SACEA
PROFESSIONAL
DYNAMIC
VALUE ADDING

NEWSLETTER

9th Edition

May 2021

From the Councils Pen.....

REFLECTION ON SAFETY PERFORMANCE

The safety dashboard (Fig1) as disseminated by Mineral Council South Africa depicted regression of 42% in Mining industry fatalities. It is with great distress in our Coal Industry to also have retrogressed in our safety performance.

We need to regroup and reflect on the current challenges, identify system failures and learn from such incidents and preventive controls are implemented in pursuit to zero harm. We envisage robust engagements in our oncoming Safety Workshop to discuss industry challenges and also cover safety themes which are prioritized in our SACEA 2021 strategy implementation.

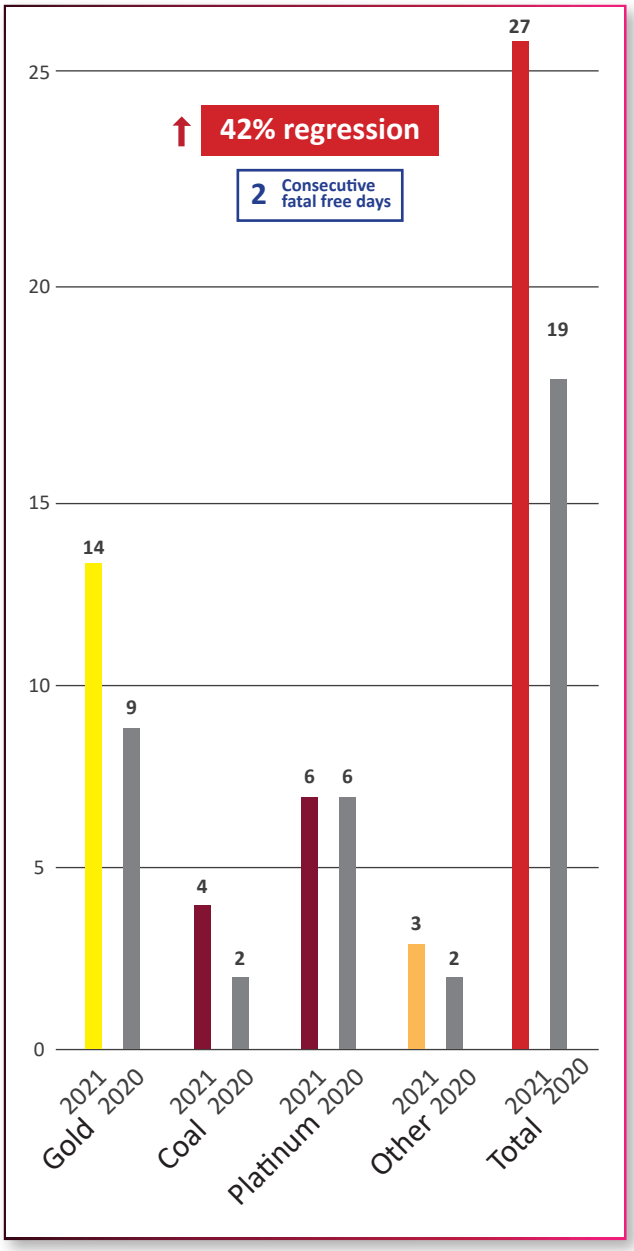


Figure 1: *Fatality per commodity to date 24 May 2021*

Congratulations

REFLECTION OF PAST PRESIDENT

ANNETTE SMALL

At the Council Meeting held on Thursday 22 April 2021 at Colliery Training College in Emalahleni. The SACEA President, Mr. Hennie Lombard expressed his gratitude, congratulated and thanked Mrs. Annette Small for her dedicated leadership and continued contribution to the Association during her term of Presidency

SECOND VICE-PRESIDENT

FEFA MOLELEKI

Mr. Fefa Moleleki has been elected as 2nd Vice-President of the Association for the year 2021. We wish him the best of luck and we look forward to working with him throughout the coming year.

From letf to right:
Mazwi Buthelezi (Vice-President), Fefa Moleleki (Second Vice-President), Hennie Lombard (President)

UPCOMING EVENTS

Underground Users Forum	10 June 2021
Young Talent Forum	23 June 2021
Plant Users Forum	22 July 2021
Technical Symposium	29 July 2021

THE INTERNET OF THINGS (IoT)

The Internet of Things (IoT) is a technological paradigm imagined as a global network where devices or machines can interact. IoT is acting as a technological revolution influencing all application domains including smart home, smart cities, agriculture, automobiles, health-care, industrial production, and transport. It is estimated that there will be 50 to 100 billion smart things and objects connected to the Internet by 2020. In this context, industries are being challenged to rethink their production processes with the potential to spark innovations in production systems on an unprecedented scale.

The Industrial Internet of Things (IIoT), which is an application of IoT in industry, is part of the Industry 4.0 concept, which emphasizes the idea of consistent digitization and the connectivity of all productive units, combining the strengths of the traditional industry with internet technologies.

Figure 2: *Practical workshop at CTC*

ARTISAN 4.0™

The Internet of Things and Industry 4.0 is everywhere. These advancements in technology are inevitable and will touch us all in mining, manufacturing, engineering, and logistics. It will touch the work of artisans. Automation is central to this trend, including robotic applications and the Internet of Things. ARTISAN 4.0™ skills are required to handle highly skilled work with machines that are interconnected and communicating with humans. While these technologies sweep across workplaces and redefine business models, there is an opportunity to prepare yourself or your organisation for the future with CTC's ARTISAN 4.0™ program.

The ARTISAN 4.0™ program is offered in four phases and at the conclusion of each ARTISAN 4.0™Phase, a certificate will be issued. Visit CTC for further information about this course.

Figure 3: *SACEA Council site visit at CTC*

NORTHERN/LIMPOPO REGIONAL MEETING:

A Northern / Limpopo Regional Meeting was held on 6 May 2021 and the topic of one of the presentations was:

BATTERY TECHNOLOGY

Battery technology is constantly changing as more research are being conducted. Batteries are getting smaller, more powerful and less expensive which enables the market to look more into battery power mining equipment.

Why batteries?

Batteries provide multiple benefits in the health and safety, cost, performance and functionality when compared to a standard diesel system. Please see the basic benefits from battery systems as outlined below.

1 FUNCTIONALITY

- Individual Cell Monitoring –
- Voltage,
- Resistance,
- Temperature
- Touch Safe during Maintenance following the Correct Lock-out Procedure.
- Integrated Thermo-Electric Cooler
- Integrated Gas and Arc Flash Detection
- Internally Fused for fault current and Overload protection
- High Voltage Interlock Monitoring
- Internal Shock and Vibration Absorption
- Advance Battery Conditioning Software to provide battery State of Health and Preventative Maintenance

2 HEALTH & SAFETY

- Reduction in safety and environmental risks
- Zero emissions (DPM's). No ventilation and heat dilution required for operation of the equipment.
- Reduction in noise levels
- Handling of diesel. No ignition hazard
- No exposure to high temperature hazard
- Turbulence of exhaust stirs up harmful dust

3 COST

- Increased CAPEX reduced OPEX
- On average the difference in the cost of capital is recovered after 18 - 24 months
- Reduced maintenance and service cost
- Reduced ventilation cost – a 20% reduction in speed contributes to a 50% saving in electricity consumption

4 PERFORMANCE

- Increased performance parameters
- Battery equipment has three times more power when compared to diesel powered equipment
- Higher availabilities (MTTR and MTTF)
- Increased haulage achieved through more trips per shift
- Increased efficiency and reliability

Learning From Incidents

MINING FATALITIES

According to the Minerals Council Safety Dashboard, the mining industry already recorded an increase in fatalities for 2021 compared to the same period in 2020.

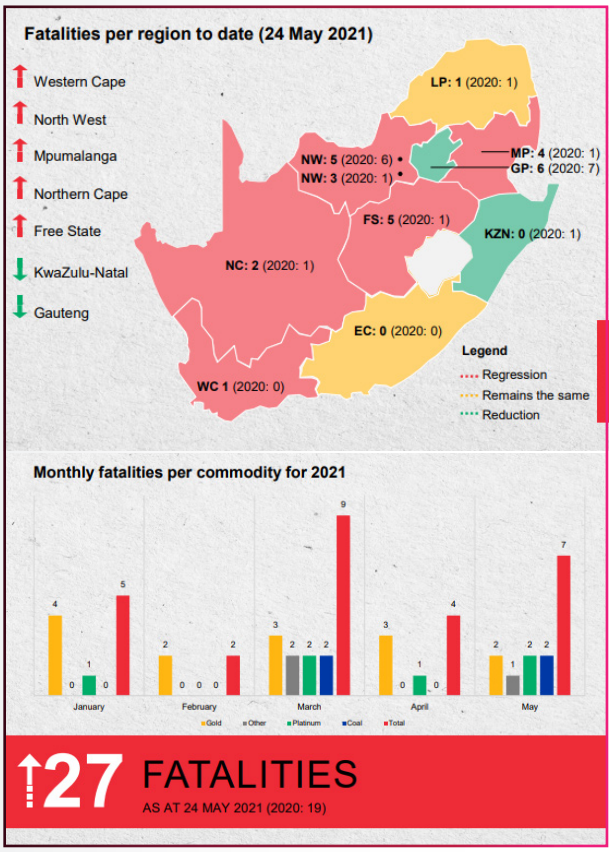
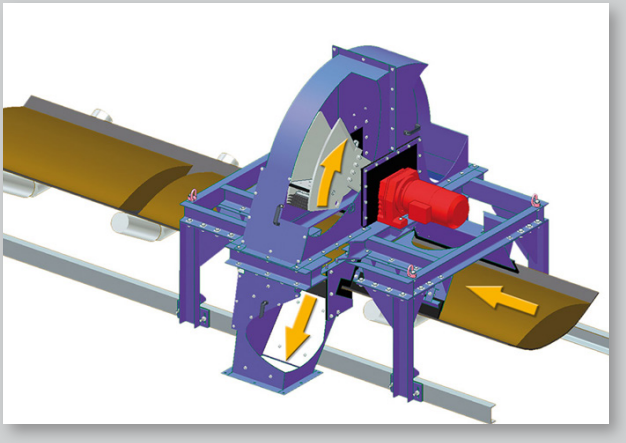


Figure 2
Sourced from: www.mineralscouncil.org.za

CROSS HAMMER BELT SAMPLER FATAL

INCIDENT DESCRIPTION:

Mpumalanga Colliery: On 06 May 2021 an Assistant and an Artisan were installing a skirting on the Auto Sampler. The Auto Sampler started unexpectantly, crushing the Assistant's head between the Sampler hammer and the structure.



EMPLOYER DUTY GAPS

- **RISK ASSESSMENT**

Does the Mini-risk assessment address the task?

- **PROCEDURES**

Does the procedure cover the interlock between the sampler and the conveyor belt. Is it clear to the artisan, how to lock the system out?

- **TRAINING & COMPETENCE**

Does the person have the right training, competence and authorization?

- **ENFORCEMENT**

Is the rule applied and checked on a regular basis?

LEARNINGS & RECOMMENDATIONS

1. PLANNING

While planning or doing a task, ask yourself the following questions and address in the SWP and Mini risk assessment:

Will I…

- Come into contact with any…(possible risk)?
- Loose control over any…(tool/equipment)?
- Cause a sudden release of stored energy?

2. ISOLATION & LOCK-OUT

During isolation and lock-out, ensure that all equipment being worked on, or being in contact with, are isolated and locked out.

Do a positive test on each piece of equipment to ensure isolation was effective.

3. TRAINING

Only competent team members to execute work.

Ensure that all team members are trained to understand the hazards, risks, controls and steps to do the task safely.

4. WORK PROCEDURES

Practical Safe Operating Procedures and Standards:

- Clearly defined task steps in the correct sequence should be executed.
- Identify the risks associated with each task step.
- Identify the controls needed to mitigate the specific risk during each task step.

CHERRY PICKER FATAL

INCIDENT DESCRIPTION:

Mpumalanga Colliery: On 12 May 2021, a Cherry Picker Operator assisted an Artisan to inspect and tighten bolts on a structure by way of using a Cherry Picker. As they were raising the bucket of the Cherry Picker, the Operator's head was crushed between the structure and the Cherry Picker control panel

EMPLOYER DUTY GAPS

- **RISK ASSESSMENT**

Does the Mini-risk assessment consider the whole working environment? (Including elevated structures)

- **PROCEDURES**

Does the procedures address all possible risks, including overhead structures? Is there a stand-off rule?

- **TRAINING & COMPETENCE**

Are you constantly guarding against complacency?

- **ENFORCEMENT**

Is it allowable to operate in close proximity of structures? How is this governed?

LEARNINGS & RECOMMENDATIONS

1. PLANNING

While planning or doing a task, ask yourself the following questions and address in the SWP and Mini risk assessment:

Will I…

- Come into contact with any…(possible risk)?
- Loose control over any…(tool/equipment)?
- Cause a sudden release of stored energy?

2. ISOLATION & LOCK-OUT

Do not allow workers to position themselves between overhead hazards, such as joists and beams, and the rails of a basket.

If the basket moves, the worker(s) could become trapped and crushed between the rails and the overhead hazard.

3. TRAINING

Ensure that all team members are trained to understand the hazards and risks associated to the task.

Ensure that all team members know and follow the steps to carry out the task safely.

4. WORK PROCEDURES

Ensure that work procedures and assessments address the critical aspects of the task.

Ensure Manufacturer's safety instructions are followed and incorporated in work procedures

SACEA
PROFESSIONAL
DYNAMIC
VALUE ADDING

For more information

RAYMOND VAN DER BERG

(+27) 11 568 2053
raymondvdb@mpas.org.za
www.sacea.org.za
@SACEAofficial