

COMPANY CONFIDENTIAL

RCA/Investigation General Plan

Incident Number: _____

Incident Description: _____

Incident Date: ____/____/____

Investigator: _____

1. Are legal issues a potential concern? If so, what kind (e.g., personnel injuries [employees, contractors, members of the public], offsite impacts, insurance, regulatory, criminal)?
2. Are there regulatory impacts? If so, what kind (e.g., agencies involved and specific regulations)?
3. Secure the incident scene.
 - Structural assessments complete
 - Industrial hygiene and access assessments complete
 - Work with emergency response personnel and incident response teams to stabilize the scene
 - Barriers established, incident boundary marked
4. Describe the sequence of events related to the incident. What is the current status of the system?
5. Select a team leader and team members based on the specifics of the incident.
 - List of team members (with titles and contact information) and their previous incident investigation training
 - Acquire investigation toolkit and other team supplies.
6. Restart issues – What are the short-term and long-term concerns?
7. What changes may be relevant to this incident?
 - Changes in operations (control systems, capacities, materials)
 - Changes in systems that are related to the failure (support systems, auxiliary systems)
 - Changes in personnel (newly hired, newly transferred)
 - Changes in design, suppliers, or maintenance practices
8. Logistical issues
 - Confirm that investigation team members have the required training (safety briefing, personal protective equipment, respiratory protection, etc.) to allow them unescorted access to the investigation scene and team room
 - Identify a team room
 - Secure so that investigation materials can be left in the room
 - Wall space for timeline, causal factor chart, cause and effect tree, etc.
 - Flipchart paper, flipchart/easel, white board
 - Phone/fax/copier
 - Locations for interviews separate from the team room and away from the incident scene
 - Evidence storage locations – requirements dependent on evidence characteristics and legal/regulatory implications of incident (third-party involvement)
 - Overview of the system operation
 - Brief tour of the incident scene with escort, if required
 - Identify the need for additional experts such as:
 - Metallurgist
 - Combustion issues specialist
 - Vendor representatives
 - Chemists
9. Information the company should collect NOW – see *Data Needs Form* for additional items.
 - Logs
 - Computer logs for at least the last 24 hours (longer if reasonable to do so)
 - Local electronic recorders – PLCs, personnel electronic devices
 - Maintenance/operations logs

COMPANY CONFIDENTIAL

RCA/Investigation General Plan

- Personnel that should be available for interviews
 - Personnel involved/related to the incident
 - Personnel assigned to the system
 - Emergency response personnel
 - Potential witnesses
 - Others with knowledge of the incident and system operation/history
 - System information
 - Process diagrams and process and instrumentation diagrams
 - Isometric drawings and 3D models
 - Log of operational and safety system alarms
 - Flow, temperature, pressure, and other parameter trends
 - Startup, shutdown, and normal operations procedures
 - Maintenance status
 - Work permits and their status
 - Inspection reports and maintenance logs
 - Material and material information
 - Product and intermediate specifications
 - Product samples
 - Raw material samples
 - Broken/damaged parts
 - Photographs
 - General photographs of the incident scene
 - Failed components from multiple angles
 - Any indications of failures or their affects
 - Stains, residues, foreign materials
 - Video recordings: operations, process, security
10. Overview of the investigation approach.
- Introduction
 - Overview of the incident
 - Status of the investigation - data gathering and analysis
 - Perform initial tour of the incident scene
 - Complete safety briefings and other administrative requirements
 - See *Initial Incident Scene Tour Checklist*
 - Focus on development of an *Evidence/Non-evidence List*
 - Begin timeline, cause and effect tree, and/or causal factor charting
 - Supplement with other techniques as appropriate
 - Interviews/data gathering will be integrated into analysis technique usage
 - Interviews
 - Company/facility personnel should conduct the interviews (ask the questions)
 - One person does the interview while another takes notes but asks no questions
 - Interview guidelines:
 - ~ Be nice
 - ~ Be quiet; let the interviewee talk
 - ~ Don't use leading or accusing questions
 - ~ Ask, "What did you do?, What happened?"
 - Physical parts evaluation
 - Consider physical data analysis plans for each item
 - Begin report development from the beginning of the investigation
 - Define schedule/process for writing, reviewing, and completing the report