If calling please ask for:
Mr Michael Morgan

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Reference:
MFB Review of the Hara Pumping Strategy

5th February 2014

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Acting Chief Officer Peter Rau
Metropolitan Fire & Emergency Services Board
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Dear Acting Chief Officer, Peter Rau

Sir,

The South Australian Metropolitan Fire Service (MFS) received a request from your office to assist with an independent (no blame) review of the Hara Dam pumping strategy undertaken at the Hazelwood Mine Fire. The request was received by the MFS on the 28th February 2014.

Assistant Chief Fire Officer (ACFO) Michael Morgan was requested to attend by the MFS Chief Officer and undertake a review on behalf of the Metropolitan Fire Brigade (MFB).

I arrived in Melbourne on Saturday 1st March 2014 and travelled to the Regional Coordination Centre (RCC) at Traralgon. At the RCC I met with Deputy Chief Officer (DCO) David Youssef, I was directed to Assistant Chief Fire Officer (ACFO) Ken Brown to discuss the scope of the review.

I met with ACFO Brown and received a briefing regarding the review of the Hara Dam pumping strategy.

Review Strategy

The purpose of this review is to examine the strategy of the 24th of February 2014 which involved MFB fire crews being deployed to the Hara Dam for a pumping operation.

The review shall contain an overview of the pumping strategy, the decision process, the authorisation including reporting lines and the safety considerations.

The review shall also provide conclusions including lessons learnt and recommendations as opportunities for improvement."

I was informed that I would have access to all the personnel that had been involved and any records relating to the incident. I was informed that the MFB had discussed the process with the United Firefighters Union Victorian Branch and that it would be supported.

I was provided with a list of personnel who had attended or been involved in the incident. As some of the staff was now off duty I would conduct some phone interviews to determine the individual's level of involvement, any actions undertaken or observations made.

The list included but was not limited to the following:

Commander Edward Brizzio (Operations Commander)

Commander Paul Illman (Operations Logistics Commander)

Senior Station Officer Craig Williams (Shift Safety Officer)

Station Officer Steven Davies (HSR)

Station Officer Rob Knight (SO on the pumper at the Hara Dam)

Senior Station Officer Tony Branchflower (UFU HSR Coordinator)

Station Officer Richard Kemp (SO on the pumper at the Hara Dam)

Graham Lay CFA (Operations Officer)

Linden Bradley CFA (Sector Commander)

Following the briefing I attended the fire ground at Hazelwood Mine, I reported to the MFB Divisional Command Centre (DCC) in the staging area and introduced myself to the MFB staff on duty.

Review of the Hara Dam pumping incident

1. Situation and sequence of events:

Sunday 23rd February 2014;

The night shift was operating at the Hazelwood Mine fire, at around 0230 (Monday morning) one of the MFB Health and Safety Representatives (HSR) on site was requested to undertake a risk assessment on the area in the mine known as the Hara. The Hara was located in Charlie Sector of the incident. The request came from a Country Fire Authority (CFA) Operations Officer; consideration was being given to pumping out the Hara to assist with reinstating the Ash Pit.

There was confusion amongst some of the staff with the naming and location of the Hara and the Ash pit; it appears that some believed them to be separate areas within the mine site.

The Ash pit is in fact located in the Hara area.

The HSR conducted the Risk Assessment (RA) of the Hara and raised the following issues;

- The water quality in the Hara, relating to the possibility of contact with the skin. Also of concern was the potential atomisation of the water if pumped and delivered through the monitors and any airborne droplets. It was recommended by the HSR that the water quality be analysed prior to working in the area.
- The hard standing for the appliances
- The fire in the wall of the Batter

The hand written RA was passed to the Operations officer, the officer would provide this information at the Emergency Management Team (EMT) site meeting at 0400 that morning. The HSR was unable to attend the EMT site meeting, he was required to stay on duty as the Safety Officer in the mine, it was his understanding that the RA was presented to the EMT.

No work was undertaken in the Hara during the nightshift.

The Traralgon Incident Command Centre (ICC) was aware of the RA and the outcomes of the RA. It had been noted in the Safety Officers log. Crews would be informed at the change of shift briefings; this would be a verbal briefing at the MFB DCC

Monday morning 24th February;

The dayshift crew's commenced work at the incident, the changeover of crews occurred at around 0800.

All site crews change over at the same time including the Operations Officer/Deputy/Staff and the firefighting crews working in the mine.

- The Operations Officer (CFA)
  - *Was not aware of the RA and the no go zone in the Hara area, this appears to have been missed at the changeover of the shift.*
- The Deputy Operations Officer (MFB)
  - Was passed a hand written note at change over by the outgoing Deputy. The note identified possible issues with the water quality in the Hara area.
  - *He identified that there was some confusion between the naming and location of the Hara and the Ash pit.*
  - The Operations Deputy had no direct contact with the MFB crews working in the mine.
- Operations strategies for the Hara, Charlie Sector during the dayshift;
  - In consultation with the Mine management it was determined that by using water from the Hara for firefighting the water levels in the area would remain balanced i.e. no additional water would be added from another source. This would also assist in draining the Ash pit.
  - The Operations Officer requested that the Sector Commander (SC) (CFA) and crews attempt drafting water from the Ash pit and relay the water to the aerial appliance for firefighting purposes.
  - Note;

    Crews working in the mine were to work two hour shifts and rotate out of the mine with the next shift. For the review the shifts will be identified as shift one and shift two
- Sector Commander, shift two, Charlie Sector (CFA)
  - *Was made aware at the change of shift in the morning that water usage in the Hara was to be minimised. He was not aware that the Hara had been identified as a no go zone for firefighters and that the water was not to be used.*
- Operations within the Hara, Charlie Sector;
  - The MFB crew (Shift one) were tasked with working in the Hara (Shift 2 were resting). The crews were asked by the SC to wait until he had received authority to commence the task in this area. Prior to sighting the appliances the crews were relieved, as was the SC.
  - MFB crew (Shift two) were told that they would be required to go to the dam *(Another term used for the area, adding to the potential confusion).* They conducted an assessment of the area utilising a four wheel drive vehicle prior to taking the appliances into the Hara.
  - The MFB crew were instructed to go to the dam and wait for clearance from the SC before commencing any work.
  - The MFB crews were satisfied with the task and set up at the Hara.

- At this point the SC arrived and observed the crews setting up the appliances. The SC discussed the task, he enquired if anyone had any concerns with the task, and none were identified. They discussed the task and then commenced getting to work.
- The crews set up the suction from the Ash pit and commenced relaying to the aerial appliance. They experienced difficulty in maintaining the suction; the strainers were fouling with debris.
- The SC left the Hara to retrieve an additional suction length to assist with the drafting. When the SC had returned to the Ash pit the crews had changed over. The crews were having limited success in drafting water from the Ash pit during the shift.
- At no time were crews in the water during the tasking. This was verified in the interviews with each of the Officers working in the Hara.
- *The SC was not aware of any issue with the Hara until the following dayshift.*

- MFB crews returning to the staging area for stand down
  - When the MFB crews returned to the staging area one of the officers spoke with the HSR about the tasks they had undertaken during the day. The HSR informed them that he had identified the Hara during the previous nightshift as no go zone; no staff were to enter the area. That the water was to be tested before operations would be undertaken in the area.
  - The MFB Officer then discussed the Hara operation with an MFB Commander on site. He was instructed to fill an MFB SAFE form out on his return to the training College.
  - The MFB would investigate the pumping strategy in the Hara area

2. PPE Worn

There is no issue identified with the level of PPE worn at the Hara dam, the appropriate PPE was worn at all times during Hara pumping activity.

3. Environmental Issues

There was a Risk Assessment (RA) conducted during the nightshift prior to the dayshift commencing. The RA identified several potential risks, as a result it was determined that no firefighting activities would be undertaken until the risks had been controlled or mitigated.

This information had been passed on to some members of the dayshift but no all.

Other environmental issues had been discussed by the SC and the crews at the scene, no further issues had been identified.

4. Training Issues

No training issues were identified at the task level of the Hara pumping activity.

Refresher training into effective briefings at handover is required. This an important part of the communications process whereby critical information is passed on to the oncoming personnel.

5. Review Findings

- Effective handovers must occur at every level during the change of shift during incidents. The identified RA of the Hara was not passed onto all staff in the Operations Centre, this lead to some crews being exposed to potential or unknown risks.
- The Safety Officers should attend the Emergency Management Meetings and ensure any critical safety information is presented.
- During the incident personnel were logging activities in personal incident log books. At the change of shift the log books would leave with the individual. Critical data and information was the lost as reference material.
- The changeover of all crews on the fire ground occurs at the same time, this can potentially lead to all of the intelligence gathered during that shift leaving the fire ground at the same time. Consideration needs to be given to staging the changeover of the crews and the Operations Officer/Deputies.
- No dedicated board or area was provided in the Operations Centre or the Divisional Command Centre for identifying issued raised or safety concerns that had been identified or addressed.
- No Critical messaging procedure other than the Red Flag Warning. The Incident Shift Plan contains a Safety Briefing. A Critical messaging procedure needs to be developed.
- There was confusion around the naming and location of the Hara/Ash pit or dam.

6. Recommendations

The following recommendations are provided for your consideration:

1. Members of Agencies participating in the Incident Management Teams are reminded of the need for effective handovers during or at the completion of shifts. The Australasian Inter-Service Incident Management System (AIIMS) fourth edition identifies the importance of effective handovers and the sharing of critical information. This will assist in the transfer of information that is essential to Incident Management and Safety.
2. Safety Officer are required to attend any Emergency Management or other Strategic meetings to ensure all the Safety concerns are passed on and enacted upon.
3. Incident log books are allocated to a position and not to individuals. At the commencement of the incident a log book is allocated to each position, entries are made in the log book. At the change of shift or of position the log book remains with the oncoming person. This will enable the person filling this role to review the data from the previous shift or shifts. Personnel will record the start and finish times of their shifts.
4. Changeover of all crews is staggered, the Operations Officers and Sector Commanders change prior to the change of firefighting crews. This will allow for the oncoming personnel to have a clearer understanding of the activities occurring.
5. Critical/Safety issues need to written up and accessible to staff in each area. A Safety/Issues board to be dedicated to issues as they are identified. As the risk or issue is mitigated the officer in charge of the area will strike through the issue but not erase it. This will provide the oncoming shift/shifts with the safety issues and other issues that have occurred during the incident. This is important when incidents span over a long period of time.
6. Critical safety messaging procedures should be developed, implemented and included in all safety briefings.
7. Naming protocols and the location of sites is clearly identified and passed onto all personnel at the Incident.

I wish to acknowledge the MFB Acting Chief Officer and MFB Senior Management group for their willingness to undertake the review of the Hara Pumping Incident. I was provided with access to all the staff and information relative to the Hazelwood Mine Fire. This included staff from the MFB and CFA at the SCC, ICC, Operations Centre and MFB DCC. I also wish to acknowledge all the staff interviewed for their frank and open provision of information.

Yours faithfully

Michael Morgan
Assistant Chief Fire Officer, Operations Command South.

cc: Assistant Chief Fire Officer Kenneth Brown
cc: MFS Acting Chief Officer Mick Smith