

LEAD AUDITOR COURSE – SCENARIO EXERCISE

Group Activity Scenario 1:

ESD Risk Mismanagement at Hotayi Electronics – Failure in Operational Control and Competence Assurance

Context:

Hotayi Electronics, a contract electronics manufacturer, recently undertook a major upgrade of its Surface Mount Technology (SMT) line to meet new customer requirements. The company maintains certification to ISO 45001:2018 and has implemented a documented OH&S Management System that includes hazard identification, operational controls, and competence requirements for all production processes.

As part of an internal audit conducted last month, concerns were raised regarding the inconsistent use of **Electrostatic Discharge (ESD) wrist straps** by line operators during routine production tasks.

System Details:

- **Hazard Identification**

The potential for electrostatic discharge causing product defects or fire ignition is listed as a hazard in the organization's HIRARC (Hazard Identification, Risk Assessment and Risk Control) register. The control measure prescribed includes the **mandatory use of ESD wrist straps** during SMT operations.

- **Competence**

The Job Descriptions for SMT operators clearly state their obligation to adhere to safety and quality production procedures, including use of personal protective equipment such as ESD wrist straps. Training records confirm initial onboarding and SOP briefing for all workers.

- **Operational Planning and Control**

The SMT production process is documented via a Process Flow Chart, which includes an operational step requiring "Operator to wear ESD wrist strap before handling PCB boards." This is referenced in the quality and OH&S documentation.

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- **Communication and Monitoring**

ESD-related instructions and safety guidelines are posted at the **Information Corner** near the production line. Line supervisors are expected to **remind and monitor** workers daily regarding adherence to SOPs and use of PPE.

While the official working language is English, the **majority of workers** only have a **basic understanding of English** and communicate predominantly in their **native languages** during operations.

Observations from the Audit Team:

- During the site walkthrough, auditors observed **multiple operators working without ESD wrist straps** while handling semi-assembled PCBs.
 - Interviews revealed that **some operators were unaware** that the straps were mandatory for every unit, citing **discomfort or no enforcement** by the supervisor.
 - The line supervisor acknowledged having reminded staff during **some** briefings but was **unable to provide any record** of safety communications, toolbox talks, or disciplinary follow-up for noncompliance.
 - Posters near the line were only in **English**, with **no translated versions** available despite the known language limitations of the workforce.
 - The training record showed that **SOP training was conducted more than a year ago**, with **no evidence of refresher training** or practical reinforcement on ESD hazard control.
 - No evidence was presented to show **competency reassessment** or evaluation post-upgrade of the SMT line, despite changes to equipment layout and process flow.
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Task for Participants:

You are the Lead Auditor team reviewing this case during a process audit of the SMT operations at Hotayi Electronics.

As part of this group activity:

1. **Analyze the scenario and available evidence.**

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2. **Identify applicable ISO 45001:2018 clauses** that may be violated or inadequately implemented.
3. **Determine whether the observed situation constitutes a nonconformity,** observation, or opportunity for improvement.
4. **Develop a complete nonconformity statement,** including:
 - A factual description of the non-fulfilment
 - Reference to the relevant ISO 45001:2018 clause(s)
 - Justification for whether it is a major or minor NC
 - Objective evidence supporting the finding
5. Propose at least **two corrective actions** and identify **who should be responsible** for implementation.

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Group Activity Scenario 2:

Crane Collapse at TC Marine – Contractor Oversight and OH&S Failures

Context:

TC Marine Sdn Bhd, a subcontracted logistics provider for Hotayi Electronics, manages vessel loading and unloading operations at a marine jetty. Crane operations for container transfers are regularly outsourced to independent third-party contractors. The organization has documented OH&S controls in place, including risk assessments, permit-to-work procedures, and legal compliance checks for contractors.

However, during a recent operation, a mobile crane operated by a contract crew **collapsed during lifting activities**, causing injuries to **two personnel** (one rigger and one nearby technician). The incident triggered a full investigation and raised serious concerns about **contractor management and verification practices**.

Available System Controls (as claimed by TC Marine):

- **Clause 8.1.4.2 – Contractors:**
 - Safety briefings are conducted daily by the site supervisor, evidenced by a signed attendance sheet.
 - However, contractors experience a **high turnover rate**, with **new personnel appearing almost daily**, some unfamiliar with the site-specific controls or roles.
 - The supervisor claimed that **all workers were briefed**, but no individualized verification or competence logs were available.
- **Clause 5.3 – Roles, Responsibilities, and Authorities:**
 - The **company's appointed representative** (Project Coordinator) communicated regularly with the contractor supervisor regarding job expectations and contractual obligations.
 - He confirmed that **he relies on the contractor supervisor** to manage on-site implementation and trusted the agreement would be fulfilled.

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- The representative **monitors records** (briefing logs, PTW documents) but **does not conduct on-site checks** of individual contractor personnel due to resource limitations and lack of prior incidents.
 - **Clause 6.1.3 – Legal Requirements and Other Requirements:**
 - All contractors were screened and held valid **Passports** and **Safety Passports** from an approved training authority.
 - Workers are composed of approximately **70% foreign nationals** and **30% local workers**.
 - **HIRARC Documentation:**
 - The HIRARC for crane and lifting activities was **completed in advance** and **attached to the approved project proposal**.
 - However, there is **no evidence that this risk assessment was communicated** effectively to the contractor’s workers.
 - When asked, the contractor supervisor consistently responded that “all is done” without presenting training records, verification logs, or signed acknowledgements from workers.
 - **Permit-to-Work (PTW):**
 - A formal PTW system is in place and was used for the lifting operation in question. The permit was signed off, but **there was no cross-verification** of crane operator license, lifting plan review, or competency assurance at individual level.
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Audit Observations:

- While **formal systems** (such as HIRARC, PTW, and daily briefings) were documented, **there was no effective implementation** or assurance that contractor workers had actually understood or followed the communicated controls.
- No **competency records or licenses** for the crane operator were presented during the audit.

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- There is **no system in place** to evaluate the contractor's ability to control risks **on a daily basis**, especially considering the **frequent turnover** of foreign contractor workers.
 - The **TC Marine site supervisor** has multiple responsibilities and is **not resourced to validate the daily competence** of incoming contractor personnel.
 - The incident revealed a **critical gap in the contractor evaluation and selection process**, especially regarding **worker competence and control measures** under operational pressure.
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Group Task Instructions:

You are a Lead Auditor team assigned to review this case and assess the effectiveness of contractor safety management practices in line with ISO 45001:2018.

As part of your group activity:

1. **Conduct a root cause analysis** of the crane collapse incident. Consider human, systemic, procedural, and communication factors.
2. **Map out contractor management failures**, especially those related to:
 - Selection and evaluation of contractors
 - Verification of worker competence
 - Communication of safety responsibilities and risk controls
 - Supervisory limitations
3. **Draft at least one complete nonconformity statement**, including:
 - Factual description of the failure
 - Relevant ISO 45001 clause(s)
 - Classification (Major/Minor)
 - Supporting evidence
4. **Propose a corrective action plan**, outlining:
 - Immediate, short-term, and long-term actions

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- Responsible parties
 - Monitoring and verification steps
5. **Identify potential legal or regulatory risks** associated with the failure to prevent this incident.

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Group Activity Scenario 3:

Heat Stress and Inadequate Control Measures at Betamek's Production Floor

Context:

Betamek Berhad, a Tier-1 automotive electronics manufacturer, operates a high-output assembly and inspection plant. During a recent heatwave, the facility reported **multiple fainting incidents** involving production floor workers during back-to-back shifts.

An internal investigation revealed that the **exhaust ventilation system** had been **malfunctioning for several days**, with maintenance delayed due to procurement of spare parts. In the interim, **emergency ventilation windows remained sealed** at all times out of concern for product contamination, as per quality assurance (QA) guidance.

The production team's **incident log** documented at least **four heat-related incidents** in the same week, all occurring within the final inspection bay, which had a **higher equipment density** and minimal air circulation.

Available System Controls (as claimed by Betamek):

- **Clause 7.1 – Resources:**
 - The facility is equipped with an industrial exhaust fan system, designed to support the heat load and number of workers under normal conditions.
 - However, **no contingency ventilation measures** were activated when the system failed.
- **Clause 8.1.2 – Eliminating Hazards and Reducing OH&S Risks:**
 - A **Job Safety Analysis (JSA)** had previously been completed and included "heat stress" as a potential hazard, with "ventilation system" and "hydration access" listed as controls.
 - There was no documented escalation or review of this risk once the **ventilation control became ineffective**.
- **Clause 10.2 – Incident, Nonconformity, and Corrective Action:**

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- The company has a formal incident investigation and corrective action process.
 - The HR and EHS departments opened case files for the affected workers, but no **system-level corrective action** (e.g. engineering review or heat stress mitigation policy update) has yet been implemented.
 - **Clause 5.4 – Consultation and Participation of Workers:**
 - According to management, workers are free to raise safety concerns, but interviews revealed that many **felt discouraged to open emergency windows** due to informal verbal warnings from QA staff.
 - Workers stated that their concerns regarding rising heat levels were voiced during shift briefings but were “**not acted upon.**”
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Audit Observations:

- The **existing ventilation system** was originally designed to handle typical environmental conditions but proved **inadequate under extreme heat conditions**, especially with no temporary measures in place.
 - **Hydration stations** were available, but **no real-time monitoring** of ambient temperature or worker health status was evident.
 - The safety committee was **not involved** in assessing the impact of closing ventilation windows, and no documented consultation was conducted with the affected operators.
 - The JSA and HIRARC had not been **reviewed or updated** after the incident series, and the **same conditions persisted for several days** following the first case.
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Group Task Instructions:

You are acting as the OH&S audit team reviewing the management of heat stress-related hazards at Betamek. Your group is to perform the following:

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Task 1: Hazard Identification and Risk Evaluation

- Reconstruct the hazard based on real context (i.e., high ambient temperature, sealed workspace, poor airflow).
 - Determine its **risk ranking** (likelihood × severity), both **before** and **after** control failure.
 - Evaluate whether the risk level became **intolerable or uncontrolled** during the incident period.
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Task 2: Draft an Incident Investigation Form

Include:

- Date/time of incidents
 - Description of what occurred
 - Immediate causes (e.g., ventilation failure, sealed windows)
 - Root causes (e.g., failure to escalate system breakdown; ineffective consultation)
 - Contributing factors (e.g., QA pressures, cultural barriers)
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Task 3: Define Preventive Measures and Long-Term Controls

Suggest realistic corrective and preventive actions, such as:

- Engineering controls: portable cooling fans, automated window release protocols
 - Administrative controls: daily ambient temperature logging, heat index-based rest breaks
 - Worker training and SOP updates
 - Design of a heat stress response protocol
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Task 4: Evaluate Worker Consultation and Participation (Clause 5.4)

- Was there evidence of worker involvement in hazard reassessment?

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- Were the non-managerial workers involved in decisions about maintaining sealed windows?
 - Was there a formal mechanism for workers to raise urgent safety issues?
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Participant Deliverable:

Prepare the following for submission:

1. A **formal Nonconformity Statement**, structured as:
 - Description of the finding (facts, not opinion)
 - Applicable ISO 45001:2018 clause(s)
 - Classification: Major or Minor
 - Objective evidence from the scenario
2. A sample **Corrective and Preventive Action Plan (CAPA)** table with:
 - Immediate and long-term actions
 - Responsible party
 - Deadline
 - Evidence of implementation
3. A short **risk assessment table** pre- and post-failure
4. Summary evaluation of worker consultation and evidence of systemic breakdown