Australian Government

Department of Education, Employment and Workplace Relations

MSS027008A Coordinate noise management activities

Release: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

MSS027008A Coordinate noise management activities

Modification History

Not applicable.

Unit Descriptor

This unit of competency covers the ability to oversee the day-to-day noise management activities for a site, project or ongoing program. Personnel are required to interpret and implement a noise monitoring plan, organise specified monitoring activities, verify the quality of monitoring data and investigate and rectify unexpected or unacceptable results, monitor compliance with relevant noise standards/limits, and provide reports. They work under the supervision of an environmental scientist or engineer, site manager or enterprise environmental manager.

Application of the Unit

This unit of competency is applicable to environmental site coordinators, environmental managers and senior environmental officers working in a range of industry sectors, such as:

- environmental services involved with sampling, monitoring and/or control of noise
- environmental compliance, auditing and inspection.

Note that the term ‘manager’ is used to refer to management of a function, project and/or program and does not necessarily imply line management.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MSS025008A Monitor and evaluate noise

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

1	Confirm scope of noise management activities with supervisor	1.1	Review legislative, regulatory and licensing requirements and approvals that apply to site/project/program
		1.2	Review current noise monitoring plan, including objectives, known issues, specified management activities and any required changes
		1.3	Review previous noise monitoring records and reports, if available
		1.4	Confirm that noise monitoring sites, sampling and measurement methods, instrumentation and enterprise procedures are in accordance with relevant standards and guidelines
		1.5	Clarify own scope of responsibility/authority for achieving specific outcomes and the roles of other key personnel
		1.6	Identify resources available to conduct noise management activities
2	Organise noise management activities	2.1	Develop a consolidated schedule to ensure all activities can be conducted efficiently with the available resources
		2.2	Develop checklists/clear work instructions to enable personnel to perform assigned tasks efficiently and with minimal errors
		2.3	Ensure that personnel who conduct monitoring are competent to undertake their assigned tasks
		2.4	Ensure noise monitoring equipment is regularly calibrated and maintained and that adequate stocks of consumables are available
		2.5	Conduct, or arrange for, regular site inspections to monitor the effectiveness of noise control/reduction actions (if relevant to

			site/project/program)
		2.6	Advise relevant personnel when specified noise control/reduction actions are not being implemented effectively (if relevant to site/project/program)
		2.7	Conduct, or arrange for, additional monitoring/inspections after atypical events, legitimate complaints or government requests
3	Verify noise data	3.1	Identify relevant job instructions, data and technical records in enterprise information management system
		3.2	Confirm that technical records provide sufficient information to ensure traceability for the monitoring activities involved
		3.3	Compare monitoring data with expected values and identify any outliers
		3.4	Inspect data records to identify any gaps and to check the integrity of data entry, transfers, alterations and calculations
		3.5	Notify manager when data is incomplete, or contains significant errors, and clarify what action to take
4	Determine if results are acceptable and within expectation	4.1	Compare results with expected values, relevant standards and/or statutory limits and identify any significant differences or trends
		4.2	Check the reliability of results by examining data/results from repeat measurements or other monitoring sites
		4.3	Assess the significance of any documented observations of atypical environmental or meteorological conditions
		4.4	Check that all adjusted data and calculations are free from error
		4.5	Check that estimations of uncertainty are

			reasonable and consistent with the relevant standard, if relevant
		4.6	Report results that meet enterprise data quality standards and are consistent with expectations
5	Investigate/rectify unexpected or unacceptable results	5.1	Examine records of pre-use checks and calibration performance to ensure that the monitoring instruments used meet specifications and enterprise requirements
		5.2	Establish whether human, environmental and/or meteorological factors could have affected the reliability of results
		5.3	Check for obvious errors in measurement positions and/or techniques
		5.4	Report unexpected results that meet enterprise data quality standards
		5.5	Identify possible root causes of unacceptable results and appropriate preventative/corrective actions
		5.6	Report investigation outcomes and recommendations for improvements in accordance with enterprise procedures
		5.7	Seek manager's advice when challenges are beyond own technical competence or when input from environmental specialists may be required
6	Keep management informed about noise performance	6.1	Provide regular reports about noise performance including instances of potential/actual non-conformance and incidents and the actions taken in each case
		6.2	Report opportunities and recommendations for improvements in noise monitoring or management in accordance with enterprise procedures

7	Maintain noise records	7.1	Ensure all noise records are legible, accurate and satisfy enterprise/legislative requirements
		7.2	Store noise records to enable easy access and review by authorised personnel in accordance with enterprise procedures
		7.3	Regularly review noise records to identify any significant trends and impacts
		7.4	Identify any problems with the maintenance and security of noise records and resolve them promptly

Required Skills and Knowledge

Required skills
Required skills include: • accessing, interpreting and applying relevant legislative/regulatory requirements, standards, codes, guidelines and equipment manuals • explaining relevant noise standards and/or statutory limits, monitoring methods, equipment operating procedures and enterprise noise control/reduction actions clearly and concisely • verifying the accuracy and completeness of data, results and technical records • using statistical tests (e.g. to determine data acceptability, estimate uncertainties, examine trends and infer basic relationships) • recognising unexpected or unacceptable data and results • analysing records of monitoring activities, including pre-use checks and calibration, to identify potential causes of unacceptable/unexpected data and results • recommending appropriate preventative/corrective actions to control potential/actual non-conformances or incidents • solving complex technical problems, including identifying instrument faults • responding effectively to complaints and requests for information • seeking advice when issues/problems are beyond scope of competence/responsibility • maintaining records and providing accurate, complete and timely reports • working safely and monitoring the safety of others
Required knowledge
Required knowledge includes: • terminology, concepts and principles associated with sound, noise measurement, noise control and reduction • legislative/regulatory requirements, standards, codes and guidelines dealing with environmental and/or occupational noise • noise measurement parameters and associated measurement methods (relevant to job role) • enterprise noise monitoring plans, procedures (and noise issues, noise control devices and noise reduction actions for site/project, if relevant) • detailed scientific and technical knowledge of the monitoring methods and instrumentation used to generate the noise data, including calibration, simple fault-finding and troubleshooting • expected values for noise parameters, relevant standards, and statutory noise limits or similar • problem-solving techniques and cause analysis • impacts of common human, environmental and/or meteorological factors on data quality • sources of interference, uncertainty, limitations of methods and sources of variability

- enterprise procedures for identifying/assessing environmental risks/impacts, responding to complaints and environmental incidents, and record management and reporting noise data
- interpersonal communication, negotiation and conflict resolution techniques
- relevant health, safety and workplace emergency response procedures

Evidence Guide

Overview of assessment	Competency must be demonstrated in the ability to perform consistently at the required standard.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently apply the skills covered in this unit of competency in new and different situations and contexts. Critical aspects of assessment and evidence include: • planning and implementing the day-to-day noise management activities for a site, project or ongoing program • explaining noise monitoring plans, monitoring methods operation of monitoring instruments and noise control/reduction strategies clearly and accurately • verifying the accuracy and completeness of noise data, results and technical records • investigating unexpected or unacceptable noise results in a logical and efficient manner • reporting noise results, performance and opportunities for improvements in accordance with enterprise procedures • maintaining noise records in accordance with legislative/licensing/enterprise requirements.
Context of and specific resources for assessment	This unit of competency is to be assessed in the workplace or a simulated workplace environment. Assessment should emphasise a workplace context and procedures found in the candidate's workplace. This unit of competency may be assessed with: • *MSS027011A Select, commission and maintain environmental monitoring instruments.* The competencies covered by this unit would be demonstrated by an individual working alone or as part

	of a team. Resources may include: • site/project/program history • relevant legislation, codes, standards, enterprise environmental management policies, plans, actions, procedures, checklists and equipment manuals • noise data sets, records and reports, and noise control/reduction strategies • monitoring methods and description of monitoring set-up, access to monitoring instruments • computer and relevant software or enterprise information management system.
Method of assessment	The following assessment methods are suggested: • review of noise data files, results and records verified by the candidate • feedback from managers and site personnel regarding the candidate's ability to safely coordinate day-to-day noise monitoring activities • review of reports and recommended improvements to noise monitoring or noise control/reduction prepared by the candidate • questions to assess understanding of procedures governing the validation of data; acceptability of data/results; sources of noise data variability, interferences and uncertainty; and relevant preventative or corrective actions • analysis of case studies/reports of relevant noise management issues and incidents • observation of the candidate providing information and/or instruction to other personnel about noise monitoring and/or control and reduction strategies. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work-like environment.

Guidance information for assessment	

Range Statement

Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Legislation, standards, codes, procedures and/or enterprise requirements	Legislation, standards, codes, procedures and/or enterprise requirements may include: • federal legislation, such as: • Environment Protection and Biodiversity Conservation Act 1999 • state/territory government legislation and regulations and local government by-laws, policies, and plans dealing with: • land use, acquisition, planning and protection • environmental protection • occupational health and safety (OHS) • Australian and international standards, such as: • AS 1055.1:1997 Acoustics - Description and measurement of environmental noise -General procedures • AS 1055.2:1997 Acoustics - Description and measurement of environmental noise - Application to specific situations • AS 1055.3:1997 Acoustics - Description and measurement of environmental noise -Acquisition of data pertinent to land use • AS IEC 61672.1:2004 Electroacoustics - Sound level meters - Specifications • AS IEC 61672.2 Electroacoustics - Sound level meters - Pattern evaluation tests • AS IEC 60942:2004 Electroacoustics - Sound calibration • Environmental Protection Authority (EPA) or government departmental guidelines and manuals, such as: • Noise Measurement Manual (QLD EPA) • A Guide to Measurement and Analysis of Noise (VIC EPA) • Noise Guide for Local Government (NSW)

	• equipment manuals and warranties, supplier catalogue and handbooks • government policy (e.g. sustainable development and impact assessment) • OHS national standards and codes of practice • site specific requirements • specific environmental standards
Noise management activities	Noise management activities may include: • assessing compliance with a statutory condition, such as a licence • investigation of a noise complaint • noise impact assessment studies • long-term monitoring programs • occupational hygiene monitoring • noise surveys • assessing effectiveness of noise control devices and reduction measures
Principles and concepts associated with noise measurement	Principles and concepts associated with noise measurement may include: • noise terminology: • sound and noise, • frequency, pitch and wavelength • sound power and acoustic energy • sound pressure and sound pressure level • sound intensity • noise measurement units (dBA and others) • frequency weighting curves • adding and subtracting sound levels • physiology of hearing • perception of noise (e.g. ‘offensive’ and ‘intrusive’ noise) • sources of noise • typical noise levels • types of noise: • continuous • intermittent • impulsive • point sources and line sources
Noise measurements and surveys	Noise measurements and surveys may include: • techniques for conducting sound and noise level measurements, such as:

	• sound power and sound pressure level measurements • frequency analysis and weighting networks (including at least A and Lin) • techniques for measuring different noise types, including steady noise, discretely varying noise, impulsive noise, industrial, road, traffic, rail traffic and air traffic • background noise level (L_{A90}) • day and night sound levels (L_{DN}) • measuring noise exposure, including equivalent continuous sound level (L_{eq}) • time weighted exposure measurement (L_{AeqT}) • common errors in sound level measurement, including mishandling of equipment, wind, humidity, temperature, reflected and absorbed sound and background noise • effects of meteorological conditions on noise • effects of topography and built structures on noise • data processing techniques, such as: • calculation of combined sound levels using graphical and mathematical equation techniques • background noise calculations • statistical analysis, including L_{Aeq}, L_{A10}, L_{A50}, and L_{A90} • characterisation of noise by octave band analysis • calculation of individual noise exposure • noise mapping • noise rating curves • sound attenuation with distance and mathematical calculation of associated quantities • using a wide range of instruments, instrument functions and displays, such as: • sampling rate • optimum level range, sensitivity and self-generated noise • measurement time intervals, integration and averaging • response rates for sound meters, including fast, slow, impulse and peak • hold features • overload and under-range indications • threshold levels • data transfer and interfacing • calibration and reference checks of sound level meters, including both electrical and acoustic

Noise monitoring instruments and ancillary equipment	Noise monitoring instruments and ancillary equipment may include: • type 1 and type 2 portable sound level meters • integrating and non-integrating sound level meters • noise dose meters • sound level calibrators • octave analysers • statistical analysers, data loggers and recorders • telemetry equipment • sound monitoring stations • microphones • wind shields
Additional resources and equipment	**Additional resources and equipment** may include: • meteorological instruments, such as: • thermometers • hygrometers • barometers • anemometers • digital cameras • global positioning system (GPS) equipment • site plans, maps and aerial photographs • noise measurement and survey forms • personal protective equipment
Meteorological measurements	**Meteorological measurements** may include: • temperature • relative humidity • barometric pressure • wind speed and direction
Noise control/reduction actions	Noise control/reduction actions will vary greatly with the type of site and industrial processes involved and may include: • (re)design of work practices to minimise noise emissions, such as: • increase distance between noise generator and sensitive receiver • re-orient equipment to direct noise away from sensitive area • schedule operations so that noisy equipment is used separately rather than concurrently • use ‘quiet’ work practices (e.g. requiring trucks to

	turn off rather than idling for long periods) • substitute noisy equipment for quieter equipment (e.g. improved fan design, vibrating pile drivers and hydraulic crushers) • install specific noise reduction devices, such as equipment silencers and mufflers, noise barriers and enclosures, and installation of sound insulation • consult with nearby receivers, especially if 'one-off' or rare noise generating activities are to be conducted outside standard hours
OHS and environmental management requirements	OHS and environmental management requirements: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of field work and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Environmental

Custom Content Section

Not applicable.