MINERALS COUNCIL
SOUTH AFRICA

COMMON, MEMBER-DIFFERENTIATED APPROACH TO COMPLIANCE WITH TMM REGULATIONS

1 BACKGROUND

The commencement date of the suspended clauses, that is, regulation 8.10.1.2(b) and 8.10.2.1(b), which required the automatic slowdown and stop of diesel-powered TMM, in the TMM Regulations was gazetted on 21 December 2022. This date is also the effective date as per Gazette No. 47790, Vol 690, Government Notice No. 2908. For context, this gazette must be read in conjunction with Government Gazette No. 38493 published on and dated 27 February 2015.

In anticipation of an earlier lifting of these sub-regulations, the Board had approved adoption of a common, member-differentiated approach to compliance. Except referring mines to Section 79 of the Mine Health and Safety Act (MHSA), the Regulator could not provide written guidance on how to apply for exemption, where to apply for exemption, what to cover in the exemption application, format of action plan, and list of supporting documents required. This document provides a broad framework of the approach which was reviewed and supported by the CM&EEs on 18 January 2023, approved by the CEO Zero Harm Forum on 2 March 2023, and ratified by the Board on 29 March 2023. This document also outlines, in detail, key elements of the approach to guide mines to compliance, which include a template for application for exemption / extension as per Annexure 1 below). This document needs to be read in conjunction with the related document titled: "*Process Flow Guidance Towards Compliance with TMM Regulations".*

2 KEY ELEMENTS OF THE MEMBER, DIFFERENTIATED APPROACH TO COMPLIANCE

The Minerals Council Board approved adoption of a common, member-differentiated approach in response to the urgent lifting of the suspended clauses in the TMM Regulations with continual support through the Minerals Council.

In essence these elements help the mine to answer these questions:

- Where are we?
- Where do we want to be?
- How and when are we going to get there?

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2.1 Conducting a Gap Assessment against the Technical Specifications

Using the Technical Gap Assessment Checklists is useful in assisting mines to assess their collision prevention system (CPS) products against the CPS technical requirements. The feedback contained therein is also supportive in accelerating mines' and suppliers' development processes. These checklists were issued for completion by the original equipment manufacturers (OEMs), original technology manufactures (OTMs), and third party providers. The Minerals Council issued these checklists to the CM&EE TMM Task Team members to engage their respective suppliers and to have these checklists completed.

The checklists are on the Minerals Council's MOSH website: Technical Gap Assessment Checklists.

2.2 Conducting of CPS Readiness Levels Analysis

In view of the earlier lifting of the suspended clauses in the TMM Regulations, mines are urged to conduct their own readiness levels analysis to gauge their readiness. Readiness levels will also assist when engaging with the DMRE to indicate the South African Mining Industry's (SAMI's) readiness levels. The following aspects should be considered:

2.2.1 Risk Assessment Results

Mines are advised to ensure that their TMM fleet asset registers are reviewed and kept up to date. Based on the results of the risk assessment and traffic flow analysis, TMMs which are identified to operate within areas on the mine where there is a significant risk of collision, must be identified as a matter of urgency so that plans can be put in place to have those TMMs fitted with CPS. Many TMMs are legacy or unintelligent and require upgrades to be auto-slowdown and auto-stop compliant.

2.2.2 Available CPS Technical Specifications

These specifications are a good guide to ensure that the whole SAMI is being measured against the same "ruler". This is to ensure that there is uniformity on the CPS products supplied to the mines and also conformity to Section 21 of the Act, including legal liability.

These documents are available on the Mineral Council's MOSH website: CPS Technical Specifications.

2.2.3 Status of Installation, Repair, and Maintenance Skills Readiness

Prior to CPS being installed on the mines' TMMs, it is important that the mine has adequate skills to install, repair, and maintain the CPS systems. In the least, the mines

must ensure that there are service level agreements in place with the respective OTMs. The Minerals Council has published a Knowledge Transfer Framework which provides a process for transfer of the above skills from the OTM to the mines' technical personnel. This document is available on the Mineral Council's MOSH website: Knowledge Transfer Framework.

2.2.4 Supplier selection, budget, and board approvals

Mines are urged to request proposals from suppliers, obtain board or equivalent approvals, assign executive champion, appoint project manager, establish multi-disciplinary project team, budget sufficient funds to implement CPS. For those mines that have not implemented CPS or intending on changing suppliers, it is important that enough time is allocated for procurement and supplier selection processes. Furthermore, consideration needs to be given to those TMMs identified as legacy TMMs for solutions to either upgrade or replace. Such decision need executive leadership approval.

2.2.5 CPS Testing

Testing for technology readiness remains the most critical issue, takes considerable time. It must be well planned, fully resourced with fit-for-purpose machinery, instrumentation, authorised operators, safe operating conditions, and using industry test guidelines as developed through the Minerals Council special project.

2.2.6 Change Management

Sustainable adoption of new technology must be centred around people. Address the unintended consequences of impact of technology on people. These people would be stakeholder groups, those affected directly or indirectly, decision makers, enablers, supporters, and implementers. A detailed change management, plan including communication and training plans should be developed and implemented.

2.3 Mine Specific Action Plan

Each mine should compile a specific action plan on how and when it will conform to the requirements as set out in Chapter 8.10 of the MHSA. It is critical that realistic timelines be established with start and end date to close out the gaps identified in the conformance assessment and other key elements as outlined above.

3 CONCLUSION

In essence the common, member-differentiated approach to compliance with TMM Regulations provide mines with a tool to develop their action plans against which progress implementation progress can be monitored both internally and externally.

ANNEXURE 1 – TEMPLATE FOR APPLICATION FOR EXEMPTION / EXTENSION

It is envisaged that this will assist mines with compliance and, where necessary, also with application for exemption / extension, noting that the Chief Inspector of Mines had asserted during a meeting with the Chairperson of the CEO Zero Harm Forum that such applications must be accompanied with mine specific action plans. The following sets out the key aspects in the form of a table of contents for application for exemption in a common, member-differentiated approach:

TABLE OF CONTENTS

1. **Title**

    a) **To whom:** The Principal Inspector of Mines. (in your province)

    b) **Subject:** Mine Name (Applicant): application for exemption from the Mine Health and Safety Act, 1996 (Act No .29 of 1996) – reference applicable regulations:

    - **Underground:** 8.10.1.2(b): in the event where no action is taken to prevent potential collision, further means shall be provided to retard the diesel powered trackless mobile machine to a safe speed where after the brakes of the diesel powered trackless mobile machine are automatically applied. The prevent potential collision system on the diesel powered trackless mobile machine must fail to safe without human intervention. Collisions between diesel powered trackless mobile machines.
    - **Surface:** 8.10.2.1(b): in the event where no action is taken to prevent potential collision, further means shall be provided to retard the diesel powered trackless mobile machine to a safe speed where after the brakes of the diesel powered trackless mobile machine are automatically applied. The prevent potential collision system on the diesel powered trackless mobile machine must "fail to safe" without human intervention.

2. **Background (Contextualisation)**

    Brief summary of Applicant's overall approach to compliance and intent to comply with Regulations 8.10.1 and or 8.10.2 (Applicant's intent in preparation for the coming into operation of Regulations 8.10.1.2(b) and 8.10.2.1(b) leading to item 4 below.

3. **Basis or references upon which your past and future CPS ecosystem is based:** *(note: complied, conformed and or aligned with the following global and local standards, guidelines, and leading practices)*

    a) Guideline for the compilation of a mandatory Code of Practice for Trackless Mobile Machines – Reference Number: DMR 16/3/2/2-B2 (including the latest revision which includes traffic flow analysis risk assessment).

b) MOSH traffic management leading practice adoption guide for both surface and underground mines (even if not published).

c) MOSH Collision Prevention (CPS) Guidelines. (User requirement specification, functional specification, integrated CPS testing regime, Section 21 compliance requirements for CPS products).

d) Collision Management Systems Technical Specification Guidelines for underground mining operations – prepared by the CM&EE TMM task team (Rev A.6).

e) Collision Management Systems Technical Specification Guidelines for open cast/ open pit/surface mining operations – prepared by the CM&EE TMM Task Team (Rev A.6).

f) ISO 21815-1:2022 – Earth Moving Machinery – collision warning and avoidance – Part 1: General Requirements.

g) ISO 21815-2:2021 – Earth Moving Machinery – Collision warning and avoidance – Part 2: On board J1939 communication interface.

h) Other relevant international, local or company references etc.

4. **Tasks that have been completed to date and tasks in the process of being implemented:** *(note: justification or proof that the applicant **has and will** implement Regulations 8.10.1 and or 8.10.2. Answer the questions: Where are we? Where do we want to be? How are we going to get there?)*

a) User requirement specification. (Important to emphasise stakeholder involvement)

b) Traffic flow analysis.

c) Risk assessment: (example: Traffic flow risk assessment and Risk Control Action Plan is in place and has been implemented where reasonably practicable to implement).

d) Traffic management plan (TMP).

e) Functional specification: (example: Functional specifications have been compiled for both the potential Collision Warning and Avoidance System Device (CxD) providers and OEMs).

f) Human change management: A human change management program / journey has been designed, implemented and is in the continuous process of supporting the CPS project daily.

g) CPS selection process: A detailed CxD technology selection process has been completed.

h) Testing procedure: (example: A detailed CPS testing procedure was developed, and CAPEX raised to perform the testing).

i) CPS testing: (how was testing done against detailed acceptance criteria?).

j) CxD technology selection: (example: A new CxD technology was selected).

k) CxD provider and OEM Tenders: (example: Tenders were sent, or received back from, and/or evaluated for the CxD provider and OEMs).

Note: many TMMs are legacy or unintelligent machines and require extensive upgrades to be ISO 21815-2, auto retard and auto stop compliant.

l) Board approval and CAPEX availability: (state if capital has been approved or is in the process of being approved).

m) CxD and OEM orders and contracts: (status of orders, contracts, SLAs. Note: some machine upgrades have long lead times and machines must be sent back to OEMs for upgrades).

n) Information technology integration: (systems upgraded for reporting and integrated into Applicants business model).

o) Previous CPS Exemption applications: (Proof of compliance with conditions of any previous applications).

p) Tracking: (Proof of availability of reports for detailed interaction analysis and actions taken).

q) Workforce preparation (people change management): (The people change management methodology employed and proof of results or trends).

r) Skills readiness and knowledge transfer for installation, repair, and maintenance: Local skills development: (How have all local resources been upskilled? – local resource competency creation. Investment in local skills etc).

s) Local manufacture impact: (Drive for export of locally manufactured CxD components).

t) Induction and Training: (including simulators).

u) Implementation plan: (the implementation plan details the planned programme for the roll out to the remaining operations).

5. **Request for exemption:** (specify the request with start date and end date clearly specified).

6. **Motivation for exemption:** (Tasks completed as specified in item 4 above. Track record of doing what you say you will do).

7. **Conditions of exemption if granted:** (what will be done during the period of exemption to ensure full compliance will be achieved on the planned dates. (Example: audits, reports the DMRE, controls in place etc).

8. **Annexure:** Summarised plan (with detailed plan available for implementation tracking).