Advanced Incident Investigation and Root Cause Analysis Training Course



23 - 27 Nov 2026

Madrid

5900 € (Per Person)

Ref: #HSE8290_107318

Course Introduction / Overview:

This comprehensive training course is designed to equip professionals with the advanced skills required to conduct thorough incident investigations and identify true root causes, thereby preventing recurrence and fostering a proactive safety culture. In today's complex operational environments, simply addressing the immediate symptoms of an incident is insufficient. This program, offered by BIG BEN Training Center, delves deep into systemic cause analysis, moving beyond individual blame to understand the organizational and human factors that contribute to failures. Drawing upon the foundational principles articulated by experts like James Reason in his seminal work, "Managing the Risks of Organizational Accidents," participants will learn to see incidents not as isolated events but as outcomes of deeper system vulnerabilities. The curriculum integrates a variety of proven methodologies, from the 5 Whys and Fishbone diagrams to more sophisticated techniques like Fault Tree Analysis and Event and Causal Factor Analysis. The ultimate goal is to empower participants to transform their organizations into high-reliability entities that learn, adapt, and continuously improve their safety and operational performance through evidence-based investigation and effective corrective and preventive actions.

Target Audience / This training course is suitable for:

- Health, Safety, and Environment (HSE) professionals.
- Operations managers and supervisors.
- Quality assurance and control specialists.
- Engineering and maintenance personnel.
- Incident investigators and team leaders.
- Human resources managers involved in workplace incidents.
- Risk management professionals.
- Compliance officers and auditors.
- Anyone responsible for leading or participating in incident investigations.

Target Sectors and Industries:

- Manufacturing and industrial production.
- Oil and gas exploration and processing.
- Construction and civil engineering.
- Aviation and aerospace.
- Healthcare and pharmaceuticals.
- Transportation and logistics.
- Power generation and utilities.
- Governmental agencies and public sector organizations.
- Chemical processing and handling.

Target Organizations Departments:

- Health, Safety, and Environment (HSE).
- Operations and Production.
- Quality Assurance (QA) and Quality Control (QC).
- Engineering and Technical Services.
- Maintenance and Reliability.
- Human Resources.
- Risk Management and Compliance.
- Project Management.
- Logistics and Supply Chain.

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a structured and systematic approach to incident investigation.
- Apply a range of Root Cause Analysis (RCA) tools and techniques effectively.
- Master evidence collection, preservation, and analysis methods.
- Conduct effective and unbiased investigative interviews with witnesses.
- Analyze human factors and organizational influences contributing to incidents.
- Differentiate between immediate causes, contributing factors, and systemic root causes.
- Write clear, concise, and comprehensive investigation reports.
- Formulate robust and sustainable Corrective and Preventive Actions (CAPA).
- Promote a just culture that encourages incident reporting and organizational learning.
- Utilize incident data to identify trends and proactively manage risk.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, experiential, and focused on practical application. We believe that adult learners gain the most from doing, not just listening. This course moves beyond traditional lectures to immerse participants in a dynamic learning environment. A significant portion of the training is dedicated to hands-on workshops, realistic case studies, and group-based problem-solving exercises. Participants will work in teams to analyze simulated incident scenarios, applying the tools and techniques as they learn them. This collaborative approach fosters peer-to-peer learning and allows for the exchange of diverse perspectives. Our expert instructors facilitate these sessions, providing real-time feedback, guidance, and insights drawn from extensive industry experience. The methodology emphasizes critical thinking and the development of analytical skills, ensuring that participants leave not just with theoretical knowledge but with the confidence and competence to lead effective investigations in their own workplaces. The program is structured to build skills progressively, culminating in a comprehensive simulation that integrates all the core concepts learned throughout the five days.

Course Agenda (Course Units):

Unit One: Foundations of Effective Incident Investigation

- Introduction to incident investigation principles.
- The purpose and benefits of a structured investigation process.
- Legal, regulatory, and ethical responsibilities.
- Understanding the difference between blame and accountability.
- Introduction to the concept of a 'just culture'.
- The incident causation model and the Swiss Cheese Model by James Reason.
- Key terminology and definitions in incident investigation and RCA.

Unit Two: The Investigation Process and Data Collection

- Immediate response and securing an incident scene.
- Forming and managing an effective investigation team.
- Developing an investigation plan and timeline.
- Techniques for physical and documentary evidence collection.
- Methods for evidence preservation and chain of custody.
- Mastering witness interviewing techniques for factual information gathering.
- Avoiding cognitive biases during the investigation process.

Unit three: Core Root Cause Analysis (RCA) Methodologies

- The 5 Whys technique for simple problem analysis.
- Developing Ishikawa (Fishbone) diagrams to map potential causes.
- Introduction to Barrier Analysis and its application.
- Conducting an Event and Causal Factor Analysis (ECFA).
- Change Analysis for identifying contributing factors.
- Practical workshops applying each RCA tool to case studies.
- Selecting the appropriate RCA tool for different types of incidents.

Unit Four: Advanced Analysis and Human Factors

- Introduction to Fault Tree Analysis (FTA) for complex systems.
- Understanding human error and performance influencing factors.
- Analyzing systemic and organizational weaknesses.
- The role of safety management systems in incident prevention.
- Assessing organizational culture and its impact on safety.
- Techniques for analyzing procedural and management system failures.
- Integrating human and organizational factors into the RCA process.

Unit Five: Reporting, Recommendations, and Organizational Learning

- Developing effective Corrective and Preventive Actions (CAPA).
- Using the SMART criteria for creating actionable recommendations.
- Writing a comprehensive and persuasive investigation report.
- Communicating investigation findings to management and stakeholders.
- Tracking the implementation and effectiveness of recommendations.
- Leveraging investigation data for trend analysis and proactive risk management.
- Embedding lessons learned to foster a culture of continuous improvement.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can an organization effectively shift from a culture of blame to a 'just culture' that encourages open reporting and genuine learning from incidents?

What unique qualities does this course offer compared to other courses?

This training course distinguishes itself by moving beyond the mere procedural application of RCA tools and focusing deeply on the systemic and human factors that are the true genesis of most significant incidents. While many courses teach the 'what' and 'how' of investigation techniques, our curriculum, inspired by the work of thought leaders like James Reason, emphasizes the 'why'. We challenge participants to look past the final error and uncover the latent organizational weaknesses, cultural norms, and decision-making processes that create the conditions for failure. The course's uniqueness lies in its strong emphasis on practical, simulation-based learning. Participants do not just learn about Fishbone diagrams or Fault Tree Analysis; they actively build them in collaborative teams, debating causal factors and defending their conclusions based on evidence from complex, realistic case studies. This hands-on approach ensures a deeper level of understanding and skill retention. Furthermore, we dedicate significant time to the critical skills of investigative interviewing and managing cognitive biases, areas often overlooked but essential for uncovering the truth. The ultimate goal is not just to train investigators, but to cultivate leaders who can champion a proactive, learning-oriented safety culture within their organizations.