**Audit Checklist for**

**Management of Overhead Powerlines on Mines**

**August 2005**

**NSW Department of Primary Industries**

**516 High Street, MAILAND NSW 2320**



INTRODUCTION

The NSW Department of Primary Industries - Mine Safety has the responsibility of promoting high standards of safety within the NSW mining industry and ensuring compliance with legislation. This requires mines to manage their activities in such a manner as to identify and assess risk to the safety and health of persons at their mine and to deal with those risks on a priority basis.

The location of overhead powerlines on mine site provides an ever present risk of vehicles and equipment coming into contact with them and for persons being electrocuted and injured. Overhead powerlines can also create bush fires when lines clash or vegetation comes into contact with the lines. In order to prevent such occurrences, all mines must ensure that all hazards associated with overhead powerlines on the mine sites are identified and that adequate controls and preventive measures are in place to ensure contact, injury and fires are prevented.

To achieve this outcome the department has developed this Audit Checklist for Management of Overhead Powerlines tool for use by Mine Safety Operations and industry to assess the adequacy of overhead powerline management on mine sites.

ABOUT THE MANAGEMENT OF OVERHEAD POWERLINES - AUDIT CHECKLIST

1. The Audit Checklist for Management of Overhead Powerlines has been designed as a tool to assist auditors conducting audits of the management systems at Metalliferous and Extractive mine sites in NSW.
2. The checklist can be used to identify the current level of performance in the management of overhead powerlines at a mine sites through
* the assessment of compliance with the relevant legislative requirements of the Mines Inspection Act 1901 and General Rule 2000 – including compliance with the Australian Standards associated with electrical installations as per General Rule clause 68 and reference to the Minerals Industry Safety Handbook
* the evaluation of the effectiveness of the current management system in place at the mine for overhead powerlines.
* identify strengths and weaknesses
* provide the auditee with an opportunity to improve the management system in place at the mine for overhead powerlines.
1. The checklist has a number of questions that may be asked by the auditor to determine the extent to which the audit criteria are fulfilled. The notes in Italics below each question are areas that the auditor should review and consider to verify the responses provided by the auditee.
2. The three columns headed **Doc, Int and Obs** refer to Documents, Interview and Observations respectively. A tick should be entered in the applicable column that supports the type of evidence supplied during the audit process ie if the evidence is obtained during an interview then the **Int** column should be ticked to show that the evidence obtained was obtained by interview.
3. The column headed **Audit Observations – Comments** is to be used by the auditor to record the audit results and evidence obtained during the audit process and to assist when writing up the audit report. This can include records, statements of fact, photographs or other information, which are relevant to the audit criteria and are verifiable. An audit notebook may also be used to record the audit results and evidence.

DISCLAIMER

The compilation of information contained in this document relies upon material and data derived from a number of third party sources and is intended as a guide only in devising risk and safety management systems for the working of mines and is not designed to replace or be used instead of an appropriately designed safety management plan for each individual mine. Users should rely on their own advice, skills and experience in applying risk and safety management systems in individual workplaces.

Use of this document does not relieve the user (or a person on whose behalf it is used) of any obligation or duty that might arise under any legislation (including the Occupational Health & Safety Act 2000, any other Act containing requirements relating to mine safety and any regulations and rules under those Acts) covering the activities to which this document has been or is to be applied.

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Users should always verify historical material by making and relying upon their own separate inquiries prior to making any important decisions or taking any action on the basis of this information.

| **No.** | **Evidence to be obtained to validate the implementation of a Management System for Overhead Powerlines**  | **Doc** | **Int** | **Obs**  | **Audit Observations - Comments** |
| --- | --- | --- | --- | --- | --- |
|  | Provide a plan of the site that shows the location of all OHL’s with their voltage, ownership and points for emergency isolation (if available).*Check:** *ownership – who’s responsible for maintenance of the poles and for isolating power should contact be made*
 |       |       |       |       |
|  | Provide details of survey measurements of the height of the OHL’s above road or ground level in all areas along the length of the lines where traffic or vehicles may pass. *Check:** *clearance heights - should be shown on site plan of the OHL’s.*
 |       |       |       |       |
|  | Demonstrate that a risk assessment has been carried out that identifies all possible activities whereby equipment may make contact with overhead powerlines, power poles and transformers.*Check for the following:* * *risk assessments - to MDG 1010 & AS 4360 standard*
* *competent persons involved in RA*

*Consider:** *Identification of possible activities*
* *The fully extendable height of all equipment on site or to be brought on site is identified and measured*
* *Assessment of risks*
* *Use of hierarchy of controls*
* *Implementation of controls. These should include:*
	+ - *restricted access zones with an entry permit system*
		- *barriers to pre vent collision with poles & transformers.*
		- *specified clearances from OHL’s (determined by a competent electrical engineer).*
 |       |       |       |       |
|  | Demonstrate that an OHL Management Plan has been prepared from the results of a risk assessment.*Check for the following** *life cycle approach – design to initiation & review*

*This may include:** *Traffic management plan*
* *Plan for use of specific equipment not used on a day basis eg. cranes*
* *Permit entry zones for travel under certain OHL’s*
* *Permit entry zones for operating equipment (especially equipment that can lift or dump) within 10 metres of OHL’s.*
* *No dump areas under OHL’s or within 10 metres.*
* *No storage area under OHL’s or within 10 metres.*
* *Maintenance plan for power poles – to ensure regular inspection*
* *Emergency Response Plan – to address such possible occurrences as: lines down, equipment into poles and lines, fires in vicinity of energised lines.*
 |       |       |       |       |
|  | Demonstrate maintenance of competences for persons with respect to the issues associated with overhead powerlines on site?*Check for the following:** *Training records and/or formal qualifications*
* *Delegation of responsibilities*
 |       |       |       |       |
|  | Demonstrate that records are kept of all matters relating to the management of overhead powerlines?*Check for the following:** *Amendments to site plan of overhead powerline location and voltages, if any changes are made.*
* *Incident/accident reports of any matters involving overhead powerlines*
* *Inspection reports of overhead powerline matters ie. cutting grass near lines and poles, tree maintenance*
* *Inspections of overhead powerlines by owning authority*
* *Record of maintenance activities*
 |       |       |       |       |
|  | Demonstrate that overhead powerline management requirements are reviewed and audited regularly to ensure that they are current, up to date and address any relevant issues at the mine.*Check for the following:** *document control procedures*
* *latest versions, authorised & in use*
* *audit reports, SWP’s*
 |       |       |       |       |
|  | Provide evidence that a current copy of relevant legislation, Australian Standards and codes are readily accessible at the mine.*Legislation requirements may include the following (as per Clause 38 of the General Rule):** *The Mines Inspection Act 1901*
* *The Mines Inspection General Rule 2000*
* *Occupational Health and Safety Act 2000*
* *Minerals Industry Safety Handbook*
* *AS 3007.1 – 1987Electrical Installations –Surface mines and associated processing plant – Scope and definition*
* *AS 3007.2 – 1987 Electrical installations – Surface mines and associated processing plant – General protection requirements, and*
* *AS 3007.3 – 1987 Electrical installations – Surface mines and associated processing plant – General requirements for equipment and ancillaries, and*
* *AS 3007.4 – 1987 Electrical installations – Surface mines and associated processing plant – Additional requirements for specific applications, and*
* *AS 3007.5 – 1987 Electrical installations – Surface mines and associated processing plant – operating requirements, and*
* *AS 3000: 2000 Electrical installations (known as the Australian/ New Zealand Wiring Rules)*

*Note: AS3007 has been revised and republished in 2004* |       |       |       |       |
|  | Demonstrate that emergency procedures and equipment are available for any possible emergency involving an overhead powerline, power pole or transformer station.*This may include:** *emergency procedures*
* *fire fighting and rescue equipment*
* *liaison with power supply authority and owners of overhead powerlines*
* *liaison with outside emergency agencies*
* *electrical shock victim management*
 |       |       |       |       |
|  | Provide evidence that all overhead powerlines, poles and transformers are kept in a sound condition and are maintained and tested to confirm to Australian Standard requirements.*Check for the following** *Maintenance and inspection records*
* *Competent repairers, testing & calibration records*
 |       |       |       |       |
|  | Provide evidence that prior notice was given to an Inspector or Mine Safety Officer of any changes to the location of overhead powerlines on site. (This is a requirement of General Rule clause 68 (2). |       |       |       |       |
|  | Demonstrate that high voltage transformer stations are secure, kept locked and are only accessible to authorised persons. |       |       |       |       |
|  | Demonstrate that the high voltage lines and transformers stations that are located on the mine site are properly maintained by their owners.This should ensure:* cutting of grass and weeds to prevent a fire hazard
* other vegetation management (trees).
 |       |       |       |       |
|  | Other Comments / Issues |       |       |       |       |

Feedback Sheet

Your comments will be very helpful in reviewing and improving this Audit Checklist for Management of Overhead Powerlines.

Please copy and complete the Feedback Sheet and return it to:

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**How did you use, or intend to use, this document?**

 **What do you find most useful about this document?**

 **What do you find least useful?**

 **Do you have any suggested changes to the document?**

Thank you for completing and returning this Feedback Sheet.