

**SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS
SKILLS MAP - SENIOR PROCESS SAFETY ENGINEER**

Sector	Energy and Chemicals			
Track	Production and Process Engineering			
Occupation	Engineer			
Job Role	Senior Process Safety Engineer			
Job Role Description	The Senior Process Safety Engineer provides technical advice and guidance on process safety-related activities. He/She leads the implementation of the Process Safety Management (PSM) framework in the organisation, and reviews plant safeguarding system requirements to ensure compliance with process safety standards. In addition, he provides technical input for the development and maintenance of the organisation's Major Hazard Installation (MHI) Safety Case.			
	The Senior Process Safety Engineer administers the Workplace Safety and Health (WSH) and Environmental Management Systems (EMS) by advising on the development and improvement of Safe System of Work (SSoW) frameworks, and by ensuring proper closure of process safety incident investigations and their notification to relevant authorities. He provides support and advice for asset integrity assurance and compliance, and leads process safety reviews during new projects. In addition, he contributes to staff capability development by coaching and mentoring junior staff in his team.			
	The Senior Process Safety Engineer works closely with the process engineering team and Health, Safety and Environment (HSE) department, and liaises with regulatory authorities for process safety matters. He is analytical, enjoys solving problems, and possesses good communication and interpersonal skills.			
Critical Work Functions and Key Tasks	Critical Work Functions		Key Tasks	
	Administer Workplace Safety and Health (WSH) and Environmental Management Systems (EMS)		Advise on the development and improvement of Safe System of Work (SSoW) frameworks	
			Comply with WSH and EMS systems	
			Review process safety incident investigations and ensure proper closure of investigations and notification to relevant authorities	
	Administer Process Safety Management (PSM) systems		Lead the implementation of PSM frameworks	
			Manage and review PSM performance data using tracking tools	
			Review plant safeguarding systems to ensure compliance with process safety standards	
			Review PSM frameworks for hazard identification, assessment of consequences and control of risks	
	Support process engineering projects		Support the development and maintenance of the technical section of the organisation's Major Hazard Installation (MHI) Safety Case	
			Lead technical support on process troubleshooting and optimisation from the process safety perspective	
			Review technical justification bases for projects from the process safety perspective	
			Support projects during plant commissioning and turnaround activities	
	Manage asset integrity		Use emerging technologies for process safety solutioning with reference to case studies and safety standards	
		Review asset integrity risk and reliability analyses and improvements		
Administer staff and organisational development		Support and advise on asset integrity assurance and compliance		
		Adopt technologies to support virtual collaboration in remote locations		
		Coach and mentor staff		
		Manage team performance to achieve organisational goals		
		Supervise process safety-related continuous improvement projects		
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Change Management	Level 4	Sense Making	Advanced
	Commissioning and Start-Up Management	Level 4	Problem Solving	Advanced
	Continuing Professional Development Management	Level 4	Lifelong Learning	Advanced
	Continuous Improvement Management	Level 4	Computational Thinking	Intermediate
	Data Analytics System Design	Level 3	Decision Making	Intermediate
	Data and Statistical Analytics	Level 4		
	Engineering Drawing Interpretation and Management	Level 5		
	Engineering Management of Change	Level 4		
	Engineering Project Management	Level 4		
	Engineering Safety Standards Interpretation	Level 4		
	Environmental Management System Framework Development and Implementation	Level 3		
	Front-End Engineering Design Management	Level 4		
	Internet of Things Management	Level 3		
	Major Hazard Installation Safety Case Management	Level 5		

Skills & Competencies	Operations Reporting Protocol Application	Level 4	
	Process Control	Level 4	
	Process Operations Troubleshooting	Level 5	
	Process Optimisation	Level 5	
	Process Engineering Design	Level 5	
	Process Plant and Equipment Integrity Management	Level 5	
	Process Safety Management Framework Development and Implementation	Level 4	
	Robotic and Automation Technology Application	Level 4	
	Safe System of Work Development and Implementation	Level 5	
	Safety Integrity Levels Management	Level 4	
	Technical Presentation	Level 5	
	Technical Report Writing	Level 4	
	Training, Coaching and Assessment Management	Level 3	
	Workplace Safety and Health Framework Development and Implementation	Level 3	
	Workplace Safety and Health Hazard Identification and Risk Control Management	Level 3	
Programme Listing	For a list of Training Programmes available for the Energy and Chemicals sector, please visit: www.skillsfuture.sg/skills-framework/energyandchemicals		

The information contained in this document serves as a guide.