



COURSE OVERVIEW FE0920
API-580: Risk Based Inspection
(API Exam Preparation Training)

Course Title

API-580: Risk Based Inspection (API Exam Preparation Training)

Course Date/Venue

August 17-21, 2026/Online Virtual Training

Exam Window & Venue:

December 04-25, 2026/Abu Dhabi, Dubai, Al-Khobar, Jeddah, Kuwait, Amman, Beirut, Cairo, Manama, Muscat and Istanbul. Participant has the option to attend at any of the above cities



Exam Registration Closing Date:

September 25, 2026

Course Reference

FE0920



Course Duration/Credits

Five days/4.0 CEUs/40 PDHs

Course Description



This practical and highly-interactive course includes practical sessions and exercises where participants carry out welding inspection. Theory learnt in the class will be applied using our state-of-the-art simulators.



API 580 Supplemental Inspection Certification program is designed to train inspectors on Risk-Based Inspection. The program is based on API RP 580 (Risk-Based Inspection), which is applicable to all inspectors in the petroleum/petrochemical industry. The objective of this program is to provide inspectors with advanced (above the basic core API 510, 570 & 653 certifications) knowledge and skills in the area of Risk-Based Inspection based on the information contained in API RP 580.



This course is designed to train individuals who are interested in obtaining the API 580 RBI Inspector Certification, as well as those who are seeking an advanced knowledge of Risk Based Inspection requirements. Included with the course is a pre-study guide and student classroom workbook. The student receives instruction regarding how to take the test, as well as insight into the intricacies of "real world" situations. Daily tests are designed to gauge students' proficiency and understanding of the material.

Haward Technology is proud of its **90% pass rate** on all our API sponsored courses



Course Objectives/Outcomes & Benefits for the Participants

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

- Get prepared for the next API 580 exam and have enough knowledge and skills to pass such exam in order to get the API 580 Inspector certificate
- Discuss API-580 certification and exam as well as computer-based API-580 exam tutorial
- Carryout risk-based inspection, RBI process, risk management and risk reduction
- Explain the risk assessment concepts and differentiate relative risk versus absolute risk
- Recognize RBI concept, types and application including damage mechanisms and failure modes requirements
- Discuss consequence of failure (COF) and probability of failure (POF) for RBI
- Identify the types of RBI assessment and use RBI for risk management
- Apply risk management through inspection and use RBI to establish plans and priorities
- Identify the roles and responsibilities of team leaders and team members including equipment inspector or inspection specialist, corrosion and process specialists and operations and maintenance personnel, etc
- Carryout data and information collection for RBI assessment and plan the RBI program
- Review damage mechanism and assess probability of failure (POF) and consequences of failure (COF)
- Employ risk determination, assessment and management as well as risk management with inspection activities
- Apply other risk management methods, updating RBI assessment and RBI documentation and recordkeeping

Who Should Attend

This course is designed for those involved in risk based inspection methodologies and practices in refineries, gas, oil and petrochemical facilities. This includes inspection engineers and inspectors who are seeking API-580 certification. Other engineers, inspectors, maintenance staff, facility integrity personnel and asset managers who are considering or implementing risk based inspection systems will definitely benefit from this course.

Training Fee

US\$ 2,750 per Delegate + VAT.

Exam Fees

US\$ 590 per Delegate + VAT.

Exam Eligibility & Structure

Exam candidates shall have the following minimum pre-requisites:-

- If you hold a current API 510, 570 or 653 certification, you automatically qualify to take the API 580 Risk Based Inspection certification exam
- If you do not hold a current API 510, 570 or 653 certification, then qualification is based on a combination of your level of education and industry experience acquired within the last 10 years
- Prior to submitting an application, please use the table below to determine if you qualify to take the API 580 exam. The minimum experience required MUST be documented on your application

Education	Years of Experience	Experience Required
BS or higher in engineering or technology	1 year	Any experience in the petrochemical industry
2-year degree or certificate in engineering or technology	2 years	Any experience in the petrochemical industry
High school diploma or equivalent	3 years	Any experience in the petrochemical industry
No formal education	5 or more years	Any experience in the petrochemical industry

Applicable Codes & Standards

Listed below are the effective editions of the publications required for next API-580, Risk Based Inspection Examination:-

- API Recommended Practice 580, *Elements of a Risk-Based Inspection Program*, **4th Edition, August 2023 with Addenda 1 (March 2025)**

API Exam Format

All API exams are organized online in one of the Prometric Examination centers.

The only document required is the students Photo ID. No other documents, books, standards, codes or publications whatsoever are allowed during the exam.

All applicable codes and standards will be available online in the exam station.

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.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Howard Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.



API Certificate(s)

API-580 certificate will be issued to participants who have successfully passed the API-580 examination.



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

Howard Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-22
HTME No. 74852
Participant Name: Salem Ghanem

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
FE0920	API-580: Risk Based Inspection (API Exam Preparation Training)	Nov 10-14, 2022	40	4.0

Total No. of CEU's Earned as of TOR Issuance Date: 4.0

TRUE COPY
Jany Castillo
Academic Director

Howard Technology is accredited by:
BAC, IACET, ILMI, ISO 9001:2015, UKAS, TCM1, BOS

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel: +971 2 3091 714 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

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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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

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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 **4.0 CEUs** (Continuing Education Units) or **40 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.

Accommodation

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



Cours 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. Mahmoud Shama, BSc, API, ASNT-NDT is a **Certified AWS/API/ASNT Inspector & Senior Inspection Engineer** with over **25 years** of **Offshore & Onshore** experience within the **Petrochemical, Refinery and Oil & Gas** industries. His expertise widely evolves in the area of **Damage Mechanisms, Fitness-for-Service, Deterioration Mechanisms & Failure Modes, Refractory Inspection, Risk-Based Inspection, Risk-Based Assessment, Risk-Deterioration, Risk Management, Risk Mitigation, Reassessment & Updating RBI Assessment, RBI Documentation & Record**

Keeping, Welding Codes, Welding Qualification, Welding Technology, Metallurgy, Condition Monitoring, Corrosion Monitoring, Cathodic Protection, Corrosion & Non-Destructive Examination & Inspection, Mechanical & Metallurgical Failure Mechanisms, Damage Mechanisms Inspection, Pressure Vessel Design, ASME Boiler Pressure Vessel, API 571, 580, 510, 653, 936, 579, 570, 577 & SI; ASNT, RT, UT, MT & PT; AWS-CSWIP; ASME Section VIII Div.1&2; ASME Section II; Equipment Failure Analysis, Risk Based Inspection (RBI) as well as the construction, installation fabrication, erection, inspection, maintenance, assessment, rating, repair, alteration, reconstruction and integrity assessment of Piping, Pipelines, Tanks, Fuel Storage Tanks, Rotating Equipment, Static Equipment, Pigging Foundations, Corrosion Control, Corrosion Monitoring, Failure Analysis Methodologies, Failure Analysis & Reporting, Engineering Drawings Interpretation, Visual Inspection & Load Testing, Radiography Interpretation, Boroscopic Internal Inspection, Pressure Vessels, Heat Exchangers, Oil Heaters, Coolers, Boilers, Furnace, Cryogenic (LNG) Tanks, Cryogenic Heat Exchangers, Process Inspections, Painting, Vibration Analysis, NDT Activities, Construction & Mechanical Integrity, Process Piping Design and Failure Analysis. He has further practical experience in **ISO Certifications, QA/QC, Lifting Equipment, Oil Heaters, Coolers, Re-Boilers, Separators, Gas Boots, LPG Bullets, Air Driers, Sand Blasting, Roller Bearing, Practical Vibration Measurements** and at the same time, he is an **international expert** with **several codes and standards** in the process industry such as **API, ASME, CSWIP, ANSI, ASTM, NACE, TEMA, HEI, ISO, AUC**, etc.

Throughout his career life, Mr. Mahmoud has provided significant contributions to the industries by acquiring **key positions** such as being the **Senior Inspection Engineer, Lead Integrity Engineer, Senior Welding Inspector, Inspector Engineer, Technical Trainer, NDT & Document Controller, Technical Instructor** and **API & Corrosion Instructor** for international companies such as **SEGAS** and **GPC** just to name a few.

Mr. Mahmoud has a **Bachelor** degree in **Mechanical Engineering** and is currently taking a **Diploma in Applied Chemistry**. He is a **Certified Senior Welding Inspector (AWS-CSWIP), Certified Risk Based Inspection (API-580), Certified Tank Inspector (API-653), Certified Pressure Vessel Inspector (API-510), a Certified Damage Mechanisms Inspector (API-571), a Certified Refractory Inspector (API-936)** as well as a **Certified ASNT Level I & II in Radiographic Testing (RT), Ultrasonic Testing (UT), Magnetic Testing (MT), Liquid Penetrant Test (PT)**. Further, he is a **Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, a **Qualified Fitness for Service (API 579), a Certified Piping Inspector (API 570), Welding Inspection & Metallurgy (API 577)** and **Source Inspection (API SI)**. Moreover, he has delivered numerous trainings, courses, workshops and conferences internationally.

Virtual Training (If Applicable)

If this course is delivered online as a Virtual Training, the following limitations will be applicable:-

Certificates	Only soft copy certificates will be issued to participants through Howard's Portal. This includes Wallet Card Certificates if applicable
Training Materials	Only soft copy Training Materials (PDF format) will be issued to participant through the Virtual Training Platform
Training Methodology	80% of the program will be theory and 20% will be practical sessions, exercises, case studies, simulators or videos
Training Program	The training will be for 9.5 hours per day starting at 0730 and ending at 1700
H-STK Smart Training Kit	Not Applicable
Hands-on Practical Workshops	Not Applicable
Site Visit	Not Applicable
Simulators	Only software simulators will be used in the virtual courses. Hardware simulators are not applicable and will not be used in Virtual Training

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: Monday, 17th of August 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to API-580 Certification & Exam Code Books and Recommended Practices Required for the Exam: Body of Knowledge • Are You Qualified? • Studying for the Exam • Schedule a Computer Based Test (CBT) • Re-scheduling/Cancelling a CBT • ProProctor (Remote Exam) • What are the Pre-Test Questions? • Alternative Item Types (AITS) • What to Expect on Test Day
0930 – 0945	Break
0945 – 1100	Computer-Based API-580 Exam Tutorial Welcome & Exam Structure • Navigating through the Exam • Time Remaining • Flagging Questions
1100 – 1200	Computer-Based API-580 Exam Tutorial (cont'd) Answering Multiple-Choice Questions • Using the Calculator • Ending Exam Sections
1200 – 1300	Lunch
1300 – 1400	Overview of Risk-Based Inspection Framework of the RBI Process • Risk Management • Flexibility in Application • Mechanical integrity Focused • RBI Assessment benefits & Limitations • Terms, Definitions, Acronyms and Abbreviations



1400 – 1430	Risk Assessment Concepts What is Risk? • Risk Management & Risk Reduction • Risk Management • Relative Risk vs. Absolute Risk
1430 – 1530	RBI Concept, Types & Application The Evolution of Inspection Intervals and Due Dates • Damage Mechanisms and Failure Modes Requirements
1530 – 1545	Break
1545 – 1645	RBI Concept, Types & Application (cont'd) Consequence of Failure (COF) and Probability of Failure (POF) for RBI • Precision vs. Accuracy
1645 – 1700	Distribute Homework & Recap
1700	End of Day One

Day 2: Tuesday, 18th of August 2026

0730 – 0745	Review of Day 1 & Homework Answers
0745 – 0930	RBI Concept, Types & Application (cont'd) Types of RBI Assessment • Using RBI for Risk Management
0930 – 0945	Break
0945 – 1030	RBI Concept, Types & Application (cont'd) Risk Management through Inspection • Using RBI to Establish Plans and Priorities
1030 – 1130	Roles, Responsibilities, Training & Qualifications Roles and Responsibilities of Team Leaders & Team Members • Equipment Inspector or Inspection Specialist • Corrosion & Process Specialists • Operations & Maintenance Personnel
1130 – 1230	Roles, Responsibilities, Training & Qualifications Management & Risk Analyst • Environmental and Process Safety Personnel • Financial/Business Personnel • Risk Assessment Personnel
1230 – 1330	Lunch
1330 – 1430	Data & Information Collection for RBI Assessment Data Needs for Qualitative RBI • Data Needs for Quantitative RBI • Data Needs for Semi-Quantitative RBI • Data Quality • Codes and Standards • Sources of Site-Specific Data & Information
1430 – 1530	Planning the RBI Program Organizing the Work Process • Essential Steps of an RBI Program • Establish Physical Boundaries of an RBI Assessment • Facilities & Process Units Screening • Equipment Item Screening
1530 – 1545	Break
1545 – 1630	Planning the RBI Program (cont'd) Utilities, Emergency & Off-Plot Systems • Establish Operating Boundaries • Start-up and Shutdown • Normal, Upset and Cyclic Operation • Operating Time Period • RBI Program Planning
1630 – 1645	Administer Quiz
1645 – 1700	Distribute Homework & Recap
1700	End of Day Two



Day 3: Wednesday, 19th of August 2026

0730 – 0745	Review of Day 2 & Homework Answers
0745 – 0930	Damage Mechanism Review Understanding Damage Mechanisms and the Failure Mode is Important • Information Required for a DMR • Identifying Corrosion Rates and Damage Mechanisms • DM Data Resources • DMR Outcome Documentation • DMR Relationship with IOWs
0930 – 0945	Break
0945 – 1130	Assessing Probability of Failure (POF) Qualitative POF Analysis • Quantitative POF Analysis • Determination of POF • Determine the Effectiveness of Past Inspections • Determine the Effectiveness of Inspections
1130 – 1230	Assessing Consequences of Failure (COF) Qualitative Consequence of Failure (COF) Analysis • Semi-Quantitative Consequence of Failure (COF) Analysis • Categorizing Safety, Health and Environmental Consequence of Failure
1230 – 1330	Lunch
1330 – 1530	Assessing Consequences of Failure (COF) (cont'd) Volume of Fluid Release • Flammable Events (Fire and Explosion) • Releases of Toxic & Other Hazardous Fluids
1530 – 1545	Break
1545 – 1630	Assessing Consequences of Failure (COF) (cont'd) Production (Business Interruption) Consequence of Failure (COF) • Maintenance and Reconstruction Impact
1630 – 1645	Administer Quiz
1645 – 1700	Distribute Homework & Recap
1700	End of Day Three

Day 4: Thursday, 20th of August 2026

0730 – 0745	Review of Day 3 & Homework Answers
0745 – 0845	Assessing Consequences of Failure (COF) (cont'd) Factors for Estimating Consequence of Failure (COF) • Factors for Ranking Consequences
0845 – 0930	Risk Determination, Assessment & Management Determination of Risk • Event Tree Approach to Risk Assessments • Understanding Acceptable Levels of Risk
0930 – 0945	Break
0945 – 1130	Risk Determination, Assessment & Management (cont'd) Using Risk Assessment in Inspection and Maintenance Planning • Sensitivity Analysis • Risk Matrix & Plots • Risk Thresholds
1130 – 1230	Risk Management with Inspection Activities Managing Risk by Reducing Uncertainty through Inspection • Inspection Activities for Managing Risk
1230 – 1330	Lunch
1330 – 1530	Risk Management with Inspection Activities (cont'd) Identifying Risk Management Opportunities for RBI Results • Establishing an Inspection Strategy based on Risk Assessment
1530 – 1545	Break



1545 – 1630	Risk Management with Inspection Activities (cont'd) <i>Managing Inspection Costs with RBI • Assessing Inspection Results • Achieving Lowest Life Cycle Costs with RBI</i>
1630 – 1645	Administer Quiz
1645 – 1700	Distribute Homework & Recap
1700	End of Day Four

Day 5: Friday, 21st of August 2026

0730 – 0745	Review of Day 4 & Homework Answers
0745 – 0900	Other Risk Management Methods <i>Evaluating Flaws for Fitness-for-Service • Equipment Modification, Re-design and Re-rating • Emergency Isolation & Depressurizing/De-inventory • Modify Process • Water Spray/Deluge & Water Curtain • Blast-resistance Construction • Additional Risk Management Methods</i>
0900 – 0930	Updating the RBI Assessment <i>The Difference Between Evergreening & Reassessment • Why Conduct an RBI Reassessment?</i>
0930 – 0945	Break
0945 – 1100	Updating the RBI Assessment (cont'd) <i>Damage Mechanisms and Inspection Activities • Process and Hardware Changes</i>
1100 – 1230	Updating the RBI Assessment (cont'd) <i>RBI Assessment Premise Change • When to Conduct and RBI Reassessment</i>
1230 – 1330	Lunch
1330 – 1530	RBI Documentation & Recordkeeping <i>Documenting the RBI Management System</i>
1530 – 1545	Break
1545 – 1630	RBI Documentation & Recordkeeping (cont'd) <i>Documenting the Outcome of the RBI Assessment • Keys for Success</i>
1630 – 1645	Course Conclusion
1645 – 1700	POST-TEST
1700	End of Course

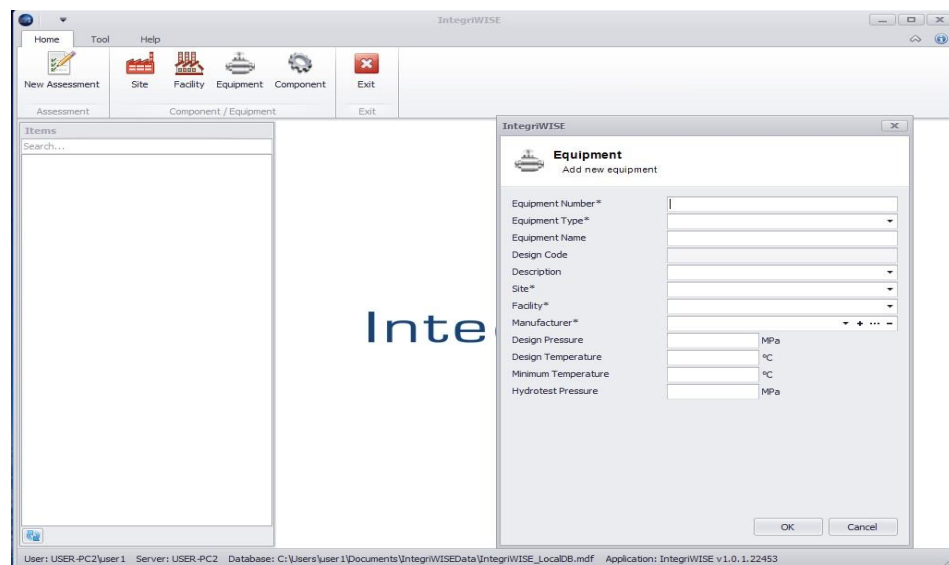
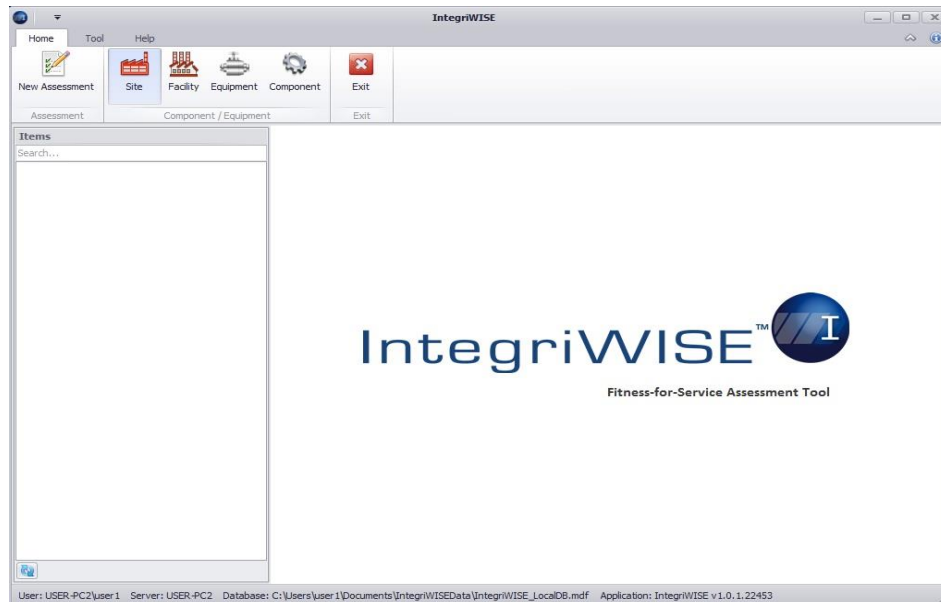
MOCK Exam

Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward's Portal. Each participant will be given a username and password to log in Haward's Portal for the MOCK Exam during the 60 days following the course completion. Each participant has only one trial for the MOCK exam within this 60-day examination window. Hence, you have to prepare yourself very well before starting your MOCK exam as this exam is a simulation to the one of the Certification Body.

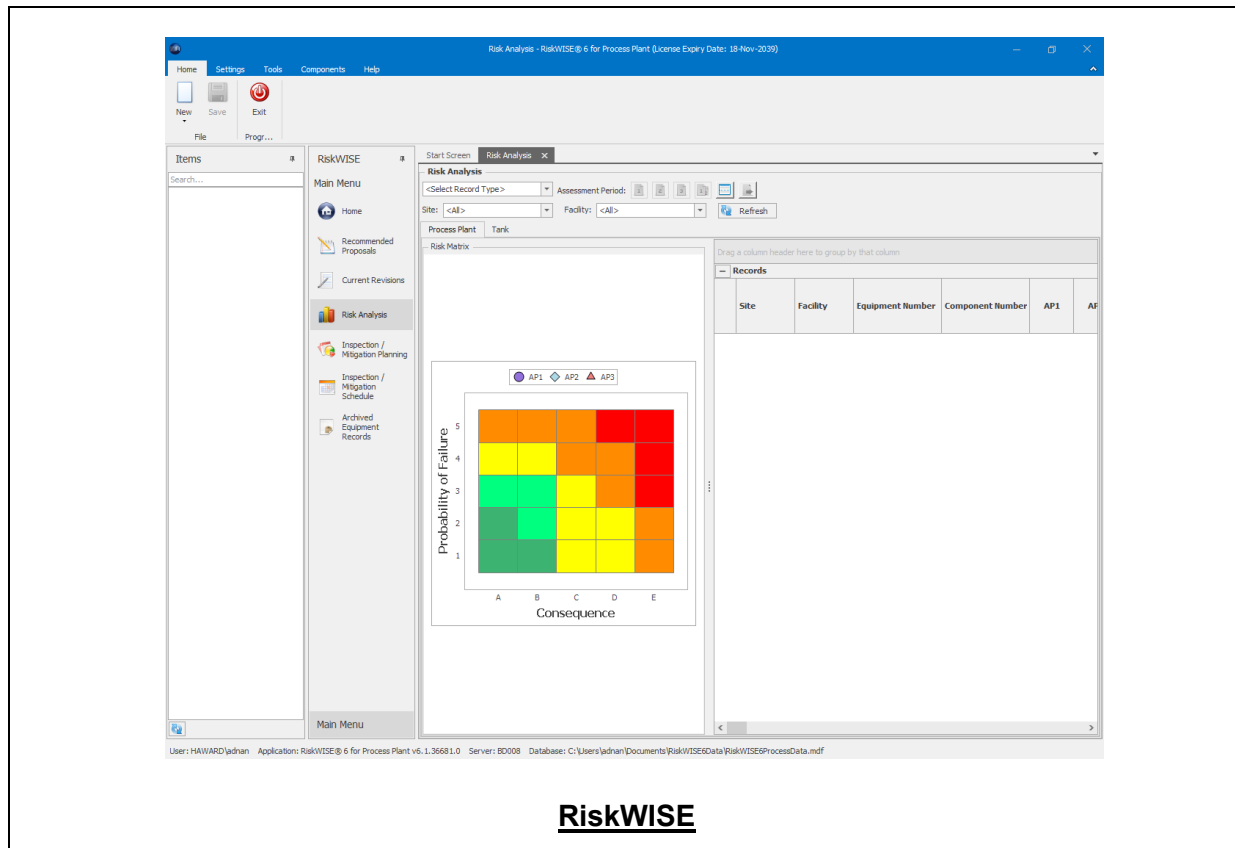


Simulator (Hands-on Practical Sessions)

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 state-of-the-art simulator “RiskWISE” and “IntegriWISE™”.



IntegriWISE™



Course Coordinator

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