VERIFICATION FINDINGS REPORT RESPONSE BY

AUSTRALIAN POWER PARTNERS BV & OTHERS - APPBV & OTHERS - MIN 5004

June 2012

Rev 3.1

TRIM Ref: H12/01541

Workplace Hazards & Hazardous Industries Group
WorkSafe Victoria
Level 26, 222 Exhibition Street, Melbourne 3000

DOCUMENT REVISION RECORD

Rev	Date	Description/Comments	Prepared by	Reviewed by
0	30/05/2012	Draft prepared for inspector use	Wally Morrison	
1	20/08/2012	Draft prepared for inspectors review	Kevin Hayes & Marnie Ross	Wally Morrison
2	31/08/2012	Draft prepared for internal review	Wally Morrison	Sean Byrne
3	01/09/2012	Draft prepared for site review	Wally Morrison	APPBV
3.1	1/10/2012	Final document including site comments and action plan reference	P Brimblecombe	J Robinson

WorkSafe Internal Review (Completed after finalisation of report)

Reviewed By	Confirmed	Comment
Group Leader	Sean Byrne	
Manager – Earth Resources	Rob Kelly	30/12/13

CONTENTS

1. EXECUTIVE SUMMARY

WorkSafe conducts detailed inspections annually on various prescribed mines. The purpose of the Verification process is to assess compliance across a variety of control measures and associated elements of the Safety Management System (SMS). Control measures selected for this Verification were identified from documentation provided by Australian Power Partners BV & Others (APPBV & others) and conformance with industry standards.

In addition to the objectives of this Verification, WorkSafe seeks to assess the quality of selected control measures (CM) and related elements of the SMS, from an adequacy management perspective.

The Verification focused on Mine Fires which has been identified by the Operator as a Major Mining Hazard (MMH). Documentation provided by APPBV & Others was reviewed prior to selection of each control measure for on-site verification.

The site based inspection identified a number of opportunities for APPBV & Others to improve the functionality and effectiveness of risk control measures and their related safety management elements. These are included as comments in the findings summary (section 4), with further detail provided in Attachment A of this report.

It is recommended that APPBV & Others improve its SMS documentation by including a description of the SA process together with a comprehensive review of each MMH SA. This and any related performance monitoring are explicit requirements of Regulation 5.3.23 and 5.3.21 of the Occupational Health and Safety Regulations 2007 for a prescribed mine.

2. VERIFICATION OBJECTIVES

The objectives of the Verification process are to:

- Identify areas where strategic intervention is required.
- Ensure regulatory breaches or non-conformances detected during the inspection are appropriately dealt with.
- Assess whether or not a mine operator is providing a satisfactory level of Safety Management.

3. METHODOLOGY

3.1 Verification Focus

The Verification purpose was to focus on fire prevention and mitigation control measures including related elements of the SMS. Additional SMS elements assessed during the visit included hazard identification and incident reporting.

A desk-top review of previously obtained documents formed the basis for selection of control measures and SMS elements for verification. The control measure and SMS element findings are summarised in Tables 1 and 2.

Issued entry reports contain a summary of the activities conducted, issues identified and documents voluntarily provided by APPBV & Others. Refer to Attachment C and Attachment D for further detail.

3.2 Verification Team

Duration: 2 Days	Start: 20/06/2012	Finish: 21/06/2012
Agency	**Name**	**Role**
WorkSafe	Kevin Hayes	Lead Inspector
WorkSafe	Marnie Ross	Inspector
WorkSafe	Wally Morrison	Senior Mining Engineer

4. INSPECTION FINDINGS

4.1 Control Measure Findings Summary

Control Measure	Implemented	Functional	Level	Comments
CM 1: Fire Suppression in cubicles	In Part	In Part	2	Control not fully implemented in all electrical cubicles located within the mine.
CM 2: Shift Fault Inspections	Yes	In Part	3	Control exists however is not properly performance monitored, is lacking description and is informally used.
CM 3: Temperature Monitoring/Trips of Critical Components	Yes	In Part	3	Control exists as required but is lacking description.
CM 4: Maintenance - Daily Cleaning or on Request - Hose down/Shovel clean	Yes	In Part	4	Control exists, is effective but does not meet some of its performance standards.
CM 5: Inspection - Safety Walks	In Part	No	1	Key components required for the control to prevent the MMH are missing. Safety Walks are being conducted however they are not conducted in relation to the stated function/objective.
CM 6: Annual Fire Safety Audits	In Part	In Part	3	Control exists however it is not properly performance monitored.
CM 7: Fire Hydrants/Sprays located near all plant	Yes	Yes	5	Control considered to be implemented and functional. *Note: this status is for the listed CM only (hydrants and sprays) and does not include any other associated Fire Service equipment / components (e.g. pumps).*

Table 1: Control Measure Findings

4.2 Safety Management System Findings

4.2.1 Safety Management System

Regulation 5.3.21 requires the operator of a prescribed mine to establish and implement a SMS. Sub regulation (3) (d) further requires that the SMS must contain a description of the Safety Assessment (SA) under regulation 5.3.23.

The findings are summarised in Table 2 below.

4.2.2 Safety Assessment

The Mine provided SAs all of which were incomplete and appeared to be undergoing development. Of the several MMHs assessed Fire was included. These documents provided the basis from which the Mine's obligation to carry out a SA was assessed.

The SA of MMHs must involve an investigation and analysis of the MMH and testing of the implemented control measures. The SA and testing of control measures are explicit requirements of Regulation 5.3.23 and 5.3.21 of the Occupation Health and Safety Regulations 2007 for a 'prescribed' mine.

4.2.3 Selected SMS Element Findings Summary

SMS Element	Implemented	Functional	Level	Comments
SMS 1: Hazard Identification	Yes	In Part	4	Auditing activities (in this area) are not being conducted; performance standards have not been developed.
SMS 2: Safety Assessment: Mine Fires	No	No	0	Documentation obtained is incomplete and cannot be considered a Safety Assessment.
SMS 3: Incident Management and Reporting	Yes	Yes	6	Based on observations and findings made during the site visit, the SMS element was considered to be Implemented and Functional.

Table 2: SMS Element Findings Summary

5. CONCLUSIONS AND OPPORTUNITIES for IMPROVEMENT

5.1 Strategic or Regulatory Intervention

When viewed against each of the objectives of the Verification process in Section 2, the inspection team concluded:

Objective	Findings
Identify areas where strategic intervention is required (subject to oversight visits and possible compliance and enforcement actions).	• Mine Fire control measure recommendations made within this report in line with resulting action plans, and • SA process of identified MMHs in accordance with reg 5.3.23 of the Occupational Health and Safety Regulations 2007.
Ensure regulatory	WorkSafe issued two Improvement Notices:

breaches or non-conformances detected during the inspection are appropriately dealt with.	V01017400252L/111-01 - Safety Assessment for the identified Major Mining Hazard "Mine Fires" has not been conducted as required by Regulation 5.3.23 of the Occupational Health and Safety Regulations 2007. V01017400252L/111-02 - Failure to provide a system that ensures that the fire fighting equipment on Dredger 10 remains in a serviceable condition and is available for use.
Assess whether or not a mine operator is providing a satisfactory level of Safety Management.	Opportunities for improvement have been identified and are discussed further in section 5.2 of this report. Implementation of the recommendations should result in an improved level of safety management.

5.2 Opportunities for Improvement

A number of Opportunities for Improvement were identified based on the findings of this verification. These are listed in abbreviated form here. The reader should refer to the detailed findings in Attachment A for further detail and recommendation reasoning.

Provide feedback and recommendations to the mine operator so that they can improve the level of safety management at the mine site	**CM 1 – Fire Suppression in cubicles:** 1. Installation of fire suppression in all electrical cubicles located in the mine to be completed and an action plan detailing completion dates to be generated. 2. APPBV & Others to create a register of fire suppression equipment located within the mine. 3. APPBV & Others to document inspections of fire suppression equipment. 4. APPBV & Others to check canister installation and use-by dates. **CM 2 - Shift Fault Inspections:** 1. APPBV & Others to identify areas of plant (inc conveyors) with greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7). 2. APPBV & Others to identify those areas of plant that have been assessed as having a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7) within the operator's 'check' sheet including instructions on what to inspect and inspection frequency. 3. APPBV & Others to include 'excessive coal build-up / spillage' on the operator's check sheet. 4. APPBV & Others to ensure that inspections as per above are audited. **CM 3 - Temperature Monitoring/Trips of Critical Components:** 1. Develop and maintain a list of 'critical' components as detailed in the Safety Assessment, document critical components (including – Performance Elements, what to measure, method and frequency of measuring and responsible persons) in the Safety Assessment control descriptor sheets (V42). 2. Determine completion dates for D11 Fire 'Action Plan'. **CM 4 - Maintenance - Daily Cleaning or on Request - Hose down/Shovel clean:** 1. Equipment is to be cleaned prior to all maintenance and breakdown

	activities being performed. **CM 5 - Inspection, Safety Walks:** 1. Safety Walks to be conducted according to the stated function/objective of this control (as documented V42) to ensure that scheduled monthly Safety Walks Inspections are undertaken. 2. APPBV & Others to ensure that inspections are conducted according to the schedule. **CM 6 - Annual Fire Safety Audits:** 1. Training in performing the Annual Fire Safety Audit/Inspection to be formalized for those employees required to complete the checklists. This training is to include the Deputy Production Manager and the other roles identified in the APPBV & Others Mine Fire Service Policy & Code of Practice (V45). 2. Deputy Production Manager to ensure that the Annual Fire Audits are conducted by competent personnel as defined in the Fire Person Duties Training manual (V50). 3. Recommendation 17 (2006 mine fire investigation action plan), requires definition of where, when and how CO monitoring is to be conducted. 4. Review the Action Plan to ensure that it is reflective of the actions that are to be implemented. 5. APPBV & Others to ensure that all identified actions are recorded and closed off within the recommended time frames. **CM 7 - Fire Hydrants/Sprays located near all plant:** 1. APPBV & Others to ensure that all fire fighting equipment including extinguishers and hose reels are provided with signage that identifies appropriate usage. **SMS 1 - Hazard Identification:** 1. Remove all copies of the old forms from the system when new forms have been developed and introduced. 2. Provide refresher training on use and completion of the Safety Walk Inspection Checklists. 3. Implement a formal process for auditing of the JSAs by Supervisors/Managers. **SMS 2 - Safety Assessment, Mine Fires:** 1. APPBV & Others to conduct a Safety Assessment re MMH Mine Fires as per reg 5.3.23 of the Occupational Health and Safety Regulations 2007.

5.3 Conclusions

The inspection identified a number of opportunities for APPBV & Others to improve the implementation and functionality of the control measures and SMS elements verified. Specific recommendations identified during the Verification are recorded as comments in Tables 1 and 2, and are discussed in Attachment A of this report.

Improvement within SMS documentation can be made with emphasis placed on SA description and triggers for SA review. The current SA for Mine Fire is incomplete, appears partially documented and requires a comprehensive review.

APPBV & Others's action taken to address the specific recommendations will be progress monitored during future oversight visits by Worksafe.

6. ATTACHMENT A - Detailed Inspection Findings

6.1 Control Measure 1 – Fire Suppression in cubicles - CM 0294

MMH Control	Key areas of interest / Inspection Guidance
CM 1: Fire Suppression in cubicles - CM 0294 (Electrical fires)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • To mitigate/extinguish fire in electrical cubicles caused by electrical malfunction/ electrical fault of equipment located in electrical cubicles. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Determine if the mine has identified (risk assessed) those cubicles that have a greater potential to cause a "Mine Fire" as documented within the Bow - Tie diagram (V7). Are all electrical cubicles 'fitted' with fire suppression systems or is this a generic statement? ***Implemented:*** 1. Has the mine installed fire suppression (systems) in all electrical cubicles located within the mine i.e. on conveyors (H/E cubicles) and dredgers/stackers? (Note: Does the mine have a register of fire suppression equipment - if so, reconcile with a sample of equipment located within the mine). 2. Does the mine provide a system for inspecting/maintaining cubicle fire suppression systems? (Note: Verify that inspection/maintenance regimes are up to date). ***Functional:*** 1. Are faults identified (during inspections/maintenance) reported and repaired in a timely manner? 2. How does the mine test this control measure? (Note: Has the system operated under 'fault' conditions? - If so, has this been recorded?).

Findings (Fact & Opinion)

Implemented:

1. Has the mine installed fire suppression (systems) in all electrical cubicles located within the mine i.e. on conveyors (H/E cubicles) and dredgers/stackers? (Note: Does the mine have a register of fire suppression equipment - if so, reconcile with a sample of equipment located within the mine).

Management informed that fire suppression systems are installed in approximately 80% of all electrical cubicles located within the mine and they are continuing the process of upgrading old electrical cubicles. This upgrade will include the installation of "Pyrogen" canister type fire suppression. Observed new Dirty Water Pump Station (DWPS), all cubicles accessed / observed (3) contained canister type suppression.

A random selection of LV and HV electrical cubicles on Dredger 10 (D10) and Dredger 24 (D24) - observed two (out of nine) cubicles that had suppression installed.

Management informed that they do not have a register of installed suppression equipment (in cubicles) and it appears that (from field observations) the suppression equipment installed is less than the 80% as

stated by Management.

2. **Does the mine provide a system for inspecting/maintaining cubicle fire suppression systems? (Note: Verify that inspection/maintenance regimes are up to date).**

Management informed that basic inspections are carried out by site electricians when performing LV / HV maintenance inspections. The LV / HV maintenance inspections observed appeared to be up to date, however inspection of fire suppression / canister is not documented and inspections cannot be verified.

WorkSafe observed various installation dates on suppression canisters installed within the electrical cubicles. Management was unable to confirm / verify whether or not the canisters have a 'use-by' / replacement date.

Functional:

1. **Are faults identified (during inspections/maintenance) reported and repaired in a timely manner?**

No faults (re suppression systems) have been documented or identified. Enquiries with relevant employees appear to confirm this. Management demonstrated the fault recording process. WorkSafe did not observe any recorded faults.

2. **How does the mine test this control measure? (Note: Has the system operated under 'fault' conditions? - If so, has this been recorded?).**

Management informed that physical testing of the suppression system is not practical; however a trial test of a suppression canister was performed during initial implementation for employee information and training. Management was unable to provide documentation of the demonstration.

Status (Yes/In Part/No - include explanation)

Implemented: In Part

Functional: In Part

The control has not been implemented (installed) in all electrical cubicles located within the mine.

Opportunities for Improvement

Recommendations:

1. APPBV & Others to complete the installation of suppression in all electrical cubicles located in the mine and provide WorkSafe with an action plan detailing progression and completion dates.
2. APPBV & Others to create a register of fire suppression equipment located within the mine.
3. APPBV & Others to document inspections of fire suppression equipment.
4. APPBV & Others to verify canister installation / use-by dates.

Comments from the Operator on the Findings and Required Actions

In general we agree with the findings. As part of the ongoing routine maintenance program all cubicle fire suppression will be located, inspected and use-by dates recorded.

The installation of fire protection in electrical cubicles will be subject to risk assessment. Fire protection will only be installed in electrical cubicles where the risk assessment indicates it is required.

Refer to Action Plan items 1.1, 1.2, 1.3 & 1.4

6.2 Control Measure 2 – Shift Fault Inspections - CM 0151

MMH Control	Key areas of interest / Inspection Guidance
CM 2: Shift Fault Inspections - CM 0151 (Friction fires)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • To inspect those areas of plant deemed 'higher risk' of causing fire due to 'friction heating' **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Determine if the mine has identified (risk assessed) those items of plant that have a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7). ***Implemented:*** 1. Does the mine provide a system for inspecting those area of plant (conveyors) that have a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7). 2. Who performs these inspections and at what frequency (is this documented)? (Note: Verify that inspection regimes are up to date - obtain inspection sheets if available). ***Functional:*** 1. How does the mine ensure that these inspections are being carried out? (Note: discuss with the person responsible for these inspections - what do they look for, have they been trained etc...? Is auditing conducted? - Does this include the quality of inspections? 2. Are faults identified (during inspections) reported and repaired in a timely manner? Can the mine provide examples where faults have been identified and actioned accordingly?

Findings (Fact & Opinion)

Implemented:

1. **Does the mine provide a system for inspecting those area of plant (conveyors) that have a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7).**

Management informed that the dredger operators inspect the areas of the dredgers that that have a greater potential to cause a "Mine Fire" during their 'lube' inspections. The areas include conveyors, transfer points, couplings, gearboxes, motors and brakes. The lube inspections are documented (including notes on what to check re grease / oil levels see V38) however shift fault inspections covering fire risk are not listed.

Assessments on specific areas of plant that have a greater potential to cause a "Mine Fire" (due to 'friction heating') have not been carried out and inspections (re what to look for) have not been

developed.

However it must be noted that enquiries with plant operators (when prompted) indicated some knowledge of what to 'look out for' when performing 'lube' inspections.

2. **Who performs these inspections and at what frequency (is this documented)? (Note: Verify that inspection regimes are up to date - obtain inspection sheets if available).**

See comments above. Inspections are performed on a daily basis. Daily 'lube' inspection sheets (see were observed however these sheets do not provide any documentation re Shift Fault Inspections - CM 0151 (Friction fires).

Functional:

1. **How does the mine ensure that these inspections are being carried out? (Note: discuss with the person responsible for these inspections - what do they look for, have they been trained etc...? Is auditing conducted? - Does this include the quality of inspections?**

Management informed that the 'lube' inspection sheets are collected and reviewed at the end of each shift by Shift Supervisor. Enquiries with plant operators indicated knowledge of what to 'look out for' when performing 'lube' inspections, including abnormal / excessive noise (from idlers, gear box and couplings, coal build-up / spillage and excessive heat. Operators have had 'on the job' training and are 'generally' aware (experienced) in identifying faults / abnormal situations.

Management informed that the Shift Supervisors access the machine and regularly check the machine condition - checks include: steering line, batter and formation quality (see V6). Other observations include housekeeping (coal build-up) and other abnormalities (excessive noise / heat etc...). These 'other' observations are not documented and it is not clear if the 'quality' of the Shift Fault Inspections (CM 0151 Friction fires) is reviewed or audited.

2. **Are faults identified (during inspections) reported and repaired in a timely manner? Can the mine provide examples where faults have been identified and actioned accordingly?**

Management informed that faults identified and reported are assessed and repaired accordingly. All faults are reported through to the Mine Control Centre (MCC) and are logged, documented and communicated to all relevant personnel (see V39 and V44). WorkSafe did not observe any 'logged' faults re Shift Fault Inspections - CM 0151 (Friction fires).

It appears that shift inspections are being carried out by experienced personnel, however these inspections re Shift Fault Inspections - CM 0151 Friction fires (and auditing / checking for quality) appear to be carried out informally and are not documented / performance monitored.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Control exists however is not properly performance monitored, is lacking description and is being informally used.

Opportunities for Improvement

Recommendations:

1. APPBV & Others to assess those area of plant (inc conveyors) that have a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7).
2. APPBV & Others to include those areas of plant that have been assessed as having a greater potential to cause a "Mine Fire" (due to 'friction heating') as documented within the Bow - Tie diagram (V7) within the operator's 'check' sheet and include instructions on what to inspect including frequencies.
3. APPBV & Others to include 'excessive coal build-up / spillage' on the operator's check sheet.

4. APPBV & Others to ensure that these inspections are being carried out and documented (e.g. performance monitored / quality etc...)
Comments from the Operator on the Findings and Required Actions
Agree with the assessment. Action Plan has been developed to meet the requirements of the recommendations. Refer Action Plan items 2.1, 2.2, 2.3, & 2.4

6.3 Control Measure 3 – Temperature Monitoring/Trips of Critical Components - CM 0309

MMH Control	Key areas of interest / Inspection Guidance
CM 3: Temperature Monitoring/Trips of Critical Components - CM 0309 (Friction Fires)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • Not stated or documented by the site. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Determine if the mine has implemented a system for temperature monitoring/trips of critical components (due to 'friction heating') as documented within the Bow - Tie diagram (V7). Has the mine identified 'critical' components? If so, what are they, do they have a register? Focus on impact idler area (from D11 fire). ***Implemented:*** 1. Has the mine identified/does the mine have a register of all 'critical' components as documented within the Bow - Tie diagram (V7) under 'friction fires'? 2. What determines critically? Have the 'critical' components been formally assessed? 3. Has the mine implemented a system for temperature monitoring/trips of critical components (due to 'friction heating') as documented within the Bow - Tie diagram (V7) i.e. what is the system? ***Functional:*** 1. How does the mine ensure that monitoring is being conducted? Is this a formal process/automated, what is the frequency? Is the reporting/recording/monitoring system audited ensuring that faults identified are recorded and repaired in a timely manner? Can the mine provide copies of these audits? 2. Are faults identified (during the 'monitoring' process) reported and repaired in a timely manner? Can the mine provide examples where faults have been identified and actioned accordingly? Note: Check with mine maintenance planner re D11 fire - impact idler faults.

Findings (Fact & Opinion)

Implemented:

1. Has the mine identified/does the mine have a register of all 'critical' components as documented within the Bow - Tie diagram (V7) under 'friction fires'?

No. A register of 'critical' components was not found at the time of this Verification.

2. What determines critically? Have the 'critical' components been formally assessed?

Criticality is determined by the level of risk. Risk includes the hazards associated with the operation of the plant and the amount of energy involved in that operation. Large amounts of energy production increase the level of risk.

The only 'critical' components that have been identified are those that relate to plant and then the related

risk to the Mine.

3. **Has the mine implemented a system for temperature monitoring/trips of critical components (due to 'friction heating') as documented within the Bow - Tie diagram (V7) i.e. what is the system?**

Yes. There is a computer based system that records the temperatures of the plant (CITEC). If the temperature is raised, the system will record any tripping of the plant. If an item of plant trips, an alarm sounds indicating that there is a problem.

A thermal scan of some of the identified 'critical' components is conducted weekly – this activity is managed by Belle Banne.

Functional:

1. **How does the mine ensure that monitoring is being conducted? Is this a formal process/automated, what is the frequency? Is the reporting/recording/monitoring system audited ensuring that faults identified are recorded and repaired in a timely manner? Can the mine provide copies of these audits?**

The mine has an automated system (CITEC) ensuring that monitoring is being conducted. The system is also continuous.

If there are any concerns, the issues are logged in the system and sent to the Mine Control Centre. A report will then be sent to the Maintenance Crew to assess the issue and repair the problem – if it can be repaired at the time.

2. **Are faults identified (during the 'monitoring' process) reported and repaired in a timely manner? Can the mine provide examples where faults have been identified and actioned accordingly? Note: Check with mine maintenance planner re D11 fire - impact idler faults.**

Evidence of the tripping of the D11 dredger was not available at the time of this Verification. The system has just been upgraded and only has data for the month. Refer to document (V51) list of plant tripping for June 2012.

The Final Report for the Dredger 11 (D11) Chute Fire (V36) indicates the actions required to be completed post the investigation. The Action Plan also indicates those people with responsibility for completing the actions. The Action Plan completion dates have not been reached at this time.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Control exists as required but is lacking description.

Opportunities for Improvement

Recommendations:

1. Develop and maintain a list of 'critical' components as detailed in the Safety Assessment and document these critical components (including – Performance Elements, what to measure, method and frequency of measuring and responsible persons) in the Safety Assessment control descriptor sheets (V42).
2. Determine completion dates re D11 Fire 'Action Plan'.

Comments from the Operator on the Findings and Required Actions

Agree with findings. Refer Action Plan items 3.1 & 3.2

6.4 Control Measure 4 – Maintenance - Daily Cleaning or on Request - Hose down/Shovel clean - CM 0062

MMH Control	Key areas of interest / Inspection Guidance
CM 4: Maintenance - Daily Cleaning or on Request - Hose down/Shovel clean - CM 0062 (Poor Housekeeping)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • Not stated or documented by the site. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Determine if the mine has implemented a system for 'Daily Cleaning or on Request - Hose down/Shovel clean (Poor Housekeeping)' as documented within the Bow - Tie diagram (V7) i.e. where and when? This CM must also be reliant on an inspection process (may also include CM 2 and CM 6 - if this is accurate, determine who performs these inspections including frequencies). ***Implemented:*** 1. Has the mine implemented a system for 'Daily Cleaning or on Request - Hose down/Shovel clean - CM 0062 (Poor Housekeeping)' as documented within the Bow - Tie diagram (V7)? (Note: determine if this is a generic statement or whether 'cleaning' applies to 'critical' components identified in CM2). 2. Who performs this function (cleaning) and at what frequency (is this documented)? (Obtain inspection sheets if available). ***Functional:*** 1. How does the mine ensure that 'Daily' cleaning is being conducted? Is this a formal process i.e. who checks? Is auditing conducted? Can the mine provide copies of these audits? 2. Is cleaning 'on request'conducted in a timely manner? Can the mine provide examples where 'poor housekeeping' has been identified and actioned accordingly? Note: focus on cleaning of critical components - not general housekeeping. 3. Site inspection - Is there excessive coal build up around known sources of heat i.e. idlers, pulleys, motors, gear boxes and electrical equipment?

Findings (Fact & Opinion)

Implemented:

1. **Has the mine implemented a system for 'Daily Cleaning or on Request - Hose down/Shovel clean - CM 0062 (Poor Housekeeping)' as documented within the Bow - Tie diagram (V7)? (Note: determine if this is a generic statement or whether 'cleaning' applies to 'critical' components identified in CM2).**

The function / objective of this control can be found (see V42 – system control 0062) and relates to cleaning 'Major Machines / Plant' for safe maintenance access / maintenance work. Discussions with mine maintenance planners informed that a system exists requiring the plant to be cleaned prior to maintenance tasks being carried out. Scheduled maintenance activities are discussed during mine planning meetings, the Mine Maintenance coordinator issues a memo detailing permits and cleaning requirements (see V39) and this is issued to mine operations for actioning prior to maintenance activities

being performed. Management informed that cleaning is 'sometimes' unsatisfactory and maintenance personnel have to 'clean down' in more specific areas prior to commencing activities.

It must be noted that this control is not related to CM2 "Shift Fault Inspections" and applies only to maintenance activities.

2. **Who performs this function (cleaning) and at what frequency (is this documented)? (Obtain inspection sheets if available).**

Operators perform this activity (on request) see V39 – cleaning list. In this instance (re maintenance activities), machines may not be cleaned down on a 'daily' basis. No documentation (inspection sheets) is returned / available (from operations) detailing cleaning activities i.e. plant that has been cleaned. Management informed that operators are expected to ensure that the machine remains clear of excessive spillage during normal operations and this includes all 'problematic' areas including transfer points. Discussions with operations personnel confirm these expectations, however operations main concern is a perceived 'lack of time' to connect machine up to fire service (hose –up) and production expectations.

Functional:

1. **How does the mine ensure that 'Daily' cleaning is being conducted? Is this a formal process i.e. who checks? Is auditing conducted? Can the mine provide copies of these audits?**

Management informed that this control applies to maintenance activities. Maintenance personnel check for adequacy prior to commencement of activities, if cleaning is not satisfactory, maintenance personnel perform the 'extra' cleaning. Management informed that enhancements can be made ensuring that all cleaning meets expectations – these improvements include use of photographs (of areas to be cleaned) to be included with cleaning list (V39) and operator check / sign off sheets. No auditing is carried out. Management performs 'fresh eyes' safety observations where housekeeping is observed and documented (V30 and V32). The fresh eyes observation form has been developed for observations carried out in the power station and makes no specific mention of mining 'housekeeping' hazards in relation to this control measure i.e. cleaning or removal of excess coal (fuel) prior to maintenance activities.

2. **Is cleaning 'on request' conducted in a timely manner? Can the mine provide examples where 'poor housekeeping' has been identified and actioned accordingly? Note: focus on cleaning of critical components - not general housekeeping.**

Cleaning is carried out on request (see V39). Management performs 'regular' safety observations where housekeeping is observed and documented (V30 and V32). Housekeeping issues are listed and actioned accordingly.

3. **Site inspection - Is there excessive coal build up around known sources of heat i.e. idlers, pulleys, motors, gear boxes and electrical equipment?**

Site inspection of D24 – minor build-up of coal at slew area, operators main concern is perceived 'lack of time' to connect machine up to fire service (hose-up) and to clean excessive coal spillage. Site inspection of D10 – minor spillage along BWB walkway, no excessive coal build-up on or near known sources of heat. It is noted that this control measure applies to maintenance activities and not 'general day to day' operations.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Control exists, is effective but does not meet some of its performance standards.

Opportunities for Improvement

Recommendations:

1. APPBV & Others to ensure that machines / plant is cleaned prior to all maintenance and breakdown

activities being performed. Enhancements to the current arrangements can be made ensuring that all cleaning requests meets expectations – these include use of photographs (of areas to be cleaned) and operator check / sign off sheets upon completion.
Comments from the Operator on the Findings and Required Actions
The current practice is to be documented and formalised listing responsibilities and accountabilities. Refer to Action Plan item 4.1

6.5 Control Measure 5 – Inspection - Safety Walks CM 0061

MMH Control	Key areas of interest / Inspection Guidance
CM 5: Inspection - Safety Walks CM 0061 (Poor Housekeeping)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • Not stated or documented by the site. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Determine if the mine has implemented a system for performing 'Safety Walks' (Poor Housekeeping)' as documented within the Bow - Tie diagram (V7) i.e. where and when? Is there a greater focus on Mine Fires or is this a generic inspection process? ***Implemented:*** 1. Has the mine implemented a system for 'Safety Walks' (Poor Housekeeping) as documented within the Bow - Tie diagram (V7)? (Note: determine if this is a generic statement or whether a greater focus is applied to the 'critical' components identified in CM2). 2. Who performs this function (safety walks) and at what frequency (is this information contained within a schedule)? (Obtain completed inspection sheets if available). ***Functional:*** 1. How does the mine ensure that 'Safety Walks' are being conducted? Is this documented within a schedule i.e. who checks? Discuss with personnel listed on schedule, determine what they check/look at (is there a greater focus on 'critical' items of plant?), have they been trained? Is the schedule (if available) up to date? 2. Can the mine provide examples where 'a Safety Walk' has identified issues re coal build-up and actioned accordingly? Note: focus on housekeeping of critical components - not general housekeeping. 3. Site inspection - Is there excessive coal build up around known sources of heat i.e. idlers, pulleys, motors, gear boxes and electrical equipment (see CM 4)?

Findings (Fact & Opinion)

Implemented:

1. Has the mine implemented a system for 'Safety Walks' (Poor Housekeeping) as documented within the Bow - Tie diagram (V7)? (Note: determine if this is a generic statement or whether a greater focus is applied to the 'critical' components identified in CM2).

The function/objective of this control (as documented V42) is to ensure that regular scheduled monthly Safety Walks Inspections (SWIs) are undertaken focussing on coal build-up on and around plant and conveyors to minimise fire risk.

Safety Walks are conducted in nominated areas. These areas have been identified and are documented in V28 Safety Walk Procedure page 5. The areas nominated for the safety walks are reviewed annually by Senior Management.

Evidence that there is a greater focus on 'critical' components was not identified. Furthermore the

document V28 Safety Walk procedure does not appear to focus on the stated function/objective of this control measure i.e. to ensure that regular scheduled monthly Safety Walks Inspections (SWIs) are undertaken focussing on coal build-up on and around plant and conveyors to minimise fire risk. The checklist and guide (contained within V28) makes no mention of identifying coal build-up on and around plant and conveyors.

2. **Who performs this function (safety walks) and at what frequency (is this information contained within a schedule)? (Obtain completed inspection sheets if available).**

Mine Management, Team Leaders and employees including Health and Safety Representatives conduct the scheduled safety walks according to the table as set out on page V28 page. Approximately 50 employees including Management have been nominated to perform 2 safety walks for the calendar year.

Functional:

1. **How does the mine ensure that 'Safety Walks' are being conducted? Is this documented within a schedule i.e. who checks? Discuss with personnel listed on schedule, determine what they check/look at (is there a greater focus on 'critical' items of plant?), have they been trained? Is the schedule (if available) up to date?**

The results of the safety walks are discussed in the weekly Safety Meetings that are held by Mine Management.

The results of the safety walks are also reported at the monthly Occupational Health and Safety Committee meetings. The reports include which safety walks have been conducted.

The quality of the completion of safety walk documents is varied. (Refer to documents V25 Safety Walk Checklist). Some of the checklists are completed and signed, others are patchy. Refresher training in filling in the safety walk checklists is to be scheduled.

The schedule for where and when safety walks are to be conducted is included in the Safety Walk Procedure (V28).

The schedule appears to be up to date, however upon inspection of the completed check lists (reconciled with the schedule) it is apparent that three (of the four) completed safety walks were overdue and were completed after the scheduled date.

2. **Can the mine provide examples where 'a Safety Walk' has identified issues re coal build-up and actioned accordingly? Note: focus on housekeeping of critical components - not general housekeeping.**

No. The mine could not provide examples where a 'Safety Walk' has identified issues re coal build-up around critical components, however it is noted (V25) that coal build-up was observed on walkways.

3. **Site inspection - Is there excessive coal build up around known sources of heat i.e. idlers, pulleys, motors, gear boxes and electrical equipment (see CM 4)?**

Site inspection of D24 – minor build-up of coal at slew area, operators main concern is perceived 'lack of time' to connect machine up to fire service (hose-up) and to clean excessive coal spillage. Site inspection of D10 – minor spillage along BWB walkway, no excessive coal build-up on or near known sources of heat.

Evidence obtained (from enquiries, observations and documentation) indicates that APPBV & Others conduct Safety Walks, however they are not conducted in relation to the stated function/objective of the control measure and as such this activity appears to be a generic safety walk activity rather than a specific activity focussing on coal build-up on and around plant and conveyors to minimise fire risk.

In addition three (of the four) completed Safety Walks appear to have been overdue and were completed after the scheduled date. Also it is unclear whether the identified issues have been actioned.

Status (Yes/In Part/No - include explanation)

Implemented: In Part

Functional: No

Key components required for the control to prevent the MMH are missing, Safety Walks are being conducted, however they are not conducted in relation to the stated function/objective.
Opportunities for Improvement
Recommendations: 1. APPBV & Others to conduct Safety Walks according to the stated function/objective of this control (as documented V42) i.e. to ensure that regular scheduled monthly Safety Walks Inspections (SWIs) are undertaken focussing on coal build-up on and around plant and conveyors to minimise fire risk. APPBV & Others to document these inspections. 2. APPBV & Others to ensure that inspections are conducted according to the schedule.
Comments from the Operator on the Findings and Required Actions
The Safety Walks are monitored and reported/minuted in the Weekly Mine Management Safety Meeting. While not all dates are achieved, for various reasons, all inspections are completed. Refer to Action Plan item 5.1

6.6 Control Measure 6 – Annual Fire Safety Audits - CM 0288

MMH Control	Key areas of interest / Inspection Guidance
CM 6: Annual Fire Safety Audits - CM 0288 (Escalation Scenario)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • Not stated or documented by the site. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** A major fire occurred within the mine in 2006, an investigation was conducted; obtain a copy of this investigation and corrective actions. Review these actions to determine if the mine has implemented the recommendations. ***Implemented:*** 1. Has the mine implemented a system for 'Annual Fire Safety Audits' (Escalation Scenario) as documented within the Bow - Tie diagram (V7)? (Note: Obtain latest audit). 2. Who performs the 'Annual Fire Safety Audit' (is this information contained within a schedule)? Are personnel qualified, trained etc...? ***Functional:*** 1. How does the mine ensure that the 'Annual Fire Safety Audit' is being conducted i.e. who is responsible for ensuring that the 'Annual Fire Safety Audit' is being conducted, is this documented? 2. Are issues identified (during the 'auditing' process) recorded and corrected within a timely manner? Can the mine provide examples where issues have been identified and actioned accordingly? 3. Review corrective actions generated from the 2006 mine fire investigation recommendations - are all actions completed/closed?

Findings (Fact & Opinion)

Implemented:

1. Has the mine implemented a system for 'Annual Fire Safety Audits' (Escalation Scenario) as documented within the Bow - Tie diagram (V7)? (Note: Obtain latest audit).

Yes. A system for 'Annual Fire Safety Audits' has been implemented. It is reviewed prior to the commencement of the fire season and pre-summer. It is managed by the Deputy Production Manager, or the Production Manager or the Director of Mining, (refer to document V45 APPBV & Others Mine Fire Service Policy & Code of Practice).

The fire season is determined with assistance from the CFA – this usually occurs in July or August.

2. Who performs the 'Annual Fire Safety Audit' (is this information contained within a schedule)? Are personnel qualified, trained etc...?

The 'Annual Fire Safety Audit' is performed by the Maintenance Services Group. This is a task for the 1x7 (shift) Maintenance Crew. The crew is not specifically trained in the conduct of the Annual Fire Safety Audit, but some members of the crew have been provided fire fighting training.

The audit, in essence, is a series of planned maintenance activities and routine checks on the fire service equipment.

Functional:

1. **How does the mine ensure that the 'Annual Fire Safety Audit' is being conducted i.e. who is responsible for ensuring that the 'Annual Fire Safety Audit' is being conducted, is this documented?**

The 'Annual Fire Safety Audit' is documented (V45) APPBV & Others Mine Fire Service Policy & Code of Practice. This document details the responsibilities relating to the conduct of the 'Annual Fire Safety Audit'.

2. **Are issues identified (during the 'auditing' process) recorded and corrected within a timely manner? Can the mine provide examples where issues have been identified and actioned accordingly?**

Yes. Issues found during the audit process are recorded on the Checklist for Fire Fighting Equipment Annual Audit & Inspection document (V48).

The actions resulting from the issues are usually populated into a Work Order for completion. The work orders are entered into the computer based maintenance system for action.

However, the completion of the actions is not recorded on the Checklist for Fire Fighting Equipment Annual Audit & Inspection document (V48).

Evidence of the completion of work orders relating to the repair of sprays and hydrants that were identified as needing replacement was not able to be located at the time of this Verification.

3. **Review corrective actions generated from the 2006 mine fire investigation recommendations - are all actions completed/closed?**

Some of the corrective actions generated from the 2006 mine fire investigation recommendations have been completed. These action have been closed, however there is no indication in the Action Plan of these closures. Some of the actions have required longer time frames to complete.

It was noted that some of the actions are very broad and require more definition.

Status (Yes/In Part/No - include explanation)

Implemented: In Part

Functional: In Part

Control exists however is not properly performance monitored.

Opportunities for Improvement

Recommendations:

1. Training in performing the Annual Fire Safety Audit/Inspection to be formalized for those employees required to complete the checklists. This training is to include the Deputy Production Manager and the other roles identified in the APPBV & Others Mine Fire Service Policy & Code of Practice (V45).
2. Deputy Production Manager to ensure that the Annual Fire Audits are conducted by competent personnel; i.e. trained as per the Fire Person Duties Training manual (V50).
3. Recommendation 17 (2006 mire fire investigation action plan), requires definition of where, when and how CO monitoring is to be conducted.
4. Review the Action Plan to ensure that it is reflective of the actions that are to be implemented.
5. APPBV & Others to ensure that all identified actions are recorded and closed off within the recommended time frames, i.e. the actions contained within the Action Plan are signed and dated upon completion.

Comments from the Operator on the Findings and Required Actions
1. The required competencies to complete the annual inspections, as identified by the Deputy Production Manager, are to be documented and only personnel with the necessary competencies are to be selected to complete the inspections. 2. See point 1. 3. The specific requirements for CO monitoring are detailed in the Annual Fire training. They are to referenced in the Fire Instructions as well. 4. Ongoing review of the D11 Fire Action Plans will continue. 5. The completion of individual Actions is recorded in Paradigm against a user id. Refer to Action Plan items 6.1, 6.2, 6.3, 6.4 & 6.5

6.7 Control Measure 7 – Fire Hydrants/Sprays located near all plant - CM 0284

MMH Control	Key areas of interest / Inspection Guidance
CM 7: Fire Hydrants/Sprays located near all plant - CM 0284 (Mine Fire Hazard)	**Reference Material:** 1. V7 APPBV & Others Mine Bow - Tie diagram "Mine Fire" **Purpose of Control:** • Not stated or documented by the site. **Operating Performance Conditions/Parameters/Criteria:** Not stated or documented by the site. **Performance Information:** Not stated or documented by the site. ***Note:*** Site inspection required (sample dredger/stacker/conveyor). ***Implemented:*** 1. Does the mine have a register of fire fighting equipment (extinguishers/hose reels) located within the mine? 2. How is this equipment maintained? Note: Who inspects/maintains the equipment? Are check sheets available? Is there a schedule with determined frequencies? Is the schedule up to date? Obtain a copy of the schedule and reconcile with a sample of equipment located within the mine. ***Functional:*** 1. How does the mine ensure that the fire fighting equipment (extinguishers/hose reels) is being maintained? Is there a formal process for checking i.e. who checks? Is auditing conducted? Can the mine provide copies of these audits? 2. Inspect a random sample of extinguishers and hose reels on site (reconciled via register if available), check for test date currency (tags), pressure gauges, appropriate signage, visible defects hose reels/nozzles etc... 3. Are faults identified (during the 'inspection' process) reported and repaired in a timely manner? Can the mine provide examples where faulty items of equipment have been identified and actioned accordingly?

Inspector Comments (Initial observations and enquiries)

Note: this CM relates to Hydrants and Sprays located within the mine re: fire service system and not extinguishers / hose reels located on Dredgers and Stackers.

Findings (Fact & Opinion)

Implemented:

1. Does the mine have a register of fire fighting equipment (extinguishers/hose reels) located within the mine?

The mine has a register of fire fighting equipment located within the mine however Management explained that this CM relates only to Hydrants and Sprays located within the mine i.e. fire service system and not extinguishers / hose reels located on conveyors, dredgers and stackers.

WorkSafe observed an up to date mine plan detailing the mine's fire service system. WorkSafe observed fire service equipment (hydrants and sprays) whilst on site including standard 65mm fire hydrants located approx 50m spacing along fire service pipe line. Management informed that in addition to this, they have

installed 18mm fire sprays also located on the fire service pipe line (spacing approx 50m intervals).

2. **How is this equipment maintained? Note: Who inspects/maintains the equipment? Are check sheets available? Is there a schedule with determined frequencies? Is the schedule up to date? Obtain a copy of the schedule and reconcile with a sample of equipment located within the mine.**

Management informed that inspections are carried out on a monthly basis as per procedure manual (Safety Device Testing for Open Cut Large Machines) see V43 by trained operators (overseen by engineer). In addition, hose reels are 'wet tested' (for functionality) at six monthly intervals.

Fire Service equipment is maintained by the 'Fire Services' group, inspections are carried out during belt shifts, conveyor extensions and during the Annual Fire Safety Audit see CM6.

Functional:

1. **How does the mine ensure that the fire fighting equipment (extinguishers/hose reels) is being maintained? Is there a formal process for checking i.e. who checks? Is auditing conducted? Can the mine provide copies of these audits?**

See Implemented dot point 2 (management sign-off).

2. **Inspect a random sample of extinguishers and hose reels on site (reconciled via register if available), check for test date currency (tags), pressure gauges, appropriate signage, visible defects hose reels/nozzles etc…**

Observed random sample of extinguishers and reels on site (see other observations / findings). Extinguishers observed were found to be in date with no other issues (pressure gauges / signage) observed.

3. **Are faults identified (during the 'inspection' process) reported and repaired in a timely manner? Can the mine provide examples where faulty items of equipment have been identified and actioned accordingly?**

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: Yes (5)

Note: this status is for the listed CM only (hydrants and sprays) and does not include any other associated Fire Service equipment / components (e.g. pumps).

Opportunities for Improvement

Recommendations:

1. No direct recommendation was concluded in relation this CM but tangle recommendations are made in the following section.

Other observations / comments / recommendations not directly related to this CM

Observed:

- No signage on hose reels adjacent to electrical switchroom (e.g. "Not for electrical fires").
- Hose nozzle (on hose adjacent to electrical switchroom) missing centre spray mechanism.
- Dredger 10 fire hose (on reels) that appeared to crack when flexed, Management explained that these operate under low pressure (gravity fed water supply). When tested, WorkSafe observed that no water was available. It was observed that the machine was in operation. Management later informed that fire services water tank located on the machine was empty, thus rendering the

system unserviceable.

Comments:

WorkSafe issued an Improvement Notice (V01017400252L/111-02) - failure to provide a system that ensures that the fire fighting equipment on Dredger 10 remains in a serviceable condition and is available for use.

Recommendations:

1. APPBV & Others to ensure that all fire fighting equipment including extinguishers and hose reels are clearly identifiable i.e. correct signage - (e.g. "Not for electrical fires").

Comments from the Operator on the Findings and Required Actions

Signage is correct to AS/NZS 1841.1:2007 and AS/NZS 2444-2001 for extinguishers and AS/NZS 1221-1997 for Fire Hose Reels. Usage of different fire fighting equipment for specific purposes is also covered in the Annual Fire Training presentation and assessment.

Refer to Action Plan item 7.1

6.8 SMS Element 1 – Hazard Identification

SMS Element	Key areas of interest / Inspection Guidance
SMS1: Hazard Identification	**Reference Material:** **Note:** The information received from APPBV & Others prior to the verification did not contain information relating to hazard identification. **Purpose:** Not stated or documented by the site. As defined by WSV Senior Mining Engineer: To ensure all hazards are indentified so effective controls can be implemented to eliminate and/or reduce the risk to employee health and safety. **Performance Information:** ***Implemented:*** 1. A current and up to date training matrix or register exists. It is to include records for all training requirements related to Hazard Identification. 2. The Hazard Identification process is documented and made readily available to all employees. 3. A system exists for communicating the occurrence, presence and severity of hazards between in coming and out going shifts in accordance with regulation 5.3.19. ***Functional:*** 1. Evidence hazard identification tools (i.e. Job Safety Analysis) are regularly audited by supervisors/managers to ensure "generic components" and hazard identification is applicable and accurate. 2. Evidence exists to support all personnel are trained and competent in the use and application of all applicable hazard identification tools (i.e. Job Safety Analysis). 3. Historic and current evidence ensuring communication between in coming and out going shifts, identifying hazards, exists. 4. Evidence the hazard identification process is effectively utilised to help design and implement control measures with input from employees.

Findings (Fact & Opinion)

Implemented:

1. A current and up to date training matrix or register exists. It is to include records for all training requirements related to Hazard Identification.

Yes. The training matrix is computer based and reflects all of the training that has been provided to the employees.

The training in Hazard Identification has been included in this training matrix. This training is primarily in Job Safety Analysis methods, and 'Take 5'.

Information on hazard identification is also included in the Shift Instructions.

2. The Hazard Identification process is documented and made readily available to all employees.

Yes. The Hazard Identification is located on the Paradigm system – which provides document control. It is also included in the Induction training package. Refer to document (V33) Hazard Identification, Risk Assessment and Control procedure.

Hazard identification is included in the safety walk procedure (V28).This procedure includes a schedule

for where the safety walks are conducted in both the Mine and the Power Station.

Access to the Hazard Identification process is available for employees on the Intranet.

3. **A system exists for communicating the occurrence, presence and severity of hazards between in coming and out going shifts in accordance with regulation 5.3.19.**

Yes. The reporting of occurrence, presence and severity of hazards between shifts is communicated through the pre-start meetings and in 'hot shot' (shift) handovers.

Information is also transferred between Supervisors when they meet at shift changeovers.

Functional:

1. **Evidence hazard identification tools (i.e. Job Safety Analysis) are regularly audited by supervisors/managers to ensure "generic components" and hazard identification is applicable and accurate.**

No. This is an informal process. Some of the JSAs and Take 5s are audited but there is no set process in place for this to occur.

There is a process for looking at the quality of the compliance with health and safety practices. This is called 'fresh eyes observation'. The conduct of the 'fresh eyes observation' occurs monthly. These 'inspections' are conducted in all working areas of the Mine and Power Station. There are specific people who are allocated the responsibility for performing this activity – members of the Fresh Eyes BBS Committee.

This process looks at the safety practices that are being utilized in the workplace. 'fresh eyes' focuses on all aspects of safety based behavior – hazard identification, compliance with procedures (including PPE use, tools and equipment, housekeeping) , implementation of risk control measures and continuous improvement opportunities relating to safety (refer to documents V30 [Fresh Eyes Observation form] & V32 [Fresh Eyes Procedure]).

Information obtained from the 'fresh eyes observation' process is provided to the Health and Safety department and Operations Management.

2. **Evidence exists to support all personnel are trained and competent in the use and application of all applicable hazard identification tools (i.e. Job Safety Analysis).**

Yes. Evidence show that all employees have been trained in the use of JSAs; refer to documents V24 Job Safety Analysis Assessment. This training includes Supervisors and Senior Management.

The employees that have completed the JSAs (document V31) collected at this time have used the old form. At the time of this Verification no new completed JSA forms were located.

3. **Historic and current evidence ensuring communication between in coming and out going shifts, identifying hazards, exists.**

Yes. Information is transferred between Supervisors when they meet at shift changeovers, refer to document V27 'Weekday 06:20hrs Shift Change over Meeting. Hazards that have been identified are included in the information discussed at these meetings.

4. **Evidence the hazard identification process is effectively utilised to help design and implement control measures with input from employees.**

Yes. When a hazard is reported the information is then provided to the Maintenance crew. The information is also provided to the Health and Safety department and Operations Management.

The information is provided to the Priority over Plan (POP) Group for implementation into future design.

Once the information has been disseminated to all relevant groups it may be transferred into shift instructions.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Old forms (JSAs) are still being utilised post training indicating that auditing activities (to address this and other concerns – quality) are not being conducted; performance standards have not been developed.

Opportunities for Improvement

Recommendations:

1. Remove all copies of the old forms from the system when new forms have been developed and introduced.
2. Provide refresher training on use and completion of the Safety Walk Inspection Checklists.
3. Implement a formal process for auditing of the JSAs by Supervisors/Managers.

Comments from the Operator on the Findings and Required Actions

The new JSA forms are being progressively introduced as training is completed for each section. As a result there will be a mixture of forms while sections use the old forms prior to being retrained. When the training is completed all old forms will be removed from use.

The other recommendations are accepted and addressed in the action plan. Refer to Action Plan item 8.1, 8.2 & 8.3

6.9 SMS Element 2 – Safety Assessment: Fire

SMS Element	Key areas of interest / Inspection Guidance
SMS2: Safety Assessment (SA) Fire	**Reference Material:** V7 IPR-GDF Suez Major Mining Hazards (Bow Tie Diagrams) V10 Major Mining Hazard Audit Checklist V11 Major Mining Hazards Safety Assessments **Purpose:** As defined by WSV Senior Mining Engineer: Gain a detailed understanding of all risks associated with MMHs through identification, investigation and analysis. Develop and identify control measures relevant to all identified risks and ensure adequate testing of each control is undertaken. The developed systems must readily available and comprehensible to all personnel. **Note:** The information received from APPBV & Others prior to the verification did not contain information relating to Safety Assessment purpose or intent. **Note:** V11 Major Mining Hazards Safety Assessments states relevant SAs have been developed but not yet verified and agreed to by employees. **Performance:** ***Implemented:*** 1. The SMS contains a description of the SA conducted, reg 5.3.21(3)(d). 2. A SA exists for the identified major mining hazard "Mine Fires". 3. The documented SA for Mine Fires describes the methods used in the investigation and analysis, reg 5.3.23(4)(a). 4. Operators/employees were consulted during the development of the SA, have ready access to it and can demonstrate they comprehend it or know who to go to if they need assistance. 5. Evidence that the SA has provided a detailed understanding of all aspects of risk from Mine Fires, reg 5.3.23(2) (i.e. is there evidence they understand the main causes of Mine Fires, and the preventative and mitigative controls?). ***Functional:*** 1. The SMS has triggers for review in line with requirements of Reg 5.3.22. 2. There is evidence the SMS is or has been reviewed following an incident involving a mining hazard or once every three years. 3. Evidence that deficiencies highlighted by reviews are prioritised and progress monitored to ensure the SA the remains effective.

Findings (Fact & Opinion)

Implemented:

1. The SMS contains a description of the SA conducted, reg 5.3.21(3)(d).

Management explained that the Safety Assessment for MMH Mine Fires is linked to the Hazard and Risk Register (V19), the Hazard and Risk Register is linked to the Safety Management System Manual (V16) under the title 8.2 Risk Assessment. Upon review of both documents, WorkSafe could not find a description of the Safety Assessment. The Hazard and Risk Register (V19) lists Fire (as Hazard – page 17) and refers to another document (QEST rank 13 MMH IPRH-7). Consequences listed include 'loss of life' but makes no mention of "Major Mining Hazard" i.e. potential to cause an incident that would cause,

or pose a significant risk of causing, more than one death.

2. A SA exists for the identified major mining hazard "Mine Fires".

Management provided a copy of the bow-tie diagram titled "Mine Fire" (V7) dated 3rd March 2010 prior to the Verification as evidence that a Safety Assessment has been carried out for the identified MMH. Management also provided copies of 'control description' sheets that have been developed post March 2010 (V42). Management informed that these sheets contain the relevant information and description of the identified control measures as documented within the bow-tie diagram (V7). Of the 74 'Control Descriptor' sheets obtained, 47 (approx 64%) contain information relating to: Function / Objective, Related actions & owners, Performance Elements and Effectiveness Measures. The other 27 sheets (approx 36%) do not contain any information and remain incomplete.

Management provided a document (V17) titled "International Power APPBV & Others - Report for Major Mining Hazards Assessment, Interim Submission" dated December 2009 that states on page 19 (under the heading) "Further Work" - "Risk assessments are to be carried out for each of the scenarios for the MMHs illustrating that risk has been reduced to as low as reasonably practicable". Management informed me that the assessments as stated in the above mentioned document have not been completed.

3. The documented SA for Mine Fires describes the methods used in the investigation and analysis, reg 5.3.23(4)(a).

Methods used in the investigation and analysis of all documented Safety Assessments including Mine Fires is described on pages 2 and 3 of V17 ("International Power APPBV & Others - Report for Major Mining Hazards Assessment, Interim Submission") including AS/NZS ISO 31000:2009 (Risk Management) and MDG 1010 (Risk Management Handbook for The Mining Industry).

4. Operators/employees were consulted during the development of the SA, have ready access to it and can demonstrate they comprehend it or know who to go to if they need assistance.

A selection of employees were consulted and participated in the initial workshops (development of SAs including Mine Fires) conducted in 2009, these are listed on pages 5, 6 and 7 of V17. Enquiries with a random selection of employees (including supervision) revealed little / no knowledge of the SA process, details (some could 'vaguely' remember) or location. Most indicated that if they have 'major' OHS concerns they could openly discuss with Management who inturn would involve the OHS department.

WorkSafe observed completed JSAs that list (under consequences) fatalities, there is no 'reminder or instruction' detailing escalations i.e. review / revise / conduct a Safety Assessment. It appears (from this observation) that employees have little or no understanding of the SA requirements (see comments SMS1).

5. Evidence that the SA has provided a detailed understanding of all aspects of risk from Mine Fires, reg 5.3.23(2) (i.e. is there evidence they understand the main causes of Mine Fires, and the preventative and mitigative controls?).

It appears (from completed documentation provided – V17 and V42) that there is 'some' understanding of 'some' aspects of risk associated with MMH Mine Fires, however the incomplete documentation (see dot point 2) indicates that the mine does not have a complete understanding of risks associated with Mine Fires. Furthermore a significant fire occurred (on Dredger 11) within the mine (Jan 2012), a significant mine fire occurred in 2007, annual fire safety audits (see CM6 comments) actions are not closed out / signed-off in a timely manner and observations on Dredger 10 (see comments CM7 fire services water tank empty) indicate a lack knowledge (possibly risk management / perception of risk) regarding preventative and mitigative controls.

Functional:

1. The SMS has triggers for review in line with requirements of Reg 5.3.22.

Management provided document Safety Management System Manual (V16). Upon review, there does not appear to be any 'triggers' to review the SMS "if a mine modification is to be made, if an incident involving a mining hazard occurs and in any event at least once every 3 years".

2. There is evidence the SMS is or has been reviewed following an incident involving a mining hazard or once every three years.

Management informed that the SA re Mine Fires is under review post Dredger 11 fire (Jan 2012), however a closer inspection of the documentation (V42) indicates that the SA has not been completed (see comments dot point 2). It must be noted here that the current SA process commenced in Dec 2009. Other documentation obtained (V11) states that the Safety Assessments have been developed but are yet to be verified and agreed by members of the work groups.

3. **Evidence that deficiencies highlighted by reviews are prioritised and progress monitored to ensure the SA the remains effective.**

No evidence available / obtained.

Status (Yes/In Part/No - include explanation)

Implemented : No

Functional : No

Documentation obtained is incomplete and cannot be considered a Safety Assessment.

Other Comments

Comments:

WorkSafe issued an Improvement Notice (V01017400252L/111-01) - Safety Assessment for the identified Major Mining Hazard "Mine Fires" has not been conducted as per reg 5.3.23 of the Occupational Health and Safety Regulations 2007.

Opportunities for Improvement

Recommendations:

1. APPBV & Others to conduct a Safety Assessment re MMH Mine Fires as per reg 5.3.23 of the Occupational Health and Safety Regulations 2007.

Comments from the Operator on the Findings and Required Actions

Assessment completed subsequent to the Verification as part of the 3 year review process and to address Improvement Notice V01017400252L/111-01 that has now been complied with.

Refer to Action Plan item 9.1

6.10 SMS Element 3 – Incident Management and Reporting

SMS Element	Key areas of interest / Inspection Guidance
SMS3: Incident Management and Reporting	**Reference Material:** • OHS Act – PART 5, sections 37 -39 **Note:** The information received from APPBV & Others prior to the verification did not contain information relating to Incident Management. **Purpose:** Not stated or documented by the site. As defined by WSV Senior Mining Engineer: To ensure all incidents are reported classified and appropriately investigated with appropriate corrective actions taken to minimise potential future risk. **Performance:** ***Implemented:*** 1. An Incident investigation and reporting procedure, with particular reference to Part 5 sections 37 to 39 of the OHS Act, exists and is current. 2. A process for determining incident 'basic causes' has been defined. 3. Incident management responsibilities within the system exist and have been defined. ***Functional:*** 1. Evidence the incident investigation and reporting procedure(s) is used. 2. Evidence those with accountabilities in incident investigation and reporting are trained and aware of their responsibilities. 3. Evidence the incident investigation process or system is used for addressing actions. 4. Evidence that incidents are reported in accordance with OHS Act – PART 5, sections 37 - 39.

Findings (Fact & Opinion)

Implemented:

1. An Incident investigation and reporting procedure, with particular reference to Part 5 sections 37 to 39 of the OHS Act, exists and is current.

Yes. There is a procedure in place that has recently been reviewed and is scheduled for review in two years, (18/6/14). The procedure is 'Incident Management & Reporting Procedure (V35). The procedure is used in conjunction with the Incident Investigation Report (V34).

2. A process for determining incident 'basic causes' has been defined.

Yes. The 'Incident Management & Reporting Procedure' has a section that is used for determining the Incident level. The levels are from 1-4 (lowest to highest). This section of the procedure provides guidance on what determines the level of the Incident.

3. Incident management responsibilities within the system exist and have been defined.

Yes. The 'Incident Management & Reporting Procedure' defines the roles and responsibilities that are allocated when an incident occurs. The roles and responsibilities include Supervisor and Management duties.

The Incident Investigation Report requires input from all levels of Management and employee base – including sign off up to and including the General Manager Operations.

Functional:

1. Evidence the incident investigation and reporting procedure(s) is used.

Yes. Refer to the incident report for the fire on 11 Dredger. Evidence is included in the Final Report (V36) and the WorkSafe Victoria Incident Notification Form (V41)..

2. Evidence those with accountabilities in incident investigation and reporting are trained and aware of their responsibilities.

Yes. Verbal response to the questions relating to the roles and responsibilities of the Managers that were present during the Verification indicated that they have received training.

3. Evidence the incident investigation process or system is used for addressing actions.

Yes. The ICAM (Incident Cause Analysis Method) document generates the actions and responsible persons as part of the process – refer to the Dredger 11 Centre Chute Fire Incident Final Report (V36).

4. Evidence that incidents are reported in accordance with OHS Act – PART 5, sections 37 - 39.

Yes. Refer to the WorkSafe Victoria Incident Notification Form (V41).

Status (Yes/In Part/No - include explanation)

Implemented: Yes
Functional: Yes

Opportunities for Improvement

Recommendations:

Comments from the Operator on the Findings and Required Actions

No action required, agree with assessment

7. ATTACHMENT B – Verification Findings Tool – Information

Control Measures Findings

Implemented	Functional	Level	Description
No	No	0	Control does not exist (at all) as described by the Mine or exists but is totally ineffective
In Part		1	Key components required for the control to prevent the MMH are missing
Yes		2.	Control exists as required but is: • not working; • not being used
	In Part	3.	Control exists as required and is: • not totally effective - achieving some performance standards at controlling the MMH; • doing the job but is not being tested; • not properly performance monitored, and/or • lacking description and/or being informally used
		4	Control exists, is effective and is performance monitored but does not meet some of its performance standards
	Yes	5	Control fully implemented and fully functional

Safety Management System Findings

Implemented	Functional	Level	Description
No	No	0	The operator of the mine has **not** established and implemented a Safety Management System that supports implemented control measures: • The SMS element does **not exist** at all, and the Corporate SMS is not directly relevant to the Mine e.g. regulation 5.3.21(3)(b) , and/or • Safety Assessment is not part of the SMS as required by regulation 5.3.21(3)(b) Performance standards for measuring the effectiveness of the Safety Management System have not been developed
In Part	No	1	The Safety Management System does **not** provide a comprehensive and integrated management system for all aspects of control measures adopted under Part 3 because the SMS element exists but: • Key components of the SMS element required to manage the control measure are **missing** such as lack of maintenance, inspection or training systems, or • Key components are present but are **not being used** to manage control measures, i.e. a process that sits outside the formal SMS system is being used to manage the control measure, or • Those aspects of the SMS element which have been implemented have been demonstrated to not be functional. • Performance standards for measuring the effectiveness of the Safety Management System may have been developed, but they have not been undertaken to a satisfactory level. Auditing activities have not been developed or have been ineffective in identifying issues with implementation.
In Part	In Part	2	The Safety Management System does **not** provide a comprehensive and integrated management system for all aspects of control measures adopted because the SMS element exists but: • Some key components of the SMS element have **not** been implemented, and • Those aspects of the SMS element which have been implemented have been demonstrated to functional. • Performance standards for measuring the effectiveness of the Safety Management System have been developed covering those aspects of the SMS element that have been implemented and monitoring has been undertaken. Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.
Yes	No	3	The Safety Management System does **not** provide a comprehensive and integrated management system for all aspects of control measures adopted because:

			• The SMS element and key components are all present but are **not being** used to manage the control measure, i.e. use of other systems not included within the Mine SMS. Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.
Yes	In Part	4	The Safety Management System does **not** provide a comprehensive and integrated management system for all aspects of control measures adopted because: • Performance standards for measuring the effectiveness of the Safety Management System **have not** been developed. • The SMS elements and key components are present, are being used and performance standards have been developed but the performance is **not** being monitored in accordance to the criteria detailed within the Mine SMS. Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.
Yes	In Part	5	The Safety Management System does provide a comprehensive and integrated management system for all aspects of control measures adopted, however: • Performance monitoring activities indicate that the SMS **is not** meeting its required performance standard, and • Corrective action has **not** been developed or implemented Auditing activities have been developed but are deemed to be **only partially** effective in identifying issues with implementation/ functionality.
Yes	Yes	6	The Safety Management System does provide a comprehensive and integrated management system for all aspects of control measures adopted because SMS elements are implemented and are demonstrated to be effective by: • Performance monitoring activities that indicate the SMS is meeting its required performance standard, or • Performance monitoring activities indicate that the SMS is meeting its required performance standard, or where monitoring indicates deficiency in performance, that corrective action(s) have been developed, and monitored for implementation and effectiveness. Auditing activities have been developed and have been effective in identifying any issues related to implementation/functionality.

8. ATTACHMENT C – ADDITIONAL INFORMATION

Entry Reports were provided to site at the end of each day of the Verification (details below).

20/06/12	V01017400251L	**KH**
21/06/12	V01017400252L	**KH**

9. ATTACHMENT D – SITE DOCUMENTS RECEIVED BY WSV

V1. Organisational Charts

V2. Coal Batter Establishment By Dredger Operation

V3. Shift Information Report

V4. Dredger Operating Plans (i.e. schematics)

V5. APPBV & Others Mine Overburden Stability Face Mapping April 2012

V6. Mine Operations Compliance to Shift Instructions (Version 5)

V7. IPR-GDF Suez Major Mining Hazards (Bow Tie Diagrams)

V8. System Controls related to MMH #10 – Structural Failure of Fixed Structures (Control Measures linked to Bow Tie Diagrams – V7)

V9. System Controls related to MMH #4 – Jacking of Plant (Control Measures linked to Bow Tie Diagrams – V7)

V10. Major Mining Hazard Audit Checklist

V11. Major Mining Hazards Safety Assessments

V12. System Controls related to MMH #9 – Falling Material and Loads (Control Measures linked to Bow Tie Diagrams – V7)

V13. System Controls related to MMH #5 – Vehicle Interactions (Control Measures linked to Bow Tie Diagrams – V7)

V14. Findings from the 2011 Verification of Dredger 11 Outage – Replacement of Pivot No3 (July 2011)

V15. System Controls related to MMH #8 – Group Batter Failure – Engulfment or Fall from Heights (Control Measures linked to Bow Tie Diagrams – V7).

V16. IPR-GDF SUEZ APPBV & Others, Safety Management System Manual, dated 21/11/2011

V17. GHD International Power APPBV & Others, Report for Major Mining Hazards - draft only, dated December 2009

V18. IPR-GDF SUEZ APPBV & Others, QMS Internal Audit - Fire Protection Routines, dated 4/11/2011

V19. IPR-GDF SUEZ APPBV & Others, Hazard and Risk Register - Risk Assessment of Major Health & Safety Hazards at International Power APPBV & Others Power Station and Mine, dated 24/10/2010

V20. IPR-GDF SUEZ APPBV & Others, Plant Mods. Co-ordination AG 15 - Procedure for the Design, Manufacture and Installation of New or Modified Plant, dated 28/07/2009

V21. IPR-GDF SUEZ APPBV & Others, Incident Management & Reporting Procedure, dated 20/03/2012

V22. IPR-GDF SUEZ APPBV & Others, Occupational Health and Safety Training for Mine 2012 Schedule

V23. IPR-GDF SUEZ APPBV & Others, Mine Job Safety Analysis Proforma, dated 12/12/2011

V24. IPR-GDF SUEZ APPBV & Others, Job Safety Analysis Assessment Chris Code: MHJ001 x 4 , dated 16/11/2011, 12/1/2012, 12/12/2011 and 18/11/2011;

V25. International Power APPBV & Others, Safety Walk and Compliance Audit Procedure x 4, dated 10/2/2012, 31/5/2012, 3/5/2012 (6 pages) and 8/6/2012, 4 pages per document;

V26. IPR-GDF SUEZ APPBV & Others, Stop & Take 5 - six examples, not dated

V27. IPR-GDF SUEZ APPBV & Others, Weekday 06:20hrs Shift Change over Meeting, dated 20/06/2012

V28. IPR-GDF SUEZ APPBV & Others, Safety Walk Procedure, dated 6/3/2012

V29. International Power, Job Safety Analysis (JSA) Training Presentation, dated November 2011

V30. IPR-GDF SUEZ APPBV & Others, Fresh Eyes Observation Form, not dated

V31. International Power APPBV & Others, Job Safety Analysis Proforma, dated 2/6/2012

V32. IPR-GDF SUEZ APPBV & Others, Fresh Eyes Procedure, dated 16/5/2008

V33. IPR-GDF SUEZ APPBV & Others, Hazard Identification Risk Assessment and Control, dated 7/5/2012

V34. IPR-GDF SUEZ APPBV & Others, Incident Investigation Report, not dated

V35. IPR-GDF SUEZ APPBV & Others, Incident Management & Reporting Procedure, dated 18/6/2012

V36. IPR-GDF SUEZ APPBV & Others, 11 Dredger Centre Chute Fire Incident - Final Incident Investigation Report, dated 20/6/2012

V37. IPR-GDF SUEZ APPBV & Others, Fire Instructions - Mine, 27/7/2011

V38. IPR-GDF SUEZ APPBV & Others, Dredger D10 10 Daily - Lubrication Schedule, dated 2/12/2010

V39. IPR-GDF SUEZ APPBV & Others, Weekday 06:20hrs Shift Change over Meeting - including remedial and follow up actions, dated 21/6/2012

V40. IPR-GDF SUEZ APPBV & Others, Pyrogen Fire Detection & Suppression System for Mine Electrical Cubicles, dated 9/2/2005

V41. WorkSafe Victoria, Incident Notification Form - Dredger 11 Fire, dated 2/1/2012

V42. IPR-GDF SUEZ APPBV & Others, Bow Tie Diagram Revised Performance Measures, not dated

V43. APPBV & Others Power Corporation, Procedure Manual: SDT Manual for Open Cut Large Machines, Title: Fire Fighting Equipment, dated 11/11/1996

V44. IPR-GDF SUEZ APPBV & Others, Shift Production Report - Night Shift 12 June 2012 & Mine Shift Managers Report, 12/6/2012

V45. IPR-GDF SUEZ APPBV & Others, Mine Fire Service Policy & Code of Practice, 27/2/2012

V46. IPR-GDF SUEZ APPBV & Others, Fire Protection Systems Presentation, not dated

V47. Pina McCafferty, Fire Season Declaration - E-mail, dated 17/11/2011

V48. IPR-GDF SUEZ APPBV & Others, Check List for Fire Fighting Equipment Annual Audit & Inspection including supporting work orders/follow up action, varying dates

V49. IPR-GDF SUEZ APPBV & Others, List of Critical Components - Temperature Monitoring/Trips of Critical Controls, not dated

V50. IPR-GDF SUEZ APPBV & Others, Fire Person Duties Training Manual, 19/6/2012

V51. List of Warning Alarms for "critical components" re Temperature Monitoring (CITECK), dated 20/06/12