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## Situation Awareness for Control Room Operations in Plant Safety

### Overview

Situation awareness plays a significant role in contributing to many mishaps. Approximately 70%-90% of human errors under accidents that occurred in complex and high technology system caused by situation awareness such as Three Miles Island, Piper Alpha oil platform explosion, and many more. Understanding and improving situation awareness can reduce human decision making errors and ultimately to reduce incidents/accidents, improve system safety caused by human performance. Situation awareness can be formally defined as " the perception of elements in environment within a volume of space and time, comprehend and understand of their meaning and the projection correctly of their status in the near future". This interactive and comprehensive training workshop provides key principle and concepts of situation awareness (SA) applied in human decision making control room operations in plant process that aims to prevent human error and improve plant safety. The 2 days training course provide a comprehensive set of practices and techniques required to improve situation awareness and reduce human errors that occurred in control room operation in plant process. This training and hand-on practical workshop is intentionally designed for those who responsible for or concerned with the critical decision making in control room operations control room operations in plant safety that aims to prevent operational error, increase plant safety level, and reduce plant accidents. This training workshop is targeted at various industries, not a specific one.


### Objectives

The 2 days interactive training workshop will enable you to learn how to

- Understand a key principles and concepts of situation awareness (SA) applied in control room operations in plant safety.
- Understand the human performance and limitations that impact vastly on situation awareness (SA).
- Identify the key contributing factors to loss of situation awareness (SA)
- Understand how to improve situation awareness.
- Identify the key contributing factors that impacts on situation awareness in control room operations.
- Develop situation awareness training applied for control room operations.
- Develop a design concept of situation awareness applied for human factor design in plant operations.
- Develop a situation awareness threats checklists approach to prevent causes of Situation Awareness errors in your control room operations.
- Develop a situation awareness improvement checklists to facilitate SA improvement in your control room operations.

### Course Outlines

1. The Concepts of Situation Awareness (SA) and How is important for complex decision making in process control operations
2. Situation Awareness Models
3. How to build situation awareness
4. Situation Awareness Errors
5. Contributing factors to Loss of Situation Awareness
6. Individual and Team Situation Awareness
7. Situation Awareness Improvement
8. Situation Awareness Training
9. Situation Awareness for Process Control Operations
10. Situation Awareness (SA) and SCADA
11. Situation Awareness Errors in SCADA (Safety Cases)
12. Factors cause Loss of Situation Awareness in Control Room

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## Situation Awareness for Control Room Operations in Plant Safety

- Human Performance Limitations
- Human-Machine Interface(HMI)
- Information Display
- Human-Machine Interface
- Control Systems
- Alarm Systems
- Communication
- Procedures
- Control Room Environment

13. Designing for Situation Awareness (SA) in control room operations
14. Situation Awareness threats Checklists
15. Situation Awareness improvement Checklists
16. Hand-on exercises
17. Practical Case Study

### **Who should attend**

Control Room Operators, Management executive, supervisor, safety engineer, risk manager, and all participants who are responsible for or concerned with the management and control of risks, loss and damaged in control room operations

### **Duration**


2 days

### **Key Points about This Course**

- You will learn how to understand the principles and concepts of situation awareness applied in control room operations.
- You will learn how to understand and build situation awareness in your operations
- You will learn how to understand a loss of situation awareness in your operations
- You will learn how to understand the impact of human performance and limitations on situation awareness.
- You will learn how to understand the factors contributing to loss of situation awareness in control room.
- You will learn how to improve situation awareness in control room operations
- You will learn how to develop effective situation awareness training applied in control room of plant process.
- You will learn how to understand and apply the concept of designing for Situation Awareness (SA) perspectives approach to human factor design in plant process.
- You will learn how to develop Situation Awareness threats checklists to avoid and prevent loss of situation awareness.
- You will learn how to develop Situation awareness improvement checklists to improve situation awareness and reduce situation awareness errors.

### **Learning Outcomes from this course**

- You can understand a key principles and concepts of situation awareness (SA) applied in control room operations in plant safety.
- You can understand the human performance and limitations that impact vastly on situation awareness (SA).
- You can identify the key contributing factors to loss of situation awareness (SA)
- You can understand how to improve situation awareness.
- You can identify the key contributing factors that impacts on situation awareness in control room operations.

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## **Situation Awareness for Control Room Operations in Plant Safety**

- You can develop situation awareness training applied for control room operations.
- You can develop a design concept of situation awareness applied for human factor design in plant operations.
- You can develop a situation awareness threats checklists approach to prevent causes of Situation Awareness errors in your control room operations.
- You can develop a situation awareness improvement checklists to facilitate SA improvement in your control room operations.