

## COURSE OVERVIEW PE0127 Operations Abnormalities & Plant Upset

### Course Title

Operations Abnormalities & Plant Upset

### Course Date/Venue

December 08-12, 2024/Tamra Meeting Room, al Bandar Rotana, Dubai Creek, Dubai, UAE

### 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, 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 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\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### 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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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 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.

### 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. Basem Al-Qarout** is a **Senior Process & Chemical Engineer** with over **35 years** of extensive teaching and field industrial experience. His expertise covers **Fundamentals of Process Operations, Hydrocarbon Processing, Process Plant Start-Up & Commissioning, Crude Oil & Refinery Products, Sampling & Feed/Product Quality, Process Plant Performance & Efficiency, Process Troubleshooting & Problem Solving, Separation of Oil/Gas/Water, Oil Field Operations, Gas Field Operations, Oil Production, Gas Processing, Process Equipment Design, Operation of Process Equipment, Hydro-Treating, Hydro-Forming, Hydro-Cracking and Catalyst Technology.** Furthermore, he is also well-versed in **P&ID and Wiring Schematics Rotating Equipment-Machinery (Pumps, Compressors, Turbines, Fans & Blowers, Electric Motors, Gears & Transmission Equipment), Static Equipment-Stationary, (Heat Exchangers, Distillation Column, How Trays Work, Process Heaters/Furnaces, Reboilers, Condensers, Piping System, Valves) and Process Control & Instrumentation (Process Control, Instrumentation, Control Valves).**

During Mr. Al-Qarout's career life, he has handled challenging positions wherein he has acquired his thorough practical and academic experience as the **Technical Instructor, Senior Production Foreman, Panel Operator at Hydro Cracking Plant and Plant Foreman** of various companies such as **Mellitah Oil and Gas B.V., KNPC, Chevron, Jordan Refinery Company and Libya Oil Center.**

Mr. Al-Qarout has a **Diploma in Chemical Engineering** from the **Polytechnic University in Jordan.** Further, he is **Certified by City & Guilds as Level 2 & 3 NVQ Processing Operations: Hydrocarbons Assessor** and a **Certified Instructor by Haward Technology Train-the-Trainer Program.**

### 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 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, 08<sup>th</sup> of December 2024**

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

**Day 2: Monday 09<sup>th</sup> of December 2024**

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

**Day 3: Tuesday, 10<sup>th</sup> of December 2024**

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

**Day 4: Wednesday, 11<sup>th</sup> of December 2024**

0730 – 0930	<b>Emergency Team Building &amp; Improper Management of Manpower During Upset Conditions</b>
0930 – 0945	Break
0945 – 1100	<b>Improper Risk Assessment of Operation Conditions During Plant Upset</b>
1100 – 1215	<b>Risk Assessment &amp; Risk Evaluation</b> Risk Matrix



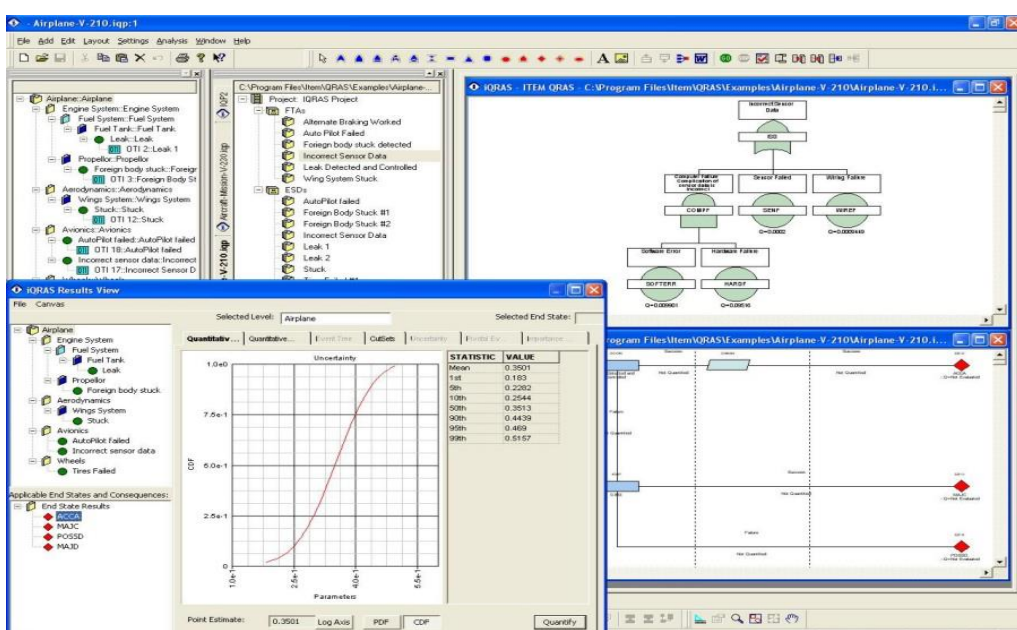
1215 – 1230	Break
1230 – 1420	<b>Recognizing Key Points &amp; Controlling Elements in Different Process</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5: Thursday, 12<sup>th</sup> of December 2024**

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

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

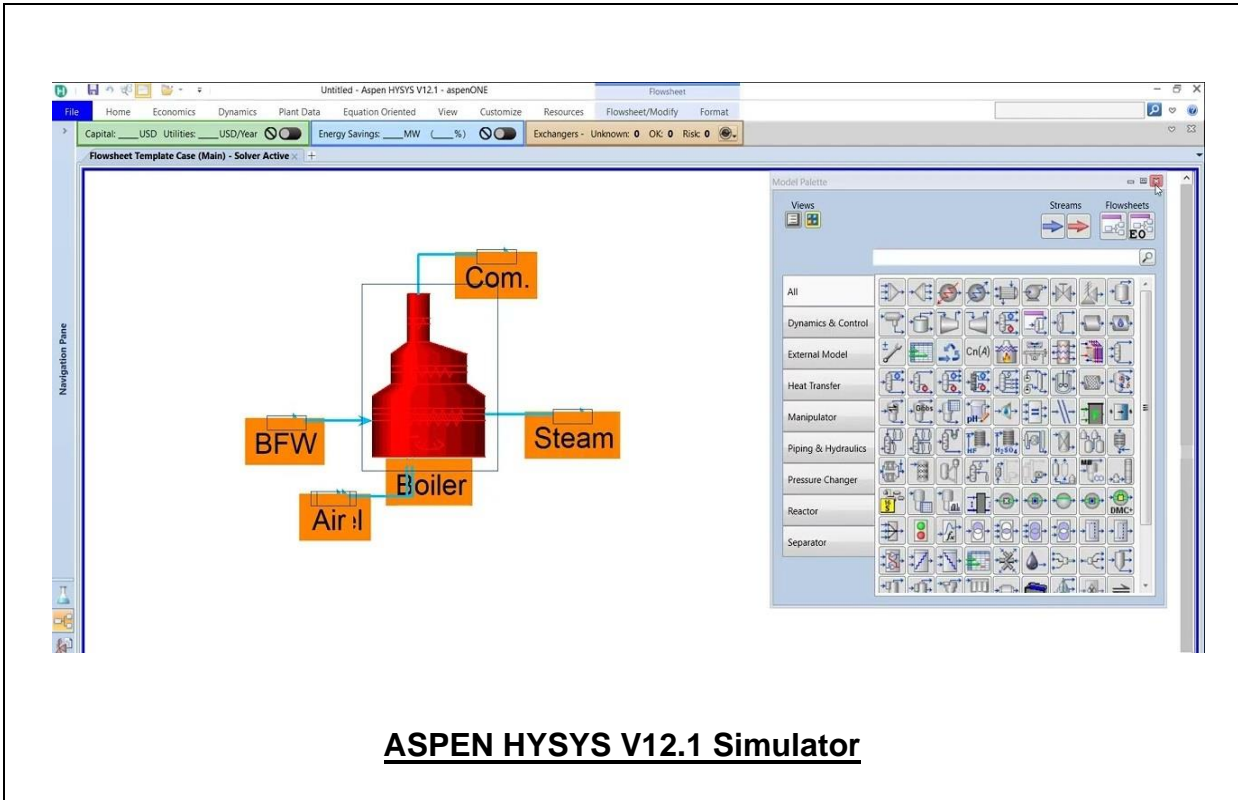
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art “QRA System” simulators and “ASPEN HYSYS” simulator.



The screenshot displays the QRA System Simulator interface. It features a fault tree diagram on the right, a CDF (Cumulative Distribution Function) graph on the left, and a statistics table. The CDF graph shows the probability of failure over time, with a point estimate of 0.3501. The statistics table provides key values for the simulation.

STATISTIC	VALUE
Mean	0.3501
1st	0.183
5th	0.2262
10th	0.2544
50th	0.3513
90th	0.4439
95th	0.469
99th	0.5167

**QRA System Simulator**



**ASPEN HYSYS V12.1 Simulator**

**Course Coordinator**

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