MATRIX QUANTUM SDN. BHD. 202201044306 (1490003-X)
Lot 180, Jalan 1A, Kampung Baru Subang,
40150 Shah Alam, Selangor Darul Ehsan.
Tel: 03-58926806 Email: matrixquantum88@gmail.com

TRAINING SCHEDULE & OUTLINE

Course Tittle	**Boiler Failure & Repair**
Training Provider	**Matrix Quantum Sdn Bhd**
Duration	**2 Days**
Date	**TBA**
Time	**8.30am – 5.00pm**
Speaker	**Mohd Fauzi bin Mat Rasid – Boiler Engineer Grade (JKKP 2025/JS01/1590)**

About the Training:
This 2-day program is designed to provide steam engineers, boilermen, and technical personnel with a clear, practical, and systematic understanding of boiler failure mechanisms, troubleshooting, and code-compliant repair strategies

Through structured technical modules and practical case study discussions, this program equips participants with the tools to perform Root Cause Analysis (RCA), implement robust Corrective and Preventive Actions (CAPA), and prevent catastrophic equipment damage.

This course is highly relevant for Steam Engineers, Boiler Inspectors, Plant Engineers, Maintenance Managers, and Senior Operators seeking to enhance asset reliability, manage emergency failure events safely, and ensure full compliance with DOSH/JKKP statutory requirements while fulfilling Continuous Education Program (CEP) points for license renewal.

Training Outcomes:
Upon completion of this training, participants will be equipped to immediately implement best practices of:

1. **Analyze** the primary causes, failure mechanisms, and operational impacts of boiler pressure part breakdowns.
2. **Identify** early warning defect indicators and evaluate boiler structural integrity through systematic routine inspection and monitoring.
3. **Troubleshoot** critical operational issues, including tube leaks, thermal overstress, corrosion, scaling, and combustion anomalies.
4. **Apply** code-compliant repair methodologies, welding quality controls, and post-repair NDT testing procedures.
5. **Ensure** strict compliance with DOSH/JKKP statutory requirements, operator safety duties, and mandatory repair documentation.

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6. **Perform** technical Root Cause Analysis (RCA) on actual failure incidents to formulate effective Corrective and Preventive Action (CAPA) plans.
7. **Execute** emergency response protocols and safe shutdown procedures to contain secondary damage and safeguard personnel during catastrophic failure events.

TRAINING SCHEDULE & OUTLINE

	TIME	DESCRIPTION	REMARK
DAY 1	8.30-8.45	REGISTRATION DAY 1	
	8.45-9.00	INTRODUCTION AND ICE BREAKING	
	9.00-10.30	MODULE 1	
	10.30-11.00	TEA BREAK	
	11.00-12.30	MODULE 2	
	12.30-14.00	LUNCH AND ZOHOR PRAYER BREAK	
	14.00-15.30	MODULE 3	
	15.30-15.45	TEA BREAK	
	15.45-17.15	MODULE	
	17.15	ADJOURN DAY 1	
DAY 2	8.30-8.45	REGISTRATION DAY 4	
	8.45-9.00	RECAP OF PREVIOUS DAY LESSONS	
	9.00-10.30	MODULE 4	
	10.30-11.00	TEA BREAK	
	11.00-12.30	MODULE 6	
	12.30-14.00	LUNCH AND ZOHOR PRAYER BREAK	
	14.00-15.30	MODULE 6	
	15.30-15.45	TEA BREAK	
	15.45-17.15	MODULE 7	
	17.15	END OF COURSE	

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MODULE OUTLINE DETAILS

1. MODULE 1 – INTRODUCTION TO BOILER FAILURE

Focus: Failure-Mechanism-Analysis

Coverage:

- Common causes of boiler failures
- Types of boiler failures and their impact on operation
- Case studies of boiler failure incidents

2. MODULE 2 – BOILER INSPECTION & FAILURE PREVENTION

Focus: Proactive-Asset-Integrity

Coverage:

- Importance of routine inspection and monitoring
- Identification of early warning signs of boiler defects
- Boiler integrity assessment and preventive maintenance

3. MODULE 3 – COMMON BOILER PROBLEM & TROUBLESHOOTING

Focus: Root-Cause-Troubleshooting

Coverage:

- Tube Leakage
- Overheating & Thermal stress
- Corrosion & Erosion Issues
- Scaling and poor water treatment effects
- Pressure-related failures
- Combustion and burner-related problems

4. MODULE 4 – BOILER REPAIR & MAINTENANCE

Focus: Code-Compliant-Restoration

Coverage:

- Repair methods for common boiler defects
- Welding repair requirements and considerations
- Repair procedures and quality control
- Post-repair inspection and testing requirements

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5. MODULE 5 – BOILER SAFETY & COMPLIANCE REQUIREMENTS

Focus: Statutory-Compliance

Coverage:

- Requirements for safe boiler operation
- Roles and responsibilities of boiler operators
- Importance of proper documentation and repair records
- DOSH/JKKP requirements related to boiler repair and inspection

6. MODULE 6 – CASE STUDY & PRACTICAL DISCUSSION

Focus: Incident-Investigation-Resolution

Coverage:

- Review of actual boiler failure cases
- Root cause analysis (RCA)
- Corrective and preventive actions (CAPA)

7. MODULE 7 – EMERGENCY RESPONSE & FAILURE MANAGEMENT

Focus: Emergency-Damage-Containment

Coverage:

- Immediate action during boiler failure
- Safe shutdown procedures
- Prevention of secondary damage and escalation