



International Power

International Power
Hazelwood

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ACTION OFFICER: Susan Browne

Audit Number: 4278
Business Unit: International Power Hazelwood
Audit Description: GHD Mine Fire Recommendations Follow-up Review
Audit Date: January 2008

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Explanation of the priorities assigned to recommendations:

Critical	Issues of such importance that failure to address them would jeopardise the continuity of the business and/or would have a material impact at Group level.
Priority 1 (High risk)	Significant issues which require the immediate attention of management and priority action for resolution.
Priority 2 (Medium risk)	Less significant but nevertheless important issues which should receive prompt attention from management, with an agreed program for resolution.
Priority 3 (Low risk)	Issues that warrant attention from management and should have an agreed program for resolution.
Observation	Issues where there is scope for management to improve processes.

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Topic:	1. Recommendation 1		
Produced by:	K Uytenbogaardt	Reviewed by:	
Observation:			
GHD Recommendation			
<i>In July of each year, a plan should be developed for the upcoming fire season based on weather predictions and mine conditions. Note that with the current conditions, a fire season may need to be designated from October to March.</i>			
IPRH Proposed action and Current Status			
<ol style="list-style-type: none"> 1. Fire Instructions to have a section designated to Fire Preparedness. (Complete) 2. By July 31 each year, the Fire Services Officer is to obtain weather predictions for the up coming fire season and to designate the start of the season. (Complete) 3. Develop a "Season specific plan" for up coming fire season based on weather previous, current and predicted condition. To be implemented before nominated fire season. (Complete) 4. Each month until the end of the declared fire season, the "season specific plan" is to be formally reviewed and updated for the current conditions by the Fire Services Officer. A written report with recommendations is to be submitted to the Mining Director and Production Manager for approval. (Complete) <i>Still need to update the table with rainfall and humidity figures for Oct, Nov and Dec 07 results.</i> 5. All the above items are to included in the IPRH Mine Fire Instructions. (Complete) 			

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Topic:	2. Recommendation 2		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p>An annual audit of the fire system should be undertaken prior to the start of the fire season in accordance with the fire season plan (Refer to Recommendation 1). The audit should review all aspects of the fire service facilities, systems and procedures. This should include hardware, documentation (eg. emergency response plans), fire pumps and electrical supply, spray coverage of coal levels and fire fighting training, etc.</p>			
IPRH Proposed action			
<ol style="list-style-type: none">1. Develop an audit checklist including hardware, documentation (eg. emergency response plans), fire pumps and electrical supply, spray coverage of coal levels and fire fighting training, etc. (Complete)2. A minimum of two audits will be carried out before October 1 each year. The first audit will be carried out as part of the development of the "Season Specific Plan" and be completed by July 31 each year. (Complete). The pre-season audit was not performed as the process had not been instituted at the time.3. The second audit will be carried out by September 30 each year and a written report to the Mining Director and Production Manager outlining plans to recover any shortfalls. (Complete)4. All the above items are to included in the IPRH Mine Fire Instructions. (Complete)			

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Predefined conditions should be identified to assist in determining whether a Fire Alert should be declared. The criteria should not be based solely on CFA Total Fire Bans as the CFA criteria includes factors relating to conditions that are not applicable to an open-cut coal mine. These conditions should include ranges in temperature, humidity, wind direction or speed that can define 'severe weather conditions'.

IPRH Proposed action

5. Set up to three weather stations, one on Southern batters, one on the Mine floor and the other on Northern batters, to collect real time data to assist with input into the declaration of a fire alert. **(In-progress)**. 2 weather stations have been put up (one on the northern batters and the other at the mine control centre). The weather stations are being trialled.
6. Set up an algorithm or graph to take into account temperature, humidity, wind speed and wind direction to assist in the declaration of a Mine Fire Alert. **(In-progress)**.
7. Investigate the linkage of the warning system to the CITEC system. **(In-progress)**.
8. Develop a set of rules which define conditions for which a "Period specific fire preparedness and mitigation plan" is to be prepared. **(In-progress)**. A draft has been prepared
9. Develop a process for preparation and circulation and communication of the "Period specific fire preparedness and mitigation plan" at least 24 hours in advance. **(In-progress)**.
10. The above actions are to be included into the IPRH Mine Fire instructions. **(In-progress)**.

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Topic:	4. Recommendation 4
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Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
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Observation:

GHD Recommendation

Fire Alert processes are understood but are not always fully complied with. As the Fire Alert is a critical control to prevent fires, the procedures including roles and responsibilities should be reviewed, updated, reiterated and enforced for mine personnel.

IPRH Proposed action

11. Review roles and responsibilities when a fire alert is declared and update in the IPRH Fire Instructions. **(Complete)**.
12. Upon declaration of a Mine Fire Alert when a "Period specific fire preparedness and mitigation plan" is not already in place, develop and issue a situation specific "Fire Alert Plan" from the generic "Period specific fire preparedness and mitigation plan". **(Complete)**. **The plan has been implemented, but has not been required.**
13. Carry out annual Mine Fire training for all Mine employees and contractors **(In-progress)**.
 - which include procedures for a fire alert. **(Complete)**.
 - IPRH Mine Fire Instructions to be issued to all relevant Mine personnel. **(Complete)**.
14. Introduce Mobile Phone message advice to critical persons once a fire alert has been declared. **(Complete)**.

Issue	2. Monitoring of Completeness of Fire Training
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Remediating Business Unit:	IPRH	Priority:	2	Status:	
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Issue:

Whilst there is detailed documentation to support the fire training of staff, a review of the records in the CHRIS system noted that several staff had not received training within the last 12 months. The main reason for staff missing their annual training was due to them being on leave at the time that the training was scheduled.

A review of the mine staff and the fire training records noted that several staff members had not received fire training for longer than 12 months. the list of individuals is as follows:

- D.Napier
- K.Clissold
- N.Coxall
- G.Daniel
- P.Fleming
- D.Gass
- V.Gates
- L.Hardy
- G.Honeychurch
- G.Huxley
- J.McCue
- M.McKernan
- G.Morgan
- D.Morrison
- D.Napier
- R.Pearce
- A.Prochazka
- R.Scorse
- J.Smith

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Topic:	4. Recommendation 4			
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]	
	Col Smith Geoff Smith G.Vaux I.Wilson G.Ypelaan			
Recommendation:	A report of staff who are due for training in the following quarter or have not received training within the preceding 12 months should be developed, printed and reviewed on a quarterly basis.			
Proposed Action:	TRAIN PERSONNEL WHEN OPPOR. ARISES			
Responsible Person:	R. PREZIOSO	Date Due:		Completed Date:
Process:		Themes:		

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Topic:	5. Recommendation 5		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p><i>Roles and responsibilities of Fire Services and personnel to support Fire Services during a Fire Alert and in an incident should be reviewed. The review should cover the responsibilities and tasks required by the Fire Services Group including the Fire Services Officer, Supervisor and Operators for the normal daily tasks, during a Fire Alert and during an incident. The review should also cover which mine personnel or contractors would provide a valuable and effective resource to support Fire Services during a Fire Alert and an incident dependent on their roles and responsibilities. For instance, utilising the maintenance crew for additional fire spotting after a Fire Alert has been declared. Refer to Appendix D for Organisational responsibilities in Fire Prevention.</i></p>			
IPRH Proposed action			
<ol style="list-style-type: none">1. Review entire role of group in upcoming EBA negotiations and negotiate changed working arrangements. (In-progress).2. Review Fire instructions in relation to the responsibilities of Fire Services Group, their normal duties during a fire alert and in an incident. (Complete)3. Review the roles of mine personnel during a fire alert and incidents. This will be outlined in the "Situation specific Fire Alert Plan" – refer to action #2 in Recommendation #4. (Complete)			

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Topic:	6. Recommendation 6		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>Interface and communications between Operations, Fire Services and Maintenance needs to be reviewed in terms of fire systems, particularly in relation to the power supply for the fire pumps.</i>			
IPRH Proposed action			
4. Electrical Authority to notify Mining Director, Production Manager and Fire Service Officer of changes to power supply to Fire pumps. (Complete). The procedure has been documented but not yet implemented as it has not yet been needed			
5. Develop procedure and introduce higher level sign off for changes to critical fire and flood protection plant e.g feeders, critical pumps, pipelines etc. (Complete).			

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Topic:	7. Recommendation 7		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation <i>Roles, responsibilities and procedures outlined within the IPRH Emergency Response Plan should be reviewed and rewritten utilising a checklist approach so that each person undertaking an emergency role can confirm that they are undertaking their key activities.</i>			
IPRH Proposed action Review and update Emergency Response Plan to include a checklist for each person undertaking an emergency role. (In-progress) .			

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Topic:	8. Recommendation 8		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>In a significant fire, each coal level should be treated as a fire zone and a Zone leader allocated after consultation with the CFA.</i>			
IPRH Proposed action			
6. Review Emergency Response Plan for Zone Leaders responsibilities to include allocation to the CFA crew/strike team and a designated zone appropriate to the incident. (Complete) .			
7. Emergency Commander is to allocate designated zones appropriate to the incident and include in the Mine Fire Instructions. (Complete) .			
8. Train and reinforce in annual Mine Fire Training. (Complete) .			

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Topic:	9. Recommendation 9		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>Once it has been determined that there is a significant fire, all supervisors should return to the ICP for a briefing and to undertake a role of co-ordinating the fire teams. A co-ordinated approach to fighting fires is more effective than just large numbers of fire fighters.</i>			
IPRH Proposed action			
9. Determine the point a fire/incident is deemed "significant" e.g outside agencies are required to attend, and the required action of Supervision. (Complete) .			
10. Update the IPRH Mine Fire Instructions and Emergency Response Plan to reinforce the role of Mine Supervision in a fire and/or emergency. (Complete) .			
11. Supervision to be trained in protocol. (Complete) .			

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Topic:	10. Recommendation 10		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]

Observation:

GHD Recommendation

The ICP should continue to be established as a special facility separate from normal operations or mine activities. The ICP should have available all essential equipment required for an emergency response, that is easily and quickly accessible; and able to be transported to any onsite facility. This equipment may be available as a mobile 'kit'.

IPRH Proposed action

12. Team to be set up to look at where the ICP should be established and what sort of equipment would be required. **(In-progress)**.

13. ICP to be established. **(In-progress)**.

Issue	3. Power for the Incident Control Centre				
Remediating Business Unit:	IPRH	Priority:		Status:	
Issue:	The business is currently upgrading the Mine Training Centre so that it can be used as an incident control centre. There is no backup electricity supply for the centre other than the mains supply				
Recommendation:	The team managing the development of the emergency response control room at the training centre, should investigate the need for generators to supply power in the event that electricity supply is unavailable at the time of an emergency.				
Proposed Action:					
Responsible Person:	R. PREZIOSO	Date Due:	MAY 08	Completed Date:	
Process:		Themes:			

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Topic:	11. Recommendation 11		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p><i>IPRH should consider notifying the CFA immediately once a spot fire has been reported and verified on site. The CFA remains on alert for a nominated amount of time (eg. 15 minutes). Within this time frame they must receive further notification from the site that the fire has been extinguished otherwise they will send out an initial response crew in anticipation that the fire has escalated and requires their assistance. This practice is undertaken at other mines in Latrobe Valley.</i></p>			
IPRH Proposed action			
<ol style="list-style-type: none"> 1. Discuss and agree protocol with CFA. (Complete). 2. Document agreed protocol and include in Emergency Response Plan and IPRH Mine Fire Instructions. (Complete). 3. Train and reinforce in annual Mine Fire Training. (Complete). 			

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Topic:	12. Recommendation 12		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p><i>The IPRH Significant Issue Corporate Response Plan and the IP Corporate Serious Incident Procedure should be reviewed and updated to ensure there are no discrepancies and the IPRH Emergency Response Plan should be consistent with the IPRH Significant Issue Corporate Response Plan.</i></p>			
IPRH Proposed action			
Undertake review of the above plans and ensure linkage and consistency. (In-progress) .			

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Topic:	13. Recommendation 13		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation <i>Work procedures and practices within the 'Mine Fire Service Policy and Code of Practice' and the 'Fire Instructions' should be systematically reviewed and updated.</i>			
IPRH Proposed action As part of the development of the "Season specific plan" both documents are to be reviewed and updated if necessary. (Complete) .			

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Topic:	14. Recommendation 14				
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]		
Observation:					
GHD Recommendation					
<i>Whilst it should be recognised that the priority is to ensure that sufficient water is used to control the spread of fires, particularly to ensure no burning coal is transferred to the power station, mine operations should be trained to understand the effects of excessive water transferred to the power station.</i>					
IPRH Proposed action					
Annual Mine Fire Training to include the effect of excessive water on power station operations. (Complete) .					
Issue	4. Not All Mine Staff have completed their annual Fire Training				
Remediating Business Unit:	IPRH	Priority:	2	Status:	
Issue:	<p>A review of the mine staff and the fire training records noted that several staff members had not received fire training for longer than 12 months. the list of individuals is as follows:</p> <ul style="list-style-type: none"> D.Napier K.Clissold N.Coxall G.Daniel P.Fleming D.Gass V.Gates L.Hardy G.Honeychurch G.Huxley J.McCue M.McKernan G.Morgan D.Morrison D.Napier R.Pearce A.Prochazka R.Score J.Smith Col Smith Geoff Smith G.Vaux I.Wilson G.Ypelaan 				
Recommendation:	A report of staff who have not received training within the preceding 12 months should be developed, printed and reviewed on a quarterly basis.				
Proposed Action:	TRAIN PERSONNEL WITHIN OPER. AREAS				
Responsible Person:	R. PREZIOSO	Date Due:		Completed Date:	
Process:	Themes:				

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Topic:	15. Recommendation 15		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation <i>The use of thermal imaging cameras and other technology in the detection of faulty idlers should be investigated for their application and used where appropriate.</i>			
IPRH Proposed action			
1. Purchase Thermal imaging equipment. (Complete) .			
2. Set up and implement program of inspections. (Complete) .			

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Topic:	16. Recommendation 16		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>The use of thermal imaging cameras was effective during the fire fighting and should be considered as well as other technology for wider use in spotting fires within the mine.</i>			
IPRH Proposed action			
Carry out an investigation into the use and possible purchase of thermal imaging and other technology in the Mine. (Complete) .			

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Topic:	17. Recommendation 17		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>A procedure for dealing with Carbon Monoxide (CO) during fire fighting, including the use of CO monitors, should be developed since personnel safety is a major responsibility and concern in fighting coal fires.</i>			
IPRH Proposed action			
3. Develop procedure for dealing with CO during fire fighting and insert into the IPRH Emergency Response Plan. (Complete) .			
4. Investigate the use and purchase of additional CO monitors and possible back up sources e.g Loy Yang B, Yallourn etc. (Complete) .			

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Topic:	18. Recommendation 18		
Produced by:	K Uytenbogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p><i>Whilst the efforts of all mine, contractor and CFA personnel are highly commended in their assistance with the fire fighting, it should be emphasised and reinforced to all personnel that no job is so important that they should take excessive risks.</i></p>			
IPRH Proposed action			
<ul style="list-style-type: none"> 5. Toolbox Meeting to be carried out outlining the above. (Complete). 6. Annual Fire Training to reinforce the need to "Take 5" and identify risks and take appropriate action. (Complete). 			

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Topic:	19. Recommendation 19		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<i>Allocating IPRH operations staff to CFA strike teams during a fire should be included within IPRH procedures (eg. Emergency Response Plan and/or Fire Instructions) and reinforced so that it becomes normal practice.</i>			
IPRH Proposed action			
7. Review Zone Leaders responsibilities as this will include working with CFA strike teams and update Emergency Response Plan and IPRH Mine Fire Instructions. (Complete) .			
8. Zone Leader training to be provided to Mine Crews. (Complete) .			

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Topic:	20. Recommendation 20		
Produced by:	K Uytendogaardt	Reviewed by:	[reviewed_by]
Observation:			
GHD Recommendation			
<p><i>To ensure that the ongoing efficient operations of the mine are not compromised over the long term as a result of the fire incident, a detailed risk analysis should be carried out to assess the life cycle impact of the fire on maintenance costs and longevity of the mine infrastructure assets.</i></p>			
IPRH Proposed action			
<p>Asset Manager to carry out a detailed risk analysis to assess the longevity of the mine infrastructure assets. (Complete).</p>			