

Title	Demonstrate knowledge of Hazard and Operability (HAZOP) studies in the workplace		
Level	4	Credits	6

Purpose	<p>This unit standard is for people who are participating in HAZOP studies in the workplace.</p> <p>People credited with this unit standard are able to demonstrate knowledge of: the features and use of HAZOP studies; how HAZOP studies are applied; hazard analysis; and how decision making resulting from HAZOP studies and hazard analysis is applied, in the workplace.</p>
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Classification	Occupational Health and Safety > Occupational Health and Safety Practice
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Available grade	Achieved
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Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to – Health and Safety at Work Act 2015 (HSWA) and relevant regulations; Substances and New Organisms Act 1996 (HSNO Act); Electricity (Safety) Regulations 2010.
- 2 Definitions
 - Hazard* – a situation that poses a level of threat to life, health, property or environment.
 - Organisational requirements* – instructions to staff on policies and procedures which are documented in memo, electronic or manual format and are available in the workplace.
 - Risk* – the potential that a chosen action or activity (including the choice of inaction) will lead to a loss (an undesirable outcome).

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the features and use of HAZOP studies in the workplace.

Performance criteria

- 1.1 The terms ‘hazard’ and ‘risk’ are explained in terms of their differences.

- 1.2 The prime purpose of a HAZOP study is explained in relation to the risk management process.
- Range purpose may include but is not limited to – hazard identification, risk estimation, evaluation and acceptance, insurance, modification.
- 1.3 The characteristics and focuses of a HAZOP study are outlined in terms of their impact on the workplace.
- Range characteristics include but are not limited to – systematic, team, line by line, guide-words;
focuses include but are not limited to – deviations from design intent, undesirable effects for safety, operability, the environment.
- 1.4 The difference between a HAZOP study and a design review is explained in terms of purpose and use.
- 1.5 The situations where a HAZOP study can be used are described in terms of the relevance to the workplace.
- Range situations include but are not limited to – new projects, modifications, existing plants, incident investigation.
- 1.6 Legislative requirements that apply to a HAZOP study are described in terms of their impact on the workplace.
- Range requirements include but are not limited to – HSWA; HSNO requirements for location, stationary tank and approved handler certification.

Outcome 2

Demonstrate knowledge of how HAZOP studies are applied in the workplace.

Performance criteria

- 2.1 The roles within and composition of a HAZOP team are explained in accordance with organisational requirements.
- Range roles include but are not limited to – leader, scribe, design engineer, operational and maintenance representatives, other specialists.
- 2.2 The steps in a HAZOP study and the process for applying them in the workplace are outlined in accordance with organisational requirements.
- Range steps include but are not limited to – overview, boundaries or scope, line or node selection, guide-words.

- 2.3 The application of guide-words is explained in terms of their use in the HAZOP process.
- Range guide-words include but are not limited to – cause, consequence, safeguards, action.
- 2.4 The responsibilities of a team member in a HAZOP study are explained in terms of organisational requirements.
- Range responsibilities include but are not limited to – preparation, application of experience, focus on system failure, active participation, recording verification.

Outcome 3

Demonstrate knowledge of hazard analysis in the workplace.

Performance criteria

- 3.1 The purpose of hazard analysis is explained in terms of the overall process of risk management.
- 3.2 Hazard analysis procedures are outlined in terms of the key steps leading to decision making in the workplace.
- Range procedures include but are not limited to – methods (qualitative, quantitative), estimation of consequences for personnel or public safety, financial loss or environmental impact, estimation of likelihood, assessment against criteria, decision options.
- 3.3 The tools used in hazard analysis procedures are described in accordance with organisational requirements.
- Range tools include but are not limited to – models, fault tree, event tree.

Outcome 4

Demonstrate knowledge of how decision making that results from HAZOP studies and hazard analysis is applied in the workplace.

Performance criteria

- 4.1 Decision making from hazard analysis procedures is explained in terms of key factors and how decisions will vary depending on the type of hazard in accordance with organisational requirements.
- Range key factors include but are not limited to – safety, environment, financial loss, acceptance, insurance, design change, practicality.
- 4.2 Decision making from HAZOP studies is explained in terms of reducing identified risk by elimination, isolation and minimisation of hazards in accordance with organisational requirements.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 May 2002	31 December 2013
Revision	2	16 May 2005	31 December 2013
Review	3	25 May 2007	31 December 2013
Review	4	17 June 2011	N/A
Rollover and Revision	5	22 May 2014	N/A
Rollover and Revision	6	22 August 2019	N/A
Rollover and Revision	7	25 March 2021	N/A

Consent and Moderation Requirements (CMR) reference	0121
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.