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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 Commissioning “Beyond Start Up”
Training Provider	Matrix Quantum Sdn. Bhd.
Duration	2 Days
Date	TBA
Time	8.30am – 5.00pm

Training Background

Boiler and Thermal system commissioning is a critical transition phase between project completion and stable operation. Across different boiler technologies and fuel systems, commissioning failures commonly result in safety incidents, operational instability, underperformance, prolonged acceptance delays and early equipment damage.

This training is designed around universal commissioning framework that is applicable across multiple boiler and thermal systems, while highlighting system-specific risks, behaviours and decision points relevant to different industries and applications. Participants will gain practical insight into commissioning readiness, execution, performance verification and post-commissioning stabilization.

Training Outcomes:

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

- 1) Apply a structure end to end commissioning life cycle for boiler and thermal system
- 2) Identify critical readiness and risk factors prior to commissioning
- 3) Apply a structured approach to Cold, Warm and Hot commissioning execution
- 4) Evaluate performance results, acceptance criteria and commissioning outcomes
- 5) Recognise system-specific challenges and make informed commissioning decisions
- 6) Support smoother handover and sustainable long-term operation after commissioning



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	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 3	
	17.15	ADJOURN DAY 1	
DAY 2	8.30-8.45	REGISTRATION DAY 2	
	8.45-9.00	RECAP OF PREVIOUS DAY LESSONS	
	9.00-10.30	MODULE 3	
	10.30-11.00	TEA BREAK	
	11.00-12.30	MODULE 4	
	12.30-14.00	LUNCH AND ZOHOR PRAYER BREAK	
	14.00-15.30	MODULE 5	
	15.30-15.45	TEA BREAK	
	15.45-17.15	MODULE 5	
	17.15	END OF COURSE	



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MODULE OUTLINE DETAILS

1. MODULE 1 – COMMISSIONING PHILOSOPHY AND LIFECYCLE FOR BOILER

- A. Definition & Scope of Boiler and thermal system commissioning
- B. Differences between erection, Pre-commissioning, Commissioning and acceptance
- C. Commissioning boundaries and interfaces with plant or process system
- D. Universal commissioning lifecycle applicable to different boiler technologies
- E. Typical Commissioning risks across fuel fired and process driven system

2. MODULE 2 – PRE-COMMISSIONING READINESS AND RISK CONTROL

- A. Mechanical, Electrical & Instrumentation Readiness
- B. Verification of Safety Systems, Interlocks and Control Permissive
- C. System Integration checks with downstream and Upstream processes
- D. Identification of Critical “No-Go” condition prior to commissioning
- E. Common pre commissioning gaps and operational impact
- F. Risk profiling based on boiler type, fuel system and process dependency

3. MODULE 3 – COLD, WARM AND HOT COMMISSIONING EXECUTION

- A. Cold Commissioning of auxiliaries and support system
- B. Initial Energization or fuel firing across different boilers
- C. Controlled warm up, pressurization and thermal expansion considerations
- D. Steam or thermal energy introduction to plant or process users
- E. Managing system Response
- F. Handling abnormal conditions and decision-making during commissioning

4. MODULE 4 – PERFORMANCE VERIFICATION, ACCEPTANCE AND TROUBLESHOOTING

- A. Key Performance parameters for boiler and thermal systems
- B. Principles of performance testing and operational stabilization
- C. Understanding acceptance criteria versus design and contract values
- D. Typical performance shortfalls during commissioning
- E. Structured troubleshooting approach during the commissioning phase
- F. Technical and management perspectives in acceptance decision-making

5. MODULE 5 – POST-COMMISSIONING STABILIZATION, OPTIMIZATION AND HANDOVER

- A. Transition from commissioning to normal operation
- B. Establishing safe and stable operating envelopes
- C. Initial optimization and tuning consideration
- D. Managing load variability and system interactions
- E. Handover documentation, operating limits and knowledge transfer