



Safety Case Services & Solutions



Yokogawa industrial expertise supports MHIs

Yokogawa is one of the top global leaders in the automation industry today. With extensive industry knowledge and advanced capabilities, Yokogawa is actively engaged in high-profile large-scale projects, delivering integrated process control and safety automation (ICSS) solution to a vast network of customers from oil, chemicals, natural gas, power, iron and steel, pulp and paper, pharmaceuticals, and food industries.

Our process safety consultancy and solutions aid clients in achieving and demonstrating compliance for SCR. Yokogawa offers solutions to expedite in the processes across the following areas:

- Operations Management
- Human Factors Automation
- SIS Lifecycle Management
- Fire & Gas Solutions
- Emergency Response Management

What does **Safety Case Regime (SCR)** imply for the Industries in Singapore?

With the new regulations by Singapore Ministry of Manpower, all Major Hazardous Installations (MHI) classified under the SCR are required to justify their safety case to the Major Hazards Department (MHD). This process ensures that the safety case meets the requirements of the new Workplace Safety and Health (WSH) regulations – to reduce plant risk level to ALARP (as low as reasonably practicable), while sustaining safety operational excellence.

MHIs are required to maintain the safety case as a living document throughout the entire plant lifecycle; from initial concept design, to daily operations and the eventual termination or decommissioning of the facility.

Yokogawa Safety Case Solutions

<p>Safety Case Management</p> <p>Monitor plant safety performance, control safety critical elements and maintain live documents</p>	<p>SIS Lifecycle Management</p> <p>Manage performance of safety instrumented functions for IEC 61508 / 61511 compliance</p>	<p>Emergency Response</p> <p>Automate process plant emergency response</p>
<p>Alarm Management</p> <p>Improve safety and efficiency by rationalizing and optimising process alarms</p>	<p>Incident Management</p> <p>Trigger ICSS and near-miss incident investigation, facilitate root cause analysis and lessons learnt</p>	<p>Safe Operations</p> <p>Maintain process operating conditions within safe design envelope</p>
<p>Change Management</p> <p>Evaluate and control facility design modifications and operations prior implementation</p>	<p>Human Factors Automation</p> <p>Prevent human failures by procedural automation of SOPs and startup/shutdown procedures</p>	<p>... and others</p> <ul style="list-style-type: none"> • SC gap analysis • Process safety consultancy • Training and competence management

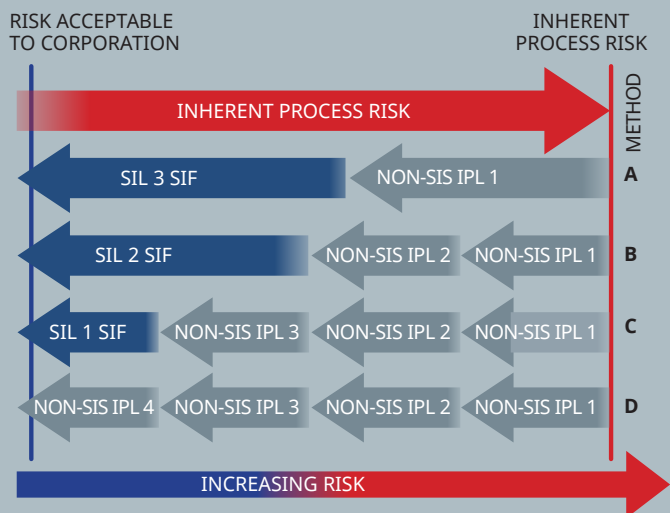
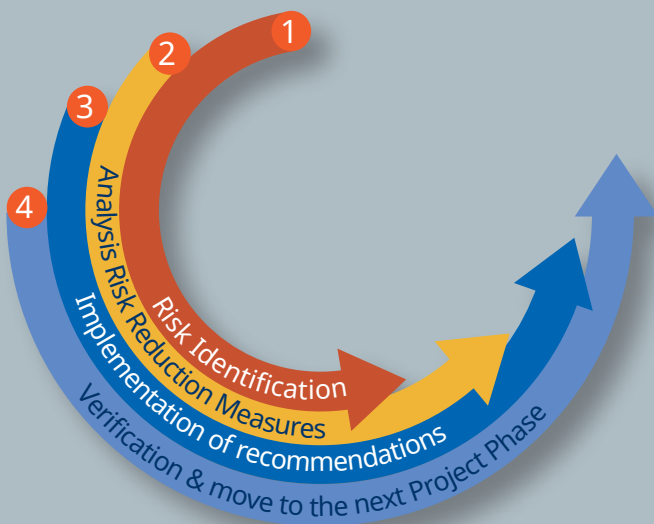
Yokogawa Safety Case Services

Our process safety team consolidates experts with vast industrial experiences from oil refineries, platforms, storage terminals, water industries and more.

Together with our customers, we strive to deliver rigorous process safety consultation to enable safe operations at all times.

Consultation services include:

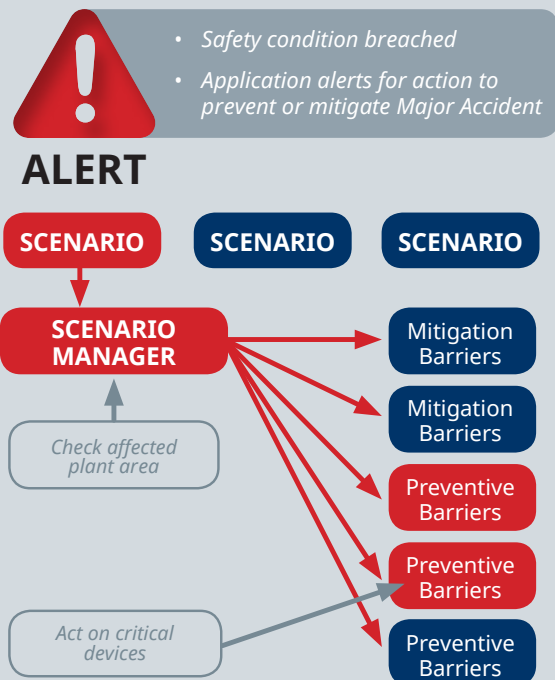
- HAZOP
- LOPA
- SIL Validation and Verification
- Singapore Safety Case Consultancy
- Safety Case Development Courses



Yokogawa Safety Case Dashboard

The smart Yokogawa Safety Case dashboard consolidates your plant safety and operational information in a user friendly outlook, supporting MHI users in the following aspects:

- Perform LIVE monitoring of plant safety & risk level
- Integrate Major Accident information and monitor Safety KPI
- Monitor status of key preventive and mitigation barriers
- Early detection on critical devices and user action before Major Accident occurs
- Reduce Major Accident response time



If a major hazard event has a frequency of occurrence once in a thousand years, there might be a small but finite chance that accidents may occur today.

The smart safety case dashboard provides real time ALARP measurements for Major Accident Scenarios (MAS) defined in the plant safety case and monitors the LIVE document status; giving you complete control of your plant safety at a glance.

Safety Case Regime Readiness Checklist

- | | | | |
|--|--|---|---|
| 1. Which SC phase does the company belong to? | <input type="checkbox"/> Phase 1
<input type="checkbox"/> Phase 2
<input type="checkbox"/> Phase 3 | 6. Does your safety case document identify obsolete design standards that may have been used for a new plant design? | <input type="checkbox"/> Yes
<input type="checkbox"/> No |
| 2. Are all the possible risks and hazards of a major accident documented in the safety case profile? | <input type="checkbox"/> Yes
<input type="checkbox"/> No | 7. Are human factors taken into consideration for design of equipment, workplace, operational workflow and maintenance processes? | <input type="checkbox"/> Yes
<input type="checkbox"/> No |
| 3. Are there any technical or operational measures in place to manage and control the mentioned risks and hazards above? | <input type="checkbox"/> Yes
<input type="checkbox"/> No | 8. Are there any automated MOC procedures established within your company? | <input type="checkbox"/> Yes
<input type="checkbox"/> No |
| 4. Is there a systematic process or a set of pre-established compliance documents in place to enable plant managers to identify and implement safety measures on-site? | <input type="checkbox"/> Yes
<input type="checkbox"/> No | 9. Have your company identified the main safety case KPIs? | <input type="checkbox"/> Yes
<input type="checkbox"/> No |
| 5. Are the PHA assessments, including HAZOP, QRA, SIL and SIF analysis compliant to the industry standard guidelines? | <input type="checkbox"/> Yes
<input type="checkbox"/> No | 10. Does your company have an automated system to demonstrate and manage SC for regulatory audits? | <input type="checkbox"/> Yes
<input type="checkbox"/> No |

To find out more about safety case audit preparation, contact us at inquiry@sg.yokogawa.com

YOKOGAWA ENGINEERING ASIA PTE. LTD.

5 Bedok South Road, Singapore 469270
Phone: (65)-6241-9933
Fax: (65)-6241-9919
Website: www.yokogawa.com/sg/solutions/solutions/safety-case-regime/

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