# **COURSE OVERVIEW RE0930** Process Plant Shutdown, Turnaround & Troubleshooting

#### **Course Title**

Process Plant Troubleshooting

Shutdown, Turnaround

&

Course Reference

**RE0930** 

### **Course Duration/Credits**

Five days/3.0 CEUs/30 PDHs

#### **Course Date/Venue**

Session(s)	Date	Venue
1	May 05-09, 2024	The Kooh Al Noor Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE
2	August 04-08, 2024	Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey
3	December 08-12, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar

#### **Course Description**







This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

The process industry is losing over half a billion dollars of profits a year due to poor turnaround results and missed opportunities. The majority of turnarounds lacked strategic focus and front-end planning. In addition, lacked leadership turnaround teams and understaffed. The major negative factor is the growing higher turnaround performance between expectations and rapidly shrinking qualified resources to manage the turnarounds. As a result, the planning effort not only starts late, but it is also ineffective, and typically does not contribute in the turnaround success.

This course is designed to bridge the above-mentioned gap. It will provide turnaround managers and engineers with enough knowledge and skills to understand the purpose of the turnaround, to properly plan and manage the turnaround, and to achieve exponential results of their turnaround project. The course will teach participants how to establish a systematic turnaround management processes and procedures that incorporate the best turnaround practices, planning techniques and execution strategies.

















Turnaround results have a long-term effect on the facility's operational reliability and it dictates the plant's operational efficiency and business survival in the competitive global market. The turnaround performance can be dramatically improved if companies focus on key issues such as strategic planning, selection of qualified contractors, synergistic and innovative organizations, and tactical initiative to improve field productivity.

The course will cover the emerging industry trends, turnaround benchmarking and the challenges faced by plant executives to consistently achieve pacesetter results on plant shutdowns and turnarounds. We will teach you how to fairly balance your business, marketing and financial goals with your plant needs for mechanical integrity and operational reliability. We will show you how to focus on risk areas, early work scope definition, high-performance initiatives, the assignment of qualified staff and the best practice contracting strategy. Upon the completion of this course, you will have good knowledge to perform World-Class turn arounds.

#### **Course Objectives**

Upon the successful completion of this course, each participant will be able to: -

- Get a certificate as a "Professional Turnaround Manager"
- Apply systematic techniques in the shutdown, turnaround and troubleshooting of process plants
- Implement the special needs of time constrained projects (24/7)
- Identify the work to be accomplished for the shutdown project
- Plan to meet deadlines & complete turnaround projects on time within budget
- Apply shutdown best practices
- Plan, lead, organize, control and co-ordinate shutdown type projects
- Schedule the work effectively
- Manage resources effectively
- Implement feedback systems
- Identify risks and manage these effectively
- Reporting and documenting the shutdown activity
- Recognize the use of software packages

### Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive "Haward Smart Training Kit" (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes electronic version of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a Tablet PC.

#### Who Should Attend

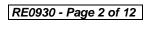
This course is intended for those involved directly or indirectly in the plant shutdown and turnaround operations. This includes maintenance and project staff such as managers, engineers, planners, supervisors and other technical people.

















#### **Course Certificate(s)**

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

#### Recertification is FOC for a Lifetime.

## **Sample of Certificates**

The following are samples of the certificates that will be awarded to course participants:-







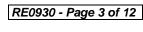




















(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs)



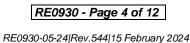




















#### **Course Certificate(s)**

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

#### **Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations: -

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the ANSI/IACET 2018-1 Standard which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET 2018-1 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and quidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award 3.0 CEUs (Continuing Education Units) or 30 PDHs (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

\*\*\* BAC British Accreditation Council (BAC)

Haward Technology is accredited by the British Accreditation Council for Independent Further and Higher Education as an International Centre. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

#### Accommodation

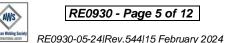
Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

















#### **Course Instructor(s)**

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Attalla Ersan, PEng, MSc, BSc, is a Senior Engineer with over 35 years of extensive experience within the Project Safety Oil & Gas, Hydrocarbon and Petrochemical industries. His expertise widely covers the areas of HAZOP Facilitation, Hazardous Materials, Material Safety Data Sheets (MSDS), Hazardous Wastes, Hazards of Chemical Incidents, Shipping Configurations, Respiratory Protection, Protective Clothing, Donning and Doffing Procedures,

Boiler & Steam System Management, Waste Heat Recovery, Boiler Plant Safety, Boiler Controls, Steam Distribution Systems, Steam Traps, Pollution Control, Cracked Gas Compressor, Reboilers, Sulphur Unit Air Blower, Steam Turbine, Distillation Columns, Gas Treatment, Waste & Water Treatment Units, Process Plant Operations, Process Plant Startup & Operating Procedure, Ethylene & Vinyl Chloride, Ethane Cracking Furnaces Operations, Ethylene & Polyethylene Operation, Acid Gas Treatment, Sulphur Recovery, EDC & VCM, Caustic Soda Storage, Debottle-necking, Loss Prevention, Process Operation, Safety Audits. Process Engineering, Root Cause Investigations, Pyrolysis Cracking, Gas Plant Commissioning, Loss Prevention Techniques, Occupational Hazards, Hot Tapping & Tie-Ins, Pre-Start-Up Safety Review (**PSSR**), Standard Operating Procedure (**SOP**), Emergency Operating Procedure (EOP), Permit to Work Systems (PTW), Hazard and Operability (HAZOP) Study, Process Hazards Analysis (PHA), Consequence Analysis Application, Gas Detectors Operation, Accident/Incident Investigation (Why Tree Method), Occupational Exposure Assessment, Fire Fighting & First Aid, Environmental Management, Basic Safety Awareness, Steam Cracking, Steam Generation, Binary Fractionators Operations, Tanks Farm & Metering Station Techniques, Gas Treatment, Sulphur Recovery Process Unit Operation, Permit to Work System and Emergency Response Planning. Further, he is also well-versed in Project Management, Human Resources Consultancy, Manpower Planning, Job Design & Evaluation, Recruitment, Training & Development and Leadership, Creative Problem Solving Skills, Work Ethic, Job Analysis Evaluation, Training & Development Needs, Bidding & Tendering, Technical Report Writing, Supervisory Leadership, Effective Communication Skills and Total Quality Management (TQM). He is currently the CEO of Ersan Petrokimya Teknoloji Company Limited wherein he is responsible for the design and operation of Biogas Process Plants.

During his career life, Mr. Ersan has gained his practical and field experience through his various significant positions and dedication as the **Policy**, **Organization & Manpower Development Head**, **Training & Development**, **Head**, **Ethylene Plant – Pyrolysis Furnace Engineer**, **Production Engineer**, Process Training Coordinator, Ethylene Plant Shift Supervisor, Ethylene Plant Panel & Fit Operator, Process Training & Development Coordinator, **Technical Consultant**, and **Instructor/Trainer** for Qatar Vinyl Company Limited and Qatar Petroleum Company (QAPCO).

Mr. Ersan is a **Registered Professional Engineer** and has a **Master's degree** of **Education** in **Educational Training & Leadership** and a **Bachelor's degree** of **Petrochemical Engineering**. Further, he is a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, workshops, conferences and seminars internationally.

















### Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures

20% Practical Workshops & Work Presentations

30% Hands-on Practical Exercises & Case Studies

20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

#### **Course Fee**

Dubai	<b>US\$ 5,500</b> per Delegate + <b>VAT</b> . This rate includes H-STK <sup>®</sup> (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	<b>US\$ 6,000</b> per Delegate + <b>VAT</b> . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	<b>US\$ 6,000</b> per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

# **Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
	Introduction & Fundamentals
	Introduction to PM: What is a Project? • PM Associations & Body of
0830 - 0900	Knowledge • Project Management Body of Knowledge (PMBOK) •
0000 - 0000	Project Management Elements • Projects Environment • Project Life
	Cycle Phases • Project Managers Job profile • Project Manager Job
	Description • Project Management Skills • Project Management Toolkit
	Planning the Shutdown
0900 - 0915	Identifying the Work • Starting Your Project • Project Charter/Project
0900 - 0913	Document • Defining & Limiting the Scope • Constraints of the
	Shutdown
	Prioritizing the Proposed Work
	Identifying the Work • Review the Maintenance Backlog • Jobs Not
0915 - 0945	Requiring a Shutdown • Equipment History • Predictive Maintenance
	(PDM) Records • Preliminary Work of Shutdown • Walk-downs & Check
	Lists ● Solicit the Input of Others ● Reviewing Shutdown Files ● Identify
	Start-up Activity • Compiling Identified Work





















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0945 - 1000	Break
1000 - 1030	Sources of Shutdown Work & Shutdown Project Parameters
	Class Task
	Risk Management
1030 - 1100	Staffing Assumptions • Estimate Risks • Commercial Data •
	Procurement Problems • Project Risk Management - Model
	Risk Management Plan
1100 – 1200	Identify Risks Throughout the Project • Develop Risk Assessment Criteria
	■ Tabulate The Risks    ■ Prepare Standby Plans or Alternatives
1200 - 1230	The Project Managers Role
1230 - 1245	Break
1245 - 1330	Quality Control Plan & Project Quality Management
1330 1400	Quality Management
1330 - 1400	Group Task
1400 - 1420	Shutdown Manager's Skills
1420 - 1430	Recap
	Using this Course Overview, the Instructor(s) will Brief Participants about
	the Topics that were Discussed Today and Advise Them of the Topics to be
	Discussed Tomorrow
1430	Lunch & End of Day One

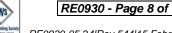
Day Z	
	Planning Processes
0730 – 0930	Doing the Right Work • Doing The Work Right • Doing The Work at the
	Right Time
0930 - 0945	Break
0045 1015	What is the Difference Between Planning & Scheduling?
0945 – 1015	What is Scheduling? • Planning Objectives • Planning Tools Cycle
1015 1045	Project Management Toolkit
1015 – 1045	Project Plan • Shutdown Plan
	Shutdown Definition
1045 1115	The Shutdown Work Breakdown Structure • The Project WBS – It's Uses
1045 – 1115	• The Project Work Breakdown Structure • The Shutdown Budget • The
	<i>Project OBS</i> ● <i>The Shutdown OBS</i> ● <i>The Shutdown WBS</i>
1115 1120	The Shutdown WBS & SOW
1115 - 1130	Group Task
	Planning Thought Process
	What Must Happen First on the Job? • Who Must Do This Step? • How
1130 – 1200	Many People Are Required? • What Parts, Materials, or Supplies Will Be
	Needed? • Is Any Support Equipment Required? • How Long Will It
	Take? ● What Must Happen Next on this Job? ● Documentation
	Determining Contract Work
	Technical Support • Non-technical Support • Work That Can Be
1200 – 1215	Performed Off-site • Work Requiring Special Equipment • Activities from
	WBS • Activities Data • Task Duration - PERT Method • Activity
	Work Content & Costing/Pricing
1215 - 1230	Break
1230 - 1330	Base Line Plan with Budget Approval
	Networks For Activity Logic – Overview & Convention • Shutdown– Early
	Start Calculations - Forward • Project Plan - Late Start Calculations-
	backwards, Float Calculations – Subtract & Network to Gantt Chart •
	Common Network Errors • Schedules • Milestones



















1330 – 1420	Base Line Plan with Budget Approval (cont'd)
	Resource Utilization • Milestone Plan & Chart • Resource Utilization •
	Resource Loading & Leveling • Schedules: Resource Requirements •
	Manual Load Leveling
1420 - 1430	Recap
	Using this Course Overview, the Instructor(s) will Brief Participants about
	the Topics that were Discussed Today and Advise Them of the Topics to be
	Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3	
0730 – 0900	Base Line Plan with Budget Approval (cont'd) Leveling Other Resources ● Resource Utilization ● Budgets & Committed Cash Flow ● Tracking Project Costs ● The Basic Principle ● Base Line Plan
0900 – 0930	Shutdown - Network Logic, Schedules: Committed Cash Flow & Schedules: Actual Projected Cash Flow Group Task
0930 - 0945	Break
0945 - 1015	Organizing & People Management  Shutdown Toolkit • The Shutdown Organisation • Organizing Tools & Techniques • Most Important Communications • Tender / Contract Clause Coverage • Parts, Material & Equipment • Material & Equipment Responsibility
1015 - 1115	Organizing & People Management (cont'd)  Tracking Long Delivery Items • Accounting • Reporting Structure •  Assigning Responsibility • Shutting Down Meeting • Organization  Breakdown Structure (OBS)
1115 - 1145	Organizing Group Task
1145 – 1215	The Matrix Organisation  Administration • Communication • Forms, Formats & Files • Project  File • Shut Down Toolkit- Resource Utilization
1215 - 1230	Break
1230 - 1330	<b>Leadership Tools &amp; Techniques</b> Team Selection – Organisation • - Motivation • - Shutdown Sponsor Role
1330 - 1420	Execution & Feedback  The Execution Phase • Shutdown Practical Execution Issues • Feedback on Project Status • Job Status Update • Feedback on Project Status • Feedback on Project Status: Costs
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three



















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Day 4

0730 – 0930	Execution & Feedback (cont'd)  Project Practical Control • Project Review Meeting • Materials  Management • Staging/Rigging • Shutdown Safety • OSHA  Requirements
0930 - 0945	Break
0945 – 1015	Quality Control Plan (QCP) Information Cost of Quality ● Inspection Reports ● Activity Inspection Results ● Quality Control Sheet
1015 - 1100	Quality Group Task
1100 – 1230	Proven Turnaround Practices  The Nature of Turnaround/Shutdown Project Management • The Environment In Which a Turnaround/Shutdown Takes Place • Turnaround/Shutdown Success Factors • More Success Factors • Similar Planning Approach To Projects • Elements of a Turnaround/Shutdown • Turnaround/Shutdown Toolkit • The Work Breakdown Structure (WBS) & the Organization Breakdown Structure (OBS) • Identifying the Work • General Shutdown/Turnaround Checklist • Planning A Plan • Milestone Plan • Milestone Chart • Work Scope • Budgets & Cost Control • Projects
1230 - 1245	Break
1245 - 1400	Proven Turnaround Practices (cont'd)  Materials ● Process Operations ● Pre-shutdown/Pre-turnaround Reviews  ● Safety ● Typical Safety Questions That Should Be Asked ● Inspection ● Contracting ● Quality: What is Required? ● Quality Control Plan (QCP)  ● Quality Control Plan (QCP) Inspection Report ● Quality Control Sheet  ● Risk Management ● Shutdown/Turnaround Practices Discussion
1400 – 1420	Control of Shutdown Control Tools & Techniques • Tracking Project Costs • Project Practical Control • Controlling • Control - Overview • Control: CSCS = Cost Schedule Control System • Control Cycle -CSCS • CSCS Illustrative Graph • Scope Control
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5	
0730 - 0930	Control of Shutdown (cont'd)  Shutdown & Turnaround • Shutdown Acceleration • Project  Acceleration • Contractor Controls • Control Tools & Techniques •  Tracking Project Costs • Project Practical Control • Controlling •  Control - Overview
0930 - 0945	Break
0945 - 1015	Control of Shutdown (cont'd)  Control: CSCS = Cost Schedule Control System • Control Cycle -CSCS •  CSCS Illustrative Graph • Scope Control • Shutdown & Turnaround •  Shutdown Acceleration • Project Acceleration • Contractor Controls
1015 - 1030	Accelerating a Project & Start-up & Handover Group Task















1030 – 1100	Start-up & Handover  Elements of Handover • Contactor Handover • Final Report •  Conclusion
1100 – 1200	<b>Use of Computer &amp; Software</b> Project Management Software ● Sorting & Communicating Information
1200 - 1230	Using Microsoft Project & Shutdown Workshop Group Task
1230 - 1245	Break
1245 – 1300	Typical Causes of Shutdown Failure  Work not Clearly Defined ● Risks not Analysed or Managed with  Contingency Plans ● No Baseline Plan −Poor or Non-existent Planning ●  Lack of Scope Management ● Poor Leadership ● Not Taking  Environmental needs into the Plan ● Focus on Critical Path items only- the  Rest Catch up with you
1300 – 1315	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1315 - 1415	COMPETENCY EXAM
1415 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course

# **Simulator (Hands-on Practical Sessions)**

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the "MS Project" and "Mindview Software".









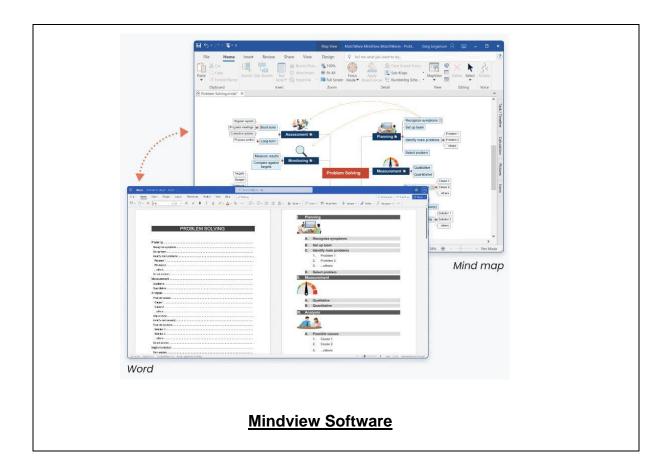












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