

## SCENARIO: Site Audit at Hotayi Plant (Penang)

You are part of the Lead Auditor team assigned to conduct a 2-day IMS Stage 2 audit for the company's Penang facility. The scope includes:

- Design validation, procurement, PCBA, final assembly, packaging, and shipping
- Environmental and OSH aspects of manufacturing operations
- Stakeholder and legal compliance management

During the audit, you and your team collect evidence through interviews, document reviews, and site inspections.

### AUDIT OBSERVATIONS

Below are the findings for your team to review and analyze. Participants must detect **nonconformities (NC)**, **opportunities for improvement (OFI)**, or **positive findings**, along with the applicable clause(s).

#### 1. Warehouse – Chemical & Finished-Goods Storage

It is 15 June 2025, third audit hour. You follow Ms Jaya, the new Warehouse & Logistics Executive (on-boarded four months ago), into **Aisle C3**—an area she calls the “mixed inventory buffer.”

- **Ambient conditions:** Temperature 32 °C, no mechanical ventilation; a single oscillating fan is running.
- **Observation:** On the second rack-level sit two fibre drums of **NC-888 solvent-based adhesive**, parked less than 70 cm from shrink-wrapped cartons of finished infotainment head units ready for outbound shipment to an OEM customer. The drums show **severe label degradation; half the hazard pictograms and UN Number are unreadable.**
- **Document review in situ:** You request the SDS binder. Jaya produces a plastic folder marked “SDS 2016–2020 (Master).” The sheet for NC-888 carries a revision date **May 2019**; the chemical supplier logo has since changed. A sticky note inside reads, > “Need new SDS – remind Raja (EHS)”.

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- **Interview:** Jaya volunteers, “We’re waiting for Facilities to finish the flammable store extension. For now we keep small drums here, but it’s temporary—maybe two weeks already.”
- **Further walk-around:** At floor level you notice **no bunding or spill-tray**; minor adhesive residue has hardened on the concrete. Fire-load signage lists a different chemical code name, last updated 2021.
- **Potential impacts:** VOC migration into packaging, fire escalation path toward finished goods, regulatory breach of Environmental Quality (Schedule Waste) and FMA (Factories & Machinery Act) separation rules.

### 2. Surface-Mount Technology (SMT) Line – Production Control & Competence

After lunch you audit **SMT Line 4** where Ms Alicia, the Line Leader, oversees four operators and one rework technician.

- **Process observation:** A *production downtime whiteboard* shows “Stencil clog – 12 min” and “Touch-up 6 pcs.” Alicia explains, “Anything under ten boards we just fix and flow forward; no need to log in SAP.”
- **Record sampling:** You open the **manual “Minor Rework Log” ledger** (kept in a drawer). Last entry is **3 May 2025** though today is mid-June. Alicia nods: “We jot issues first, then I key-in weekly—but last week was audit prep so I’m behind.”
- **ERP cross-check:** In the QC office, the electronic NC dashboard shows only two rework tickets in June, both for Line 2.
- **Competence file:** Operator Mr Chen proudly shows his **IPC-A-610 “Class 2 Specialist” certificate, expiring 2021**. He laughs, “We were supposed to renew during COVID but training budget froze.”
- **Environmental angle:** At the solder-paste printer you note a one-kilogram *paste pot* with lid ajar, temperature rising to 34 °C; MSD (moisture-sensitive device) timer tag has expired.
- **OH&S note:** The extraction hood is running but the fume monitor’s last calibration sticker shows **December 2022**.

### 3. Maintenance Room – Contractor Hot-Work & Permit-to-Work System

Mid-morning Day 2 you step into the compressor mezzanine. Two external contractors from “**Turbo-Flow Engineering**” are cutting a section of stainless pipe.

- **PPE check:** Both wear safety vests but **no hearing protection** in a 95 dB(A) zone. Sparks fly toward a nearby cardboard box of spare filters.
- **Permit folder:** The *Hot-Work Permit* clipped to the wall is partially filled; signature block for **Safety & Officer (SHO)** is blank.
- **Induction records:** HR’s “Visitor & Contractor Induction Log” (Excel) lists only one of the two names; both have blank cells under *Noise Hazard Acknowledged*.
- **Interview with Contractor Supervisor (Mr Rahman):** He says, “Safety team gave verbal go-ahead last night, paperwork is formality. We’re racing to finish before line start-up.”
- **Risk assessment:** The formal *Job Safety Analysis* attached to the work order is dated **2023** for a **different compressor model**; new risks (noise peaks, confined space heat) are not evaluated.
- **Environmental relevance:** The cut pipe vents compressed air mixed with residual compressor lubricant mist directly to atmosphere; no drip trays beneath the joint.

#### 4. Environmental Compliance – Scheduled-Waste Handling & Legal Registers

Outside the plating area is the **Scheduled Waste Interim Store** (chain-link fenced).

- **Physical observation:** A **10-litre open steel pail** labelled “SOLDER DROSS” last week rests on a wooden pallet; rainwater has partially filled it, leaching grey residue onto the concrete. No T-label, no accumulation start date.
- **Documentation:** The *DOE e-SWIS portal* print-out pinned on the noticeboard shows the last submitted **SW410 consignment note: April 2025**. The May entry cell is blank.
- **Interview with Waste Handler (Ms Lily, Production Clerk):** “I just took over from Mr Hong who resigned. I attended DOE’s webinar but still figuring out e-SWIS login.”
- **Legal-register cross-check:** The IMS Legal Register revision **REV 09/2022** lists Scheduled Waste (SW Regs 2005) but the column “Next Review Date” shows **31 Dec 2023 – pending**.

- **Quality intersection:** Some solder dross originates from touch-up stations flagged for high defect rates—indicating process inefficiency linking QMS KPI to waste generation.
- **OH&S aspect:** Lead exposure risk from open container not evaluated in latest Hazard Identification & Risk Assessment (HIRA).

### 5. Top-Management Commitment & Strategic Direction

Your closing interviews are with the **Managing Director (MD), QA Manager, EHS Manager and HR Director**.

- **Objective review:** The **Quality & Environmental Objectives scorecard** on screen still references *FY 2023 Target: “Reduce Customer PPM to  $\leq 250$ ”* and *“Cut VOC by 5 %”*. Actuals for FY 2024 have been collected but **no new targets approved**.
- **OH&S Objective sheet** (drafted March 2025) states *“Zero LTI; implement 5S in all lines”* yet **does not cross-reference the enterprise Risk Register**, nor list measurable KPIs.
- **Compliance evaluation:** The EHS Manager admits, “We postponed the 2024 legal compliance audit due to resource constraints. We plan to combine it with the internal audit next quarter.” There is **no documented evaluation report** for the past 12 months.
- **Incident discussion:** A slip-and-fall on 20 April 2025 resulted in medical leave, but **this incident is missing from the Management-Review minutes (May 2025)**. The MD remarks, “I thought the EHS team would brief us separately.”
- **Integrated strategy link:** The Business Plan presentation features **customer-satisfaction charts** but omits environmental costs and safety performance metrics, contradicting the IMS Policy that pledges “holistic, balanced priorities.”

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### ACTIVITY TASKS FOR PARTICIPANTS

#### Task 1: Identify Nonconformities

From the scenario, identify valid **nonconformity statements**. Each must include:

- The **objective evidence**

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- The **clause reference**
- A clear **statement of non-fulfilment**
- **Impact/risk assessment**

### Task 2: Determine Severity and Classification

Classify each finding as:

- **Major NC, Minor NC, or Opportunity for Improvement (OFI)**  
Provide justification based on risk, systemic failure, and recurrence potential.

### Task 3: Write Corrective Action Request (CAR)

Choose 2 major nonconformities and draft the **Corrective Action Request** forms including:

- Root cause analysis suggestion
- Containment and correction
- Corrective action and verification method

### Task 4: Prepare for Closing Meeting

Develop a **2-slide summary** of:

- Key nonconformities
- Positive findings
- Audit recommendation (certification or not)

# Integrated-Audit Story Case: TC Marine Shipyard Sdn Bhd

*(A fully-fleshed scenario for an IMS Lead-Auditor class covering ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018. The facts below give enough depth for learners to discover – and correctly classify – non-conformities, link them to clauses, evaluate risk and draft corrective-action requests.)*

## 1 Company & Audit Context

Item	Details
<b>Organisation</b>	<b>TC Marine Shipyard Sdn Bhd</b> – designs, builds and repairs harbour tugs (40 – 65 m) and offshore crew-transfer vessels.
<b>Location / Scope</b>	28-acre waterfront yard, Penang. Scope of IMS: “Design, construction, repair and delivery of steel & aluminium workboats, including painting, outfitting and sea trials.”
<b>Certification status</b>	ISO 9001 and ISO 14001 certified since 2021; now seeking <b>first-time ISO 45001 certification</b> and <b>recertification</b> of Q&E. Audit is a combined <b>Stage 2</b> (OH&S) + <b>Surveillance 2</b> (Q&E).
<b>Workforce &amp; contractors</b>	540 employees (200 welders/fitters) + ≈120 contractors/day (grit-blasting, scaffolding, engine OEM teams).
<b>Key processes</b>	Sales & naval-architecture design ► Procurement & supplier QA ► Plate cutting & hull fabrication ► Block welding & NDT ► Blast & paint ► Engine/propulsion installation ► Dock trials ► Delivery & warranty service.
<b>Legal &amp; other req.</b>	<ul style="list-style-type: none"><li>• <i>Quality</i>: Class approvals (BV, ABS), SOLAS, IACS welding qualifications.</li><li>• <i>Environment</i>: EQA 1974, Scheduled-Waste Regs 2005 (SW 311 grit, SW 305 waste paint), Clean-Air Regs 2014 (booth VOCs).</li><li>• <i>OH&amp;S</i>: OSHA 1994 (2022 Amd.), FMA, Work on Vessels Reg., Noise &amp; Confined-Space Regs.</li></ul>

## 2 Audit Findings

### 1 Hull-Fabrication Shed – Welding, NDT & Housekeeping

*Date/Time:* 17 July, 09:45 | *Weather:* 32 °C, 78 % RH

*Guide:* En. Hafiz — Fabrication Superintendent (20 yrs service)

1. Two flux-cored welders fabricating aluminium deckhouse blocks display **WPS-FCAW-AL-02 (Rev 0, 2019)** on a faded board. Rev 2 (May 2024) — which introduced a **pre-heat  $\geq 65$  °C** after a cracking incident — has yet to be cascaded.
2. Production schedule shows **Block 3 launch on 31 July**. The **NDT backlog board lists 38 joints** still awaiting ultrasonic test (UT); Hafiz says, “We’ll catch up after Raya Haji—customers only check final dimensional fit.”
3. **Grinding dust 15 mm thick** along the north wall; the last entry in the 5S *patrol checklist* is **7 May 2025**. Two contract cleaners left in June; HR has not replaced them due to “budget freeze”.
4. Apprentice welder uses a **noise dosimeter (Unit #03)** with calibration label expired **DEC 2023**. Hafiz: “We sent it to a KL lab, but courier misplaced the cert.”
5. A pallet with **20 × 5 L tins of epoxy filler (UN 1263, Class 3)** sits **3 m** from active gouging without a *Hot-Work Zone* barrier; BOMBA permit for the temporary storage expired 30 June.
6. **Local law crossover:** DOSH Noise Regs require dosimeter calibration every 12 months; FMA Reg 45 mandates monthly housekeeping for fire risk in welding bays.

### 2 Blast & Paint Hall – Air Emissions, Scheduled Waste & Product Quality

*Date/Time:* 17 July, 13:45 | *Guide:* Cik Siti, Paint-Shop Supervisor

1. Cyclone grit-reclaimer down for two weeks; operators sweep **copper-slag grit (SW 311)** into an **open Ro-Ro bin with no HDPE liner**. Gusty monsoon winds carry visible dust toward the southern perimeter drain that discharges into *Sg. Prai* 300 m away.
2. Portable VOC monitor reads **135 ppm** (yard EIA limit 100 ppm). Maintenance request #E-152 (replace carbon filters) is marked “Awaiting part import—supplier in Guangzhou closed for Dragon Boat holiday.”

3. QA dashboard shows **holiday-test rework** rose from **2 % (Q4-2024) to 6 % (June 2025)**. Root-cause report pending. Three Airless spray guns lack *pot-life timer tags*; painters estimate time “by feel”.
4. Respirator cartridge-change sheet last signed **FEB 2025**. Two painters report “strong thinner smell” at day’s end but no occupational health surveillance (OHS) clinic visit logged since 2023.
5. **Scheduled-waste manifest April**: 6 t of SW 311 sent to Kualiti Alam. The **IMS legal register (Rev 09/2022)** still quotes  $\leq 4$  t/month threshold for Special Management Notification under EQA and has not been updated.
6. Local DOE (Pulau Pinang) issued an **advisory letter (May 2025)** noting dust complaints from nearby village *Kg. Bangal*. No additional control measures recorded.

### 3 Engine-Fit-Out Workshop – Supplier Controls & Spill Preparedness

*Date/Time*: 17 July, 16:15 | *Guide*: Pn. Letchumi, Outfitting Engineer

1. An OEM commissioning technician (PT Jaya Indonesia) torques gearbox bolts. *Contractor Induction Form* shows safety briefing signed, but **medical-fitness declaration blank**—contrary to JLM Guidelines on contractor fitness for shipboard work.
2. **Vendor certificate of conformity** cites **drawing rev-B**. Engineering is at **rev-D** (added cooling duct). No record of change notification in the *Supplier Portal*; QA says, “We emailed them, but portal upgrade is pending IT.”
3. **Hydraulic-oil spill-kit** container found empty (only gloves inside). Weekly inspection checklist ticked “OK” by JH on **5 July**. Dock master recalls a **2 L spill on 11 July** that was wiped with rags and binned as domestic waste.
4. Area noise level survey (Nov 2024) shows **89 dB(A)**. Two fitters wearing ear-muffs; visiting technician only foam plugs (NRR 22). No verification of their attenuation adequacy in contractor PPE register. Noise Identification Questionnaire dated on 12 Dec 2024 is however shows the 10 checkpoints remarks as NO (which means no significant excessive noise identified.)
5. **Digital torque-wrench sticker** smeared; deciphered calibration due date looks like **08/23** (11 months overdue). Metrology lab in Bayan Lepas has no service order on record.



6. Relevant Malaysian context: CIDB & DOSH jointly issued 2023 guidance requiring documented verification of foreign skilled workers' competency and medical fitness before high-risk tasks.

#### 4 Dry-Dock & Berth – Confined-Space Safety, Bilge Water & Storm-Drain Controls

*Date/Time:* 18 July, 09:10 | *Guide:* Capt. Chong, Dock Master

1. Hull #123 centre-fuel-tank cleaning. *Confined-Space Entry Permit* lists O<sub>2</sub> 20.8 %, H<sub>2</sub>S 0 ppm; **CO field blank**. Capt. Chong says, “My portable analyser CO cell died last month; we use smell test—diesel fumes easy to detect.” (Contravenes DOSH CoP on Confined Spaces §5.2.)
2. Portable ventilation fan cable lies across ladder; insulation nicked and wrapped with cellophane tape. Electrical Permit-to-Work (E-PTW) box unticked.
3. **Bilge-water separator data logger** offline since **3 April** (lightning strike). An apprentice records oily-water discharge manually on scrap paper; totals are keyed into Excel every Friday. Daily limit under Marine Dept circular is 15 ppm oil; no data to verify.
4. Waste-oil IBC marked “SW 305 – Used Lube Oil” but **accumulation date missing**. IBC on bare asphalt 12 m from shoreline. *Storm-Drain Inspection Log* last completed February; **rainbow sheen** observed on ditch surface after heavy overnight rain.
5. Malaysian Marine Department inspection (June 2025) warned yard to tighten oily-water management before renewal of *Industrial Effluent Discharge Licence* in November.

#### 5 Top-Management Review & Strategic Direction

*Date/Time:* 18 July, 15:00 | *Present:* En. Azlan (MD), Pn. Faridah (GM Ops), Tn. Syamsul (QA-Mgr), Cik Rafidah (EHS-Mgr)

1. **IMS Policy** (Jan 2022) still sets Lost-Time Injury Rate (LTIR) target **≤0.8** per 200k hours. Actual rolling LTIR **1.3** and rising. MD: “We’ll revise targets after we get ISO 45001 certificate.”

2. **Management-Review minutes (Feb 2025)** discuss customer PPM (currently 420) and on-time delivery, but **skip environmental KPI** because “expansion baseline pending DOE approval”.
3. **Legal compliance evaluation** for 2024 postponed due to Work-From-Home disruptions; plan to **hire consultant in Q3-2025**. No interim status report.
4. Internal-audit schedule shows **Quality & Environment audits done March 2025; OH&S internal audit “to be planned after Stage-2”**. This conflicts with ISO 45001 §9.2 and the **DOSH-endorsed Malaysian Guidelines on OSH-MS Audits**.
5. Business-risk register (Rev 5, Apr 2025) covers steel price volatility and USD/MYR exchange but **omits occupational-health liabilities** despite DOE dust complaint and DOSH improvement notice (noise).
6. Finance Director remarks that **RM 250 000** budget earmarked for new paint-booth filters was “re-allocated to marketing expo in Singapore” with no documented risk assessment.

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