



COURSE OVERVIEW PE0127 Operations Abnormalities & Plant Upset

Course Title

Operations Abnormalities & Plant Upset

Course Date/Venue

January 21-25, 2024/Oryx Meeting Room,
Doubletree By Hilton Doha-Al Sadd, Doha, Qatar

Course Reference

PE0127

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



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.



Managing Manpower effectively and assess risk properly during plant upset are key effective factors when reacting with incidents. Incidents may start minor and become major by wrong reaction and wrong decisions. The aim of this course is to make everybody involved in the operations know exactly what to do. The incident itself may cause a certain loss, but with wrong reaction it became a massive loss. Understanding operation, effective emergency/contingency plan, rules of each one within emergency plan and makes emergency tools ready and in operational condition are the main aims of this course. One approach to overcome any incident development is to prepare yourself and emergency team to treat incidents situation professionally.



Upon review of several incidents, two common causes were identified that contributed to those incidents. The causes are improper management of manpower during upset conditions and improper risk assessment of activities to be executed or stop doing. However, on close examination the trained emergency team and correct managing of the incident besides using correct emergency tools will minimize the loss and accidents consequences.



Effective training is the necessary foundation for the successful implementation of optimum emergency managing condition and optimum consequences minimizing. This course will train participants on managing risk & manpower during plant upset to save lives, assets and company reputations.

Course Objectives

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

- Manage manpower effectively and assess risk properly during the abnormalities of the operations and plant upset
- Assess staffing level in abnormal situations and distribute manpower during plant upset conditions
- Manage shift teams, assess risk of non-routine activities and manage operational crisis
- Identify risks in the process and describe the roles, responsibilities and procedures in emergency management
- Use the risk assessment process and have enough skills in monitoring and auditing the emergency tools
- Recognize the training requirements for process emergency handling including emergency team building
- Discuss the various skills that will be acquired in controlling emergency management using different scenarios and matrix
- Identify the common mistakes during emergencies and employ the preventive measures

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 conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of operations abnormalities and plant upset for superintendents, supervisors and foremen in various departments of process plants (production, operations, maintenance, utility, etc.). Further, the course is suitable for emergency teams, managers, supervisors and other technical staff.

Course Fee

US\$ 6,000 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation


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

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:-

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USA International Association for Continuing Education and Training (IACET)

Haward Technology is an Authorized Training Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, Virginia 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 1-2013 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 1-2013 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 Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. 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.

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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.



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:



Dr. Faysal Eliyan, PhD, MSc, BSc, is a **Senior Engineer** with extensive years of experience within the **Oil & Gas, Petroleum and Refinery** industries. His expertise widely covers in the areas of **Process Plant Equipment, Process Equipment Design, Sizing, Selection, Applications & Troubleshooting, Process Plant Optimization Technology & Continuous Improvement, Plant Operation, Troubleshooting & Optimization, Gas Conditioning & Processing, Plant Layout Optimization, Concrete Structural Design, Concrete Maintenance & Reliability Analysis, Civil Engineering Drawings, Standards & Codes, Civil Engineering Design, Petrochemical Plant Structure Design & Remediation, Elements of Applied Civil Engineering, Dynamic Analysis of Rotating Equipment Foundations & Structural Steel Piperacks, Concrete & Structural Steel Design, Steel Structure Design, Advanced Building Construction Technology, Structural Engineering Techniques, Structural Renovation of Buildings, Earthwork & Structural Maintenance, Surface Drainage, Drainage System, Building Envelopes & Finishes, Landscaping & Roofing System, Seismic Design for Buildings, AutoCAD, Advanced Seismic & Wind Design of Reinforced Concrete, Structural Systems & Components, Design of Concrete Columns & Beam Frames, Design of Foundations & Equipment Footings, Maintenance of Concrete Structures, Structural Reliability Assessment, Codes & Structural Reliability, Probabilistic Evaluation of Existing Structures, Structural Steel, Precast Concrete and Reinforced Polymer Layered Steel.** Further, he is also well-versed in **Gas Turbines, Steam Turbines, Heat Exchangers Inspection, Testing & Overhaul Cleaning, Heating, Ventilation & Air Conditioning (HVAC), Fans & Blowers, Heaters & Boilers, Compressors, Maintenance Planning & Scheduling, Pumps & Compressors Operation & Maintenance, Valves Technology Selection, Installation & Troubleshooting, Cooling Towers, Rotating Equipment, Turbomachinery, Condition Monitoring & Diagnostics, Hydraulic & Pneumatic Systems Maintenance & Troubleshooting, Piping Systems, Corrosion Control & Materials Selection in Oil and Gas and Water Systems, Machinery Alignment & Balancing, Maintenance Management, Operational Problems & Failure Analysis, Energy Performance Assessment of Powerplants, Plant Operations, Project Management, Six Sigma and Health, Safety & Environment.**

During his career life, Dr. Faysal has gained his practical and field experience through his various significant positions and dedication as the **Assistant Professor, Senior Consultant, Laboratory Instructor, Lecturer, Tutor, Mentor, Advisor, Trainer, Engineering Manager, Senior Engineer, Senior Project Engineer, Engineer** and **Adjudicator** from various institutions and universities such as the **Community College of Qatar, American University of the Middle East, McMaster University, The University of British Columbia, The University of British Columbia, Qatar University** and **General Electric**, just to name a few.

Dr. Faysal has **PhD, Master's** and **Bachelor's** degree in **Engineering** from the **University of British Columbia (Canada)**. He is a **Certified Instructor/Trainer**, a member of the **Chamber of Civil Engineers, Structural Stability Research Council, American Institute of Steel Construction** and **American Society of Civil Engineers (ASCE), USA**. He also **published numerous books, researches and scientific papers** and received several awards and recognitions for **Journal of Materials Engineering and Performance** and has further delivered numerous trainings, courses, seminars, workshops and conferences internationally.





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:

Day 1: Sunday, 21st January 2023

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Introduction
0930 – 0945	<i>Break</i>
0945 – 1100	Understanding Operational Principles & Why Plants Get Upset
1100 – 1230	Roles & Responsibilities
1230 – 1245	<i>Break</i>
1245 – 1420	Emergency Team Buildings & Responsibilities of Each Member - Case Study
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2: Monday, 22nd January 2023

0730 – 0900	How Incidents Develop & Common Reasons
0900 – 0915	<i>Break</i>
0915 – 1100	Review of Several Incidents <i>Two Common Causes were Identified that Contributed to those Incidents</i>
1100 – 1230	Improper Management of Manpower During Upset Conditions
1230 – 1245	<i>Break</i>
1245 – 1420	Improper Management of Manpower During Upset Conditions (cont'd)
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 23rd January 2023

0730 – 0930	Root Cause Analysis (RCA)
0930 – 0945	<i>Break</i>
0945 – 1100	Risk Register
1100 – 1215	Incidents Development Scenarios - Discussion
1215 – 1230	<i>Break</i>
1230 – 1420	Incidents Development Scenarios - Discussion (cont'd)
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4: Wednesday, 24th January 2023

0730 – 0930	Emergency Team Building & Improper Management of Manpower During Upset Conditions
0930 – 0945	<i>Break</i>
0945 – 1100	Improper Risk Assessment of Operation Conditions During Plant Upset





1100 – 1215	Risk Assessment & Risk Evaluation <i>Risk Matrix</i>
1215 – 1230	<i>Break</i>
1230 – 1420	Recognizing Key Points & Controlling Elements in Different Process
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 25th January 2023

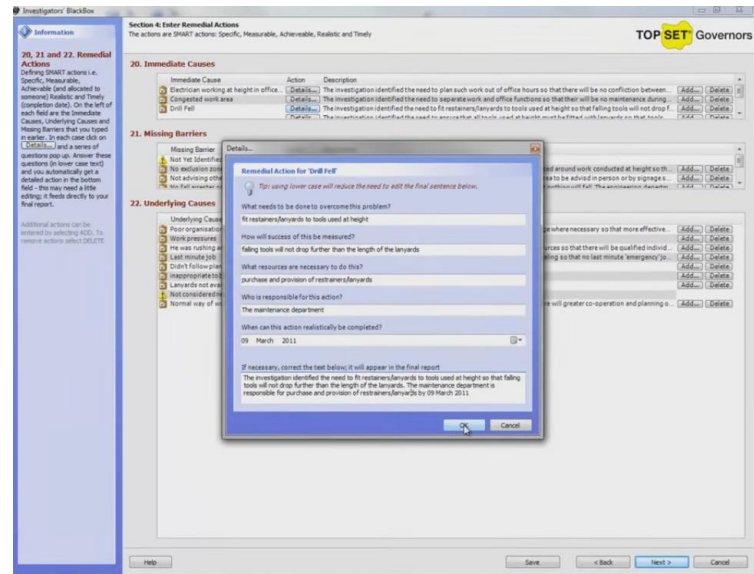
0730 – 0930	Building Successful Emergency Team & Each One Roles & Responsibilities
0930 – 0945	<i>Break</i>
0945 – 1100	Closing Gaps & Correcting Scenarios
1100 – 1215	Closing Gaps & Correcting Scenarios (cont'd)
1215 – 1230	<i>Break</i>
1230 – 1345	Case Study & Discussion
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>





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 our state-of-the-art “BlackBox” and “QRA System” simulators.



BlackBox Software Tool





The screenshot displays the QRA System Simulator software. The main window is titled 'Airplane V.210.iqr.1'. It features a hierarchical project tree on the left side, listing various system components such as 'Engine System', 'Fuel System', 'Leak', 'Propeller', 'Wings System', 'Avionics', and 'Wheels'. The central area contains a plot of the Cumulative Distribution Function (CDF) for 'Uncertainty', with the y-axis ranging from 0 to 1.0 and the x-axis showing parameters from 10e-1 to 5e-1. To the right, a fault tree diagram is visible, showing the relationship between various failure events. Below the plot, a 'STATISTIC VALUE' table provides numerical data for different percentiles.

STATISTIC	VALUE
Mean	0.3501
1st	0.183
5th	0.2202
10th	0.2544
50th	0.3513
90th	0.4439
95th	0.469
99th	0.5167

QRA System Simulator

Course Coordinator

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