CIVIL INFRASTRUCTURE HEALTH, SAFETY, AND ENVIRONMENT
Describe protection of health, safety and environment in the civil infrastructure industry

level: 3
credit: 7
planned review date: October 2006
sub-field: Civil Works and Services

purpose: This unit standard is a component of the industry self-regulation system for operations in the civil infrastructure industry.

People credited with this unit standard are able to: describe civil infrastructure worksite hazards and their controls; demonstrate knowledge of safe practice for civil infrastructure worksites; describe best practice procedures in the event of unsafe work conditions and actions; and describe how the environment is protected in the civil infrastructure industry.

entry information: Open.

accreditation option: Evaluation of documentation and visit by NZQA and industry.

moderation option: A centrally established and directed national moderation system has been set up by Infrastructure ITO.

special notes: 1 This unit standard requires a general understanding of hazards common to the civil infrastructure industry and the general principles of controlling them.

2 Assessment against this unit standard may take place in a workplace and/or provider environment.
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3 Definitions
Civil infrastructure worksite refers to a site with activity relating to any of: the construction and maintenance of infrastructure assets such as road, rail, port, airport, and utilities; demolition; bulk earthworks; quarrying; asphalt production; and bitumen storage and application.


MSDS means material safety data sheet.

Site safety plan means the comprehensive plan dealing with issues relating to health, safety, and the environment. This plan may be generic or site specific and includes an emergency plan.

Work zone means the area immediately around a specific work activity. There may be more than one work zone at a worksite.
Elements and Performance Criteria

element 1

Describe civil infrastructure worksite hazards and their controls.

Range: methods of control comply with the hierarchy of eliminate, isolate, and minimise.

performance criteria

1.1 Hazards associated with climate are identified and methods of control are explained in accordance with industry best practice.

Range: includes but is not limited to – sun, wind, high temperature, low temperature, rain, dust, insects, changing light conditions.

1.2 Hazards associated with entering work zones are identified and methods of control are explained in accordance with industry best practice.

1.3 Hazards associated with working among moving plant, equipment, and vehicles are identified and methods of control are explained in accordance with industry best practice.

Range: on road, off road.

1.4 Hazards associated with using and storing specific substances are identified, and methods of control are described in accordance with industry best practice.

Range: may include but is not limited to – soils, fuels, lubricants, adhesives, burnt lime, cement, paints, hot bitumen, emulsions, agrochemicals, bacteria, explosives; evidence is required of at least four substances.

1.5 Hazards associated with different ground surfaces and locations are identified and methods of control are described in accordance with industry best practice.

Range: ground surfaces include but are not limited to – sloping, wet, slippery, unstable; locations - at height, at depth, confined.
1.6 Hazards associated with working near utility services are identified and methods of control are described in accordance with industry best practice.

Range: power, gas, communication services, water supply, drainage, high pressure/hot water, steam.

1.7 Hazards associated with working near structures are identified and methods of control are described in accordance with industry best practice.

Range: includes but is not limited to – pylons, buildings, poles.

1.8 Hazards of working with auxiliary equipment and tools are identified and methods of control are described in accordance with industry best practice.

Range: equipment and tools include but are not limited to – electrically powered, pneumatically powered, hydraulically powered, powder powered, cables, hoses.

1.9 Hazards of manual handling and lifting are identified and methods of control are described in accordance with industry best practice.

1.10 Hazards of mounting and dismounting plant and vehicles are identified and methods of control are described in accordance with industry best practice.

1.11 Hazards associated with specific work activities are identified and methods of control are described in general terms in accordance with industry best practice.

Range: activities may include but are not limited to – excavating, trenching, concreting, slinging, loading and unloading, working at height; evidence is required of at least three activities.

1.12 Hazards associated with confined spaces, chemicals, and unsafe atmospheres are identified and methods of control are described in accordance with industry best practice.

Range: atmospheres – toxic, explosive, enclosed.
1.13 Personal factors that affect safety are described in terms of controlling their impact on the worksite.

Range: includes but is not limited to – poor nutrition, lack of sleep, dehydration, drugs, alcohol, poor hygiene.

element 2

Demonstrate knowledge of safe practice for civil infrastructure worksites.

Range: safe practice as defined in industry codes of practice, guidelines, and manuals.

performance criteria

2.1 Personal protective equipment for work activities is described in terms of type, level of protection, use, and condition.

Range: at least two different work activities.

2.2 Safe use of different types of civil infrastructure plant and equipment is described in accordance with industry best practice.

Range: types may include – small, large, stationary, mobile; includes but is not limited to – pre use inspection, routine maintenance, appropriateness for use, training, parking/storage, fuelling; evidence is required of two types.

2.3 Protective devices on plant and equipment are described in accordance with industry best practice.

Range: devices include but are not limited to – operator protective structures, safety chains, safety lockout, placarding.

2.4 Types and use of worksite protective devices are described in accordance with industry best practice.

Range: includes but is not limited to – signage, barriers, cones.
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2.5 Safety and emergency equipment for worksites is described in terms of legislative requirements and industry best practice.

2.6 Safe practice is described in terms of information provided at worksites.

Range: site safety plan, MSDS;
may include but is not limited to – bitumen burns card.

2.7 Requirements for worksite tidiness and cleanliness are described in accordance with industry best practice.

2.8 First aid requirements are described in accordance with legislative requirements and industry best practice.

element 3
Describe best practice procedures in the event of unsafe work conditions and actions.

performance criteria

3.1 Immediate response required on finding unsafe equipment is stated and explained in accordance with industry best practice.

3.2 Lock out/tag out procedures are described in accordance with industry best practice.

3.3 Reporting of unsafe plant and equipment is described in accordance with industry best practice.

3.4 Response to finding unsafe work practice is described in accordance with industry best practice.
element 4

Describe how the environment is protected in the civil infrastructure industry.

performance criteria

4.1 Runoff and sediment control is described in accordance with industry best practice.

4.2 Dust control is described in accordance with industry best practice.

4.3 Vibration control is described in accordance with industry best practice.

4.4 Noise mitigation is described in accordance with industry best practice.

4.5 Containment and cleanup of spillage are described in accordance with industry best practice.

   Range: petrol/diesel, oil, one other substance.

4.6 Worksite waste disposal is described in accordance with industry best practice.

   Range: contaminated material, general waste, hazardous waste.

4.7 Protection of heritage and conservation sites is described in accordance with industry best practice.

Comments on this unit standard

Please contact Infrastructure ITO askus@infratrain.co.nz if you wish to suggest changes to the content of this unit standard.

Please Note

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.
Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0101 which can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.