



## **External Training Course**

# **Plant and Equipment Integrity**

**From 13 Oct. To 17 Oct. 2024**

**From 10 Nov. To 14 Nov. 2024**

**From 15 Dec. To 19 Dec. 2024**

**Cairo Marriott Hotel & Omar Khayyam Casino  
Cairo - Egypt**

**Mr. Ghanem F. Al-Otaibi  
GM & Institute Owner**

☛ **Tel.: 00965 22204992**

☛ **Mob.: 00965 65548855**

☛ **Email: admin@agi-kw.com**

☛ **Fax: 00965 22204999**

☛ **Mob.: 00965 97273712**

☛ **Email: agi-kw@hotmail.com**

**W/SITE: WWW.AGI-KW.COM**

**External Training Course:**

**Plant and Equipment Integrity**

**From 13 Oct. To 17 Oct. 2024**

**Fees: 1350 KD**

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**Course Overview:**

The "Plant and Equipment Integrity Training Course" is designed to provide participants with comprehensive knowledge and practical skills for ensuring the integrity, reliability, and safe operation of plant and equipment in oil and industrial environments. This course covers critical areas including asset integrity management, inspection and maintenance strategies, risk assessment, failure analysis, and compliance with industry standards and regulations. The course aims to help organizations minimize risks, prevent accidents, reduce downtime, and optimize the lifespan and performance of their equipment.

**Course Objectives:**

By the end of this course, participants will be able to:

- Understand the principles and importance of plant and equipment integrity.
- Develop and implement effective asset integrity management systems.
- Conduct risk assessments and establish maintenance and inspection strategies.
- Apply failure analysis techniques to identify and mitigate potential failures.
- Ensure compliance with relevant standards, codes, and regulations.
- Optimize equipment performance and extend operational lifespan.

**Training Methodology:**

**Lectures and Presentations:** Comprehensive lectures by industry experts.

**Case Studies:** Analysis of real-world scenarios to reinforce learning.

**Interactive Workshops:** Group discussions and practical exercises.

**Hands-On Sessions:** Practical demonstrations and activities.

**Assessments and Feedback:** Regular assessments to gauge understanding, with personalized feedback.

## **Course Agenda & Outline**

### **Introduction to Plant and Equipment Integrity:**

Definition and importance of plant and equipment integrity.

Key concepts in asset integrity management.

Overview of industry standards and regulations.

### **Asset Integrity Management Systems (AIMS):**

Components of an effective AIMS.

Risk-based inspection and maintenance (RBIM) principles.

Developing integrity management plans and procedures.

### **Inspection and Maintenance Strategies:**

Types of inspection (visual, ultrasonic, radiographic, etc.).

Preventive vs. predictive maintenance strategies.

Condition monitoring and its role in integrity management.

### **Risk Assessment and Management:**

Identifying hazards and assessing risks associated with equipment failure.

Risk-based decision-making and prioritization.

Tools and techniques for risk assessment (HAZOP, FMEA, etc.).

### **Failure Analysis and Mitigation Techniques:**

Common failure modes in industrial equipment.

Root cause analysis (RCA) methods.

Strategies for failure prevention and mitigation.

### **Compliance with Standards and Regulations:**

Understanding key standards (API, ASME, ISO, etc.).

Ensuring compliance with local and international regulations.

Documentation and reporting requirements.

### **Optimizing Equipment Performance:**

Strategies to enhance reliability and availability of equipment.

Performance monitoring and KPI development.

Life-cycle management and cost optimization.

### **Case Studies and Practical Applications:**

Real-world examples of equipment integrity challenges.

Best practices and lessons learned from different industries.

Group exercises and interactive sessions.

## Course Details & Agenda:

### (1<sup>st</sup> Day) Agenda

|       |       |   |
|-------|-------|---|
| 8.30  | 9.00  | Opening Remarks (30 Min.).  |
| 9.00  | 11.30 | <u>DISCUSS COURSE TOBICS:</u> <ul style="list-style-type: none"> <li>• Introduction to Plant and Equipment Integrity.</li> <li>• Asset Integrity Management Systems (AIMS).</li> <li>• Inspection and Maintenance Strategies.</li> <li>• Risk Assessment and Management.</li> <li>• Failure Analysis and Mitigation Techniques.</li> <li>• Compliance with Standards and Regulations.</li> <li>• Optimizing Equipment Performance.</li> <li>• Case Studies and Practical Applications.</li> </ul> |
| 11.30 | 12.00 | Coffee Break  |
| 12.00 | 14.00 | <u>Introduction to Plant and Equipment Integrity:</u> <ul style="list-style-type: none"> <li>• Definition and importance of plant and equipment integrity.</li> <li>• Key concepts in asset integrity management.</li> <li>• Overview of industry standards and regulations.</li> </ul>   |
| 14.00 | 14.30 | Questions and Discussion  |
| 14.30 |       | Buffet Lunch  |

### (2<sup>nd</sup> Day) Agenda

|       |       |  |
|-------|-------|--|
| 9.00  | 11.30 | <u>Asset Integrity Management Systems (AIMS):</u> <ul style="list-style-type: none"> <li>• Components of an effective AIMS.</li> <li>• Risk-based inspection and maintenance (RBIM) principles.</li> <li>• Developing integrity management plans and procedures.</li> </ul>                        |
| 11.30 | 12.00 | Coffee Break   |
| 12.00 | 14.00 | <u>Inspection and Maintenance Strategies:</u> <ul style="list-style-type: none"> <li>• Types of inspection (visual, ultrasonic, radiographic, etc.).</li> <li>• Preventive vs. predictive maintenance strategies.</li> <li>• Condition monitoring and its role in integrity management.</li> </ul> |
| 14.00 | 14.30 | Questions and Discussion   |
| 14.30 |       | Buffet Lunch   |

## (3<sup>rd</sup> Day) Agenda

|       |       |   |
|-------|-------|---|
| 9.00  | 11.30 | <u>Risk Assessment and Management:</u> <ul style="list-style-type: none"> <li>Identifying hazards and assessing risks associated with equipment failure.</li> <li>Risk-based decision-making and prioritization.</li> </ul> |
| 11.30 | 12.00 | Coffee Break  |
| 12.00 | 14.00 | <u>Risk Assessment and Management:</u> <ul style="list-style-type: none"> <li>Tools and techniques for risk assessment (HAZOP, FMEA, etc.).</li> <li>Case Studies and Practical Applications.</li> </ul>                    |
| 14.00 | 14.30 | Questions and Discussion  |
| 14.30 |       | Buffet Lunch  |

## (4<sup>th</sup> Day) Agenda

|       |       |   |
|-------|-------|---|
| 9.00  | 11.30 | <u>Failure Analysis and Mitigation Techniques:</u> <ul style="list-style-type: none"> <li>Common failure modes in industrial equipment.</li> <li>Root cause analysis (RCA) methods.</li> <li>Strategies for failure prevention and mitigation.</li> </ul>                         |
| 11.30 | 12.00 | Coffee Break  |
| 12.00 | 14.00 | <u>Compliance with Standards and Regulations:</u> <ul style="list-style-type: none"> <li>Understanding key standards (API, ASME, ISO, etc.).</li> <li>Ensuring compliance with local and international regulations.</li> <li>Documentation and reporting requirements.</li> </ul> |
| 14.00 | 14.30 | Questions and Discussion  |
| 14.30 |       | Buffet Lunch  |

## (5<sup>th</sup> Day) Agenda

|       |       |  |
|-------|-------|--|
| 9.00  | 11.30 | <u>Optimizing Equipment Performance:</u> <ul style="list-style-type: none"> <li>Strategies to enhance reliability and availability of equipment.</li> <li>Performance monitoring and KPI development.</li> <li>Life-cycle management and cost optimization.</li> </ul>             |
| 11.30 | 12.00 | Coffee Break   |
| 12.00 | 14.00 | <u>Case Studies and Practical Applications:</u> <ul style="list-style-type: none"> <li>Real-world examples of equipment integrity challenges.</li> <li>Best practices and lessons learned from different industries.</li> <li>Group exercises and interactive sessions.</li> </ul> |
| 14.00 | 14.30 | Questions, Discussion & Conclusion Training Course.  |
| 14.30 |       | Buffet Lunch   |