SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS  
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT

TSC Category: Health, Safety and Environment Management

TSC: Safe System of Work Development and Implementation

TSC Description: Develop Safe System of Work (SSoW) frameworks and implement practices to ensure a safe and reliable environment for operations, maintenance and contracting activities.

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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<tr>
<td></td>
<td>ECM-HSE-1003-1.1</td>
<td>ECM-HSE-2003-1.1</td>
<td>ECM-HSE-3003-1.1</td>
<td>ECM-HSE-4003-1.1</td>
<td>ECM-HSE-5003-1.1</td>
<td>ECM-HSE-6003-1.1</td>
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<td>Identify Safe System of Work (SSoW) practices in the planning, preparation and execution of work activities</td>
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<td>Apply Safe System of Work (SSoW) practices in the planning, preparation and execution of work activities</td>
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<td>Interpret Safe System of Work (SSoW) frameworks and practices to ensure effective implementation of SSoW during the conduct of work activities</td>
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<td>Establish Safe System of Work (SSoW) frameworks and practices in control of operations, maintenance, contractor and other work activities</td>
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<td>Evaluate Safety System of Work (SSoW) frameworks to ensure effective implementation for the control of operations, maintenance, contractor and other work activities</td>
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<td>Set direction of Safety System of Work (SSoW) to meet the organisation’s health, safety and environment objectives</td>
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Knowledge:

- SSoW policies, procedures and practices
- Principles of activity-based risk assessments
- Permit-to-Work systems
- Principles of isolations and de-isolations
- SSoW policies, standards, procedures and practices
- Principles of activity-based risk assessments, hazard identifications and risk control measures
- Permit-to-Work systems
- Permit documentation, formats and layouts
- Isolation and de-isolation processes and procedures
- Work completion and permit close-out procedures
- Methods of planning, preparation and execution of work
- SSoW policies, procedures and practices
- Workflows and processes of activity-based risk assessments, hazard identification and risk control measures
- Responsibility and accountability matrices pertaining to issuing and authorising permits for work and close-out activities
- Standards of isolation and de-isolation processes and procedures
- Methods of supervising and administering SSoW policies and procedures in the workplace
- Principles of Simultaneous Operations (SIMOPS) and possible impacts on risk assessments
- SSoW audit processes
- Workplace Safety and Health (WSH) Act and subsidiary regulations
- Singapore Standards and Codes of Practice
- Organisational WSH policies
- SSoW procedures and practices
- Principles and procedures of Permit-to-Work systems
- Principles and steps for conducting activity-based risk assessments
- Principles and steps for conducting Job Safety Analysis (JSA)
- Principles of Safe Operating Procedures and safe isolation procedures
- Process equipment and systems operating parameters and isolation procedures
- Principles and procedures for Log-Out-Tag-Out (LOTO)
- Workplace Safety and Health (WSH) Act and subsidiary regulations
- Singapore Standards and Codes of Practice
- Organisational WSH policies
- Best industry practices on WSH and SSoW frameworks
- Principles and scope of SSoW management and audits
- Risk management techniques
- Documentation control and management of the SSoW system
- SSoW workflows, roles and responsibilities, permit authorities and area authorities

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### Abilities

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<tr>
<th>Abilities</th>
<th>Methods of ensuring the effectiveness of SSoW activities and processes</th>
<th>Workflow and documentation control of the SSoW system</th>
<th>Review the development and implementation of SSoW frameworks in accordance with Singapore Standards, Codes of Practice and industry best practices</th>
<th>Endorse SSoW frameworks</th>
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</table>
| • Support the application of SSoW practices during the planning, preparation and execution of work activities        | • Apply SSoW processes and procedures  
• Identify risk level categorisation  
• Conduct activity-based risk assessments  
• Implement risk control measures  
• Carry out work area preparation  
• Prepare work permits  
• Participate in safe completion of work, sign-off and close-out | • Establish and implement SSoW frameworks and practices including Permit-to-Work systems, risk assessments, job safety analysis, safe operating procedures, safe isolation procedures and LOTO  
• Establish workflows and processes for SSoW practices  
• Maintain documentation control and management of the SSoW system  
• Support ongoing improvements to enhance SSoW practices | • Review workflows and processes, documentation control and management of the SSoW system  
• Recommend improvements to enhance SSoW frameworks and practices  
• Guide SSoW development and audit review processes | • Endorse SSoW frameworks                                                                 |
| • Contribute to activity-based risk assessments  
• Implement risk controls and measures  
• Support work area preparation  
• Support permit applications, work completion and close-out activities | | | | |