices of the company are technologically sound, abreast of the regulations, and include the best practices of the industry.

Index Terms — Safety Assessment, Audits, Auditing, Management Program, Electrical Safety,

I. INTRODUCTION

This paper addresses key elements to consider when developing an auditing program to improve an electrical safety management program. Audits are useful tools to determine performance, highlight strengths and weaknesses, increase production, and determine how to modify outdated procedures.

There are three basic types of audits: internal audits, external audits and regulatory audits. A robust safety program may use more than one type of audit to ensure all appropriate aspects of the program are effectively working.

The main element of an electrical safety audit should address the principles, controls, procedures, and other requirements that an employer has in place. Another feature of an audit should be to address items that may be missing within a safety program that are requirements such as those in NFPA 70E, CSA Z462 and OSHA.

How audits are performed and the information used from the audit determines credibility and acceptance of the audit program. The use of external auditors can enhance the breadth of an audit program by providing an unbiased viewpoint. [1]

Detailed criteria and protocols are required to ensure completeness of the audit. Protocols provide guidance on which items to address and how to address specific items during the

audit. Criteria provide the grading system for the audit findings and aid in prioritizing recommendations.

Complete and accurate audit documentation is essential. An effective audit must include a detailed report that documents findings and recommendations. The audit findings should include references to company policies as well as applicable regulations and standards.

Audits will help strengthen and enhance electrical safety management programs by identifying gaps and opportunities for improvement. They will also provide excellent recommendations for improvement based on expert knowledge in a given field of expertise. [2]

II. DEFINITION

For the purpose of this paper, an audit is defined as a formal and methodical examination of the electrical safety program. It includes a review of the electrical safety-related principles, controls, procedures, and practices. The requirements for personal protective equipment, tools and test equipment, inspection and maintenance programs, training program, past safety records and applicable regulatory requirements are reviewed to identify the areas of strengths and weaknesses for the purpose of enhancing electrical safety in the workplace. [2]

III. WHY AUDITING IS IMPORTANT

An effective auditing program is a key means of ensuring an electrical safety program is on track and improving. The auditing activity encompasses the thorough examination of facilities, policies, procedures, records and the verification of compliance to some standard or criteria. Observation of work practices and interviews of key personnel are performed. Without some form of auditing, it is almost impossible to identify gaps that may exist in your electrical safety program. Auditing helps document where an electrical safety program is doing well and where upgrades are needed to improve the effectiveness of the program or to ensure compliance with applicable standards and regulations. [3]

IV. ASPECTS OF AN EFFECTIVE AUDITING PROGRAM

To best understand how a site is complying with its own site standards, company standards, or applicable regulations (local or federal), periodic auditing of programs, policies, and procedures is essential. There are several types of audits that can be performed. Some examples are internal audits performed by site personnel, internal audits performed by personnel from other company sites, and external audits performed by consultants or regulatory agencies. Internal audits typically address the condition of the facility and how the local procedures and work practices are being executed by the local work force. External audits typically not only focus on work practices at the location (field audits) but also focus on management systems and programs and how effective these systems and programs are in providing a safe work environment while complying with the appropriate site and company policies and with the applicable local and federal regulations. [4]

The audit process includes three elements. *Pre-audit activities* – Pre-audit activities include selecting the audit team, planning and preparing for the audit by defining the scope of the audit including the specific needs of the audit, and selecting the specialized audit team that has specific knowledge on what will be audited. *On-site audit activities* – On-site activities of an audit at a facility include: 1). a kick off meeting with management to ensure alignment on what the audit will cover, 2). reviewing the written electrical safety program, 3). a review of facility policies and procedures, training records, and the physical condition of the facility, 4). observations of work procedures, interviews of personnel, and 5). verifying findings. *Post-audit activities* – Post-audit activities include documenting the audit in an appropriate report format, providing the findings and recommendations and grading each criterion addressed during the audit, and finally, scoring the overall performance. It is a vital function to provide written recommendations of corrective actions for management to consider. Management personnel of the organization audited are responsible for developing and executing a corrective action plan to address the improvement opportunities identified by the audit team. [5]

A. Pre-Audit Activities

The early phase of an audit begins with careful planning. Scope, Location, Personnel, Protocols, Criteria, Rating Systems, and Timelines must all be decided prior to the start of a facility audit. An audit has clearly defined boundaries and limits. It cannot cover everything an organization does. There must be clarity on the exact scope of the audit by all parties. Items that fall within the scope of the audit are fully reported in the final report. Observations made that fall outside the scope of an audit are handled in a variety of ways. They are always reported to management in some fashion, whether it calls for an informal meeting or a more formal written note. A team must be assembled to prepare the audit outline and a Lead Auditor is identified. Care must be taken when auditors are selected as they must be knowledgeable, credible, experienced, objective, consistent, and trained. It is important that a set of audit protocols and criteria be identified for use by the audit team. The use of protocols is beneficial to ensure completeness of the audit. Protocols provide information on how specific information

on each covered area will be addressed. Protocols provide guidance to auditors to ensure that data is gathered on each audit criteria. Criteria provide the metrics or measurements (grading system) for what is found during the audit. Locations for the audit are selected based on the specific scope and criteria developed. Timelines are negotiated between the facility management team and the auditor's schedules. Emphasis is placed on being fully prepared prior to arrival, creating the least amount of disruption to the workplace, and accurate and timely reporting of the findings to management. All this is aided by a systematic plan prepared prior to the on-site evaluation.

B. On-Site Audit Activities

The on-site audit activity starts with a kick-off meeting between the audit team and plant management. The safety requirements for audit personnel to follow at the facility are addressed first. The main purpose of the meeting is to introduce the audit team, discuss the purpose of the audit and review the audit plan and scope with plant management. It is recommended the organization's management structure, the overall facility operations, and any specific issues management wants covered in the audit be discussed in the meeting.

In this meeting it is recommended an overall facility layout be discussed and the plant electrical single line diagram be reviewed to orient the audit team. It is important to schedule the time for an exit meeting to informally review the key audit findings with management prior to leaving the facility. If there are any misunderstandings or clarifications needed before the final written report is prepared, it can be discussed in the exit meeting.

On-site audit activities include a review for compliance with internal and external standards. Internal standards include corporate policies and standards and site-specific standards. External standards include standards such as NFPA 70E "Standard for Electrical Safety in the Workplace", CSA Z462 "Work Place Electrical Safety", OSHA 29 Subpart S - 1910.331-335, OSHA CFR 29 Subpart R - 1910.269, OSHA 1910.147, OSHA 1926 Subpart K and IEC 61010 "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use". [6][7][8][9][10]

The Lead auditor assigns single point accountability for specific audit criteria to each team member to ensure all criteria are addressed. A protocol and criteria should exist for each topic. A criterion is the standard or metric on which a judgment or decision may be based. A protocol is a guide or plan for the auditor. The protocol should suggest contacts to interview, recommend questions to ask, what documentation to check, and identify observations, procedures, and practices to verify. See attachments A, B, and C on page 6, 7, and 8 for examples of protocols. See attachment D on page 9 for an example of criteria.

The criteria for the audit should include specific items addressed in the company's electrical safe work practice standard. The criteria should also ensure that key safe work practices addressed in NFPA 70E, CSA Z462 and other applicable external standards are covered. The audit team may elect to use the written site procedures and work practices as the basis for their audit protocols. This practice can be an effective means to measure how well those site procedures and work practices are being followed. Audits should address not

only how well documented procedures and safe work practices are being followed but it should also address the physical condition of the facilities. The audit should include inspection of the electrical rooms and other facilities such as substations, transformer vaults, and control system rooms to bring focus on housekeeping issues. Housekeeping issues include storage issues, whether or not equipment doors are closed and latched, the proper labeling of equipment and disconnect devices, as well as how the personal protective equipment (PPE) is stored and maintained. Proper signage issues for the facility should be noted. Good housekeeping and safety go hand-in-hand. Poor housekeeping can lead to unsafe work practices.

C. Post-audit activities

Post audit activities include a final audit report documenting the audit in a report format with both the findings and recommendations for corrective action. The final report is the responsibility of the Lead Auditor. Developing and executing a corrective action plan to address the improvement opportunities identified by the audit team is the responsibility of management.

A Final Audit Report should be issued by the Lead Auditor within a few weeks after leaving the facility. The audit report states a Summary of Findings with the following: strengths and weaknesses found with documented findings, the quality of the procedures observed, the adequacy of the personal protective equipment and the training program, the areas of improvement and an evaluation and ratings of the electrical safety program and its components. The final report should include recommendations in order of priority for each criterion. A final audit report should generally contain the following items:

- A Cover Page - Name the facility audited, who performed the audit, and the date of the audit report.
- A Cover Letter - Addressed to the facility manager, include high priority key findings, signed by the lead auditor.
- An Executive Summary - Include which facility was audited, dates of audit, audit team members, what regulations the audit was based on (Corporate Standards, Site Specific Standards, NFPA 70E, OSHA, etc.), how the audit was conducted, and main strengths and weaknesses found during audit and any item that should be addressed immediately (regulatory compliance and high risk to workers)
- Table of Contents – A List of the criteria
- Main Audit Report – Findings and Recommendations for each criterion audited
- Rating (metrics) for each audit criterion

The audit report must be factual. Use data found during the audit for the findings reported. The recommendations in the audit report should use action words like develop, document, perform, create, and ensure. Avoid words like inadequate, few, and sometimes. Do not repeat stories or generalities heard during interviews.

There are a number of methods that can be used to provide a written audit report. One method is to list findings and recommendations for each criterion addressed during the audit. The example shown below is for the "Management and Training" Criterion.

D. Management and Training Criterion

The assessment was based on industry consensus standard NFPA 70E (2012 edition), CSA Z462, OSHA code of federal regulations 29 CFR Subpart R, - 1910.269, 29 CFR Subpart S, - 1910.331-335, and global best practices as benchmarks for the assessment.

E. Findings

- Management support for continuing to improve electrical safety is evident. Interviews and observations indicate excellent cooperation between organizational levels regarding electrical safety.
- Interviews and observations revealed that reporting, investigating, and communicating all incidents and near misses is mandatory.
- The facilities electrical safety program is based on NFPA 70E, CSA Z462, and national codes and regulations.
- Company procurement regulations include the requirement that all construction contractors must adhere to the facilities electrical safety program as a minimum.
- Electrical safety training at each location is provided by a member of the facilities electrical safety team. Interviews of employees indicated that the information provided during the training class is not retained by the people that attended the training.
- No record existed of a list of tasks that a person must demonstrate understanding and proficiency in for facility management to document that they are qualified to perform the task.
- Interviews and record reviews indicated that there is no comprehensive annual evaluation or assessment/audit of electrical personnel to ensure they are complying with electrical safe work practices in accordance with NFPA 70E and/or CSA Z462 requirements. [NFPA 70E 110.2(D)(1)(f), CSA Z462 4.1.6.4.3, 1910.269 (a)(2)]

F. Recommendations



(Note: Recommendations that are marked with this symbol are considered by the assessment team to be the highest priority for action.)

- Continue to promote an environment of safety ownership among all employees.
- Consider using a subject matter expert to provide electrical safety training for employees. This recommendation is based on the fact that interviews with employees confirmed that the information provided in the existing training is not retained. If electrical safety training is to be provided by members of the facilities electrical safety team, consider a "Train the Trainer" class taught by a subject matter expert for the personnel that will provide the electrical safety training.
- Consider sending key members of the company's electrical safety team to the IEEE IAS Electrical safety workshop. Participation in industry wide electrical safety workshops and conferences will allow the team members to help ensure that the company's policies and procedures stay on the leading edge of electrical safety.

- Conduct "Classroom Training" on electrical safe work practices for employees on a periodic basis (at least once every three years). Documentation of the content of the training is required. Classroom training should include both testing for understanding and verbal affirmation of understanding. Understanding that the person taking the training understood the content of the training should also be attested to by the training instructor or the employee's supervisor.
- Develop a process for certifying electrical personnel as qualified. This process should take into account training (including on-the-job training), experience, and a demonstration of understanding and proficiency skills. It should include provisions for yearly updating and recertification. This information should also be effectively documented. [NFPA 70E 110.2, 110.2(E), CSA Z 462 - 4.1.6.5, OSHA 1910.269 (a) (2); OSHA 1910.331]

V. SUMMARY

Auditing is a key element to ensure that an effective electrical safety program exists in your facility. It is recommended that internal audits be performed at least once each year and external audits be performed at least once every three years.

Auditing provides the means to understand performance versus established standards and to identify areas for continued improvement. To have an effective electrical safety program, an auditing process must be an integral element of the electrical safety program. A sustainable auditing program ensures the electrical safety procedures, recordkeeping, and operating discipline are continuously monitored and improved upon and, in the end, electrical related incidents and injuries are reduced. [2]

VI. CONCLUSIONS

Auditing is an important element of any safety program. An effective audit provides a methodology to consistently increase safety performance. It can reduce incidents. It can offer expert level industry knowledge to improve the workplace. It can forewarn the company of any non-compliance or lack of knowledge within the facility. Audits provide tremendous value for the time and money spent by an organization. The audit will provide the next step to safety. Actions taken from audit recommendations ensure strengthening of the safety program by increased regulatory compliance, improved technology, and use of industry best practices.

VII. ACKNOWLEDGEMENTS

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IX. VITA

John D. Aeiker, PE, CSP is currently the Principal Consultant for Aeiker Safety Associates, LLC specializing in Electrical Safety, Process Safety Management, and General Safety Management Systems.

John has more than 38 years of experience in operations leadership positions including refinery operations, water and wastewater design and construction, pump sales and service, and 30 years in manufacturing for DuPont. While with DuPont, he was the Safety, Occupational Health, and Environmental (SHE) Manager for the Crop Protection business unit and the Electrical Safety Competency Leader for the North America Region of DuPont Operations. He has extensive leadership and functional experience in SHE risk management, process safety, electrical safety, and contract manufacturing. He received his BSEE degree from West Virginia Institute of Technology, Montgomery, WV, in 1973.

He has been a safety and occupational health professional for the past 19 years and is a registered Professional Engineer in several states and a Certified Safety Professional. As the Electrical Safety Competency Leader for the North America Region of DuPont, he represented that region on the DuPont Corporate Electrical Safety Team and led significant

improvements to the corporate electrical safety program. He is a Professional Member of the American Society of Safety Engineers (ASSE) and a Senior Member of IEEE. He has co-authored, presented, and published papers on electrical safety for the IEEE Petrochemical Industry Council and the IEEE Industry Applications Society Electrical Safety Workshops.

Daryld Ray Crow (S'68, M'72, SM'03, LSM'07) graduated from the University of Houston in 1969 with a BSEE degree. After graduation Ray went to work for the Aluminum Company of America where he provided engineering support for Alcoa plants worldwide on the design, installation, and operation of power and rectifier systems, provided plant engineering support which included electrical safety, served as team leader for writing a number of Alcoa electrical standards including the development of and training for Alcoa's electrical safe work practice standard. He retired from Alcoa in 1996. After retiring from Alcoa, Ray worked for Fluor Global Services and Duke Energy as a Principal Technical Specialist providing design and consulting electrical engineering for plant power distribution systems and safe work practice programs, standards, and assessments/audits.

Ray presently is the Principal Technical Specialist and owner of DRC Consulting Ltd. and performs consulting work on electrical safe work practices standards, assessments/audits, electrical safe work practice training, and electrical engineering projects.

He was chair of the Petroleum and Chemical Industry (PCIC) Safety Subcommittee 2004-2006, chair of the 2004 IEEE IAS Electrical Safety Workshop, is an alternate member on the NFPA 70E technical committee "Standard for Electrical Safety in the Workplace", a member of the IEEE 1584 Committee, and was the working group vice chair for the 2007 revisions to IEEE 463 "Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones".

Ray has co-authored and presented papers and tutorials on electrical safety and auditing for the PCIC and has presented safety topics and tutorials at the IEEE Industry Applications Society Electrical Safety Workshops and IEEE IAS Pulp and Paper Industry Conference. In 2010 Ray received the IEEE IAS Petroleum and Chemical Industry Committee Electrical Safety Excellence award.

Attachment A - PROTOCOLS

Protocols should exist for each element of an electrical safety audit. Protocols are used to guide the auditor's efforts. Protocols should include the following information:

1. Guides for auditor's understanding and verification
2. Identify possible contacts
3. Questions to ask
4. Documentation to check
5. Items to test to increase your confidence in finding

Example of a protocol format:

1. Intent of audit element – what is being audited
2. Probable contacts to interview
3. Verification of findings including:
 - a. Examples of what questions to ask
 - b. Policies and procedures to review
 - c. Observations and testing to increase confidence in finding

EXAMPLE OF PROTOCOL FOR USE OF PERSONAL PROTECTIVE EQUIPMENT AND TOOLS

PROBABLE CONTACTS:

- A. Maintenance Supervisor
- B. Qualified Employee(s)
- C. Contractor Supervisor and Employee(s)
- D. Safety/Industrial Hygiene Contact
- E. Purchasing Contact

VERIFICATION:

Inquiry (what special questions do you want to ask?):

- Has an arc flash hazard analysis been completed for the facility?
- How is the need for PPE assessed?
- How is PPE inspected and maintained?
- How are employees trained on the selection/use /maintenance of PPE?
- Where do you store your PPE? How do you obtain replacements?
- What method is used to select and purchase personal protective equipment, insulated/insulating tools, and insulating rubber products (including gloves and blankets)?
- What system is in place to train new or transferred employees?
- How do you know what PPE is required for a task?
- What is the policy on the use of conductive articles (eyewear, jewelry etc.)?

OBSERVATIONS OF POLICIES, PROCEDURES, AND PRACTICES.

- Review training outline, objectives, and attendance records for authorized and qualified employees.
- Obtain examples of completed job safety analysis forms, safety rules, switching orders, standard operating procedures and verify that specific personal protective

equipment and live part tool requirements for qualified employees are included for specific tasks.

- Review arc flash analysis data or system used to select PPE for the specific task. Are labels posted on equipment that indicates the required PPE or incident energy level?
- Review requirements for use of insulated/insulating tools and insulating rubber products
- Observe use, storage, care and maintenance of personal protective equipment, insulated/insulating tools, and insulating rubber products.
- Spot check for compliance with conductive article policy.

TESTING (WHAT ACTIVITIES DO YOU WANT TO EMPLOY TO INCREASE YOUR CONFIDENCE?):

- Obtain names of authorized and qualified employees (include any new or transferred employees) and verify that training was received and documented in attendance records.

Attachment B - Supervision Interview

1. Does your facility have a written electrical safety standard? Have you reviewed the standard?
2. Do you have access to a copy? Do employees have ready access to this standard?
2. Are the requirements for management outlined in your safety standard? What are they?
3. Do you determine through regular supervision and inspections conducted at least annually that each employee is complying with the required safety-related work practices? Is this documented?
4. Do you understand who is qualified for what work and who is not? Is this documented?
5. Do you have a requirement for training and retraining on electrical safety? Is a system in place to identify personnel who have and /or should have electrical safe work practice training? Where is this documented? How do you ensure retraining for employees is completed?
6. What is covered during electrical safety training/retraining classes? Does an outline of the training classes exist? Does the training/retraining include a test for understanding?
7. Does a requirement exist for electricians to demonstrate that they can perform task assignments in a safe manner?
8. Have you attended electrical safe work practice training? When?
9. Are you familiar with the term 'Arc Hazard Analysis'? Have Arc Hazard Analysis calculations been performed at your facility?
10. Are you aware if the testing requirements for insulating rubber gloves, blankets, high voltage tools, insulating equipment, mechanized equipment, and safety equipment have been met? What is the requirement? Where is the test data documented?
11. Do you have a requirement for creating an electrical safe work condition before start of work? Does your company allow electricians to work on exposed energized electrical conductors above 50 volts?
12. How is mobile equipment that may enter high voltage areas controlled?
13. Describe the procedure for investigating electrical accidents/incidents
14. Are you aware of the required intervals for internal self audits and external audits of your electrical safety program?
15. Are you aware of any location electrical safe work practices/procedures that could serve as internal benchmarks, or exceptional practices?
16. How often are safety meetings held? Are electrical safe work practices & procedures ever discussed in safety meetings as a scheduled topic?
17. Are job briefings held before start of work? What is covered in the job briefing?
18. Do you hold safety meetings with contractors before you allow them to start work? What is discussed during the meeting? Is the meeting documented?
19. Do you hold periodic safety meetings with your contractors? How often? Who conducts the meetings? Are they documented?

Attachment C - Electrician Interview

1. Have you received training on your facility electrical safety standard? When? Is retraining required? How often? Do you have a copy of the electrical safety standard, or can you readily obtain a copy?
2. What type of work do you perform at this facility?
3. Do you generally feel safe/comfortable with how electrical jobs are conducted at this location? Are there areas where improvements are needed?
4. Who, at this location is most responsible for your safety?
5. Do you have a current CPR certification? When are you due for re-training?
6. Are you aware of any past internal/external audits/assessments for compliance with your electrical safety program? Where you involved? How?
7. Are electrical safe work practices & procedures ever discussed in safety meetings? By whom?
8. Are you aware of the limited, restricted, and prohibited approach boundaries to exposed energized live parts? What are they? Are there conditions that allow an unqualified person inside the limited approach boundary? What is required?
9. Are job briefings always held before the start of work? Who conducts the briefings? When? What is covered in the briefings? What if you are working alone?
10. Do you have a requirement to consider installing a work zone/barricade before start of work? When are they used? Describe why, where, and how you would use a work zone/barricade.
11. What is the highest voltage utilized at this location? What is the minimum approach distance? How do you know the voltage of the equipment you are going to work on? Are voltages marked on electrical equipment?
12. Are you familiar with the term 'Arc Hazard Analysis'? Are you aware if Arc Hazard Analysis calculations have been performed for electrical tasks at this location?
13. How do you know the correct PPE to use for the task you are going to perform? What PPE do you use and when do you use it?
14. Do you ever use rubber insulating voltage gloves? What voltage rating exists for the rubber insulating gloves you use? When do you use them? How often are gloves dielectrically tested? Inspected & air tested?
15. What insulated/insulating tools do you use at this facility? Do you have access to insulated/insulating tools? How are they tested? When and how are they used?
16. Explain what procedure is used if a rubber insulating glove or tool test date has expired. What procedure is used for damaged gloves or tools?
17. What type of voltage meters do you use? Are they at least Category 3 meters?
18. Do you ever use insulated mobile equipment at this location? Is the equipment tested/certified for boom insulation integrity, acoustic emissions, and mechanical integrity? By whom? How often? Is the testing documented? Are test results posted in the vehicle? Is there a pre-flight procedure for this equipment?
19. Explain the proper sequence used for attaching and removing grounds to isolated high voltage lines or equipment.
20. Have you been involved in high voltage switching orders? Who prepares and approves the switching order documents? Who conducts the switching orders? Explain How is the switching order is performed.
21. Do you ever perform work from elevated positions? Is fall protection employed? Is the need for fall protection discussed before the job?

Attachment D – Example of Audit Criteria

Criteria provide the metrics or measurements (grading system) for what is found during the audit. Metrics can then be used by site management to place focus in the appropriate areas identified for improvement, and appropriate recognition can be given for positive results.

There are different metric methods that can be used by auditors to rate each criterion addressed during the audit. One method is to use the “GAR” method. This method is based on risk assessment. The “GAR” method uses an analogy similar to a traffic light. As the light turns from green to amber, to red, the risks are higher. Based on the assessment of risk by the audit team, each criterion receives a number from 1 to 10. Items in the criteria that are rated from 7 to 10 receive a rating of Green. Items that receive a rating from 4 to 6 receive a rating of Amber. Items that receive a rating from 0 to 3 are given a rating of Red. The criteria that receive a rating of Amber or Red need improvement.

An example of how ratings of each criterion may be selected by the audit team is shown below.

RATING	DEFINITION
Green	Most or all of the applicable items listed in the criteria are in place.
Amber	Many, but not all, of the applicable items listed as minimum expectations are in place. Items missing represented more than isolated anomalies and are indicative of the need for program system improvement.
Red	Most of the applicable items listed in the criteria are missing or did not meet the requirements.

Example of an audit scorecard

Criterion	Green	Amber	Red
Commitment and Management Responsibility	X		
General and Training	X		
Job Briefing		X	
Hazardous Energy Control (Lockout/Tagout)	X		
Person Protective Equipment		X	
Tools and Electrical Safety		X	
Housekeeping and Storage Practices			X
Substations		X	
Maintenance		X	
Mobile Equipment	X		
Design and Construction			
Add other criterion as needed			
Total of each column	4	5	1
Overall Audit Rating = Green, Amber, or Red			