SUMBAWA TIMUR MINING

PT STM Contractor Safety Management System

CSMS

CONTRACTOR SAFETY MANAGEMENT SYSTEM | CSMS

PT. Sumbawa Timur Mining

Health, Safety, Environment and Risk
Guidelines for Contractors Rev.01

1. Pendahuluan

1.1. Tujuan

Tujuan dari dokumen ini adalah untuk memberikan pedoman penerapan dan pelaksanaan persyaratan HSE selama penyediaan jasa oleh kontraktor untuk memastikan kepatuhan terhadap kebijakan, standar, prosedur, dan persyaratan kontrak STM yang ditetapkan oleh STM selama kegiatan dilakukan untuk kepentingan STM dan membantu peserta lelang dalam penyusunan Proposal Teknis dan Komersial serta penjabaran program HSER.

Pedoman HSR ini dibuat sebagai ketentuan umum yang berlaku sesuai dengan lingkup pekerjaan masing-masing. Seseorang harus menafsirkan bahwa Penyedia Jasa harus mematuhi persyaratan yang berlaku dan relevan dengan layanan yang diberikan oleh Penyedia Jasa sesuai dengan Kontrak.

Persyaratan yang tercantum dalam dokumen ini berlaku untuk subkontraktor yang akan memberikan layanan atau pasokan di lokasi STM.

1.2 Cakupan

- Prosedur ini berlaku untuk kontraktor yang sedang dalam proses kualifikasi atau yang telah melaksanakan kegiatan terkendali di STM.
- Untuk kegiatan yang tidak terkendali, penerapan persyaratan Sistem Manajemen Keselamatan Kontraktor ini akan ditentukan oleh pemilik kontrak bersama dengan departemen HSR.
- Persyaratan K3LL dalam prosedur ini bersifat wajib sebagai persyaratan minimum, serta peraturan perundang-undangan setempat, yang akan berlaku di atas prosedur ini.
- Dengan menandatangani kontrak atau amandemen dengan STM, kontraktor setuju untuk bertindak sesuai dengan peraturan K3LL STM. STM akan memeriksa kinerja kontraktor, meminta dokumentasi, pelatihan, dan komitmen terhadap hal tersebut dalam pelaksanaan kegiatan.
- Kontraktor dapat dikecualikan dari beberapa persyaratan yang tidak berlaku untuk layanan yang akan diberikan.
- Semua persyaratan yang tercantum dalam prosedur ini dan yang ditetapkan dalam Spesifikasi Teknis kontrak harus dipatuhi sepenuhnya oleh kontraktor dan subkontraktor.

1. Pendahuluan

1.1 Purpose

This document objective is to provide guidelines of the application and implementation of HSE requirements during the provision of services by contractors to ensure the compliances of STM's policies, standards, procedures and contractual requirements that established by STM while the activities are conducted for STM's interest and assisting bidders in the preparation of Technical and Commercial Proposals as well as in the elaboration of the HSER programs.

This HSR Guidelines are established as general provisions which shall apply in accordance with the respective scope of work. One should interpret that Service Provider shall comply with such requirements that applicable for and relevant to the service provided by Service Provider pursuant to the Contract.

The requirements contained in this document extend to subcontractors that will provide services or supplies in STM's premises

1.2. Scope

- This procedure applies to contractors that are in the qualification process or that already execute controlled activities in STM.
- For uncontrolled activities, the applicability of this Contractor Safety Management System requirements will be determined by the contract owner together with HSR department.
- The HSE requirement in this procedure are mandatory as a minimum requirement, as well as the local legislation, which will prevail over this procedure.
- By signing a contract or amendment with STM, the contractor agrees to act in accordance with STM's HSE rules. The STM will inspect the performance of contractors, demanding documentation, training, and commitment to the matter in the execution of activities.
- The contractors may be an exemption to the several requirements which is not applicable to the service that will be deliver.
- All requirements presented in this procedures and those defined in the Technical Specification of the contract must be entirely obeyed by the contractors and subcontractors. Failure to comply with any of fault, and subject to disciplinary action.

2. PERSYARATAN HEALTH SAFETY AND RISK (HSR)

2.1 Persyaratan Umum

Sub-bab ini mendefinisikan persyaratan HSR minimum untuk pekerjaan yang harus dipatuhi oleh Kontraktor dan sub-kontraktor ketika melakukan pekerjaan untuk STM berdasarkan kontrak. Selain itu, kontraktor juga diharuskan untuk mematuhi peraturan HSR spesifik lokasi yang berlaku.

a. Kontraktor harus selalu bertanggung jawab untuk melaksanakan pekerjaan dengan cara yang dapat melindungi dari kematian atau peristiwa yang dapat merenggut nyawa, cedera pada orang, kerusakan pada properti dan/atau lingkungan.
b. Kontraktor harus memastikan bahwa sumber daya yang cukup didedikasikan untuk tugas-tugas tersebut untuk memastikan penyelesaiannya sebelum memulai pekerjaan.
c. Kontraktor harus memastikan bahwa pekerjaan yang terkait dengan kontrak dilakukan sesuai dengan hukum dan peraturan nasional dan lokal yang berlaku, standar kontraktor, persyaratan dan pedoman STM, dan praktik terbaik industri yang terkait dengan HSR.
d. Kontraktor harus mengambil semua tindakan Kesehatan dan Keselamatan yang diperlukan sehubungan dengan pekerjaan yang akan diberikan dan harus melakukan sendiri dan tenaga kerjanya sedemikian rupa untuk mematuhi setiap saat ketentuan peraturan Kesehatan dan Keselamatan nasional dan/atau internasional.
e. Kontraktor harus mengambil semua tindakan Kesehatan dan Keselamatan yang diperlukan sehubungan dengan pekerjaan yang akan diberikan dan harus melakukan sendiri dan tenaga kerjanya sedemikian rupa untuk mematuhi setiap saat ketentuan peraturan Kesehatan dan Keselamatan nasional dan/atau internasional.
f. Kontraktor harus memastikan bahwa semua personil termasuk subkontraktor dilatih dan kompeten untuk melakukan pekerjaan dengan cara yang sehat, aman dan bertanggung jawab terhadap lingkungan sesuai dengan Matriks Pelatihan Kontraktor atau Analisis Kebutuhan Pelatihan termasuk pelatihan yang disyaratkan oleh pihak yang berwenang dan induksi K3LL internal kontraktor yang memadai.

2. PERSYARATAN HEALTH SAFETY AND RISK (HSR)

2.1. General Requirements

This sub-chapter defined the minimum HSR requirements for the work that Contractor and sub-contractors are required to comply with whilst conducting work for STM under a contract. Furthermore, contractors are also required to comply with the applicable site specific HSR rules.

a. Contractor shall always be responsible for performing the work in a manner so as to protect against fatality or life changes event, injury to people, damage to property and/or the environment.
b. Contractor shall ensure that sufficient resources are dedicated to those tasks to ensure completion prior to commencing the work.
c. Contractor shall ensure that the work associated with the contract are conducted in compliance with applicable national and local laws and regulations, contractor's standards, STM requirements and guidelines, and industry best practices related to HSR.
d. Contractor shall take all necessary Health and Safety measures in relation to the work to be provided and shall conduct itself and its work-force in such a way as to comply at all times with the provisions of the national and/or international Health and Safety regulations.
e. Contractor shall take such reasonable steps to provide a safe and health working environment for its personnel, company's personnel and related third parties in the performance of this work.
f. Contractor shall ensure that all personnel including subcontractors are trained and competent to perform the work in a healthy, safe and environmentally responsible manner as per contractor's Training Matrix or Training Need Analysis including the training required by regulatory authorities and sufficient internal contractor's HSE inductions

g. Kontraktor harus mengoperasikan sistem manajemen yang memastikan:
- Personel kontraktor dan sub-kontraktor mengoperasikan sistem kerja yang aman dan sehat setiap saat selama pelaksanaan pekerjaan
- Bahaya yang terkait dengan pekerjaan diidentifikasi dan kontrol yang tepat diterapkan serta tindakan yang diambil untuk mencegah kecelakaan
- Risiko terhadap kesehatan, keselamatan dan lingkungan dalam lingkup pekerjaan diidentifikasi, dinilai dan setiap tindakan pencegahan dan pengukuran dilaksanakan untuk menghilangkan atau mengurangi risiko tersebut ke tingkat yang dapat ditoleransi yang dianggap As Low As Reasonably Practicable (ALARP) mengingat sifat pekerjaan
- Personel kontraktor dan subkontraktor menyadari bahaya dan risiko yang teridentifikasi terhadap keselamatan kesehatan dan lingkungan mereka,
- Kepatuhan terhadap standar kesehatan, keselamatan dan lingkungan yang telah ditetapkan dan peraturan pemerintah akan dipantau secara rutin oleh kontraktor, dan ketidakpatuhan akan diperbaiki
- Kontraktor harus mengidentifikasi aspek dan dampak lingkungan dengan pengendalian operasional yang diperlukan, termasuk pengelolaan limbah

h. Prosedur Kerja Aman yang terperinci yang ditetapkan oleh Kontraktor untuk memastikan bahwa pekerjaan akan dilakukan dengan memperhatikan aspek-aspek Keselamatan dan Risiko Kesehatan, harus diserahkan atau dirujuk dalam Rencana Keselamatan dan Lingkungan. Salinan dokumen sumber harus diberikan kepada STM jika prosedur tersebut hanya direferensikan

i. Proses tertentu harus diselesaikan seperti secara resmi mengembangkan Rencana Keselamatan dan Risiko Kesehatan dan / atau Rencana Kerja akhir untuk menentukan waktu dan frekuensi setiap indikator utama HSR atau pelaksanaan rencana kerja yang akan tunduk pada persetujuan tim STM. Perwakilan Kontraktor, manajer proyek, ahli K3LL senior kontraktor dan/atau PJO (Penanggung Jawab Operasional) harus mempresentasikan rencana akhir kepada tim STM sebelum memulai kegiatan.

g. Contractor shall operate a management system that ensure :
- Contractor's and sub-contractor's personnel operate safe and health work systems at all times for the performance of the work
- Hazarads associated with the work are identified and appropriate controls implemented and actions taken to prevent accidents
- Risk to health, safety and environmental in the scope of work are identified, assessed and any precautionary actions and measurements are implemented to either eliminate or reduce such risk to a tolerable level that is considered As Low As Reasonably Practicable (ALARP) given the nature of the work
- Contractor's and subcontractors personnel are aware of the identified are aware of the identified hazards and risk to their health safety and environment,
- Compliance with established health safety and environmental standards and government regulation will be routinely monitored by the contractor, and non-compliance remedied
- Contractor shall identify environmental aspect and impact with operational control required, including waste management.

h. Detailed Safe Working Procedures established by Contractor to ensure that work will be conducted with due regard to the Health Safety and Risk aspects, shall be submitted or referenced in the Health Safety and Environment Plan. Copies of the source document shall be provided to STM if the procedures are referenced only

i. Certain process must be completed such as formally developing the final Heath Safety and Risk Plan and/or Working plan for defining the timing and frequency of each HSR leading indicators or working plan execution that will become subject to STM team approvals. The Contractor's representative, project manager, contractor's senior HSE expert and/or PJO Penanggung Jawab Operasional) shall present the final plan to STM team prior commencing the activities.

j. STM dapat melakukan audit HSER dan penilaian terhadap sistem manajemen dan kinerja kontraktor dan subkontraktornya berdasarkan kontrak dan STM berhak tanpa pemberitahuan sebelumnya untuk melakukan audit HSR dan/atau inspeksi pekerjaan.

k. Siapa pun dari kedua belah pihak dapat setiap saat menggunakan haknya untuk melakukan Stop Work Authority (SWA) atau bagian dari pekerjaan jika pekerjaan tersebut tidak dilakukan sesuai dengan pedoman HSR yang ditentukan dalam persyaratan atau oleh hukum yurisdiksi yang sesuai (Kartu SWA dapat diperoleh selama proses Induksi Umum dan Lencana atau menghubungi tim HSR di lokasi) STM dapat menghentikan pekerjaan apa pun setiap kali ada risiko serius dan akan segera terjadi terhadap kesehatan dan keselamatan orang, fasilitas, lingkungan, dan masyarakat hingga kondisi risiko dihilangkan atau dikendalikan dengan benar

j. STM may perform HSER audits and assessment of contractor's and its sub-contractor's management system and performance under the contract and STM reserves the right without prior notice to conduct HSR audits and/or inspection of the work.

k. Anyone on either parties may at any time to exercise their rights to perform Stop Work Authority (SWA) or any portion of the work if the work is not conducted in accordance with HSR guidelines specified in the requirements or by the laws of the appropriated jurisdiction (The SWA Card may be obtained during the General Induction and and Badging process or contact the HSR team on site) STM may interrupt any work whenever there is a serious and imminent risk to the health and safety of people, facilities, environment and community until the risk conditions are eliminated or controlled properly

2.2. Vale Production system (VPS)

Sumbawa Timur Mining (STM) sebagai bagian dari Vale, juga menerapkan VPS (Vale Production System) sebagai jalan yang harus ditempuh untuk menjadi perusahaan yang aman dan andal. VPS memperkuat budaya organisasi perusahaan melalui pengembangan sumber daya manusia, standarisasi praktik terbaik, disiplin operasi, dan pemenuhan rutinitas.

VPS berfokus pada hasil dan menyediakan implementasi kebijakan dan praktik yang mendalam dan komprehensif untuk membuat operasi yang aman dan bertanggung jawab terhadap lingkungan dapat dilakukan dan menjamin integritas aset kami. VPS berisi praktik-praktik yang harus diterapkan setiap hari oleh semua karyawan dan kontraktor dan didasarkan pada tiga dimensi: kepemimpinan, teknis dan manajemen, yang memiliki 17 elemen seperti yang ditunjukkan di bawah ini.

Penilaian kontraktor akan didasarkan pada elemen-elemen VPS dan penerapan setiap elemen pada

2.2. Vale Production system (VPS)

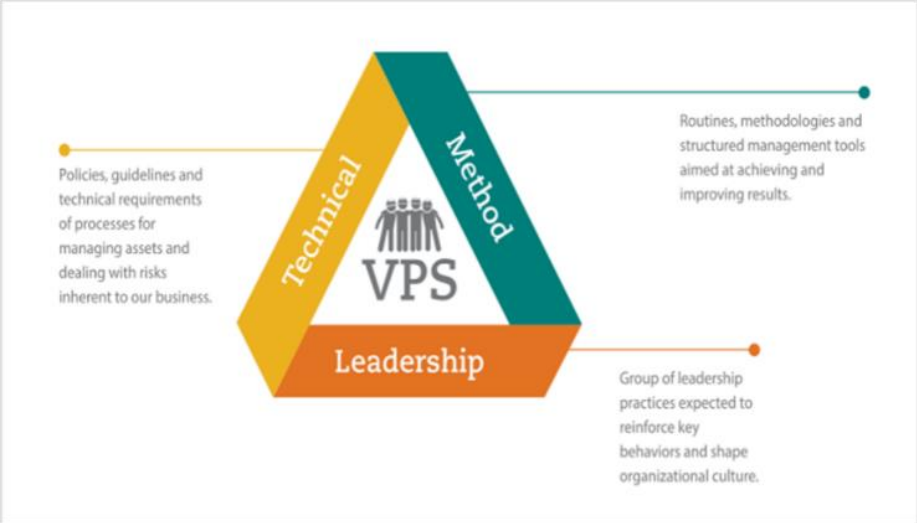
Sumbawa Timur Mining (STM) as the part of Vale, also implementing the VPS (Vale Production System) as a path that must be taken to become a safe and reliable company. It strengthens the company organizational culture through people development, best practice standardization, operation disciplin and routine fulfillment.

The VPS is focused on results and provides deep and comprehensive implementation of policies and practices to make safe and environmentally responsible operations feasible and assure the integrity of our assets. It contains practices that must be adopted daily by all employees and contractors and are based on three dimensions : leadership, technical and management, which have 17 elements as shown below.

The contractors assessment will be based on the VPS elements and the applicability of each

proyek-proyek STM. Ini adalah model yang terus berevolusi, yang mengkonsolidasikan dan terus meningkatkan pendekatan, metode, teknik, dan alat yang digunakan sesuai dengan pengetahuan yang diperoleh. Kontraktor dan pemasok dapat menggunakan sistem, alat, dan dokumen manajemen K3LL mereka sendiri jika mereka memenuhi persyaratan wajib pada proses prakualifikasi

elements to the STM projects. It is a model under constant evolution, which consolidates and continuously improves in its approach, methods, techniques, and tools used according to the obtained knowledge. Contractors and suppliers may use their own HSE management system, tools, and documents if they meet the mandatory requirements on pre-qualification process



2.3 Golden Rules

Sejalan dengan nilai Vale "Nyawa adalah yang terpenting", STM juga menempatkan Golden Safety Rules Vale sebagai perisai yang melindungi nyawa kita. Terdapat 10 Aturan yang terstandardisasi dan wajib diterapkan di seluruh dunia untuk seluruh area Vale, baik operasional, proyek, maupun administratif. Pelanggaran terhadap aturan-aturan emas tersebut akan ditangani oleh komite internal yang disebut "Committee for Life" untuk dinilai berdasarkan kasus per kasus, serta menerapkan kebijakan konsekuensi, jika berlaku Pemasok harus membuat karyawan mereka sepenuhnya sadar akan Aturan Emas dan kebutuhan untuk

2.3 Golden Rules

In line with Vale's "Life matters most" value, STM also put the Vale's Golden Safety Rules as a shields that protect our lives. There are 10 standardized and mandatory Rules worldwide for all Vale areas, whether operational, projects or administrative.
Violations of the golden rules will be addressed in internal committees called "Committee for Life" to be assessed on a case-by-case basis, as well as applying the consequence policy, when applicable
Suppliers must make their employees fully aware of the Golden Rules and the need to fulfill them.

memenuhinya

1. Alcohol and other drugs - Fitness-for-work
Never work under the influence of alcohol, drugs, or substances that reduce fitness for work.

2. Working at height - CAR 01
Never perform work at height (≥1.8m) without proper training, authorization, and always use a safety harness secured to an appropriate anchor point.

3. Vehicles and mobile equipment - CAR 02 e 03
Never operate motor vehicles or mobile equipment without proper training, authorization and safety devices. Respect the traffic plan.

4. Lockout, Tagout and Zero Energy - CAR 04
Never perform maintenance or interventions on installations or equipment without confirming that all sources of energy have been blocked, identified and tested to be in a state of "zero energy"

5. Lifting Loads - CAR 05
Never place yourself under a suspended load or enter an isolated area. Only use certified lifting devices.

6. Confined spaces - CAR 06
Never work in a confined space alone, without training, authorization, anentry permit and appropriate PPE.

7. Restricted areas - Operational discipline
Never enter into production areas, tailings areas, electrical rooms/substations or any other restricted areas without authorization.

8. Tools and equipment - Operational discipline
Never use improvised or faulty tools, machines, or equipment to execute work.

9. Risk analysis - Operational discipline
Never perform any work without understanding the risks and comply with all required controls.

10. Electronic Devices - Operational discipline
Never use cell phones or other electronic devices while using equipment or in an operational area where they are unauthorized and while using stairs and crossing streets.

2.4 Persyaratan Hukum Lainnya

Kontraktor harus memenuhi persyaratan hukum dan persyaratan HSR lainnya yang berlaku untuk kegiatan, produk, dan layanannya, dan dalam keadaan apa pun tidak boleh mengklaim ketidaktahuannya. Jika terdapat tumpang tindih antara undang-undang setempat dan aturan internal STM, maka aturan yang paling ketat dan komprehensif terkait HSR yang akan berlaku.

Semua dokumen yang membuktikan kepatuhan terhadap persyaratan hukum dan persyaratan lain yang terkait dengan ruang lingkup kontrak harus tersedia setiap saat untuk keperluan inspeksi atau audit internal atau eksternal.

Selama masa berlaku kontrak, kontraktor harus memastikan bahwa ketidaksesuaian hukum dan/atau ketidaksesuaian yang berdampak pada proses HSR diidentifikasi, dicatat, diikuti, dan diselesaikan secara efisien, untuk menghindari terulangnya ketidaksesuaian tersebut, dan STM diizinkan untuk menilai implikasi ketidaksesuaian ini terhadap hukum.

2.4 Legal and Other Requirements

Sejalan The contractor must meet the legal and other HSR requirements applicable to its activities, products, and services, and under no circumstances may it claim ignorance of them. If there is overlap between local legislation and STM's internal rules, the most restrictive and comprehensive rules in relation to HSR should prevail.

All documents proving compliance with the legal and other requirements related to the scope of the contract must be available at any time for the purposes of internal or external inspections or audits.

During the effective term of the contract, the contractor shall assure that legal non-conformities and/or non-conformities that impact HSR processes are identified, recorded, followed, and solved efficiently, avoiding their recurrence, with STM being allowed to assess the implications of this non-conformity with the law.

2.5 Batas Kewenangan dan Akses

Karyawan kontraktor dan subkontraktor tidak boleh memasuki area terlarang di area STM atau area pihak ketiga atas nama STM tanpa otorisasi yang tepat;

Perwakilan dan/atau personil STM dan Kontraktor tidak memiliki wewenang untuk mengesampingkan standar HSR. Jika disepakati bersama oleh perwakilan Kontraktor dan Perusahaan bahwa pekerjaan tersebut tidak memadai sehubungan dengan aspek Keselamatan dan Risiko Kesehatan, maka pekerjaan tersebut dapat segera dihentikan.

2.5 Limits of Authority and Access

Employees of contractors and subcontractors must not acess the restricted area of STM’s own areas or third-party areas on behalf of STM without proper authorization;

STM’s and Contractor’s representative and/or personnel do not have the authority to waiver HSR standards. If it is mutually agreed by both Contractor’s and Company’s representative that the work is inadequate with regards to any aspect of Health Safety and Risk, then the work may be immediately suspend

2.6 Kepemimpinan, Peran dan Tanggung Jawab

Kontraktor bertanggung jawab untuk :

- Menerapkan proses dan program CSMS HSR sesuai dengan persyaratan hukum setempat, Panduan HSR untuk Kontraktor dan/atau Pemasok, dan panduan HSR khusus STM yang dijelaskan dalam Spesifikasi Teknis atau Permintaan Teknis;
- Menunjukkan kepemimpinan yang aktif, melalui partisipasi, promosi kegiatan dan inisiatif HSE, melibatkan semua karyawan, di samping memastikan sumber daya dan dukungan yang diperlukan untuk manajemen yang efektif;
- Melakukan inspeksi lapangan setidaknya sebagaimana ditentukan oleh area kontrak STM;
- Melakukan analisis kritis terhadap inspeksi, tindakan ketidaksesuaian, implementasi dan fungsi kontrol yang terkait dengan kegiatan yang

2.6 Leadership, Roles and Responsibilities

The contractors are responsible for :

- Implementing HSR CSMS processes and programs according to local legal requirements, the HSR Guide for Contractors and/or Suppliers and STM's specific HSR guidelines described in the Technical Specification or Technical Requisition;
- Demonstrating active leadership, through participation, promotion of HSE activities and initiatives, engaging all employees, in addition to ensuring the resources and support necessary for effective management;
- Conducting field inspections at least as defined by STM's contracting area;
- Performing critical analysis of inspections, non-conformity actions, implementation and functionality of controls related to the activities under their responsibility and demonstrating the

menjadi tanggung jawabnya dan menunjukkan peningkatan kinerja K3LL yang berkelanjutan;
- Berpartisipasi dalam rapat K3LL sesuai dengan jadwal yang ditetapkan oleh area kontrak dan dalam Spesifikasi Teknis atau Permintaan Teknis;
- Menerapkan Aturan Emas (Golden Rules)
- Mengkomunikasikan setiap kejadian (personal, material, lingkungan atau yang melibatkan masyarakat) kepada pemilik kontrak atau inspektur STM dan area HSR dan berpartisipasi dalam analisisnya sesuai dengan standar STM
- Berbagi pengetahuan dan pelajaran yang didapat dengan karyawan STM dan kontraktor;
- Mengumpulkan dan mengkonsolidasikan informasi dan indikator K3LL perusahaan dan menyediakannya.

2.6.1. Penanggung Jawab Operasional (PJO)

a. Kontraktor harus menunjuk PJO yang minimal memiliki sertifikasi POP (Pengawas Operasional Pertama) yang masih berlaku yang dikeluarkan oleh penyedia jasa yang sah dan diakui oleh Pemerintah Indonesia dan menunjuk PJS (Pejabat Sementara) PJO yang memiliki kompetensi yang sama sebagai pengganti PJO ketika ia tidak bertugas.
b. PJO harus memiliki pengalaman yang memadai, pelatihan khusus dan keahlian sebagaimana tercantum dalam Lingkup Pekerjaan
c. Calon PJO yang diusulkan oleh Kontraktor kepada STM akan dinilai oleh KTT atau PJS KTT STM, Pemilik Kontrak, dan Perwakilan HSR.
d. STM memiliki kewenangan untuk menolak calon PJO apabila hasil penilaian tidak sesuai dengan harapan dan persyaratan minimum.
e. PJO bertanggung jawab kepada KTT untuk memastikan semua peran dan tanggung jawabnya yang dinyatakan oleh hukum dijalankan dengan baik.
f. Apabila jangka waktu kontrak lingkup pekerjaan lebih dari 1 bulan, maka wakil Kontraktor akan diusulkan oleh Kontraktor dan akan dinilai oleh tim STM untuk ditunjuk secara resmi sebagai PJO (Penanggung Jawab Operasional).
g. Sementara itu untuk masa kontrak 1 bulan atau kurang, tidak ada keharusan untuk menunjuk PJO secara resmi. Namun, Kontraktor harus menunjuk secara resmi penanggung jawab yang memiliki kompetensi dan pengalaman yang memadai untuk mengelola Keselamatan dan Operasional selama kegiatan berlangsung;

continuous improvement of HSE performance;
- Participating in HSE meetings according to the schedule established by the contracting area and in the Technical Specification or Technical Requisition;
- Implementing the Golden Rules
- Communicating any occurrence of events (personal, material, environmental or involving the community) to STM's contract owners or inspector and HSR area and participating in the analysis thereof in accordance with STM's standards
- Sharing knowledge and lessons learned with STM and contractors' employees;
- Collecting and consolidating information and HSE indicators of the company, making them available.

2.6.1. Contractor's Representative or PJO

a. The Contractor should appoint the PJO with the minimum holds valid POP (Pengawas Operational Pertama) certifications issued by the legal providers acknoledged by Indonesia Government and appoint the PJS(Pejabat Sementara) PJO with similar competency as a PJO's relieve when he is off-duty.
b. The PJO should have the adequate experiences, specific training and expertise as stated on the Scope of Work
c. The candidate PJO that has been proposed by the Contractor to STM will be assessed by STM's KTT or PJS KTT, Contract Owners, and HSR Representatives.
d. STM have the authority to reject the PJO candidate if the assessment results are not met with the minimum expectation and requirements.
e. PJO responsible to KTT to ensure all his/her roles and responsibilities stated by law are well maintained.
f. If the contract period of scope of work is more than 1 (one) months, the Contractor's representative shall be proposed by Contractor and subject to assess by STM team to be formally appointed as a PJO (Penanggung Jawab Operasional).
g. Meanwhile for the contract period 1 month or less, it is not mandatory to formally appointed the PJO. But, the Contractor's shall formally appointed responsible person with adequate competency and experience to manage the Safety and Operations during the activities;
h. This requirement does not negate the minimum requirement training competency that must possessed by the responsible person such as

h. Persyaratan ini tidak meniadakan persyaratan minimum pelatihan kompetensi yang harus dimiliki oleh penanggung jawab seperti POP (Pengawas Operasional Pertama)

2.6.2 Perwakilan HSE Kontraktor

Perwakilan dan/atau personil STM dan Kontraktor tidak memiliki wewenang untuk mengesampingkan standar HSR. Jika disepakati bersama oleh perwakilan Kontraktor dan Perusahaan bahwa pekerjaan tersebut tidak memadai sehubungan dengan aspek Keselamatan dan Risiko Kesehatan, maka pekerjaan tersebut dapat segera dihentikan.Perwakilan dan/atau personil STM dan Kontraktor tidak memiliki wewenang untuk mengesampingkan standar HSR. Jika disepakati bersama oleh perwakilan Kontraktor dan Perusahaan bahwa pekerjaan tersebut tidak memadai sehubungan dengan aspek Keselamatan dan Risiko Kesehatan, maka pekerjaan tersebut dapat segera dihentikan.

2.6.2 Contractor's HSE Representative

If required by Scope of Work or Contracts and/or the contractors with high or very high risk work shall provide HSE representative on site that meets with STM Criteria or minimum competency required by Client (STM). The primary responsibility of the HSE representative shall include, but not limited to the maintenance and monitoring of the implementation of HSE guidelines and procedures and where required provide HSE awareness training for the personnel. Such activities shall be approved and actively supported by Contractor's PJO and Management Level.

2.7. Dokumen, Pencatatan dan Informasi

Kontraktor harus memastikan bahwa dokumen dan catatan K3LL, pembaruan, dan informasi mengenai kepatuhan terhadap undang-undang dan standar K3LL yang berlaku untuk ruang lingkup kontrak tersedia (dalam bentuk fisik atau media elektronik) dan dikelola selama pelaksanaan kegiatan, untuk inspeksi atau audit.

Informasi atau dokumen spesifik lokasi tersedia dalam Spesifikasi Teknis atau Permintaan Teknis atau pada saat pertemuan awal, dan pembaruan informasi atau dokumen ini harus tersedia oleh pemilik kontrak atau inspektur.

Prosedur operasional untuk pelaksanaan kegiatan dan catatannya, harus disiapkan oleh kontraktor dengan logonya, dengan memperhatikan kepatuhan terhadap persyaratan K3LL yang ditetapkan oleh hukum dan oleh Vale dan STM.

2.7 Document, Report and Information

The contractor must ensure that HSE documents and records, updates, and information regarding compliance with HSE legislation and standards applicable to the scope of the contract are available (in physical or electronic media) and managed during the execution of activities, for inspections or audits.

Location-specific information or documents are made available in the Technical Specification or Technical Requisition or at the Kick-off meeting, and the update of this information or documents should be available by the contract owner or inspector.

The operational procedures for the execution of activities and their records, must be prepared by the contractor with its logo, observing compliance with HSE requirements established by law and by Vale and STM

3. PELATIHAN DAN ORIENTASI HSE

Sebelum mobilisasi personil dan memulai kegiatan sesuai kontrak di lokasi STM, kontraktor harus telah menyelesaikan semua pelatihan yang diperlukan karyawan untuk fungsi dan kegiatan mereka berdasarkan Matriks Pelatihan kontraktor atau analisis Kebutuhan Pelatihan, sesuai dengan persyaratan hukum dan/atau persyaratan kontrak STM.

Kontraktor harus memastikan bahwa semua karyawannya telah diidentifikasi kebutuhan pelatihannya berdasarkan posisi dan perannya, bahwa mereka telah dilatih dengan benar, memenuhi syarat, dan berlisensi sesuai dengan

3. HSE TRAININGS AND ORIENTATION

Prior the personnel mobilization and commencing the activities as per contract at STM premises, the contractor must have completed all employees required training for their functions and activities based on contractor's Training Matrix or Training Need analysis, in accordance with legal requirements and/or STM contract's requirements.

The contractor must ensure that all its employees have their training needs identified by position and role, that they are properly trained, qualified, and licensed according to legal requirements and internal STM rules according to its applicability, due date, training hours and refresh needs.

All the updated training evidence and certificate of

persyaratan hukum dan aturan internal STM sesuai dengan masa berlakunya, tanggal jatuh tempo, jam pelatihan, dan kebutuhan penyegaran.
Semua bukti pelatihan dan sertifikat terbaru dari setiap personel kontraktor akan diverifikasi oleh Tim STM sebelum memulai kegiatan. Rencana Pelatihan K3LL yang telah disetujui oleh manajemen harus diserahkan dan dipresentasikan kepada STM lengkap dengan target pelaksanaan pelatihan.

3.1. Training Matrix

Bukti pelatihan dan matriks pelatihan yang telah diperbaharui harus selalu tersedia untuk mobilisasi, verifikasi, inspeksi, dan dapat diaudit selama masa berlaku kontrak.
Matriks pelatihan harus berisi setidaknya :

a. Posisi atau Peran;
b. Kualifikasi yang terkait dengan kegiatan mereka;
   I. Prosedur kontraktor khusus, termasuk jenis risiko yang akan dihadapi oleh karyawan;
   II. Aspek dan dampak lingkungan
   III. Persyaratan pelatihan K3LH yang diwajibkan secara hukum;
   IV. Konten Perilaku.
c. Tanggal penyegaran dan tenggat waktu;

3.2. Pelatihan Legal HSE Wajib oleh Pemerintah Indonesia

Kontraktor harus memastikan training yang dipersyaratkan untuk tenaga kerjanya telah mematuhi dan resmi seperti tabel dibawah ini namun tidak terbatas :
Table 1 : Indonesia Mandatory Training Competency (Sample)

every contractor's personnel will be verified by STM Team prior commencing the activities. HSE Training Plan that has been approved by management shall be submitted and presented to STM as well complete with the Target of training implementation

3.1. Training Matrix

Evidence of training and the updated training matrix must be always available for mobilizations, verifications, inspections, and subject to be audit during the effective term of the contract
Training matrix shall contain at least :

a. Poisiton or Role;
b. Qualifications related to their activities;
   I. Specific contractor procedures, including the types of risk the eomplee will be exposed to;
   II. Environmental aspects and impacts
   III. Legal Mandatory HSE training requirements;
   IV. Behavioral contents.
c. Refresh date and deadline;

3.2. Legal HSE Training Mandatory by Government of Indonesia

The Contractor must ensure that all legal training required for its employees are compliant and valid such as including but not limited to the following table below :
Table 1 : Indonesia Mandatory Training Competency (Sample)

Pelatihan Wajib Kompetensi Pemerintah Indonesia	Referensi hukum
Operator Alat Berat (Excavator, Vibro Roller, Dozer, Compactor, Dump Truck, etc)	✓ Permen 8 Tahun 2020 ✓ Permenaker No. PER.05/Men/1985 ✓ Permenaker No. PER.09/Men/VII/2010.
Industrial Hygiene/ K3 Lingkungan Kerja	✓ Permen 10 Tahun 2018, ✓ Permen 31 Tahun 2006, ✓ Permenaker No. 5 Tahun 2018 tentang Keselamatan dan Kesehatan Lingkungan Kerja

Tenaga Kerja Bangunan Tinggi and/or Tenaga Kerja Pada Ketinggian	✓ Peraturan Menteri Ketenagakerjaan RI No 9 Tahun 2016, tentang Keselamatan dan Kesehatan Kerja dalam Pekerjaan pada Ketinggian, ✓ Peraturan Menteri PER.08/MEN/VII/2010 tentang Alat Pelindung Diri
Confined Space Entry (Petugas K3 Utama Ruang Terbatas)	✓ Permenaker no.11 tahun 2023 ✓ SE.NO. 01/DJPPK/I/2011 tentang kompetensi, kurikulum dan persyaratan khusus Petugas Keselamatan & Kesehatan Kerja Utama Ruang Terbatas (Confined Space).
Petugas K3 Madya Ruang Terbatas	✓ Se Dirjen Binwasnaker Nomor: SE.No.01/DJPPK/I/2011 tentang Petunjuk Teknik Pelaksanaan Pembinaan terhadap Ahli, Teknisi dan Petugas Lingkungan Kerja dan Bahan Berbahaya. Memahami Peraturan Khusus “L” Tahun 1936, mengenai Usaha- Usaha Keselamatan Kerja untuk pekerjaan – Pekerjaan di dalam Tangki – Tangki Apung ✓ SNI – 0229 1987 E, Keselamatan Kerja di Dalam Ruangan Tertutup ✓ OSHA 3138-01R 2004, Permit Required Confined Space ✓ Keputusan Dirjen Pembinaan Pengawasan Ketenagakerjaan No. Kep.113/DJPPK/2006, tentang Pedoman dan Pembinaan teknis Petugas K3 Ruang Terbatas ✓ Keputusan Menteri Tenaga Kerja No.Kep.187/Men/1999, tentang pengendalian bahan kimia ✓ Surat Edaran Menteri Tenaga Kerja dan Transmigrasi RI No. SE.05/MEN/PPK/IV/2012, tentang Pemenuhan Kewajiban Syarat-syarat Keselamatan dan Kesehatan Kerja di Ruang Terbatas Confined Space ✓ Surat Edaran Direktur Jenderal No. SE.NO. 01/DJPPK/I/2011, tentang Petunjuk teknis pelaksanaan pembinaan terhadap Ahli, Teknisi, dan petugas lingkungan kerja dan bahan berbahaya
Welder	✓ Permenakertrans No PER.02/MEN/1982 tentang Kualifikasi Juru Las di tempat kerja
Scaffolder & Inspector Scaffolding	✓ Peraturan Menaker No.1 /Men/1980 tentang K3 Konstruksi bangunan ✓ Surat Keputusan Bersama Menaker dan Menteri Pekerjaan Umum No 174 /Men/1986 dan No 101 /Kpts/1986 tentang K3 pada tempat kegiatan konstruksi bangunan
Ahli K3 Listrik	✓ Standar Nasional Indonesia SNI-0225 Tahun 2000 (PUIL-2000, Keputusan Menteri Tenaga Kerja dan Transmigrasi R.I. No. Kep. 75/Men/2000 ✓ PUIL 2000 Pasal 9.10.24 dandanPasal 9.10.4. ✓ Keputusan Dirjen Binawas No. Kep. 311/BW/2002 ✓ SK Dirjen Binwasnaker No. Kep. 012/DJPKK/II/2011 ✓ SK Dirjen Binwasnaker No. Kep. 048/DJPKK/VIII/2011 ✓ Permenaker No. 12 Tahun 2015 Tentang Keselamatan Dan Kesehatan Kerja Listrik Di Tempat Kerja.
Ahli K3 Konstruksi	✓ Peraturan Menteri Pekerjaan Umum Nomor : 05 /PRT/M/2014
Kebakaran Fire A, Fire B	✓ Keputusan Menteri Tenaga Kerja RI No. KEP-186/MEN/1999 tentang Unit Penanggulangan Kebakaran di Tempat Kerja
Ahli K3 Umum	✓ Undang-Undang No.01 Tahun 1970
Audit SMK3	✓ SMK3 (PP No.50 Tahun 2012)

Opt Crane Kelas I, II & III	✓ Permenaker No.05/Men/1985 ✓ Permenaker No.09/Men/2010
Opt Forklift Kelas I & II	✓ Permenaker No.05/MEN/1985 & Keputusan Menteri Tenaga Kerja No.09/MEN/2010 tentang Pesawat Angkat dan Angkut ✓ Peraturan Menteri Ketenagakerjaan Nomor 8 Tahun 2020 tentang Keselamatan dan Kesehatan Kerja Pesawat Angkat dan Pesawat Angkut
Operator Gondola	✓ Peraturan Menteri Tenaga Kerja No.05 Tahun 1985
Operator Bidang Pesawat Tenaga dan Produksi	✓ Peraturan Menteri Tenaga Kerja RI No. Per.05/Men/1985 tentang Pesawat Angkat Angkut ✓ Peraturan Menteri Tenaga Kerja RI No. Per.38/Men/2016 tentang Pesawat Tenaga dan Produksi
Petugas P3K	✓ Peraturan Menteri Tenaga Kerja dan Transmigrasi Nomor Per-03/Men/1982 tentang Pelayanan Kesehatan Kerja ✓ Peraturan Pemerintah No 50 tahun 2012 tentang penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja ✓ Permenaker No:PER.15/MEN/VIII/2008 tentang Pertolongan Pertama Pada Kecelakaan Di Tempat Kerja ✓ Keputusan Dirjen, Kep 53/DJPPK/VIII/2009 tentang Pelatihan dan Pemberian Lisensi Petugas Pertolongan Pertama Pada Kecelakaan (P3K) di Tempat Kerja
Rigger	✓ Peraturan Menteri Tenaga Kerja R.I. No. PER.05/MEN/1985 tentang Pesawat Angkat dan Angkut. ✓ Peraturan Menteri Tenaga Kerja dan Transmigrasi R.I. Nomor PER. 09/MEN/VII/2010 tentang Operator dan Petugas Pesawat Angkat dan Angkut.
Supervisi Scaffolding	✓ Peraturan Menteri Tenaga Kerja no. PER. 01/MEN/1980 tentang Keselamatan & Kesehatan Kerja pada Konstruksi Bangunan ✓ SKB Menteri Tenaga Kerja dan Menteri Pekerjaan Umum no. Kep 174/Men/1986 dan no. 104/Kpts/1986 dan pedoman pelaksanaan tentang keselamatan dan kesehatan kerja pada tempat kegiatan konstruksi.
Operator Chainsaw	✓ Peraturan Menteri Kehutnan nomor : P.58/Menhut-II/2008 tentang Kopentensi dan Sertifikasi Tenaga Teknis Pengelolaan Hutan Produksi Lestari ✓ Keputusan Menakertrans nomor no. 144 tahun 2013 tentang Penetapan SKKNI Kategori Pertanian, Kehutanan dan Perikanan, Golongan Pokok Kehutanan dan Penebangan Kayu, Golongan Jasa Penunjang Kehutanan, Sub Golongan Jasa Penunjang Kehutanan (SKKNI GANIS).
Operator Genset	✓ Peraturan Menteri Tenaga Kerja Nomor : PER.04/MEN/1985 tentang Pesawat Tenaga dan Produksi
Teknisi K3 Deteksi Gas HLO (Helicopter Landing Officer) Teknisi / Petugas Pemeriksa Penguji Bidang Bejana Tekanan dan Tangki Timbun	✓ SNI – 0229 1987 E, Keselamatan Kerja di Dalam Ruangan Tertutup ✓ Kepmenhub 20 tahun 2015 Perturan Dirjen Perhubungan Udara tentang pedoman teknis operasional peraturan keselamatan penerbangan sipil bagian 139-07 ✓ Kep Dirjen Pembinaan Pengawasan Ketenagakerjaan No. Kep. 113/DJPPK/2006 Tentang Pedoman dan Pembinaan Teknis Petugas K3 di Ruang Terbatas (Confined Spaces) ✓ Permenaker No. 37 Tahun 2016 tentang Keselamatan dan Kesehatan Kerja Bejana Tekanan dan Tangki Timbun, mengatur perusahaan mempunyai K3 Teknisi Bejana Tekanan dan Tangki Timbun agar pelaksanaan K3 di tempat kerja berjalan optimal. ✓ Undang – undang dan Peraturan Uap Tahun 1930
Other required Mandatory Competency Training	

3.3. STM Basic Safety Awareness Training

Pelatih HSR STM akan memberikan atau menawarkan panduan dasar atau Pelatihan Kesadaran Keselamatan Dasar sebelum pekerja kontraktor memulai kegiatan proyek, yang berisi setidaknya:

3.3. STM Basic Safety Awareness Training

Kontraktor harus memastikan training yang dipersyaratkan untuk tenaga kerjanya telah mematuhi dan resmi seperti tabel dibawah ini namun tidak terbatas :

a. Ethics and Code of Conduct

a. Etika dan Kode Etik
b. Kebijakan Keselamatan dan Kesehatan Kerja STM
c. Kebijakan Hak Asasi Manusia, Alkohol, dan Narkoba
d. Tugas Perawatan
e. Aturan Emas
f. Identifikasi Bahaya dan Manajemen Risiko
g. Pelaporan Bahaya, Nyaris Celaka, dan Kecelakaan atau Pedoman Komunikasi Kejadian
h. Kampanye Kesadaran Pelatihan Keselamatan Khusus (Seperti Keselamatan Bahan Kimia, Kampanye Kesadaran Pencegahan Cedera Jari Tangan, Kesadaran Bahaya Kebakaran, Kesadaran Benda Jatuh, Kesadaran H2S, Kesadaran Pemadaman Kebakaran Dasar, dan Kesadaran Pelatihan Pertolongan Pertama)
i. Program, Prosedur, dan Panduan K3LL STM yang spesifik berdasarkan Risiko Utama Kontraktor dalam lingkup pekerjaan.

Kontraktor dapat meminta Tim HSR STM untuk memberikan otorisasi kepada tenaga ahli K3LL kontraktor untuk melaksanakan BSAT, sesuai dengan persyaratan dan justifikasi HSR STM.
Pelatihan ini tidak wajib bagi Pengunjung STM dan TIDAK meniadakan kewajiban Kontraktor untuk memberikan pelatihan wajib yang diwajibkan oleh hukum dan/atau persyaratan STM baik secara internal maupun eksternal.

b. STM HSE Policy
c. Human Rights, Alcohol, Drugs Policies
d. Duty of Care
e. Golden Rules
f. Hazards Identification and Risk Management
g. Hazards, Nearmiss and Accident Reporting or Guidelines for Communication of Events
h. Specific Safety Training Awareness Campaign (Such as Chemical Safety, Hand Finger Injury Prevention Awareness Campaign, Line of Fire Awareness, Drop Object Awareness, H2S Awareness, Basic Fire Fighting, and Basic First Aid Training Awareness)
i. Specific STM HSE Programs, Procedures, and Guidelines based on Contractor's Major Risk on scope of work.

The contractor may ask STM HSR Team for authorizaton to contractor's HSE proffessional be allowed to conduct the BSAT, according to STM HSR requirements and justification.
This training are not mandatory to STM Visitors and DOES NOT negate the Contractor's obligations of providing mandatory training required by law and/or STM requirements both internally and externally.

4. EQUIPMENT SAFETY, REGISTER AND CERTIFICATION KEAMANAN PERALATAN, REGISTER DAN SERTIFIKASI

Kontraktor harus memastikan bahwa semua peralatan yang akan digunakan di lokasi STM berada dalam kondisi baik, memenuhi standar nasional dan/atau internasional, terpelihara dengan baik, terdaftar dan memiliki sertifikasi yang valid sesuai dengan peraturan perundang-undangan dan persyaratan STM, termasuk namun tidak terbatas pada:

- SILO (Surat Izin untuk Beroperasi),
- Sertifikat Pihak Ketiga NDT (Non Destructive Test), Sertifikat Alat Angkat,
- SKPI (Sertifikat Kelaikan Pemasangan Instalasi), SKPP (Sertifikat Kelaikan Peralatan),
- CoC (Sertifikat Kesesuaian),
- Sertifikat Kalibrasi dan;
- Surat-surat legalitas lainnya seperti STNK, KEUR, dll.

Kontraktor harus menyerahkan daftar daftar peralatan, perkakas, instalasi, dan lain-lain dengan sertifikat validitas peralatan yang akan digunakan di

4. EQUIPMENT SAFETY, REGISTER AND CERTIFICATION

The Contractor's shall ensure all the equipment that will be use in STM premises are in good condition, met with national and/or international standards, well maintained, registered and have valid certification as per legal regulations and STM requirements including but not limited to :

- SILO (Surat Izin Layak Operasi),
- NDT (Non Destructive Test) 3rd Party Certificate, Lifting Gear Certificate,
- SKPI (Surat Kelayakan Penggunaan Installasi), SKPP (Sertifikat Kelayakan Penggunaan Peralatan),
- CoC (Certificate of Conformance),
- Certificate of Calibration and;
- Other legal letter such as STNK, KEUR, etc.

Contractors shall submit the list register of its equipments, tools, installation, etc with the validity certificates of equipment that will be use in STM premises. This register shall monitored and maintained periodically. STM have a right to stop the operation of equipment which have invalid certification once its found during the Safety Audit or

lokasi STM. Daftar ini harus
dipantau dan dipelihara secara berkala. STM berhak untuk menghentikan pengoperasian peralatan yang memiliki sertifikasi yang tidak valid setelah ditemukan selama Audit Keselamatan atau Inspeksi Keselamatan.
Catatan : Sertifikasi ini tidak meniadakan kewajiban Kontraktor untuk melakukan pemeriksaan berkala internal seperti P2H atau Checklist Pemeriksaan Sebelum Penggunaan terhadap peralatannya.

4.1 Peralatan, Mobilisasi Logistik dan Komisioning

- Kontraktor harus meminta saran dan bekerja sama dengan pemilik kontrak, departemen logistik, HSR dan Comrel untuk rencana logistik peralatan atau barang dan menyiapkan Rencana Manajemen Perjalanan jika diperlukan untuk transportasi peralatan atau barang ke Lokasi STM (Rencana Manajemen Lalu Lintas STM akan diberikan pada saat Kick off Meeting)
- Kontraktor harus memastikan bahwa spesifikasi peralatan dan barang sesuai dengan spesifikasi yang disepakati oleh Kontrak dan/atau Persyaratan STM. Dokumentasi lengkap harus tersedia setiap saat selama pengangkutan (Delivery Order, Manual Book, MSDS, dll)
- Kontraktor hanya boleh mulai memindahkan kendaraan dan peralatan ke area di mana kontrak akan dilaksanakan setelah memastikan bahwa semua persyaratan operasi dan keselamatan telah terpenuhi, termasuk Pedoman CAR dan peraturan perundang-undangan setempat.
- Kontraktor harus memastikan bahwa setiap truk dan kendaraan logistik dalam kondisi baik (termasuk surat-surat yang sah) dan muatan diamankan dengan baik dan aman.
- Semua kendaraan dan peralatan harus memiliki rencana perawatan preventif berdasarkan panduan dari pabrik atau disiapkan oleh teknisi yang berkualifikasi.
- Pra-komisioning peralatan dapat dilakukan oleh kontraktor dengan menggunakan formulir STM Commissioning. Nantinya, Tim HSR dan perwakilan Pemilik Kontrak bersama-sama akan memverifikasi formulir Komisioning dengan melakukan Komisioning Akhir ketika peralatan tiba di lokasi STM. Apabila ditemukan ketidaksesuaian oleh Tim STM antara formulir komisioning yang diisi oleh kontraktor dengan kondisi riil peralatan, maka kontraktor bertanggung jawab dan berkewajiban penuh untuk menutup semua temuan tersebut sebelum mengoperasikan peralatan di lokasi STM.
Catatan : Jika diperlukan atau diminta oleh Pemilik Kontrak, komisioning dapat dilakukan di area

Safety Inspection.
Note : This certification does not negate the obligation of Contractor to perform internal periodic inspection such as P2H or Pre-Use Inspection Checklist to its equipment

4.1 Equipment, Logistic Mobilization and Commisioning

- Contractors shall asked for advise and liaise closely with contract owner, logistics, HSR and Comrel department for equipments or goods logistics plan and prepare the Journey Management Plan if necessary for equipments or goods transportation to STM Site (STM Traffic Management Plan will be provided during the Kick off Meeting)
- Contractors shall ensure the equipment and goods specification are matched with the agreed specifications by Contract and/or STM Requirements. Complete documentation shall be available at all time during the transportation (Delivery Order, Manual Book, MSDS, etc)
- The contractor shall only start moving vehicles and equipment to the area where the contract will be conducted after confirming that all operating and safety conditions are met, including CAR Guidelines and local legislation.
- Contractors shall ensure that every logistic trucks and vehicles are in good condition (including the legal paper) and loads are secured properly and safely.
- All vehicles and equipment must have a preventive maintenance plan based on the manufacturer’s guidelines or prepared by a qualified technician.
- Pre-commissioning equipment can be done by contractors using STM Commissioning form. Later on, the HSR Team and Contract Owner reps together will verify the Commissioning form by do the Final Commissioning when the equipment arrived at STM Site. If discrepancies found by STM Team between commissioning form filled by contractors and real conditions of equipment, the contractor have full responsibility and obligation to close all the findings before operating the equipment in STM premises. Note : If necessary or requested by Contract Owners, the commissioning may be conducted at Contractor’s area before sending the equipment to STM Premises.

Kontraktor sebelum peralatan dikirim ke lokasi STM.

5. PROSES ORIENTASI PERSONEL

Dalam masa persiapan setelah kontrak diberikan, Kontraktor harus memastikan semua proses di bawah ini diselesaikan secara profesional dan tepat waktu sebelum melakukan kegiatan penuh sesuai Lingkup Pekerjaan.

5.1 Pemeriksaan MCU & Fit for Work

Setiap personil kontraktor dan/atau subkontraktor harus menjalani Medical Check Up (MCU) atau menyerahkan dokumen MCU yang sah sesuai dengan Prosedur MCU STM dan Matriks MCU STM yang disarankan oleh dokter perusahaan akan melakukan proses pemeriksaan MCU kepada setiap personil. STM yang disarankan oleh dokter perusahaan akan menentukan kategori kebugaran setiap personil berdasarkan hasil pemeriksaan MCU (Fit to Work, Fit with Note, dan Unfit Temporary atau Unfit). Hanya personil yang memenuhi syarat yang dapat melanjutkan ke Proses Induksi.

5.2 General Induction Process

Proses GIP dan Induksi STM akan diberikan kepada personil yang memenuhi syarat yang telah lulus proses Penyaringan MCU. Harap diingat, STM HSR tidak akan mengakui personil yang belum mendapatkan izin verifikasi MCU dari Dokter Perusahaan dan Departemen HR

Induksi HSR Umum akan diberikan kepada personil setelah perwakilan Kontraktor, Contract Onwer, dan perwakilan departemen HR (Human Rsource) menandatangani formulir GIP Badging. Tanpa melengkapi semua tanda tangan pada formulir, personil tidak dapat menghadiri Induksi Umum oleh HSR. Setelah selesai mengikuti Induksi, personil dapat melanjutkan ke bagian Comrel atau Security untuk mencetak ID Badging

5.3 Pemeriksaan MCU & Fit for Work

Dijelaskan pada sub-bab 3.3.

5.4 PJO Assessment

Dijelaskan pada sub-sub bab 2.6.1

6. MEETING, KOMUNIKASI DAN KETERLIBATAN KARYAWAN

Untuk memperjelas ekspektasi HSER STM terhadap Kontraktor dan untuk mengembangkan Rencana HSER untuk pekerjaan tersebut, pertemuan-pertemuan berikut ini harus diadakan:

6.1. Kick off Meeting

Dihadiri oleh perwakilan manajemen Klien dan Kontraktor serta personil senior yang bertanggung

5. PERSONEL ONBOARDING PROCESS

Within the preparation period after the contract awarded, the Contractor shall ensure all the process below are completed in professional and timely manner before having full activities as per Scope of Work.

5.1 MCU Screening & Fit for Work

Every contractor's and/or subcontractor's personnel shall undergo the Medical Check Up (MCU) or submit valid MCU documents aligned with STM MCU Procedure and MCU Matrix

STM advised by company's doctors will conduct the MCU Screening process to every personnel. STM advised by company's doctors will determind the fitness category of each personnel based on MCU review result (Fit to Work, Fit with Note, and Unfit Temporary, or Unfit). Only eligible personnel that can proceed to the Induction Process

5.2 General Induction Process

The GIP and STM Induction Process will be given to eligible personnel who had pass the MCU Screening process. Please keep in mind, the STM HSR will not acknowledge the personnel who haven't got MCU verification clearance from Company Doctors and HR Department

The General HSR Induction will be given to the personnel after the Contractor's reps, Contract Onwer, and HR (Human Resource) department reps signs the GIP Badging form. Without completing all the signs on the form, personnel cannot attend the General Induction by HSR.

After finished the Induction, the personnel could proceed to the Comrel or Security department for ID Badging print

5.3 MCU & Fit for Work

Explained on sub-chapter 3.3.

5.4 PJO Assessment

Explained on sub-sub chapter 2.6.1

6. MEETING, COMMUNICATION AND ENGAGEMENT OF THE EMPLOYEES

In order to clarify STM HSER expectations of Contractor and to develop HSER Plan for the work, the following meetings shall be convened :

6.1. Kick off Meeting

Attended by the Client's and Contractor's management representatives and HSER

jawab atas HSER. Dalam pertemuan ini, akan ditekankan kembali ekspektasi STM Kesehatan Keselamatan Lingkungan dan Risiko dan menyatakan komitmen manajemen kontraktor terhadap kesehatan dan keselamatan kerja serta menyepakati Rencana Peningkatan CSMS untuk Kontraktor Beresiko Tinggi dengan Peringkat Minimum (C) dan menentukan Rapat Perencanaan HSER berikutnya untuk diskusi lebih lanjut.

responsible or senior personnel. During this meeting, the STM Health Safety Environemental and Risk expectations will be re-emphasized and claimed the contractor's management commitment towards health and safety as well as agreed on CSMS Improvement Plan for High Risk Contractor with Rating Minimum (C) and determine the next HSER Planning Meeting for further discussion.

6.2. HSER Planning Meeting

Dihadiri oleh perwakilan manajemen Klien dan Dihadiri oleh perwakilan STM dan Kontraktor serta penanggung jawab HSR yang diusulkan. Pada pertemuan ini, kontraktor akan memberikan Rencana HSER yang spesifik sebagai bahan untuk ditinjau oleh Tim STM dan memverifikasi Rencana dan Matriks Pelatihan HSER yang telah diperbaharui untuk ruang lingkup pekerjaan tertentu. Hasil dari pertemuan ini akan berupa daftar item tindakan, waktu penyelesaian, dan tanggung jawab yang ditugaskan untuk penyelesaian. STM akan meninjau informasi yang disajikan dan akan merespons secara tepat waktu.

6.2. HSER Planning Meeting

Attended by STM and Contractor's representatives and HSR responsible person as proposed. At this meeting, contractor will provide a specific HSER Plan as a subject to be review by STM Team and verify the updated HSER Training Plan and Matrix for the particular scope of work. The outcome of the meeting will be a list of action items, time for completion, and assigned responsibilities for completion. STM will review the information presented and will respond in a timely manner.

6.3. HSR Key Performance Indicator or Performance Meeting

Dihadiri oleh pemilik Kontrak STM dan Perwakilan HSR, dengan PJO dan/atau Tim Keselamatan Kontraktor untuk mempresentasikan pencapaian dan kinerja KPI HSR dalam kurun waktu satu bulan dan mendiskusikan beberapa masalah keselamatan yang harus ditangani oleh Pemilik Kontrak dan diselesaikan.c

6.3. HSR Key Performance Indicator or Performance Meeting

Attended by STM Contract owners and HSR Representatives, with Contractor's PJO and/or Safety Team to present the achievements and performance of the HSR KPI within a month and discuss several safety issues to be addressed by Contracts Owners and subject to be resolve

6.4. Regular HSR Meeting

PJO atau perwakilan Kontraktor harus menghadiri undangan Rapat Keselamatan yang diadakan oleh STM seperti Rapat Lingkaran Mingguan, Rapat Komite Pengarah Keselamatan Bulanan, Rapat Pencegahan Kematian, dan sebagainya serta memastikan bahwa semua poin-poin penting dari rapat tersebut disampaikan kepada timnya.

Kontraktor bertanggung jawab untuk mengembangkan proses komunikasi yang efektif dan kampanye kesadaran dengan karyawan mereka untuk berbagi informasi dan pedoman K3LL terkait ruang lingkup pekerjaan dengan mempertimbangkan, setidaknya:

- Kampanye kesadaran;
- Rapat K3LH;
- Dialog K3LH

Kontraktor harus menyimpan catatan yang memberikan bukti komunikasi dengan karyawannya dan mengevaluasi efektivitas komunikasi,

6.4. Regular HSR Meeting

PJO or Contractor's representative shall attend to the Safety Meeting invitation that held by STM such as Weekly Circle Meetings, Monthly Safety Steering Committee meetings, Fatality Prevention Meetings, etc and ensure all the key points of the meeting are cascaded to his/her team.

The contractor are responsible for developing effective communication processes and awareness campaigns with their employees to share HSE information and guidelines regarding the scope of work considering, at least :

- Awareness campaigns;
- HSE Meetings;
- HSE Dialogues

The contractor must keep records that provide evidence of communication with its employees and evaluate the effectiveness of communication, dealing with identified improvement opportunities.

The contractor may use its own methodology and forms of HSE dialogues if this process is

berurusan dengan peluang perbaikan yang teridentifikasi.
Kontraktor dapat menggunakan metodologi dan bentuk dialog K3LL sendiri jika proses ini dilakukan secara sistematis. Dalam kontrak yang diklasifikasikan sebagai risiko sedang, tinggi, atau sangat tinggi untuk K3LL, dialog K3LL harus diadakan setiap hari

systematized. In contracts classified as medium, high, or very high risk for HSE, the HSE dialogues must be held daily

7. PERSYARATAN KESEHATAN KERJA

Kontraktor minimal harus melakukan pekerjaan dan menyediakan personel, peralatan, fasilitas dan layanan sesuai dengan praktik industri yang baik serta standar dan peraturan nasional (yaitu Kepmen ESDM 1827/K/30/MEM/2018 , Kepdirjen Minerba 185 2019, dll.)
Penilaian lokasi kerja sehubungan dengan “Risiko Kesehatan Kerja” harus diberikan oleh Kontraktor dalam Rencana HSER. Hasil penilaian akan didiskusikan dengan STM dan penilaian akhir akan disepakati oleh kedua belah pihak.

7. HEALTH REQUIREMENTS

Contractor shall, as a minimum, conduct the work and provide personnel, equipment, facilities and services consistent with the good industrial practice and national standard and regulations (i.e Kepmen ESDM 1827/K/30/MEM/2018 , Kepdirjen Minerba 185 2019, etc)
An assessment of the worksite with regard to “Occupational Health Risks” shall be provided by Contractor in the HSER Plan. The assessment result shall be discussed with STM and a final assessment will be agreed by both parties

7.1. Penyakit Endemik dan Kesehatan Traveler

Kontraktor harus mempersiapkan dan melaksanakan Program Pencegahan Penyakit Endemik dan Kesehatan Wisatawan ketika beroperasi di daerah terpencil dengan penyakit endemik berat seperti malaria dan demam kuning.

7.1. Endemic Disease and Traveler

The Contractor must prepare and implement an Endemic Disease Prevention and Travelers Health Program when operating in remote areas with severe endemic diseases such as malaria and yellow fever.

7.2. Fitness of Work

Untuk menjamin kebugaran personel yang melakukan pekerjaan, Kontraktor wajib melakukan pemeriksaan kesehatan berkala terhadap personelnya dengan mengacu pada peraturan spesifik lokasi (STM-HR-SWP-001 Matriks Pemeriksaan Kesehatan)

- Kontraktor juga harus memastikan bahwa personel sub-kontraktornya harus menjalani pemeriksaan kesehatan berkala. Minimal hal ini harus mencakup pemeriksaan kesehatan sebelum perekrutan dan pemeriksaan kesehatan berkala. Bukti harus tersedia bagi STM untuk memastikan bahwa semua personel kontraktor sesuai dengan pekerjaan dan lokasi pekerjaan. Rincian pemeriksaan kesehatan akan ditentukan oleh STM.

Catatan : Personil yang kembali dari sakit parah atau rawat inap harus mendapatkan izin medis dari dokter STM sebelum kembali bekerja.

- Kontraktor harus bertanggung jawab atas biaya pemeriksaan kesehatan yang diperlukan dan untuk memberikan STM dokumen hasil pemeriksaan kesehatan yang akan diperiksa oleh dokter STM dan

7.2. Fitness of Work

To ensure the fitness of personnel engaged in the work, Contractor shall conduct periodic medical examinations of its personnel refere to site specific regulation (STM-HR-SWP-001 Matrix Pemeriksaan Kesehatan)

- Contractor shall also ensure that its sub-contractor's personnel are subject to periodic medical examination. As a minimum this shall include pre-hire medical examinations and regular medical examinations. Evidence should be mad available to STM to ensure that all contractor personnel are suitable of the work and job location. Detail of medical check up will be determined by STM.

Note : Personnel who are returning from serious illness or hospitalization must obtain medical clearance from STM's doctor before returning to assume his/her job.

- Contractor shall be responsible for the cost of medical examinations as required and to provide STM with medical examinations results document which will be screened by

mengkonfirmasi kebugaran personil yang ditugaskan oleh Kontraktor untuk pekerjaan.

- Kontraktor harus menyediakan peralatan pertolongan pertama yang cukup untuk keperluan mereka sendiri. Kontraktor harus, tanpa biaya kepada Perusahaan, bertanggung jawab atas kesejahteraan medis personilnya sendiri dan personil sub-kontraktor.
- Kontraktor dan sub-kontraktornya harus mengurus pengaturan untuk kehadiran medis, perawatan atau rawat inap jika dan ketika diperlukan dan akan mengatur perlindungan asuransi yang sesuai untuk kontinjensi tersebut.
- Personil Kontraktor harus melapor kepada Dokter atau Paramedis di lokasi jika mereka rawat jalan dan sedang mengkonsumsi obat-obatan yang dapat mempengaruhi kebugaran untuk bekerja atau efek samping lainnya.
- Personil yang akan melakukan pekerjaan penting pada kondisi ekstrim seperti Bekerja di ketinggian, Ruang Terbatas, dll harus diperiksa oleh Paramedis.
- STM dapat mewajibkan personil kontraktor untuk melakukan Pemeriksaan Kesehatan Dasar secara berkala jika dianggap perlu berdasarkan risiko pekerjaan tertentu

STM's doctor and confirm the fitness of Contractor's assigned personnel for the work.

- Contractor shall provide sufficient first aid kits for their own purpose. Contractor shall, at no cost to Company, be responsible for the medical welfare of its own and sub-contractor's personnel.
- Contractor and its sub-contractor shall take care of arrangement for medical attendance, treatment or hospitalization if and when necessary and will arrange suitable insurance coverage for such contingencies.
- Contractor's personnel shall report to Doctors or Paramedic on site if they are outpatient and being on medical consumption that might affecting the fitness for work or any other side effect.
- Personnel who will perform critical job at extreme conditions such as Working at height, Confined Space, etc shall be checked by Paramedic.
- STM might required contractor's personnel to have an Basic Health Screening on regular basis if it deemed required based on the risk of particular job

7.3. Program Kesehatan Kerja

Kontraktor wajib mempunyai program kesehatan kerja sendiri berdasarkan risiko kesehatan yang mungkin terjadi selama pelaksanaan kontrak pekerjaan. Program tersebut dapat mempertimbangkan beberapa pengendalian kesehatan kerja seperti tabel di bawah ini.

7.3. Occupational Health Program

The contractor shall have their own occupational health program based on the health risk that might occur during contract of work execution. The programs can considers the several occupational heath controls as table below

Table 2 : Program Pengendalian Kesehatan Kerja

Controls	Description
Program Ketergantungan Bahan Kimia	Dilarang memiliki atau mengkonsumsi minuman beralkohol atau zat-zat terlarang di area STM. Kontraktor bertanggung jawab untuk mengawasi karyawannya sebelum memasuki area STM dan selama shift kerja mereka, sesuai dengan undang-undang setempat. Karyawan yang ditemukan berada di bawah pengaruh alkohol atau obat-obatan terlarang di STM harus dikeluarkan dari area tersebut. Vale dapat meminta pengembangan Program Ketergantungan Bahan Kimia, dengan tujuan untuk mencegah karyawan yang berada di bawah pengaruh alkohol atau obat-obatan terlarang masuk ke area kerja.
Penyakit Endemik dan Kesehatan Traveler	Kontraktor harus merancang dan melaksanakan Program Pencegahan Penyakit Endemik dan Kesehatan Wisatawan ketika bekerja di daerah terpencil dan dalam kasus-kasus penyakit endemik yang parah, seperti malaria dan demam kuning.
Kebersihan Tempat Kerja	Paparan karyawan kontraktor terhadap zat kimia, fisik, dan biologis harus dikelola untuk mengidentifikasi dan mengendalikan paparan di atas batas paparan kerja yang ditentukan oleh undang-undang setempat.
Ergonomics	Kontraktor harus memiliki program yang mencakup kriteria untuk mengelola risiko ergonomi yang dihadapi karyawannya.
Fatigue	Jika kelelahan diidentifikasi sebagai faktor risiko yang dipetakan dalam analisis risiko kegiatan kontraktor, seperti dalam kontrak yang mencakup mengemudikan kendaraan ringan atau mengoperasikan alat berat, maka harus ada prosedur untuk mencegah kelelahan, sesuai dengan Pedoman Pencegahan Kelelahan Vale: 1. Identifikasi pekerjaan-pekerjaan yang kritis terhadap kelelahan 2. Analisis Pekerjaan Kritis 3. Identifikasi faktor penyebab yang mungkin terjadi 4. Definisi langkah-langkah pengendalian yang dapat diterapkan.
Lainnya	• Untuk aktivitas apa pun yang dilakukan di luar ruangan atau aktivitas yang menyebabkan stres termal, program rehidrasi harus dipertahankan, dan langkah-langkah harus diambil untuk perlindungan terhadap sinar matahari. • Jika berlaku, pemeriksaan kesehatan kerja harus dilakukan sesuai dengan undang-undang setempat dan sebelum karyawan dipekerjakan, dengan menilai kapasitas fisik dan emosional mereka dalam kaitannya dengan tugas-tugas yang akan mereka lakukan. Pemeriksaan medis ini harus terdiri dari evaluasi klinis dengan anamnesis pekerjaan, ditambah dengan pemeriksaan pelengkap yang terkait langsung dengan risiko lingkungan kerja dan karakterisasi kapasitas fungsional.

Table 2 : Occupational Health Programs

Controls	Description
Chemical Dependency Program	Possession or consumption of any alcoholic beverages or illegal substances on STM's premises is prohibited. The contractor is responsible for monitoring its employees before entering STM's areas and during their work shift, in accordance with local legislation. Employees found under the influence of alcohol or drugs at STM must be removed from the area. Vale may request the development of a Chemical Dependency Program, with the purpose to prevent the access the work front any employee who is under the influence of alcohol or drugs.
Endemic Diseases and Traveler's Health	The contractor must design and implement a Program for the Prevention of Endemic Diseases and Traveler's Health when working in remote areas and in cases of severe endemic diseases, such as malaria and yellow fever.
Occupational Hygiene	The exposure of contractors' employees to chemical, physical and biological agents must be managed to identify and control exposures above the occupational exposure limits determined by local legislation.
Ergonomics	The contractor must have a program that includes criteria for managing the ergonomic risks to which its employees are exposed.
Fatigue	If fatigue is identified as a risk factor mapped in the risk analysis of the contractor's activities, such as in contracts that include driving light vehicles or operating heavy equipment, there must be a procedure to prevent fatigue, according to the Vale's Fatigue Prevention Guidelines : 1. Identification of Critical jobs for fatigue 2. Analysis of Critical Jobs 3. Identification of possible contributing factors 4. Definition of applicable control measures.
Others	• For any activity performed outdoors or activities that cause thermal stress, a rehydration program must be maintained, and measures should be taken for sun protection. • If applicable, the occupational medical examinations must be conducted in accordance with local legislation and before the employee is hired, assessing their physical and emotional capacity in relation to the tasks they will perform. This medical examination must consist of a clinical evaluation with occupational anamnesis, plus complementary examinations directly related to the risks of the work environment and the characterization of functional capacity. • The contracted company must manage the health of its employees, including efforts to prevent cardiovascular diseases. Employees aged 40 years or older must undergo clinical examinations, directed questionnaires and laboratory tests to calculate the cardiovascular risk score (Framingham score).

7.4. Penyalahgunaan dan Pengendalian Narkoba dan Alkohol

Penyalahgunaan atau obat-obatan terlarang, alkohol dan/atau zat terlarang lainnya merupakan masalah global yang menuntut perhatian dari semua pihak dalam masyarakat, termasuk industri.

Penyalahgunaan zat terlarang dapat menyebabkan kerusakan properti yang serius, kehilangan nyawa, cedera, dan kecelakaan yang mengubah hidup, penurunan kinerja kerja atau masalah kinerja kerja lainnya.

Karyawan Kontraktor dan/atau subkontraktor, setiap individu yang ditugaskan untuk bekerja di fasilitas Perusahaan tidak boleh mengoperasikan peralatan atau melaksanakan tugasnya dalam keadaan terganggu oleh penggunaan zat terlarang yang dapat memberikan efek Halusinogen, Stimulan, Depresan, Adiktif, termasuk namun tidak terbatas pada Kokain, Metamphetamine, Heroin, Morfin, LSD, Psikotropika, Opium, Kodein, dll.

Karyawan Kontraktor dan setiap individu yang

7.4. Drugs and Alcohol Abuse and Control

Abuse or drugs, alcohol and/or other prohibited substances is a global concern that demands attention from all parties of society, including industry.

Abuse of prohibited substance may lead to serious property damage, loss of life, injury, and life-changing accidents, work performance deterioration or other job performance problems.

Contractor’s and/or subcontractors employees any individuals assigned to work in the Company facilities shall not operate equipment or perform their duties whilst impaired by the use of any prohibited substance that might giving the effect of Halucinogen, Stimulan, Depressant, Addictive including but not limited to Coccaine, Metampethamine, Heroin, Morphine, LSD, Psychothropic, Opoid, Kodein, etc

bekerja untuk STM tidak diizinkan untuk:

- Memiliki, mengkonsumsi, membeli atau menjual alkohol di area Operasional STM dan selama kegiatan operasional
- Memiliki, menggunakan, membeli, menjual atau mendistribusikan obat-obatan terlarang atau zat terlarang lainnya di lokasi STM atau fasilitas yang dioperasikan.

Catatan : Jika obat-obatan yang dikendalikan diresepkan oleh ahli fisioterapi atau dokter, personil harus memperhatikan dan berkonsultasi dengan dokter STM dengan resep yang valid. Dokter berhak untuk melarang orang yang berada di bawah pengaruh obat-obatan terlarang untuk bekerja di lokasi STM sampai jangka waktu tertentu.

STM memiliki hak untuk :

b. Semua karyawan harus mematuhi peraturan ini. Setiap ketidakpatuhan atau pelanggaran terhadap peraturan ini yang juga merupakan 1st Vale Golden Rules tentang Alkohol dan Zat Ilegal akan diselidiki dengan baik dan komite seumur hidup akan dibentuk untuk masalah khusus ini yang akan menghasilkan konsekuensi dan tindakan disipliner bagi individu dan/atau kontraktor sebagai perusahaan.

- Mewajibkan semua kontraktor untuk lulus pemeriksaan fisik yang mencakup tes Zat Terlarang.
- Mewajibkan semua personel yang bekerja di atau mengelola operasi keselamatan dan/atau lingkungan yang sensitif untuk menjalani program pengujian narkoba secara acak dan berkala
- Menggeledah barang pribadi Kontraktor, dan individu yang ditugaskan bekerja untuk perusahaan untuk mencari zat terlarang di lokasi STM, dengan alasan yang tepat dan itikad baik.
- Menguji karyawan kontraktor, dan individu yang ditugaskan untuk bekerja di STM untuk mengetahui keberadaan zat terlarang di lokasi kerja perusahaan jika ada kecurigaan yang beralasan. Termasuk proses investigasi oleh tim keamanan dan mungkin melibatkan penegakan hukum untuk setiap kecurigaan kepemilikan zat terlarang di lokasi STM.

c. Kontraktor harus mendapatkan persetujuan tertulis yang sah dari personilnya untuk melakukan pengujian medis untuk mengetahui adanya zat-zat terlarang.

d. Kontraktor selanjutnya setuju bahwa setiap personel yang menolak untuk memberikan persetujuan tersebut atau menarik persetujuan tersebut, atas pilihan STM, akan diberhentikan dari pekerjaan dan tidak akan, atas pilihan STM,

a. Contractor's employees and any individuals working for STM are not permitted to :

- Possess, consume, purchase or sell alcohol in STM Operational area and during operational activities
- Possess, use, purchase, sell or distribute illegal drugs or other prohibited substance on any STM premises or operated facilities.

Note : If the controlled drugs are prescribed by the phycisian or doctor, the personnel should notice and consult with STM doctors with the valid prescriptions. The doctor reserved the right to prohibit the individual under legal drugs influence to working at STM premises until certain of period.

STM reserves the right to :

b. Require all contractors to pass physical examinations which include test for Prohibited Substances.

- Require all personnel who work in or manage defined safety and/or environmentally sensitive operations to be subjected to frequent random drug testing programs
- Search the personal effects of Contractors, and individuals assigned to work for the company for prohibited substances on STM premises, with a proper reason and good faith
- Test employees of contractor, and individuals assigned to work for the STM for the presence of prohibited substance in company's worksite if there is a reasonable suspicion. Including the investigation process by security team and might involving law reinforcement to any suspicion of prohibited substance possessions in STM premises.

c. All employees must comply with this regulations. Any non-compliance or violations to this rules that also become the 1st Vale Golden Rules regarding Alcohol and Illegal Substance will going to investigate properly and committee for life will be created for this particular issue which will resulting the consequences and disciplinary actions for the individual and/or the contractor as a company.

d. Contractor shall obtain valid written consent of its personnel to perform medical testing for the presence of prohibited substances.

e. Contractor further agrees that any personnel who refuse to provide such consent or withdraws such consents, at STM option, be removed from the work and shall not, at STM option, be assigned to any future services to be provided by Contractor for STM.

f. Contractor further agrees that it shall immediately notify STM in the event that contractor becomes aware that any of its personnel has been found in possession of Prohibited substance. Contrator is

ditugaskan untuk layanan di masa depan yang akan diberikan oleh Kontraktor untuk STM.

e. Kontraktor selanjutnya setuju bahwa setiap personel yang menolak memberikan persetujuan tersebut atau menarik persetujuan tersebut, atas pilihan STM, akan dikeluarkan dari pekerjaan dan tidak akan, atas pilihan STM, ditugaskan ke layanan masa depan yang akan diberikan oleh Kontraktor untuk STM.
f. Kontraktor selanjutnya setuju bahwa ia harus segera memberi tahu STM jika kontraktor mengetahui bahwa salah satu personelnya kedapatan memiliki zat terlarang. Kontraktor diharuskan memberi tahu STM jika ada personel yang disediakan untuk pekerjaan tersebut yang sebelumnya kedapatan memiliki atau menyalahgunakan zat terlarang di lokasi kerja. Penerimaan personel tersebut untuk pekerjaan tersebut sepenuhnya merupakan kebijakan Perusahaan.

required to notify STM in the event that any personnel provided for the work have previously been found in possession, or have abused prohibited substance at the worksite. The acceptance of such personnel for the work shall be at the sole discretion of Company.

8. PERSYARATAN LINGKUNGAN

a. Kontraktor harus mematuhi semua hukum, peraturan dan ketentuan dari instansi pemerintah (yaitu: Kementrian Negara Lingkungan Hidup/KLH, dll) yang memiliki yurisdiksi, yang saat ini berlaku atau mungkin akan diberlakukan selama jangka waktu Kontrak. Yang berkaitan dengan pengendalian dan pencegahan kerusakan lingkungan.
b. Kontraktor harus segera memberitahukan kepada STM sehubungan dengan polusi, kerugian, kerusakan, klaim atau tuntutan (atau kejadian yang dapat menimbulkan hal yang sama) yang diakibatkan oleh pekerjaan yang dilakukan berdasarkan Kontrak. Kontraktor harus melaporkan kepada STM setiap insiden ketidakpatuhan terhadap persyaratan lingkungan perundang-undangan dan peraturan yang terjadi selama pelaksanaan pekerjaan.
c. Kontraktor harus mengoperasikan sistem manajemen yang dapat menunjukkan kepatuhan terhadap undang-undang, peraturan dan ketentuan lingkungan yang berlaku untuk kegiatan, produk dan layanannya.
d. Kontraktor dan sub-kontraktor harus mengambil semua langkah yang diperlukan untuk memastikan bahwa dampak lingkungan dari pekerjaan mereka dikelola secara bertanggung jawab dan harus mengambil semua langkah yang diperlukan untuk memastikan bahwa:

- Personil kontraktor menyadari dampak lingkungan dari pekerjaan kontraktor dan cukup

8. ENVIRONMENT REQUIREMENT

a. Contractor shall comply with all laws, rules and regulations of governmental agencies (i.e : Kementrian Negara Lingkungan Hidup/KLH, etc) which having jurisdiction, which now exist or may be promulgated during the term of the Contract. Relating to the control and prevention of damage to the environment.
b. Contractor shall notify company immediately with respect to any pollution, loss, damage, claim or demand (or occurrence with may give rise to same) resulting from the work performed under the Contract. Contractor shall report to STM any incident of non-compliance with legislative and regulatory environmental requirements that occur during the performance of work.
c. Contractor shall operate a management system that is able to demonstrate compliance with environmental laws, rules and regulations applicable to its activities, products and services.
d. Contractor and sub-contractor shall take all necessary steps to ensure that the environmental impacts of their work are responsibly managed and shall take all necessary measures to ensure that :
Contractor's personnel are aware of the environmental impact of the contractor's work and are sufficiently trained and competent to perform the work.
Contractor's personnel operate systems, which will ensure that significant environmental impact of work are identified and managed in accordance with a commitment to legal compliance and continual improvement.
The environmental risk associated with the work are evaluated and appropriate actions are take to

terlatih dan kompeten untuk melakukan pekerjaan tersebut.

- Personil Kontraktor mengoperasikan sistem yang akan memastikan bahwa dampak lingkungan yang signifikan dari pekerjaan diidentifikasi dan dikelola sesuai dengan komitmen terhadap kepatuhan hukum dan peningkatan berkelanjutan.
- Risiko lingkungan yang terkait dengan pekerjaan dievaluasi dan tindakan yang tepat diambil untuk mencegah kecelakaan dan mengurangi polusi dan bahwa rencana kontinjensi tersedia jika terjadi insiden
- Kontraktor akan memiliki proses yang memadai untuk memantau kinerja lingkungan dari pekerjaan mereka

e. Contractor shall be responsible for collecting all of their waste, rubbish, and food Kontraktor harus mengikuti semua peraturan lingkungan pemerintah yang berlaku dan persyaratan khusus lokasi yang tidak disebutkan dalam pedoman ini.

f. Kontraktor harus mengikuti semua peraturan lingkungan pemerintah yang berlaku dan persyaratan khusus lokasi yang tidak disebutkan dalam pedoman ini.

g. Kebutuhan dan spesifikasi area yang terkait dengan kontrak, seperti konsumsi air, pengolahan atau pembuangan limbah, pembuangan limbah, emisi atmosfer dan lain-lain didefinisikan dalam Spesifikasi Teknis atau Permintaan Teknis.

prevent accident and reduce pollution and that contingency plans are in place in the event of an incident

- Contractor will have adequate processes for monitoring the environmental performance of their work.

e. Contractor shall be responsible for collecting all of their waste, rubbish, and food scraps and other discarded material relating to the work in STM's work site or units. Such activities shall be performed on a regular basis as per site specific requirement. Such material shall be appropriately disposed of in accordance with method established by Contractor.

f. Contractor shall follow all applicable government environment regulations and site specific requirements that didn't mentioned in this guidelines.

g. The needs and specifics of the area related to the contract, such as water consumption, treatment or disposal of effluents, disposal of waste, atmospheric emissions and others are defined in the Technical Specification or Technical Requisition.

Table 3 : Environmental Control (Sampel)

Kontrol	Deskripsi
Biodiversity	Penebangan segala jenis vegetasi tidak diperbolehkan tanpa izin dari STM dan badan lingkungan yang berwenang. Dokumen yang menginformasikan asal usul input alami, seperti pasir, kerikil, dan kayu yang berasal dari hutan, harus ditunjukkan kepada STM
Sumber air	Kontraktor harus menerapkan kontrol dan/atau penghalang fisik untuk menghindari kemungkinan dampak terhadap sumber daya tanah dan air selama kegiatannya, seperti: pasokan, pencucian, pembersihan, drainase, pemeliharaan, dan penyimpanan. Jika terjadi insiden yang melibatkan peralatan yang mengakibatkan dampak pada tanah/air, Kontraktor harus memperbaiki kerusakan yang terjadi dan segera menginformasikan STM. Limbah (yang diolah dan/atau tidak diolah) yang dihasilkan oleh Kontraktor tidak boleh dikirim ke badan penerima, jaringan drainase air hujan, dan stasiun pengolahan tanpa izin sebelumnya dari Vale.
Emisi Atmosfer	Kegiatan yang melibatkan emisi partikulat (antara lain pekerjaan tanah, pengangkutan curah, penanganan, atau penyimpanan bahan bubuk) harus memiliki kontrol yang memadai seperti penutup, pembasahan, penyemprotan air, penggunaan pengikat, penekan debu, atau sistem deduksi lainnya. Kontraktor yang menggunakan kendaraan bertenaga diesel untuk mengangkut kargo atau penumpang harus mematuhi peraturan setempat mengenai pemantauan emisi udara. Kegiatan pengecatan harus dilakukan di dalam kabin yang dilengkapi dengan sistem pembuangan dan pengolahan

Table 3 : Environmental Control (Sample)

Control	Description
Biodiversity	Removal of any type of vegetation is not permitted without prior authorization from STM and the competent environmental bodies. Documents informing the origin of natural inputs, such as sand, gravel and wood originating from forests, must be presented to STM
Water Resources	The Contractor must implement controls and/or physical barriers to avoid possible impacts on soil and water resources during its activities, such as: supply, washing, cleaning, drainage, maintenance, and storage. In case of incident involving equipment that results in impacts on soil/water, the Contractor must remedy the damage caused and inform STM immediately. Effluents (treated and/or untreated) generated by the Contractor must not be sent to receiving bodies, rainwater drainage networks, and treatment stations without prior authorization of Vale.
Atmospheric Emissions	Activities involving particulate emissions (earthworks, bulk transport, handling, or storage of powder materials, among others) must have adequate controls such as enclosure, wetting, water spraying, use of binders, dust suppressors or other dedusting systems. The Contractors that use diesel-powered vehicles for transportation of cargo or passengers must comply with local legislation as to monitoring of air emissions. Painting activities must be conducted preferably in cabins equipped with suitable gas exhaust and treatment systems for control of organic vapors.
Residues	The Contractor must ensure segregation and adequate

	gas yang sesuai untuk mengendalikan uap organik.
Residu	Kontraktor harus memastikan pemisahan dan penyimpanan limbah yang memadai agar tidak mencampur jenis limbah yang berbeda yang dihasilkan, sesuai dengan program limbah unit lokal. Wadah seperti drum, drum plastik, dan lainnya harus dijaga agar tetap tertutup dan tertutup dengan baik untuk menghindari tumpahan dan/atau kebocoran, penampungan air hujan, dan perkembangbiakan vektor. Jika kontraktor bertanggung jawab untuk mengangkut atau membuang limbah, izin lingkungan, kondisi khusus, dan undang-undang yang berlaku harus dipenuhi dan bukti kepatuhan tersebut harus tersedia selama jangka waktu kontrak. Tindakan-tindakan berikut ini tidak diperbolehkan: Membakar limbah di area luar. Membuang limbah jenis apa pun secara langsung ke tanah atau badan air. Membuang limbah dalam bentuk tumpukan tanpa izin dari Vale
Gas rumah kaca	Jika diminta dalam Spesifikasi Teknis atau Permintaan Teknis, kontraktor harus menyiapkan Inventarisasi Gas Rumah Kaca, mengarsipkan catatannya, dan menyerahkannya kepada Vale jika diminta.
Manajemen bahan kimia	Kontraktor harus mengidentifikasi skenario risiko yang diakibatkan oleh pengadaan, transportasi, penanganan, penyimpanan, pemindahan, penggunaan, dan setelah penggunaan bahan kimia. MSDS atau lembar darurat untuk setiap bahan kimia harus mudah diakses (dalam bahasa setempat dan bahasa penggunanya) untuk

	storage of waste so as not to mix the distinct types of waste generated, according to waste program of the local unit. Containers such as drums, plastic drums, and others must be kept closed and properly covered to avoid spills and/or leaks, retention of rainwater, and proliferation of vectors. If the contractor is responsible for transporting or disposing of waste, environmental permits, specific conditions, and applicable legislation must be met and evidence of said compliance must be available during the term of the contract. The following actions are not allowed: • Burning waste in external areas. • Disposing any type of waste directly on soil or water bodies. Disposing waste in piles without Vale's authorization
Gas rumah kaca	Jika diminta dalam Spesifikasi Teknis atau Permintaan Teknis, kontraktor harus menyiapkan Inventarisasi Gas Rumah Kaca, mengarsipkan catatannya, dan menyerahkannya kepada Vale jika diminta.
Chemicals management	The Contractor must identify the risk scenarios resulting from the acquisition, transportation, handling, storage, transfer, use, and after use of chemicals. The MSDS or emergency sheet for each chemical must be easily accessible (in the local language and that of its users) for consultation, and its recommendations must be fully complied with, including their identification and storage. The use of chemicals on the prohibited list at Vale is not allowed. The use of chemicals on the restricted list must be justified by the contractor and approved by Vale, and it is recommended that they be replaced. Lists of Chemicals with restricted and/or prohibited use at STM are

	konsultasi, dan rekomendasinya harus dipatuhi sepenuhnya, termasuk identifikasi dan penyimpanannya. Penggunaan bahan kimia yang termasuk dalam daftar bahan kimia terlarang di Vale tidak diperbolehkan. Penggunaan bahan kimia dalam daftar terlarang harus dibenarkan oleh kontraktor dan disetujui oleh Vale, dan direkomendasikan untuk diganti. Daftar bahan kimia yang dibatasi dan/atau dilarang penggunaannya di STM tersedia di (Daftar hitam dan daftar abu-abu)
Pengelolaan dampak sosial dan hak asasi manusia	Kontraktor harus melakukan identifikasi, penilaian, dan penanganan dampak sosial yang timbul dari kegiatannya untuk mencegah, memitigasi, dan mengkompensasi dampak negatif serta memaksimalkan dampak positif, dengan memenuhi persyaratan hukum dan persyaratan Vale. Kontraktor harus menghormati keragaman sosial dan aspek budaya serta memastikan hubungan yang baik dan hidup berdampingan dengan masyarakat, dengan perhatian khusus terhadap kelompok-kelompok rentan. Kontraktor harus menetapkan langkah-langkah pencegahan dan pengendalian untuk menghindari atau meminimalkan potensi risiko dan dampak terhadap kesehatan dan keselamatan masyarakat yang mungkin timbul dari kegiatannya, seperti: Kebisingan, getaran, dan emisi partikulat yang berlebihan. Kecelakaan lalu lintas atau kebut-kebutan yang melibatkan karyawan kontraktor di masyarakat setempat.- Paparan masyarakat terhadap zat-zat berbahaya.- Dampak dan/atau keterlibatan dalam eksploitasi

	available on the (Black list and grey list)
Social and human rights impact management	The contractor must conduct the identification, assessment, and treatment of the social impacts arising from its activities to prevent, mitigate, and compensate for the negative impacts and maximize positive impacts, meeting the legal and Vale's requirements. The contractor must respect social diversities and cultural aspects and ensure good relationships and coexistence with the communities, with particular care towards vulnerable groups. The contractor must establish prevention and control measures to avoid or minimize the potential risks and impacts on the health and safety of communities that may arise from its activities, such as: • Excessive noise, vibrations, and particulate emissions. • Traffic accidents or speeding involving contractor employees in local communities. • Exposure of community to hazardous substances. • Impact and/or complicity with sexual exploitation of children and adolescents in local communities (e.g., accommodations close to communities or homes of Contractors in the communities). • Use or complicity with child labor in the value chain. • Change in violence rates in direct and indirect influence areas. • Retention of identification documents of employees by the Contractors. • Inadequate conditions of facilities in the workplace. In the event of claims of violation of human rights directly or indirectly involving the Contractor, it must conduct a

	seksual terhadap anak-anak dan remaja di masyarakat setempat (misalnya, akomodasi yang dekat dengan masyarakat atau rumah Kontraktor di masyarakat). Penggunaan atau keterlibatan pekerja anak dalam rantai nilai. Perubahan tingkat kekerasan di wilayah yang terkena dampak langsung dan tidak langsung. Penyimpanan dokumen identifikasi karyawan oleh Kontraktor. Kondisi fasilitas yang tidak memadai di tempat kerja. Jika terjadi klaim pelanggaran hak asasi manusia yang secara langsung atau tidak langsung melibatkan Kontraktor, Kontraktor harus melakukan proses untuk menangani klaim tersebut, memastikan remediasi yang tepat bagi mereka yang terkena dampak, serta pelaporan dampak, tindakan remediasi, dan hasilnya kepada semua orang yang terlibat, termasuk Vale.

	process to treat the claims, ensuring appropriate remediation to those affected, as well as the reporting of impacts, remediation actions, and results to everyone involved, including Vale.
Maintenance of the facilities and equipment integrity	The contractor's facilities, machines, equipment, and measuring/testing devices that are critical for HSE must be inventoried and have a maintenance plan to ensure their functionality within the established control parameters and with the proper quality levels. The execution of any type of maintenance (preventive, predictive and corrective) on machines, equipment and vehicles owned by the contractor within Vale's areas will be subject to the contractual requirements or authorization of the contract manager.

9. PERSYARATAN SPESIFIK MANAJEMEN KESELAMATAN DAN ATURAN KESELAMATAN PROYEK HU'U

Kontraktor harus memastikan bahwa risiko, aspek dan dampak K3LL yang berkaitan dengan kontrak diidentifikasi, dianalisis, dimitigasi (atau dikendalikan) dan dipantau. Kontraktor juga harus memberi instruksi kepada seluruh karyawannya tentang risiko dan pengendalian aktivitas yang melibatkan mereka, serta memberdayakan karyawan untuk menggunakan hak penolakan setiap kali ada situasi risiko serius dan segera terjadi terhadap keselamatan mereka atau rekan kerja mereka di tempat kerja. dimana tidak ada konsensus mengenai tindakan pengendalian yang diperlukan agar tugas dapat dilakukan dengan aman.

9.1. Hazards Identification and Risk Assessment (HIRA)

Dokumen HIRA Kontraktor harus diserahkan kepada tim STM terkait untuk ditinjau. Analisis Keamanan Pekerjaan (JSA) harus ditinjau oleh Pemilik Kontrak dan HSR setidaknya 1 hari sebelum

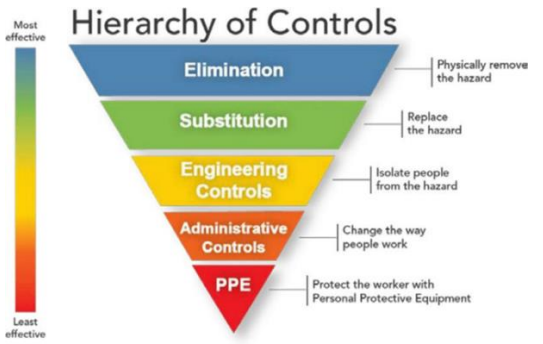
9. SPECIFIC HSER MANAGEMENT REQUIREMENTS AND HU'U PROJECT SAFETY RULES

The contractor shall assure that the HSE risks, aspects and impacts related to the contract are identified, analyzed, mitigated (or controlled) and monitored. The contractor must also instruct all its employees about the risks and controls of the activities in which they are involved, as well as empowering employees to use the right of refusal whenever there is a situation of serious and imminent risk to their safety or their colleagues in which there is no consensus on control measures required for the task to be performed safely

9.1. Hazards Identification and Risk Assessment (HIRA)

The Contractor's HIRA document shall be presented to the STM team relevant for subject to be review. Job Safety Analysis (JSA) shall be reviewed by Contract Owners and HSR at least 1 day prior the

pelaksanaan pekerjaan.
Kontraktor dapat menggunakan metodologi dan formulirnya sendiri untuk membuat Laporan Kondisi Tidak Aman, jika laporan tersebut menunjukkan sistematisasi proses ini dan mendapat persetujuan dari Pemilik Kontrak STM dan profesional HSE.
Untuk memastikan efektivitas yang lebih besar dalam menghilangkan/mengendalikan risiko, pimpinan kontraktor harus mempertimbangkan penerapan hierarki pengendalian, dengan selalu mengutamakan pengendalian yang paling efisien.



9.2. Job Safety Analysis (JSA)

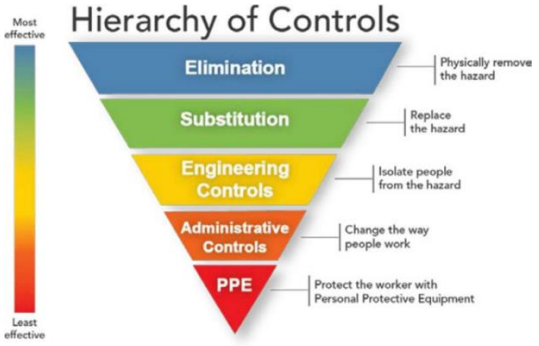
Job Safety Analysis (JSA) adalah metode analisis risiko yang terdiri dari identifikasi, pada setiap langkah dari tugas ini, penyebab, situasi risiko atau bahaya, dan tindakan pengendalian yang harus diterapkan agar suatu peristiwa tidak terjadi atau agar konsekuensi dari peristiwa tersebut dapat dikurangi. Setelah informasi ini diperoleh, klasifikasi risiko dilakukan pada setiap langkah dalam tugas ini, berdasarkan probabilitas dan tingkat keparahan.

- JSA harus dikembangkan oleh karyawan STM atau karyawan kontraktor yang memiliki keahlian tentang metodologi dan oleh karyawan Vale atau karyawan kontraktor yang memiliki keahlian dalam tugas yang akan dilakukan, selama tahap perencanaan tugas ini.
- Prosedur internal kontraktor dapat diminta untuk dinilai oleh STM. Prosedur ini diharapkan dapat menyajikan rincian kegiatan langkah demi langkah untuk pelaksanaan yang aman atau pengoperasian peralatan dalam bahasa yang sederhana dan sesuai bagi pengguna.
- Selain prosedur yang dijelaskan di atas, kontraktor harus sepenuhnya mematuhi prosedur lokal dan program pelatihan yang berlaku untuk setiap fungsi, yang akan disediakan dalam pertemuan awal Kontrak.

9.3. SAFE WORK PERMIT - SWP

SWP atau disebut juga “Contract For Life” karena tujuannya adalah menempatkan manusia sebagai pusat dari semua keputusan, dengan berfokus pada

job execution.
The contractor may use its own methodology and forms to make Unsafe Condition Reports, if it shows the systematization of this process and receives approval from STM´s Contract Owner and HSE professionals.
To ensure greater effectiveness in eliminating / controlling risks, the contractor's leadership must consider the application of a control hierarchy, always prioritizing the most efficient controls.



9.2. Job Safety Analysis (JSA)

The Job Safety Analysis (JSA) is a risk analysis method that consists of identifying, at each step of this task, the causes, risk or hazard situations and control measures that must be applied so that an event does not occur or so that the consequences of these events are mitigated. Once this information is established, the risk classification is performed in each step of this task, based on probability and severity.

- The JSA must be developed by a STM employee or contractor employee who has expertise about the methodology and by a Vale employee or contractor employee who has expertise on the task to be performed, during the planning step of this task.
- The contractor’s internal procedures may be requested for assessment by STM. The procedures are expected to present the activity step-by-step breakdown for its safe execution or equipment operation in a simple and suitable language for users.
- In addition to the procedures described above, the contractor must fully comply with the local procedures and training programs applicable to each function, which will be made available in the Kick-off meeting of the Contract.

9.3. SAFE WORK PERMIT - SWP

The SWP or also called “Contract For Life” because its purpose is to put people at the center of all decisions, by focusing on the elimination of high-severity events at Vale or STM. The process

penghapusan kejadian dengan tingkat keparahan tinggi di Vale atau STM. Proses ini melibatkan langkah-langkah pra-perencanaan, perencanaan, penjadwalan, dan pelaksanaan tugas tertentu melalui pengetahuan sebelumnya tentang risiko dan definisi kontrol. Proses ini harus dilakukan sebelum dimulainya kegiatan, untuk melindungi pelaksana tugas berisiko tinggi atau sangat tinggi yang dilakukan di area pemilik lain. SWP juga harus diterbitkan setiap kali diminta oleh persyaratan hukum atau persyaratan eksternal lainnya, dalam kondisi apa pun.

i. Peran dan Tanggungjawab

Pemilik Area & Issuers (Pemimpin, Supervisor yang Ditugaskan STM)

- Mengidentifikasi kesenjangan dan meminta dukungan untuk pelaksanaan proses ini, bila diperlukan
- Mengetahui para profesional yang akan bertindak sebagai Akseptor (Bila diperlukan) di wilayah mereka,
- Mengetahui risiko area atau proses kerja, telah dilatih dengan baik dalam proses izin kerja dan ditunjuk untuk menerbitkan, memvalidasi ulang, dan mengakhiri izin kerja.
- Memiliki informasi mengenai pekerjaan (yang direncanakan atau tidak) yang akan dirilis dan dapat mempengaruhi pekerjaan mereka.
- Memahami kondisi kerja normal dan tidak normal, hanya dapat mengeluarkan Izin Kerja setelah memastikan risiko dan tindakan pengendalian telah diidentifikasi dan tersedia selama tahap perencanaan stage.

Acceptors (PJO Contractors)

- Menilai risiko dan menerapkan langkah-langkah pengendalian yang diperlukan untuk pekerjaan mereka;
- Menginformasikan kepada Emiten mengenai risiko dari setiap tugas yang dilakukan dan pengendalian yang diterapkan.
- Berdiskusi dengan Emiten mengenai risiko yang ada di area tempat pekerjaan akan dilakukan.
- Memastikan salinan izin kerja tersedia untuk pelaksana atau anggota tim kerja.
- Menginformasikan dan mendiskusikan dengan tim pelaksana pekerjaan mengenai risiko dan pengendalian yang diterapkan. Menilai dan mengidentifikasi situasi berisiko lainnya.

STM HSR Team

involves the steps of pre-planning, planning, scheduling, and execution of a certain task through the prior knowledge of risks and definition of controls. It must be conducted before the start of the activity, to protect the executors of high or very high-risk tasks that are conducted in the area of another owner. The SWP must also be issued whenever required by a legal or other external requirement, under any circumstances.

i. Roles and Responsibilities

Area Owners & Issuers (STM Assigned Filed Leaders, Supervisors)

- Identify gaps and request support for implementation of this process, when needed
- Knowing the professionals who will act as Acceptors (When needed) in their area,
- Know the risks of the work area or process, have been properly trained in the work permit process and are appointed to issue, revalidate and terminate work permits.
- Have information regarding work (planned or not) that will be released and that may affect their work.
- Understand normal and abnormal working conditions, can only issue a Work Permit after ensuring risks and control measures have been identified and are available during the planning stage

Acceptors (PJO Contractors)

- Assess risks and implement control measures required for their work;
- Inform Issuers of the risks of each task performed and the controls implemented
- Discuss with the Issuer regarding existing risks in the area where work will be carried out
- Ensure a copy of the work permit is available for the executor or work team members.
- Inform and discuss with the work implementation team regarding the risks and controls implemented. Assess and identify other risky situations

STM HSR Team

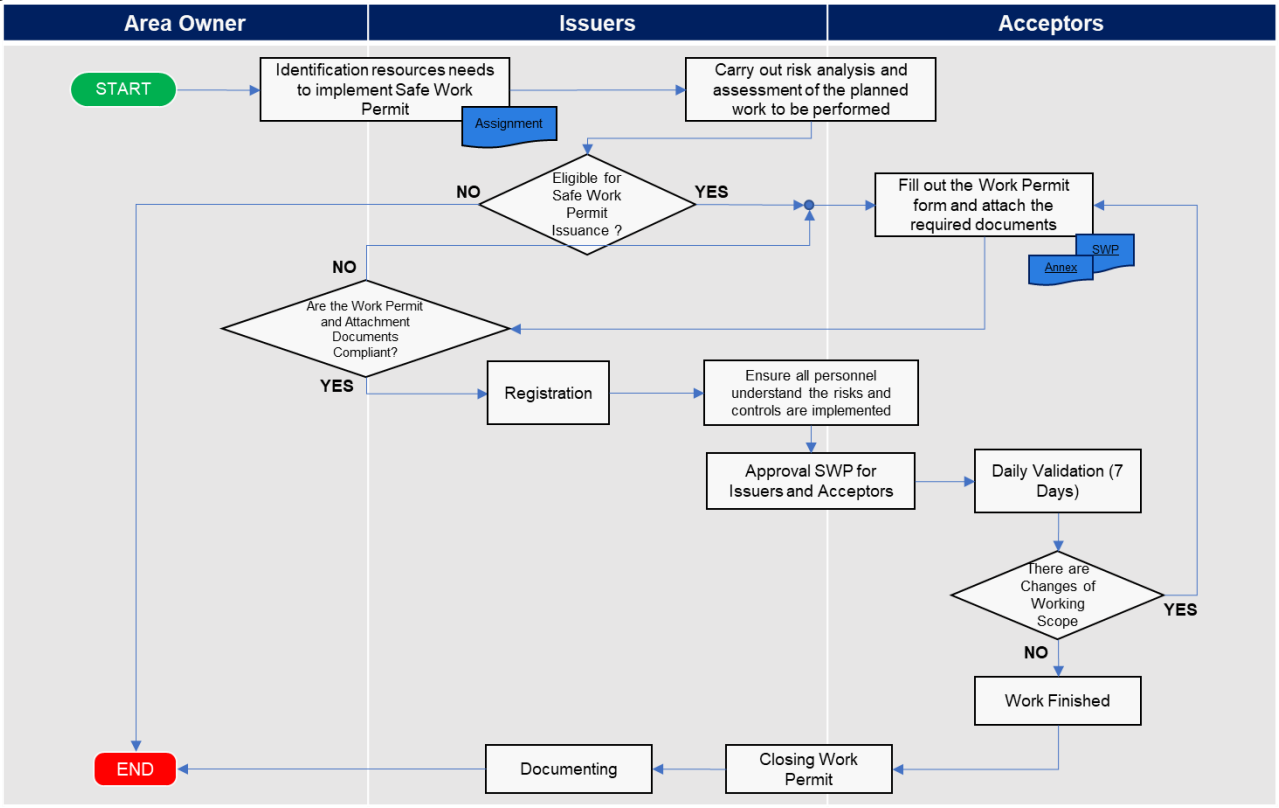
- Act as a Training Facilitator who will train Area Owners, Issuers and Acceptors in using this process
- Train safety representatives from contracting companies in this document
- Conduct field evaluations of the work permit process and areas of operation

- Bertindak sebagai Fasilitator Pelatihan yang akan melatih Pemilik Area, Penerbit dan Penerima dalam menggunakan proses ini.
- Melatih perwakilan keselamatan dari perusahaan kontraktor dalam dokumen ini.
- Melakukan evaluasi lapangan terhadap proses izin kerja dan area operasi.
- Memberikan dukungan untuk pelaksanaan proses Izin Kerja.

- Provide support for the implementation of the Work Permit process

Diagram Alir 1 : Flow Process Safe Work Permit

Flowchart 1 : Safe Work Permit Issuance Flow Process



Catatan : Formulir Pelatihan dan Formulir Izin Kerja Aman dapat diperoleh dari tim Departemen HSR.

Note : Safe Work Permit Forms Training and Forms can be obtained from HSR Department team onsite.

9.4. Kontrol Operasional

SWP atau disebut juga “Contract For Life” karena tujuannya adalah menempatkan manusia sebagai pusat dari semua keputusan, dengan berfokus pada penghapusan kejadian dengan tingkat keparahan tinggi di Vale atau STM. Proses ini melibatkan langkah-langkah pra-perencanaan, perencanaan, penjadwalan, dan pelaksanaan tugas tertentu melalui pengetahuan sebelumnya tentang risiko dan definisi kontrol. Proses ini harus dilakukan sebelum dimulainya kegiatan, untuk melindungi pelaksana tugas berisiko tinggi atau sangat tinggi yang dilakukan di area pemilik lain. SWP juga harus diterbitkan setiap kali diminta oleh persyaratan hukum atau persyaratan eksternal lainnya, dalam kondisi apa pun.

9.4. Operational Control

The contractor shall establish operational controls based on the assessment of risks and aspects/impacts, applicable legal requirements, and STMs procedures, ensuring the implementation of effective actions to mitigate risks and control the identified aspects.

Complying with the requirements in this document does not cover all requirements in local health and safety legislations. Therefore, full compliance with local health and safety legislation must be adopted as a basic premise.

In case of conflict between a requirement in this document and that of the local legislation, the one that is most stringent in health and safety must be applied. Vale's main operational HSE controls

9.5.Critical Activity Requirements (CAR)

a. CAR – 01 : Bekerja di Ketinggian

i. Persyaratan umum untuk mencegah jatuhnya benda, bahan, dan alat:

- Isolasi dan peringatan area: Isolasi dan peringatan harus dilakukan dengan penghalang fisik, seperti jaring penghalang dan alas. Untuk aktivitas jangka pendek, setelah analisis risiko dilakukan oleh area tersebut, jenis isolasi dan peringatan lain seperti pita nilon, tali atau rantai dapat digunakan. Penggunaan pita zebra plastik polos dilarang.
- Sistem pengamanan alat.
- Papan pijakan dengan ketinggian minimum sesuai dengan peraturan setempat, di bagian bawah alat pengangkat, perancah, tangga peron, dan tempat-tempat yang berisiko kejatuhan benda.
- Jaring pengaman, di mana, karena sifat kegiatan, isolasi area tidak mungkin dilakukan, dan kehadiran orang yang terlibat dalam pekerjaan di tingkat yang lebih rendah diperlukan.
- (Tambahan dari STM-OHS-STM-075) Penahan jatuh dan/atau sistem pencegah jatuh yang memadai dan sesuai harus tersedia terutama untuk pekerjaan dengan kompleksitas tinggi di ketinggian di mana titik jangkar struktural tidak tersedia atau tidak memadai. Peralatan atau perkakas khusus yang diperlukan termasuk namun tidak terbatas pada:

✓ Fullbody Harness dengan 4 D-Ring minimal double hook lanyard dengan shock absorbent
✓ Mobile fall arrester
✓ Tali Carmantel
✓ Posisi Kerja
✓ Pengangkat dada dan tangan
✓ Descender
✓ Carabiner (Min. 15kN)
✓ Anchor dan webbing straps.

Catatan : Peralatan yang akan digunakan harus disesuaikan dengan kebutuhan pekerjaan yang akan dilaksanakan, oleh karena itu sangat penting bagi kontraktor untuk menentukan atau mempunyai metode keselamatan khusus untuk kegiatan pekerjaan di ketinggian yang kompleks.

ii. Persyaratan umum untuk mencegah orang jatuh dari ketinggian:

- Pegangan tangan, pada alat pengangkat, perancah, tangga platform, galian dan tempat di mana terdapat risiko orang jatuh, yang dirancang sesuai dengan peraturan setempat, yang berisi:

called CAR (Critical Activities Requirement) as described sub-chapter 9.5 related to CAR

9.5.Critical Activity Requirements (CAR)

a. CAR – 01 : Working at Heights

i. General requirements to prevent fall of objects, materials, and tools:

- Area isolation and warning: Isolation and warning must be done with physical barriers, such as barrier mesh and pedestal. For short-term activities, after risk analysis performed by the area, other types of isolation and signaling such as nylon tape, ropes or chains may be used. The use of plain plastic zebra tape is prohibited.
- Tool securing system.
- Toe board with minimum height according to local regulations, at the bottom of lifting equipment, scaffolding, platform ladders and places where there is a risk of falling objects.
- Safety nets, where, due to the nature of the activity, isolation of the area is impossible, and the presence of persons involved in the work at a lower level is required.
- (Additional from STM-OHS-STM-075) Sufficient and adequate fall arrester and/or fall preventer system shall be in place especially for high complexity working at height where structural anchor point are not available or inadequate. The specific equipment or tools are required including but not limited to :

✓ Full body Harness with 4 D Ring at minimum with double hook landyard with shock absorbent
✓ Mobile fall arrester
✓ Carmantel Rope
✓ Work Positioning
✓ Chest and hand ascender
✓ Descender
✓ Carabiner (Min. 15kN)
✓ Anchor and webbing straps

Note : The equipment that will be use shall be adjusted with the needs from the work that will be performed, thus it is very crucial for the contractor to determine or have specific safety method for complex working at height activites

ii. General requirements to prevent fall of people:

- Handrail, in lifting equipment, scaffolding, platform ladders, excavations and places where there is a risk of falling people, designed in accordance with local regulations, containing:

✓ Upper railing.
✓ Mid-section railing.

- ✓ Pagar bagian atas.
- ✓ Pagar bagian tengah.

- Lifeline harus dipasang pada struktur yang berdiri sendiri di:
  - ✓ Kegiatan yang menggunakan tali.
  - ✓ Menggunakan perancah gantung.
  - ✓ Menggunakan kursi gantung.
  - ✓ Terkena risiko jatuh karena keruntuhan struktur.

iii. Persyaratan umum untuk perancah:

- Terbuat dari logam dan dirancang di bawah tanggung jawab profesional yang berkualifikasi (atau yang setara, menurut undang-undang setempat).
- Berbentuk tabung, platform, baji, atau tipe penjepit, dengan perlindungan pada klem di akses dan area kerja.
- Harus diukur oleh profesional yang berkualifikasi.
- Memiliki pintu jebakan yang dilengkapi dengan penghalang fisik di sekelilingnya, untuk mencegah orang jatuh.
- Dirangkai dari proyek yang mempertimbangkan, antara lain, akses yang diperlukan untuk menghindari pengguna selama skenario darurat.

Table 4 : Scaffold Specific Requirements

Persyaratan Khusus	Fixed Supperted Scaffold	Mobile Supported Scaffold	Suspended Scaffold
(a) Tangga akses yang menyatu dengan struktur	X	X	
(b) Sepatu dengan alas yang kokoh / tahan.	X		
(c)Penguncian kastor		X	
(d) Perangkat pengunci mekanis otomatis, yang memenuhi kapasitas kargo maksimum peralatan			X
(e) *Independent lifeline*			X
(f) Pelat yang terlihat dengan beban kerja maksimum yang diijinkan	X	X	X

iv. Persyaratan umum untuk tangga:

- Semua jenis tangga harus memiliki dimensi, termasuk tingkat menengah, sesuai dengan peraturan setempat.

- Lifeline must be affixed to independent structure at:
  - ✓ Activities using ropes.
  - ✓ Using suspended scaffolds.
  - ✓ Using suspended chairs.
  - ✓ Exposed to the risk of falling due to a structural collapse.

iii. General requirements for the scaffold:

- Be metallic and designed under the responsibility of the qualified professional (or equivalent, according to local legislation).
- Be of the tubular, platform, wedge, or clamp type, with protection in the clamps in accesses and work areas.
- Be dimensioned by a qualified professional.
- Have the trapdoor equipped with physical barriers around it, to prevent people from falling.
- Be assembled from projects that contemplate, among others, the necessary accesses for evasion of users during emergency scenarios

Table 4 : Scaffold Specific Requirements

Specific Requiremens	Fixed Supperted Scaffold	Mobile Supported Scaffold	Suspended Scaffold
(a) Access ladder incorporated to the structure	X	X	
(b) Shoes in solid / resistant bases.	X		
(c) Locking of casters		X	
(d) Automatic mechanical locking device, meeting the maximum cargo capacity of the equipment			X
(e) *Independent lifeline*			X
(f) Visible plate with maximum allowable workload	X	X	X

iv. General requirements for the ladders:

- Any type of ladders must contain dimensions, including intermediate levels, according to local regulations.

- Untuk pekerjaan listrik, wajib menggunakan tangga non-konduktif
- Untuk akses pada tangga vertikal tetap di atas 1,80 meter, wajib menggunakan setidaknya salah satu persyaratan di bawah ini:
  - ✓ Garis penyelamat tetap.
  - ✓ Penahan jatuh yang dapat ditarik.
  - ✓ Tali pengaman seluruh tubuh dengan tali pengikat ganda.

Kandang pengaman, yang dipasang dengan benar, di lokasi di mana undang-undang setempat menerima bahwa kandang pengaman berfungsi sebagai perlindungan dari jatuh pada tangga vertikal.

- For electrical work, its mandatory to use non-conductive ladder
- For access on fixed vertical stairs above 1.80 meters, it is mandatory to use at least one of the requirements below:
  - ✓ Fixed lifeline.
  - ✓ Retractable fall arrester.
  - ✓ Full body safety harness with double lanyard.

Safety cages, properly installed, in locations where local legislation accepts that safety cages act as protection against falls on fixed vertical ladders

Tabel 5 : Persyaratan spesifik tangga

Specific Requirements	*Simple Ladder*	*Double ladder (Opened)*	*Extendable ladder*	*Fixed cage ladder*
(a) Steps and platforms whit material non-slip surface.	*X*	*X*	*X*	*X*
(b) Non-slips shoes	*X*	*X*	*X*	*X*
(c) Specific maximum length.				
(d) Stabilization devices / Locking of casters.				*X*

Table 5 : Ladder specific requirements

Specific Requirements	*Simple Ladder*	*Double ladder (Opened)*	*Extendable ladder*	*Fixed cage ladder*
(a) Steps and platforms whit material non-slip surface.	*X*	*X*	*X*	*X*
(b) Non-slips shoes	*X*	*X*	*X*	*X*
(c) Specific maximum length.				
(d) Stabilization devices / Locking of casters.				*X*

Figur 2 : Metode Aman Menggunakan Tangga

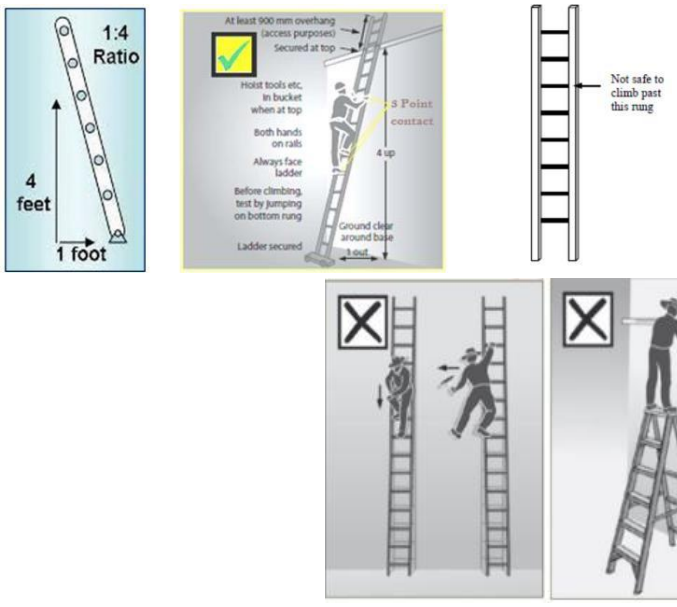
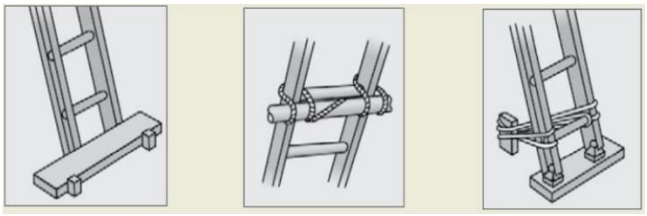
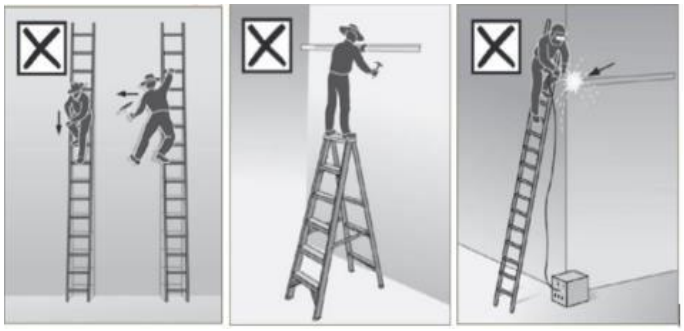


Figure 2 : Safe Method to Use Ladder





v. Persyaratan Umum untuk peralatan pengangkat orang

- Titik penahan untuk tali pengaman.

v. General Requirement for Ladder

- General Requirements for people hoisting equipment

- Kontrol gerakan platform atau keranjang pada panel kontrol bawah.
- Perangkat penghenti darurat pada panel kontrol bawah

- Anchoring point for safety harness.
- Movement control of the platform or basket on the lower control panel.
- Emergency stop device on the lower control panel.

Tabel 6 : Peralatan pengangkat untuk mengangkat orang

Tabel 6 : Lifting equipment for hoisting people

Specific Requirements	Aerial Work Platform	Lifting Equipment to hoist people		
		Man Basket	Coupled Man Basket	Suspended Man Basket
(a) Stabilizer system with inclination indicator.	X	X	X	X
(b) Wheel lock / braking system.	X	X [3]		
(c) Emergency system allowing arm movement and tower rotation in case of failure.	X	X	X	
(d) System that allows basket leveling and prevents inclination.	X	X	X	
(e) Visual sound signaling during the vertical movement of the equipment.	X			
(f) System that prevents stabilizer shoes from operating without the previous retraction of the mobile arm.		X	X	
(g) Anemometer.	X			X
(h) Boom radius and angle indicators with visual and audible alert.				X
(i) Block lift height indicator that stops lifting when reaching set height.				X
(j) Physical or electronic device or proximity sensor that prevents the impact of **operator of the equipment** against another structure.	X [4]			

b. CAR – 02: Light Motor Vehicles

RAC ini berlaku untuk pengoperasian kendaraan bermotor ringan yang dimiliki, disewa, dan disewa Vale, saat melayani STM. RAC juga berlaku untuk kendaraan penyedia layanan yang dioperasikan sebagai bagian dari kontrak STM di jalan umum atau jalan STM (termasuk area tambang bawah tanah dan permukaan).

Jenis kendaraan bermotor ringan yang tercakup dalam dokumen ini meliputi: mobil, kendaraan sport utility vehicle (SUV), truk pick-up, minivan, van ukuran besar, dan bus (baik ukuran kompak maupun ukuran besar).

i. Persyaratan untuk pengoperasian jalan dan sirkulasi kendaraan bermotor ringan motor:
   - Semua jalan yang beroperasi harus diidentifikasi di dalam Rencana Lalu Lintas;
   - Penghalang fisik atau perangkat pelindung (seperti trotoar, polisi tidur, atau lampu yang diaktifkan oleh pejalan kaki di jalur pejalan kaki yang aman, dan sebagainya). Harus dipasang, untuk memisahkan antarmuka antara orang dan kendaraan bermotor sebanyak mungkin, di mana terdapat risiko kontak yang signifikan antara kendaraan dan orang;

b. CAR – 02: Light Motor Vehicles

This RAC applies to the operation of Vale owned, leased and rental light motor vehicles, while at service of STM. The RAC also applies to service provider vehicles operated as part of a STM contract in public or STM roads (including underground and surface mining areas).

Types of light motor vehicles covered in this document include: automobiles, sport utility vehicles, pick-up trucks, minivans, full size vans, and buses (both compact and full size).

i. Requirements for the operating roads and circulation of light motor vehicles:
   - All the operating roads must be identified in the Traffic Plan;
   - Physical barriers or protective devices (such as walkways, bumps or lights activated by pedestrians on safe walking paths, among others). Must be installed, to segregate the interfaces between people and motor vehicles as much as possible, where there is a significant risk of contact between vehicles and people;
   - Speed road signs must be installed at regular intervals indicating maximum allowable speed on the internal roads;

- Rambu-rambu kecepatan harus dipasang secara berkala yang menunjukkan kecepatan maksimum yang diperbolehkan di jalan internal;
- Area parkir harus diperuntukkan bagi parkir kendaraan bermotor ringan (area tersebut harus memungkinkan pemisahan yang aman dari peralatan bergerak);
- Rute lalu lintas untuk sirkulasi peralatan bergerak, kendaraan, dan pejalan kaki harus diidentifikasi dengan jelas;
- Jalan internal fasilitas permanen harus diaspal secara khusus. Area pertambangan harus diratakan;
- Pada pertambangan bawah tanah, jalan keluar harus dirancang untuk parkir kendaraan bermotor sedemikian rupa sehingga tidak mengganggu lalu lintas di jalan utama.roads.
- Penggunaan sepeda motor, sepeda, becak, kendaraan roda tiga, kendaraan roda empat, dan kendaraan lain yang tidak disebutkan dalam dokumen ini, untuk kepentingan Vale dan/atau di dalam properti Vale, dilarang;
- Semua kendaraan harus mendapatkan perawatan preventif yang diperlukan seperti yang direkomendasikan oleh produsen;
- Parking areas must be designated for parking light motor vehicles the areas must allow a safe separation from mobile equipment);
- Traffic routes for the circulation of mobile equipment, vehicles and pedestrians must be clearly identified;
- The internal roads of permanent facilities must be preferentially paved. The mining areas must be leveled;
- In underground mining, cutouts must be designed for the parking of motor vehicles in a way that does not interfere with the traffic in the main roads.
- The use of motorcycles, bicycles, tricycles, quadricycles and other vehicles not mentioned in this document, at service of Vale and/or inside Vale property, is prohibited;
- All vehicles must receive the required preventive maintenance as recommended by the manufacturer;
- Modifications in motor vehicles must only be done with the formal approval of the manufacturer

Specific Requirements[10]	Dedicated Vehicles	Vans	Micro buses	Buses
a) Three-point seat belts for all passengers	X			
b) Three-point seat belts for first row of seats and two point for other seats		X	X	X
c) Headrest or high backed (bucket) seat with fixed head restraint for all passengers	X	X	X	X
d) Front airbag for the driver and the front seat passenger	X	X		
e) Anti-lock braking system (ABS)	X	X		
f) Vehicle warning signaling devices such as reflective triangles and / or cones	X	X	X	X
g) Audible Reverse Alarm	X	X	X	X
h) Reverse Sensor or vehicle backup camera	X	X	X	X
i) Location and speed monitoring system (telemetry)	X	X	X	X
j) Driver drowsiness detection system	X[11]	X	X	X
k) Electronic Braking Control (EBD)				
l) Stability control				
m) Four wheel or permanently engaged all-wheel drive systems				
n) Traction control system				
o) Reflective striping				

p)	communication system between vehicles and mobile equipment				
q)	Visible pennant with LED light at the tip, installed according to the height of the highest equipment circulating in the mine				
r)	Roof Mounted flashing, rotating or strobe light				
s)	Proximity Alert Sensor for Heavy Equipment, with audible alert sound				
t)	Primary Auxiliary Braking System Speed Retarding (engine brake)			X	X
u)	Secondary auxiliary braking system (hydraulic retarder + electromagnetic)				X [12]
v)	Emergency exits with single handle opening mechanism			X	X

c. CAR – 03 : Mobile Equipment Operations

Persyaratan ini berlaku untuk peralatan bergerak tambang permukaan dan bawah tanah milik STM/Vale, yang disewa atau disewa, serta peralatan milik penyedia jasa yang termasuk dalam cakupan kontrak STM dan beredar di jalan umum, area operasi, area pertambangan, dan rute operasional.

i. Persyaratan untuk semua peralatan bergerak

- Truk harus memiliki kotak roda gigi yang tersinkronisasi;
- Peralatan bergerak dengan titik-titik poros yang berisiko tertimpa atau terjepit harus diberi tanda bahaya dengan jelas dan nyata;
- Peralatan bergerak dengan pelampung cadik (sistem penstabil) harus digerakkan secara hidrolik;
- Jalur akses trailer papan harus memiliki sistem elektro-hidrolik untuk menggerakkan jalur akses;
- Peralatan bergerak harus memiliki sinyal beban dan tara maksimum;
- Peralatan bergerak harus memiliki tanda identifikasi eksternal yang memungkinkan visualisasi jarak jauh;
- Penggunaan peralatan bergerak berawak tanpa kabin tidak diizinkan;
- Semua peralatan bergerak harus memiliki kaca depan yang dilaminasi, dilapisi dengan film pengaman atau polikarbonat, yang disetujui oleh produsen atau area Teknik Vale;
  - ✓ Untuk operasi malam hari dan/atau dalam kondisi jarak pandang yang rendah, dan setiap kali pencahayaan standar peralatan tidak efisien, pencahayaan tambahan yang disetujui oleh produsen atau area Engineering harus digunakan;
- Peralatan bergerak yang dimiliki oleh Vale atau dalam layanan Vale harus memiliki alarm gigi mundur yang dapat didengar.

c. CAR – 03 : Mobile Equipment Operations

This requirement applied on STM / Vale's own, leased, or rented surface and underground mining mobile equipment, as well as equipment of service providers that are subject to the scope of STM contract and that circulate on Public roads, operating areas, mining areas and operational routes.

i. Requirements for all mobile equipment

- Trucks must have synchronized gearboxes;
- Mobile equipment with pivot points where there is a risk of crushing or pinching must have that hazard clearly and visibly signaled;
- Mobile equipment with outrigger floats (stabilizer systems) must be hydraulically actuated;
- The access ramps of the board trailers must have an electro-hydraulic system to move the access ramps;
- Mobile equipment must have maximum load and tare signaling;
- Mobile equipment must have external identification signs that allow remote visualization;
- The use of manned mobile equipment without cabin is not permitted;
- All mobile equipment must have laminated front windshields, tempered with safety film or polycarbonate, approved by the manufacturer or by the Vale Engineering area;
  - ✓ For night operations and/or in low visibility conditions, and whenever the standard lighting of the equipment is not efficient, auxiliary lighting approved by the manufacturer or the Engineering area must be used;
- Mobile equipment owned by Vale or at Vale's service must have an audible reverse gear alarm. It is not necessary to use it on public roads or close to Vale's neighboring communities
- Loads carried on trucks, which may move,

Tidak perlu menggunakannya di jalan umum atau dekat dengan masyarakat sekitar Vale
- Muatan yang diangkut di atas truk, yang dapat bergerak, bergeser, atau terbalik, harus diikat, diamankan, atau ditampung, kecuali muatan bijih curah, yang harus didistribusikan secara merata;
- Semua peralatan bergerak harus mendapatkan perawatan preventif yang direkomendasikan oleh produsen;
- Modifikasi pada peralatan bergerak hanya boleh dilakukan setelah mendapat persetujuan resmi dari produsen.

Catatan : Rincian dari setiap Persyaratan Peralatan Bergerak berdasarkan jenisnya akan disarankan atau dirinci oleh Tim STM pada SoW

displace or tip over, must be tied, secured or contained, except for bulk ore loads, which must be evenly distributed;
- All mobile equipment must receive the preventive maintenance recommended by the manufacturer;
- Modifications to mobile equipment must only be performed after formal approval by the manufacturer.

Note : The detailed of each Mobile Equipment Requirements based on type will be advised or detailed by STM Team on SoW

Table 8 : Persyaratan Khusus Peralatan Bergerak

Table 8 : Mobile Equipment Specific Requirement

Specific Requirements	Graders	Scrapers	Wheel Loaders	Backhoes	Excavators	Tractors	Forklifts	Tire Handlers	Drills	Haul trucks	Other Trucks
a) Safety belt 03 points.										X[a]	X
b) Safety belt 02 points.	X	X	X	X	X	X	X	X	X		
c) Rollover Protection Structure (ROPS).	X	X	X	X	X[b]	X				X	
d) Falling Object Protection Structure (FOPS).	X	X	X	X	X[b]	X				X	
e) Windshield Protection Grid (FOG).			X[c]	X[c]		X[c]					
f) Escape and landing alternatives in emergency situations.	X	X	X	X	X	X				X	
g) Proximity alert system between equipment.	X[e]	X[e]	X[e]	X[e]						X	X[e]
h) **Anti-collision system with automatic equipment braking.**										X	
i) Front video cameras.										X	
j) Rear video cameras.			X[d]		X[d]	X[d]			X[d]	X[d]	
k) Sides video cameras.					X[d]	X[d]			X[d]	X[d]	
l) Air-conditioned cabin.	X	X	X	X	X	X	X[g]	X	X	X	X
m) Two-way communication radio.	X	X	X	X	X	X	X	X	X	X	X[e]
n) Location and speed (telemetry) monitoring systems.										X	X
o) Load monitoring systems.										X	
p) Tire pressure and temperature monitoring systems.			X[d]							X	
q) Traction on at least two axes when there are 3 or more axes.											X[e]
r) Reflective stickers on sides and rear.							X	X			X
s) Reverse warning light.	X		X			X[f]	X	X		X	X
t) Speed limiting device.							X	X		X	
u) Operator presence detection system.							X	X			
v) Fixed load table next to the commands.			X	X	X		X	X			
w) Primary auxiliary braking system speed retarding (engine brake) and secondary auxiliary braking system (hydraulic retarder + electromagnetic)											X[h]
x) Head rest.											X
y) Tilt position indicator (visual and audible on panel).										X	*
z) Low tilt physical indicator.										X	
aa) Signaling devices (reflective triangles, cones, plastic											

(a) Mandatory for the operator

(b) Mandatory for 6 to 50 tons excavators

(c) Mandatory for mobile equipment used in vegetable clearance and demolition

(d) Required for large equipment

(e) Required for mining operations only

(f) Required for tire tractors

(g)Not required for electric pallet trucks and electric forklifts

(h) The Secondary Auxiliary Braking System (hydraulic retarder + electromagnetic) is mandatory for equipment with a total gross weight equal or above 30 tons and its use on long and steep slopes.

d. CAR - 04 : Lock Out Tag Out and Nol Energi

Untuk menetapkan persyaratan Kesehatan dan Keselamatan yang akan diterapkan untuk pengendalian yang efektif terhadap risiko bahaya bagi manusia dan menghilangkan pelepasan energi berbahaya. CAR ini berlaku untuk kegiatan dan layanan pemeliharaan yang melibatkan proses dan peralatan yang memerlukan prosedur isolasi dan penguncian/penandaan sumber energi yang memastikan pengendalian potensi pelepasan energi berbahaya.

i. Pengecualian :

- Aktivitas di mesin, peralatan, dan instalasi di mana perlindungan memastikan perlindungan yang efektif bagi pekerja dari paparan energi berbahaya yang disebabkan oleh pelepasan energi yang tidak terduga dan pekerja tidak mengekspos bagian tubuh mana pun ke zona bahaya yang terkait dengan pengoperasian mesin, peralatan, atau instalasi.
- Peralatan yang dapat dihilangkan energinya dengan mencabut steker dari stopkontak listrik, ketika orang yang melakukan servis atau pemeliharaan memiliki kendali eksklusif atas steker (bekerja sendiri) dan listrik adalah satu-satunya sumber energi yang ada.
- Pembongkaran, pelepasan, dan perakitan bagian mesin, peralatan, dan sistem yang merupakan langkah yang melekat pada proses pemeliharaan. Risiko yang ditimbulkan oleh pergerakan komponen ini dengan pembongkaran, pemindahan, atau perakitan harus ditangani dengan prosedur pemeliharaan khusus atau SWP - Izin Kerja Aman.

ii. Persyaratan untuk instalasi dan peralatan

- Processes Proses (termasuk mesin) dan peralatan di dalam fasilitas operasi harus diidentifikasi dengan jelas, didokumentasikan secara formal dan perangkat isolasi energi harus dapat dikunci keluar;;
- Perangkat isolasi harus diidentifikasi dengan jelas dalam proses area dan direferensikan dalam prosedur isolasi. Perangkat isolasi harus, lebih disukai, dirancang sebagai instalasi fisik permanen;
- Alur proses, instrumentasi, dan gambar kelistrikan harus selalu diperbarui, sehingga titik-titik isolasi dapat direferensikan dan diidentifikasi dengan jelas dalam prosedur isolasi proses;
- Perangkat penguncian harus:
  - ✓ Tahan lama untuk bertahan di lingkungan

d. CAR – 04 : Lock Out Tag Out and Zero Energy

To define the Health and Safety requirements to be applied for effective control of the risk of harm to people and eliminate involving the release of hazardous energies. This CAR applies to maintenance activities and services involving processes and equipment where procedures are required for isolation and lockout / tagout of energy sources that ensure the control of potential release of hazardous energy.

i. Exception :

- Activities in machinery, equipment and installations where safeguards ensure effective protection of workers from exposure to hazardous energies created by an unexpected energy release and workers do not expose any part of the body to the danger zones associated with the operation of machinery, equipment or installations.
- Equipment which can be de-energized by unplugging from an electrical outlet, when the person doing service or maintenance has exclusive control of the plug (working alone) and the electricity is the only energy source present.
- Disassembly, removal and assembly of parts of machines, equipment and systems that are steps inherent to the maintenance process. The risks created by any movement of these parts by disassembly, removal or assembly must be dealt with by specific maintenance procedures or SWP - Safe Work Permit.

ii. Requirements for installation and equipment

- Processes (including machinery) and equipment within an operating facility must be clearly identified, formally documented and the energy isolation devices must be capable of being locked out;
- Isolation devices must be clearly identified in area process and referenced in isolation procedures. Isolation devices must be, preferentially, designed as permanent physical installations;
- Process flow, instrumentation and electrical drawings must be up-to-date, so that isolation points can be referenced and clearly identified in process isolation procedures;
- Lockout devices must:
  - ✓ Be durable to withstand the environment in which they are used;

tempat perangkat tersebut digunakan;
- ✓ Dirancang untuk secara langsung memungkinkan penggunaan kunci;
- ✓ Memiliki integritas mekanis yang tidak memungkinkan gangguan;
- ✓ Memenuhi persyaratan format standar lokal.

• Kunci harus:
- ✓ Dirancang untuk tujuan penguncian isolasi energi dan memiliki setidaknya 6 pin;
- ✓ Hanya memiliki satu anak kunci dan tidak boleh menggunakan kunci kombinasi;
- ✓ Dirancang untuk menahan kunci saat kunci terbuka;
- ✓ Dibuat dari bahan nonkonduktif di mana ada kemungkinan kontak dengan permukaan berenergi listrik.

• Tag penguncian harus:
- ✓ Tahan lama untuk bertahan di lingkungan tempat mereka digunakan;
- ✓ Dapat dilacak;
- ✓ Mencantumkan nama orang, tanggal, waktu, dan alasan penguncian;
- ✓ Mengikuti persyaratan format standar lokal.

• Setiap proses (termasuk mesin) dan peralatan yang dipasok oleh energi listrik di mana perangkat isolasi terletak di sub-stasiun, ruang listrik atau pusat kendali motor harus memiliki sistem yang diterapkan secara resmi untuk mengelola isolasi dan penguncian tahapan energi listrik melalui:
- ✓ Identifikasi semua jalur energi yang terhubung ke peralatan yang harus diisolasi;
- ✓ Kepatuhan terhadap semua persyaratan penguncian/tagout dan pelepasan kunci.

e. CAR - 05 : Pengangkatan Beban

Persyaratan ini berlaku untuk aktivitas yang berhubungan dengan pengangkatan beban dengan peralatan yang dimiliki, disewakan atau disewakan oleh Vale, termasuk penyedia jasa alat pengangkat yang termasuk dalam lingkup kontrak dengan Vale, dari jenis alat pengangkat sebagai berikut: crane, overhead crane, monorail sistem pengangkat, boom pengangkat, derek bergerak, kerekan, dan peralatan pengangkat atau sistem pengangkat lainnya.

Yang dimaksud dengan ruang lingkup kegiatan pengangkatan, persiapan dan modifikasi yang dilakukan terhadap peralatan dan beban yang akan diangkat.

i. Persyaratan Umum Instalasi dan Peralatan

- Indikasi yang terlihat mengenai kapasitas penanganan beban maksimum pada aksesori dan peralatan pengangkat
- Kait dengan kunci pengaman pada

- ✓ Be designed to directly enable the use of locks;
- ✓ Have mechanical integrity that does not enable tampering;
- ✓ Meet format requirements of local standards.

• Locks must:
- ✓ Be designed for energy isolation lockout purposes and have at least 6 pins;
- ✓ Be single keyed and combination locks are prohibited;
- ✓ Be designed to retain the key when the lock is open;
- ✓ Be constructed of nonconductive material where there is the possibility of contact with electrically energized surfaces.

• Lockout tags must:
- ✓ Be durable to withstand the environment in which they are used;
- ✓ Be traceable;
- ✓ Indicate the name of person, date, time and reason of lockout;
- ✓ Follow the format requirements of local standards.

• Any process (including machinery) and equipment supplied by electrical energy where isolation devices are located in sub stations, electrical rooms or motor control centers must have a formally implemented system to manage the isolation and lockout of eletrical energy stages through the:
- ✓ Identification of all energy paths connected to equipment that must be isolated;
- ✓ Compliance with all requirements of lockout/tagout and of removal of locks

e. CAR - 05 : Lifting of Loads

This requirement applies to activities associated with the lifting of load by equipment owned, leased or rented by Vale, including service provider lifting equipment that are part of a contract scope with Vale, from the following types of lifting equipment: cranes, overhead cranes, monorail lifting systems, lifting booms, mobile cranes, hoist and any other lifting equipment or lifting system

It is understood in the scope of the activity of lifting the preparation and modifications made to the equipment and the load to be lifted.

i. General Requirements for Installation and Equipment

- Visible indication of the maximum load handling capacity on lifting accessories and equipment
- Hooks with safety locks on load lifting

peralatan pengangkat beban

- Aksesori pengangkat beban harus mematuhi persyaratan peraturan nasional dan/atau internasional.

ii. Persyaratan khusus sesuai peralatan yang disebutkan pada tabel di bawah ini:

Tabel 9 : Persyaratan Khusus Peralatan Pengangkat

equipment

- Load lifting accessories must comply with national and/or international regulatory requirements.

ii. Specific requirements according to equipment mentioned on the table below :

Table 9 : Lifting Equipment Specific Requirements

Specific Requirements	Tower Crane	Vehicle-mounted crane	Other Cranes	Overhead Crane	Monorails [19]	Electric Hoist	Manual Gantry
a) Load table fixed next to the control Levers	x	x	x				
b) Movement sound alarm	x			x		x[20]	
c) Top lights	x						
d) Grounded structures	x			x	x	x	
e) Outriggers pressure monitoring			x				
f) Outriggers leveling checking system or device		x	x				
g) Extensions and outriggers with hydraulic drive		x	x				
h) End stop limit switch (stopping the equipment when the limit is exceeded)	x		x	x		x	
i) Sensor or device that identifies the loose cable				x		x	
j) Anti-collision sensors[21]				x			
k) Remote control (Joystic) for load movement		x					
l) Inclinometer that prevent lifting of load with improper cable angulation				x			
m) Boom with hydraulic drive		x					
n) Locking casters							x
o) Anemometer	x		x[22]				
p) Emergency button	x	x	x	x		x	
q) Overload sensor, with stop of equipment and audible/visual alarm when rated capacity is exceeded		x	x	x		x	
r) Winch safe brake system	x			x		x	

f. CAR - 06 : Ruang Terbatas

Persyaratan CAR ini berlaku untuk mengakses dan/atau melakukan aktivitas di ruang terbatas. Akses ke ruang terbatas, serta aktivitas yang akan dilakukan di lokasi tersebut, dianggap penting mengingat risiko terkait atmosfer di area tersebut, serta risiko lain yang melekat pada aktivitas yang akan dilakukan.

Kegiatan ruang terbatas harus didahului dengan perencanaan dan, bila memungkinkan, penerapan cara alternatif untuk menghindari paparan pekerja terhadap lingkungan tersebut.

Oleh karena itu: Jika memungkinkan, lokasi harus memilih solusi teknis yang menghilangkan paparan pekerja terhadap bahaya di ruang terbatas. Ketika merencanakan masuk ke dalam ruang terbatas, Anda harus mengevaluasi apakah masuknya benar-benar diperlukan atau apakah aktivitas tersebut dapat dilakukan tanpa memaparkan

f. CAR - 06 : Confined Space

The requirements for this CAR are applicable for accessing and/or performing activities in confined spaces. Access to confined spaces, as well as the activities to be carried out in these locations, are considered critical in view of the risks related to the atmosphere in these areas, as well as the other risks inherent to the activities to be performed.

Confined space activities should be preceded by planning and, when possible, the adoption of alternative means to avoid worker exposure to these environments.

Therefore: If possible, the location must opt for an engineering solution that eliminates the exposure of workers to hazards in confined spaces. When planning entry into confined spaces, you must evaluate whether entry is absolutely necessary or whether the activity can be performed without exposing workers to the risks inherent in confined

pekerja pada risiko yang melekat di ruang terbatas. Ketika masuknya orang ke dalam ruang terbatas diwajibkan karena keterbatasan teknologi, proses pemantauan selama masuk harus dilakukan dengan menggunakan teknologi pemantauan jarak jauh yang sangat andal.

i. Persyaratan untuk instalasi dan peralatan:

- Ruang terbatas harus memiliki pelat identifikasi, penghalang fisik, dan kontrol akses untuk memperingatkan dan mencegah akses yang tidak disengaja atau tidak sah ke dalam ruang terbatas.
- Seluruh perangkat, peralatan dan perlengkapan yang akan digunakan dalam kegiatan di ruang terbatas harus diperiksa terlebih dahulu, termasuk peralatan pendukung yang tidak akan dimasukkan ke dalamnya.
- Rencana pemeliharaan dan inspeksi harus dilaksanakan sesuai dengan spesifikasi pabrikan atau area pemeliharaan Vale yang disediakan

a. keandalan dan umur manfaat peralatanpemantauan atmosfer,
b. penyelamatan di ruang terbatas, dan
c. keandalan peralatan perlindungan spesifik individu (misalnya, peralatan udara yang disuplai) dan peralatan perlindungan kolektif.

- Data peralatan serta rencana inspeksi dan pemeliharaannya, yang dijelaskan pada item di atas harus didaftarkan dan terus diperbarui dalam sistem untuk konsultasi pengguna.
- Meter multigas, oxy explosimeter dan semua peralatan lain yang memerlukan kalibrasi harus dikalibrasi dan diuji dengan benar (melalui uji singkat) sebelum digunakan.
- Harus diterapkan sistem pembuangan – yaitu pasokan udara dengan alarm – harus dipasang jika terjadi kegagalan.
- Sistem pasokan udara pernapasan harus memenuhi persyaratan:
  - ✓Peraturan lokal dan peraturan hukum.
  - ✓Program perlindungan pernapasan.
- Peralatan tanggap darurat harus tersedia, termasuk kotak P3K, peralatan penyelamat di ruang terbatas, penyelamat ketinggian, dan pasokan udara serta alat bantu pernapasan otonom.
- Penggunaan perangkat keselamatan untuk perlengkapan atau perangkat listrik (misalnya, perangkat arus sisa) harus disediakan sesuai dengan peraturan setempat.

spaces.

When the entry of people into confined spaces is mandatory due to technological limitations, the monitoring process during entry must be carried out using highly reliable remote monitoring technologies.

i. Requirements for installations and equipment

- Confined spaces must have identification plates, physical barriers and access control to warn and prevent inadvertent or unauthorized access into confined spaces.
- All devices, tools and equipment to be used in activities in confined spaces must be previously inspected, including that support equipment that will not be inserted into them.
- Maintenance and inspection plans must be implemented according to the specifications of the manufacturers or Vale's maintenance areas to provide

a. the reliability and useful life of the atmospheric monitoring equipment,
b. rescue in confined spaces, and
c. reliability of the individual specific protective equipment (e.g., supplied air equipment) and collective protective equipment.

- The equipment data and its inspection and maintenance plans, described in item above must be registered and kept updated in a system for user consultation.
- Multigas meters, oxy explosimeters and all other equipment that requires calibration must be properly calibrated and tested (via a bump test) before being used.
- It must be implemented exhaust systems – that is, an air supply with an alarm – must be installed in case of failure.
- Breathing air supply systems must meet the requirements of the:
  - ✓Local regulatory and legal regulations.
  - ✓The respiratory protection program.
- Emergency response equipment must be available, including a first aid kit, confined space rescue gear, height rescue, and supplied air and autonomous breathing apparatus.
- Use of safety devices for electrical equipment or devices (such as, for example, a residual current devices) must be provided in accordance with local regulations.
- In hazardous areas with explosion potential, electrical equipment and devices must be assigned and certified for these areas.Persyaratan untuk instalasi dan peralatan:

- Di area berbahaya dengan potensi ledakan, peralatan dan perangkat listrik harus ditugaskan dan disertifikasi untuk area tersebut.

g. CAR - 07 : Machine Guarding

Beberapa kecelakaan di Vale terjadi selama aktivitas kritis yang melibatkan mesin dengan bagian bergerak yang tidak dijaga. Faktor penyebab utama yang terkait dengan kecelakaan ini adalah:

- Tidak adanya perlindungan fisik (pagar, shiled, penjaga, dll)
- Tidak adanya perangkat pelindung otomatis (Sensor, tirai cahaya, interlock, pengontrol, aktuator, dll)
- Pelindung dilepas dan/atau tidak dipasang kembali setelah perawatan mesin
- Pengamanan yang tidak memadai,
- Kurangnya kesadaran akan risiko alat berat, dan
- Mesin baru dan yang sudah ada tidak memenuhi standar teknis untuk keselamatan mesin.

Persyaratan ini berlaku untuk semua mesin baru dan yang sudah ada di fasilitas Vale dan di fasilitas kontraktor/pihak ketiga, seperti:

- Mesin tetap atau bergerak dan instalasi terkait, baik desain baru maupun yang sudah ada,
- Mesin-mesin standar yang dibeli dari pemasok, termasuk mesin-mesin yang disesuaikan untuk Vale,
- Alat berat yang diproduksi khusus untuk Vale, dan
- Modifikasi yang dilakukan terhadap mesin yang sudah ada dan instalasi terkait.

Persyaratan Umum untuk instalasi dan peralatan:

i. Mesin dan pengaman harus sesuai dengan standar teknis dan undang-undang setempat. Pengaman Mesin harus memiliki proyek yang dikembangkan oleh seorang profesional yang berkualifikasi.

ii. Mesin harus dirancang dan dibangun sedemikian rupa sehingga mencegah orang terpapar bahaya pada tingkat apa pun. Untuk menghindari atau mengurangi paparan bahaya, kriteria dalam tabel ini harus dipenuhi:

g. CAR - 07 : Machine Guarding

Some of the accident at Vale have occurred during critical activities involving machines with unguarded moving parts. The main contributing factors associated with these accidents were :

- Absence of physical protection (fences, shileds, guards, etc)
- Absence of automatic protective devices (Sensors, light curtain, interlocks, controllers, actuator, etc)
- Guards being removes and/or not reinstalled after machine maintenance
- Inadequate safeguarding,
- Lack of awareness of machine risks, and
- New and existing machines not complying with technical standards for machinery safety

This requirement applies to all new and existing machines at Vale's facilities and at those of our contractors/third parties, such as :

- Fixed or mobile machines and associated installations, both new designs and existing,
- Standard machines purchased from suppliers, including those adapted for Vale,
- Machines manufactured specially for Vale, and
- Modifications made to existing machines and associated installations.

General Requirements for installations and equipment :

i. Machines and safeguards must comply with technical standards and local legislation. Machine Guards must have project developed by a qualified professional.

ii. Machinery must be designed and constructed in such a way that prevents people being exposed to a hazard in any level. To avoid or reduce exposure to the hazard, the criteria in this table must be met:

Tabel 10 : Persyaratan umum untuk instalasi pelindung mesin

Tabel 10 : General Requirements for machine guarding installation

Exposure level to hazard	1	2	3	4	5
Task characteristics	Work outside safeguards	Work through safeguards	Work inside the machine, behind safeguards	Work near hazardous energy/ movements	No safeguards, everything is off
Task	Normal operation		Clearing jams / Tool change, etc.	Set-up, adjustment, process monitoring, etc.	Maintenance
Safety measures	Fixed guards or perimeter fencing	Protective devices	Key exchange / trapped-key interlock, multiple reset, tag system, partial lockout/tagout, etc.	Partial lockout/tagout / alternative measures	Lockout, tagout and zero energy (CAR 04)

iii. Perangkat isolasi energi berbahaya (CAR 04) harus dipasang di lokasi yang mudah dijangkau dengan ruang yang cukup di mana pekerja dapat berdiri ketika menyalakan dan mematikannya, sehingga memungkinkan perangkat tersebut terkunci dalam posisi.

iv. Semua panel operasi dan komponen yang memerlukan servis rutin harus ditempatkan di luar perlindungan.

v. Semua sistem, komponen, dan perangkat yang digunakan untuk melakukan fungsi keselamatan (misalnya, perlindungan yang saling terkait yang saling berhubungan dengan relai keselamatan yang menonaktifkan pengoperasian motor) harus disertifikasi untuk digunakan sebagai sistem keselamatan oleh pabrikan atau oleh badan pengujian yang diakui.

vi. Jika ada risiko memproyeksikan atau bahan jatuh cair atau padat yang dapat menjangkau orang, pelindung yang sesuai harus dipasang untuk mencegah kecelakaan.

vii. Sistem kontrol mesin (misalnya, tombol start, pemilih mode, sistem interlock gerbang yang terhubung ke antarmuka penghenti keselamatan mesin, sistem penghentian darurat, dll.) harus dirancang dan dibangun sedemikian rupa untuk mencegah terjadinya situasi berbahaya. Sistem kontrol dirinci dalam item 7.1 PGS-004951 - Machine Guarding Manual.

viii. Perangkat kontrol mesin (misalnya, tombol start, pemilih mode, sistem sakelar gerbang yang saling berhubungan ke antarmuka keselamatan berhenti mesin, sistem berhenti darurat, dll.) harus dirancang dan dibangun sedemikian rupa untuk mencegah terjadinya situasi berbahaya.

ix. Pelindung tetap (pagar, perisai, penutup, jala, dll.), Pelindung bergerak (gerbang yang saling bertautan, pelindung yang dilengkapi

iii. Hazardous energy-isolating devices (CAR 04) must be installed in an easily accessible location with sufficient space in which workers can stand when switching them on and off, allowing them to be locked out in the off position.

iv. All operating panels and components that require regular service must be located outside safeguards.

v. All systems, components and devices used to perform a safety function (e.g., an interlocked protection interconnected to the safety relay that disables the operation of a motor) must be certified for use as a safety system by the manufacturer or by a recognized testing body.

vi. Where there is a risk of projecting or liquid or solid falling materials that could reach people, suitable guards must be installed to prevent accidents.

vii. The control systems of machines (e.g., start buttons, mode selectors, gate interlock systems connected to the machine safety stop interface, emergency stop systems, etc.) must be designed and constructed in such a way as to prevent the occurrence of hazardous situations. Control systems are detailed in item 7.1 PGS-004951 – Machine Guarding Manual

viii. The control devices of machines (e.g., start buttons, mode selectors, gate switch systems interconnected to the machine stop safety interface, emergency stop systems, etc.) must be designed and constructed in such a way as to prevent the occurrence of hazardous situations

ix. Fixed guards (fences, shields, covers, mesh, etc.), moveable guards (interlocked gates, guards fitted with interlocking devices) and protective devices (light curtains, scanners, etc.) used to prevent access to hazardous parts, movements and areas of the machine are detailed in item 7.6 of PGS-004951 –

dengan perangkat yang saling mengunci) dan perangkat pelindung (tirai cahaya, pemindai, dll.) yang digunakan untuk mencegah akses ke bagian, gerakan, dan area berbahaya mesin dirinci dalam butir 7.6 PGS- 004951 – Machine Guarding Manual.

x. Penjaga harus dipilih berdasarkan tabel di bawah:

Tabel 11: Pemilihan Pelindung Mesin Berdasarkan Frekuensi Akses

Frequency of access	Guarding type	Fixing	Interlock device required
Never	Fixed guards	Bolted / welded	No
Annual	Fixed guards	Bolted	No
Weekly	Fixed or moveable guards	Bolted (if fixed)	Yes (if moveable)
Daily	Moveable guards	N/A	Yes
Hourly	Moveable guards	N/A	Yes
More than hourly	Protective device	N/A	No

xi. Guards pada umumnya harus:
- Menampilkan konstruksi dan material yang sesuai dengan tujuan penggunaan dan lingkungannya, dan
- Mengakomodasi frekuensi akses secara memadai.

xii. Fixed Guards umumnya harus:
- Hanya dibuka atau dikeluarkan dengan menggunakan alat,
- Menampilkan penyerahan yang mudah dan aman untuk tujuan pemeliharaan, dan
- Perhatikan jarak aman untuk mencegah jangkauan zona berbahaya dari atas, tengah, dan bawah.

xiii. Moveable guards harus:
- Pastikan saling mengunci, memulai penghentian mesin ketika pelindung dibuka,
- Fitur desain dan konstruksi yang memungkinkannya dibuka tanpa alat, dan
- Tetap tertutup dan terkunci sampai risiko cedera akibat fungsi mesin yang berbahaya telah berhenti, termasuk gerakan inersia. movement.

xiv. Pelindung Perangkat harus:
- Memastikan deteksi orang-orang di area berbahaya,
- Mencegah terjadinya start-up yang tidak terduga ketika orang-orang berada di zona bahaya,
- Menghasilkan perintah berhenti ketika zona bahaya dilanggar, yang harus dilakukan dengan cukup cepat untuk mencegah akses ke zona bahaya,zones

xv. Harus, jika memungkinkan bagi seseorang untuk mencapai zona bahaya sebelum

Machine Guarding Manual.

x. Guards must be selected according to the table below :

Tabel 11: Machine Guarding Selection by Frequency of Access

xi. Guards in general must:
- Feature suitable construction and materials for their intended use and environment, and
- Adequately accommodate the frequency of access.

xii. Fixed guards must:
- Only be opened or removed with use of a tool,
- Feature easy and safe handing for maintenance purposes, and
- Observe safety distances to prevent hazardous zones from being reached over, through and under.

xiii. Moveable guards must:
- Ensure interlocking, initiating machine stop when the guard is opened,
- Feature design and construction that allow them to be opened without a tool, and
- Stay closed and locked until the risk of injury from the hazardous machinery functions has ceased, included the inertia movement.

xiv. Protective devices must:
- Ensure detection of people in dangerous areas,
- Prevent unexpected start-ups when people are in the hazard zone,
- Generate a stop command when the hazard zone is infringed, which must be sufficiently quick to prevent access to hazard zones,

xv. Must, where it is possible for a person to reach the hazard zone before the dangerous movements stop (e.g., due to inertia), be installed with a guard-locking device, in accordance with item 7.6.4 of PGS-004951 Machine Guarding Manual

gerakan berbahaya berhenti (misalnya, karena inersia), harus dipasang dengan perangkat pengunci pengaman, sesuai denganitem 7.6.4 of PGS-004951 Machine Guarding Manual.

xvi. Sistem fluida mesin harus:

- Dilengkapi dengan sistem pelindung dan penahan dengan cara yang sesuai (penyangga selang yang memadai, sekering udara, pelindung, dll.) untuk menghindari whiplash yang disebabkan oleh kegagalan selang atau pipa.
- Mesin harus dilengkapi dengan 1 (satu) atau lebih alat penghenti darurat agar dapat berhenti dalam keadaan darurat, memutus daya dari aktuator mesin dalam kondisi terbaik,

xvii. Sistem safety control (misalnya, interlocking yang terhubung ke relai dan aktuator keselamatan) harus menjalankan fungsi tertentu untuk mencapai atau mempertahankan keadaan mesin/proses yang aman ketika kondisi proses yang tidak dapat diterima atau berbahaya terdeteksi

xviii. Sistem Safety control harus memungkinkan tercapainya tingkat kinerja (PL) sesuai dengan risiko yang berkaitan dengan fungsi keselamatan.

xix. Semua sumber energi harus dirancang dan dipasang sedemikian rupa sehingga tidak membahayakan keselamatan atau kesehatan orang yang bekerja pada atau di sekitar mesin.

xx. Mesin harus dilengkapi dengan langkah-langkah untuk mencegah start-up yang tidak terduga yang dapat diterapkan secara otomatis (misalnya melalui sistem kendali) atau secara manual (misalnya melalui pengendalian energi berbahaya).

xxi. Perangkat peringatan (sebaiknya yang dapat didengar atau dilihat) harus disediakan bilamana keberadaan orang di zona bahaya mesin sulit diketahui. Sistem peringatan tersebut harus mengingatkan personel tentang mesin yang akan dihidupkan.

xxii. Tanda peringatan (tanda, piktogram, warna standar, dan teks tertulis dalam bahasa resmi setempat) harus digunakan untuk menunjukkan sisa risiko yang masih ada di dalam mesin.

xxiii. Mesin dan instalasi harus dilengkapi dengan sarana akses yang aman (untuk pengoperasian, penyesuaian, pemeliharaan, pembersihan, dll.), dirancang dan dibangun sesuai dengan item 7.14 of

xvi. Machine fluid systems must:

- Be equipped with protective and restraining systems by suitable means (adequate hose support, air fuses, shielding, etc.) to avoid whiplash caused by hose or pipe failures.
- Machines must be equipped with 1 (one) or more emergency stop devices to allow them to stop in an emergency, removing the power from the machine actuators in the best possible conditions,

xvii. Safety control systems (e.g., interlocking connected to safety relays and actuators) must perform specified functions to achieve or maintain a safety machine/process state when unacceptable or dangerous process conditions are detected

xviii. Safety control systems must allow for the achievement of performance levels (PL) in accordance with the risk related to the safety function.

xix. All energy sources must be designed and installed so that they do not endanger the safety or health of persons working on or nearby the machine

xx. Machinery must be provided with measures to prevent unexpected start-ups that can either be applied automatically (e.g., via a control system) or manually (e.g., via the control of hazardous energies

xxi. Warning devices (preferably audible or visual) must be provided whenever the presence of persons in hazard zones of machines is difficult to notice. Such warning systems must alert personnel about the impending machine start-up.

xxii. Warning signs (markings, pictograms, standardized colours, and written text in a local official language) must be used to indicate residual risks remaining in the machine

xxiii. Machines and installations must be provided with safe means of access (for operation, adjustment, maintenance, cleaning, etc.), designed and built in accordance with item 7.14 of the PGS-004951 – Machine Guarding Manual.

the PGS-004951 – Machine Guarding Manual.

h. CAR - 08 : Activities on the Ground

Dalam beberapa tahun terakhir, operasi Vale mengalami kegagalan tanah yang signifikan terkait dengan ketidakstabilan lereng, bukaan bawah tanah, dan aliran air yang tidak terkendali. Beberapa faktor penting yang berkontribusi terkait dengan peristiwa ini adalah:

- Geometri tidak sesuai dengan desain.
- Peningkatan tingkat kejenuhan (adanya air).
- Eksekusi kegiatan yang tidak tepat.
- Penggunaan jenis dan/atau ukuran peralatan yang tidak tepat.
- Kurangnya dan/atau kegagalan sistem pendukung/penopang.
- Kurangnya dan/atau kegagalan penghalang pelindung.
- Kurangnya dan/atau kegagalan isolasi wilayah.
- Visibilitas terganggu atau terbatas.
- Kelelahan operator.
- Kegagalan dalam memahami risiko.

Persyaratan ini terkait dengan kegiatan di semua aset geoteknik yang mengalami pergerakan massa yang memiliki potensi kritis, seperti lereng alami atau yang digali, tanggul (dipadatkan atau tidak), tempat pembuangan limbah dan/atau limbah tailing, tempat penimbunan (material halus, pelet, dan sebagainya), serta penggalian parit dan lubang bawah tanah.

Persyaratan CAR 08 ini tidak berlaku untuk penggalian di bawah 1,25 m. dan tidak berlaku untuk pengelolaan ruang terbatas, namun, untuk penggalian di bawah 1,25 m, periksa apakah ada struktur yang terkubur di area tersebut sebelum kegiatan dilakukan.

i. Persyaratan Umum untuk Peralatan, Perlengkapan, dan Perangkat:

- Peralatan yang digunakan untuk penggalian manual harus sesuai dengan kegiatan yang akan dilakukan, dalam kondisi kerja yang baik, dan digunakan sesuai dengan prosedur kerja yang aman untuk kegiatan tersebut.
- Jenis dan ukuran peralatan untuk kegiatan penggalian harus sesuai dengan jenis kegiatan yang akan dilakukan, dalam kondisi kerja yang baik, digunakan sesuai dengan prosedur kerja yang aman untuk kegiatan tersebut, dan mampu mengurangi risiko bagi operator serendah mungkin.
- **Pemeliharaan peralatan yang digunakan untuk kegiatan penggalian harus dilakukan sesuai dengan rekomendasi dari pabrik**

h. CAR – 08 : Activities on the Ground

In past years, Vale's operations have experienced significant ground failures related to the instability of slopes, underground openings, and uncontrolled water flows. Some important contributing factors associated with these events have been :

- Geometry incompatible with design.
- Increase of saturation level (presence of water).
- Inappropriate execution of the activity.
- Use of inappropriate equipment type and/or size.
- Lack and/or failure of the support/shoring system.
- Lack and/or failure of protective barriers.
- Lack and/or failure of area isolation.
- Compromised or limited visibility.
- Operator fatigue.
- Failure in perceiving risks.

This requirements are associated with activities in all geotechnical assets subjected to mass movement that have critical potential, like natural or excavated slopes, embankments (compacted or not), waste and/or tailings dumps, stockpiles (fine materials, pellets, etc), as well as excavations in trenches and underground openings.

This requirements of CAR 08 do not apply to excavations under 1,25m. and do not apply to the management of confined spaces, however, for excavations below 1,25 m, check whether there are buried structures in the area before the activity is carried out

i. General Requirements for Tools, Equipment and Devices :

- Tools used for manual excavation must be appropriate for the activity to be performed, in good working condition, and used as per the relevant safe work procedure for the activity.
- The type and size of equipment for excavation activities must be appropriate for the type of activity to be carried out, in good working condition, used as per the relevant safe work procedure for the activity, and able to reduce the risks to an operator to as low as reasonably practical.
- Maintenance of equipment used for excavation activities must be carried out in accordance with the manufacturer's recommendations.
- Lighting must be sufficient to allow work to be carried out safely and in accordance with the relevant safe work procedure.

pembuatnya.

- Pencahayaan harus cukup untuk memungkinkan pekerjaan dilakukan dengan aman dan sesuai dengan prosedur kerja aman yang relevan.
- Jika debu menghalangi pelaksanaan kegiatan yang aman, tindakan tambahan harus dilakukan atau perangkat dipasang dan dipelihara untuk meminimalkan debu dan memungkinkan kondisi lingkungan dan jarak pandang yang sesuai yang memungkinkan pekerjaan dilakukan dengan aman dan sesuai dengan prosedur kerja yang aman.
- Perangkat yang diperlukan untuk mengelola air permukaan dan air tanah harus diterapkan dan dipelihara sesuai dengan desain.

ii. Persyaratan umum untuk barikade, papan nama, dan barriers :

- Akses ke area terisolasi yang mengalami kegagalan arde harus dikontrol sesuai dengan prosedur kerja aman yang relevan, dan hanya boleh diberikan kepada orang dan peralatan yang terlibat langsung dalam pekerjaan remediasi atau perbaikan.
- Isolasi area dengan barikade atau penghalang fisik (penghalang perlindungan) dan rambu-rambu harus digunakan. Dilarang menggunakan pita bergaris plastik untuk mengisolasi area.
- Jenis, ukuran, dan lokasi penghalang perlindungan harus dipasang sesuai dengan desain dan sepadan dengan potensi bahaya untuk memastikan kegagalan tanah dapat diatasi.
- Jenis barikade dan rambu-rambu yang digunakan untuk mengisolasi bahaya harus ditetapkan dalam prosedur kerja yang aman dan harus sesuai dengan undang-undang setempat dan standar Vale.

i. CAR - 09 : Bahan Peledak (Belum Berlaku di Proyek Hu'u)

j. CAR - 10 : Bekerja Dengan Listrik

Persyaratan ini berlaku untuk semua pekerjaan pada instalasi listrik yang memuat peralatan/sistem dengan tegangan diatas 50 V AC (Arus Bolak-balik) atau 120 V DC (Arus Searah)

Persyaratan ini berlaku untuk karya berikut namun tidak terbatas pada contoh di bawah ini :

- Pemeliharaan preventif atau korektif atau peralihan listrik pada switchgear listrik, panel sambungan dan penerangan, panel otomasi, switchgear dan panel distribusi, kotak persimpangan, Kubikel dan Kabinet, Inverter

- In cases where dust prevents the safe execution of an activity, additional actions must be carried out or devices installed and maintained to minimize dust and enable appropriate environmental and visibility conditions which allow work to be carried out safely and in accordance with the relevant safe work procedure.
- Devices necessary to manage surface water and groundwater must be implemented and maintained according to designs.

ii. General requirements for barricades, signage, and protection barriers :

- Access to an isolated area that has experienced a ground failure should be controlled as per the relevant safe work procedure, and should only be granted to people and equipment directly involved in remediation or repair work.
- Area isolation with barricades or physical barriers (protection barriers) and signage must be used. It is forbidden to use plastic striped tape to isolate an area.
- The type, size and location of protection barriers must be installed according to designs and commensurate with the potential hazard to ensure any ground failure is contained.
- The types of barricades and signage used to isolate hazards must be stipulated in safe work procedures and must be in line with local legislation and Vale standards.

i. CAR - 09 : Explosive (Not Yet Applicable at Hu'u Project)

j. CAR - 10 : Working with Electricity

This requirement applies to all works in electrical installation containing equipment/systems with voltages above 50 V AC (Alternating Current) or 120 V DC (Direct Current)

This requirements applies to the following works but are not limited to the examples below :

- Preventive or Corrective maintenance or electrical switching in electrical switchgear, connection and lighting panels, automation panels, switchgear and distribution panels, junction boxes, Cubicles and Cabinets, frequency Inverters and generators;

frekuensi dan generator.
- Pengujian di outlet industri;
- Inspeksi sensitif dan prediktif di panel atau peralatan di lapangan;
- Pemeliharaan preventif pada penyearah, pengisi daya, dan bank baterai;
- Pemeliharaan preventif atau korektif di sirkuit kontrol Plug and Switch System (PASS);
- Pemeliharaan preventif atau korektif di sirkuit kontrol transformator minyak atau kering;
- Membuka dan Menutup sakelar pemutus.

Pengecualian:
- Penentuan posisi kabel daya listrik excavator secara manual (CAR 03 - Pengoperasian Peralatan Bergerak);
- Pemeliharaan dan penggunaan alat yang digerakkan dengan tenaga listrik (bor, amplas, gergaji, gergaji mesin, gerinda, dll.);
- Pemeliharaan peralatan laboratorium (kromatograf, alat analisis, oven, dll.);
- Pemeliharaan mesin kantor (komputer, mesin fotokopi, pesawat TV, mesin penjual otomatis, dll.);
- Bekerja di dekat peralatan atau instalasi listrik, seperti: pemasangan kabel telepon atau kabel data, kegiatan pemotongan rumput dan pohon, pembersihan dan perawatan di dalam ruang listrik dan gardu, dll.;
- Pengoperasian atau sirkulasi peralatan bergerak/berpindah tempat di dekat saluran listrik berenergi di atas kepala (CAR 01, 03 dan 05);
- Pekerjaan penggalian di dekat jalur listrik bawah tanah;
- Pekerjaan yang dilakukan oleh perusahaan distribusi listrik setempat.

i. Persyaratan Instalasi dan Peralatan Minimal:
- Identifikasi energi insiden sesuai persyaratan PNR-000051 - Energi Insiden, untuk peralatan yang disertakan pada Tabel 2 dokumen.
- Pengardean/Penangkal Petir sesuai persyaratan PNR-000052.
- Sistem Perlindungan Umum untuk Sistem Kelistrikan sesuai persyaratan PNR-000080.
- Diagram kelistrikan dan dokumentasi pendukung sesuai persyaratan PNR-000053.
- Perangkat Arus Sisa (RCD) atau Perlindungan Gangguan Tanah atau yang serupa berdasarkan bahaya sengatan listrik, undang-undang setempat dan standar teknis serta spesifikasi proyek.
- Perlindungan yang sesuai yang mencegah kontak tidak sengaja dengan komponen berenergi.
- Rambu-rambu keselamatan yang sesuai

- Tests in industrial outlets;
- Sensitive and predictive inspections in panels or equipment in the field;
  - Preventative maintenance in rectifiers, chargers and battery banks;
  - Preventative or corrective maintenance in Plug and Switch System (PASS) control circuits;
  - Preventative or corrective maintenance in control circuits of oil or dry transformers;
  - Opening and Closing disconnecting switches

Exceptions:
- Manual positioning of excavator electrical power cables (CAR 03 – Operation of Mobile Equipment);
- Maintenance and use of electric power driven tools (drillers, sanders, saws, chainsaws, grinders, etc.);
- Maintenance of laboratory equipment (chromatographs, analyzers, ovens, etc.);
- Maintenance in office machinery (computers, copying machines, TV sets, vending machines, etc.);
- Work near electrical equipment or installations, such as: installation of telephone or data wiring, grass and tree cutting activities, cleaning and housekeeping inside electrical rooms and substations, etc.;
- Operation or circulation of mobile/lifting equipment near overhead energized electrical lines (CAR's 01, 03 and 05);
- Excavation work on the proximity of underground electrical lines;
- Work performed by the local power distribution company.

i. Requirements for Installation and Equipment as a minimum :
- Identification of incident energy as per requirements of PNR-000051 – Incident Energy, for the equipment included at Table 2 of the document.
- Grounding/Lightning Protection as per requirements of PNR-000052.
- General Protection Systems for Electrical Systems as per requirements of PNR-000080.
- Electrical diagrams and supporting documentation as per requirements of PNR-000053.
- Residual Current Devices (RCD) or Ground Fault Protection or similar based on the hazards of electrocution, on the local legislation and technical standards and on the project specifications.
- Appropriate protection that prevents inadvertent contact with energized parts.

dengan undang-undang setempat.

Catatan : Peserta lelang akan menerima Dokumen PNR Standar Vale untuk Instalasi Listrik dalam dokumen terpisah jika ruang lingkup pekerjaan relevan dengan Persyaratan CAR - 10 ini.

k. CAR - 11 : Logam Cair (Belum berlaku di Proyek Hu'u)

l. CAR – 12 : Pekerjaan Panas

Sebagian besar insiden kritis di Vale terjadi selama pelaksanaan pekerjaan panas. Faktor utama yang berkontribusi terhadap insiden ini adalah:

Faktor utama yang berkontribusi terhadap insiden ini adalah:

- Alat/peralatan/perangkat yang tidak sesuai/hilang
- Kegagalan dalam mengidentifikasi dan menilai risiko
- Pengetahuan / Keterampilan
- Kegagalan dalam perencanaan/penjadwalan pemeliharaan preventif
- Kegagalan dalam menentukan langkah-langkah pengendalian.

i. Persyaratan umum perlengkapan dan pemasangan:

- Alat pemadam kebakaran yang sesuai untuk pekerjaan panas harus disiapkan.
- Pekerjaan panas yang dilakukan pada struktur dan/atau bangunan harus digrounding
- Integritas grounding sirkuit listrik mesin las harus dipastikan.
- Jika pekerjaan panas dilakukan di dalam tangki, wadah tertutup, atau tempat yang mungkin terdapat cairan atau gas, maka area pekerjaan panas harus dipantau dengan detektor gas untuk mengetahui adanya uap/gas yang mudah terbakar sebelum dan terus menerus selama pekerjaan berlangsung.
- Jika pembacaan lower explosive limit (LEL) melebihi 1%, aktivitas tidak boleh dimulai dan tindakan harus dilakukan untuk membersihkan area akumulasi uap/gas yang mudah terbakar dan mengidentifikasi sumbernya untuk tindakan perbaikan lebih lanjut.
- Pembuangan asap logam / welding fume harus dilakukan jika tidak ada ventilasi alami.
- Jika menggunakan gas, regulator tekanan yang telah terkalibrasi harus digunakan, tersertifikasi dan sesuai dengan gas yang digunakan.
- Pelindung mata terhadap radiasi UV harus digunakan.

ii. Persyaratan transportasi dan

- Safety signs complying with the local legislation.

Note : The bidders will receive the PNR Documents Vale's standards for Electrical Installations in the separate document whenever the scope of work is relevant with this CAR – 10 Requirements.

k. CAR - 11 : Molten Metals (Not Yet Applicable in Hu'u Project)

i. CAR – 12 : Hot Work

A Significant proportion of critical incident at Vale occurred during the execution of hot work.

The main contributing factors to these incidents were :

- Unsuitable / missing tools / equipment / devices
- Failure to identify and assess risks
- Knowledge / Skill
- Failure in the planning / scheduling of preventive maintenance
- Failure to define control measures.

i. General requirements for equipment and installation:

- Fire extinguishers intended the hot work must be adopted.
- Hot-working structures and buildings must be grounded.
- Integrity of the grounding of the power circuit of welding machines must be ensured.
- If hot work is carried out in tanks, closed containers, or places where liquids or gases may be present, the hot work area must be monitored with gas detectors for flammable vapors/gases before and continuously during the work.
- If the lower explosive limit (LEL) readings exceed 1%, the activity must not be started and measures to clean the area of flammable vapor/gas accumulation and to identify the source for further corrective action must be taken.
- Metal fume exhaustion must be implemented where there is no natural ventilation.
- If gases are used, calibrated pressure regulators must be used, certified and in conformity with the gas used.
- Eye protection against UV radiation must be used.

ii. Requirements for transportation and packaging of hot work materials or equipment

pengemasan bahan atau peralatan pekerjaan panas selama pelaksanaan tugas:

- Transportasi dan pengemasan silinder selama pelaksanaan tugas harus dilakukan dengan peralatan yang dirancang untuk tujuan ini**.**

during the task:

- The transport and packaging of the cylinder during the execution of the task must be done in a device designed for this purpose.

iii. Persyaratan isolasi (berlaku untuk semua jenis panas):

- Rambu peringatan tentang pelaksanaan pekerjaan panas harus diterapkan.
- Area bebas minimal 15 meter dari titik pelaksanaan pekerjaan panas harus dipilih, bebas dari kehadiran orang atau bahan dan peralatan yang mudah terbakar.
- Jika tidak memungkinkan untuk mengadopsi kawasan bebas sepanjang 15 meter, kawasan tersebut harus diisolasi dengan penghalang pelindung fisik, yang harus tidak mudah terbakar.
- Peralatan atau bahan mudah terbakar yang tidak dapat dikeluarkan dari area terisolasi harus dilindungi dengan penghalang, seperti selimut termal.
- Jika lokasi pekerjaan panas mempunyai bukaan lantai bawah atau atas, maka penentuan area pekerjaan panas harus mempertimbangkan resiko berpindahnya sumber api ke luar.
- Di daerah terpencil, di mana penerapan kawasan bebas dan isolasi tidak memungkinkan, langkah-langkah pengendalian tambahan berikut harus diambil:
  - ✓ Membuat penahan api pada tempat tersebut atau membasahi tumbuh-tumbuhan;
  - ✓ Mengadopsi pompa knapsack;
  - ✓ Meningkatkan jumlah orang dalam surveilans dan waktu pemantauan, sesuai dengan analisis atau prosedur risiko setempat.

iii. Requirements for isolation (applicable for all types of hot):

- Warning signs about the execution of hot work must be adopted.
- A free area of at least 15 meters from the point of execution of the hot work must be adopted, free of the presence of people or combustible materials and equipment.
- If it is not possible to adopt a free area of 15 meters, the area must be isolated with physical protection barriers, which must be non-combustible.
- Combustible equipment or materials that cannot be removed from the isolated area must be protected with barriers, such as thermal blankets.
- If the hot work site has a lower or upper floor opening, the determination of the hot work area must consider the risk of the ignition sources moving to the outside.
- In remote areas, where It is not possible to implement a free area and the isolation , the following additional control measures must be adopted:
  - ✓ Make the firebreak of the place or wet the vegetation;
  - ✓ Adopt knapsack pumps;
  - ✓ Increase the number of people in surveillance and the monitoring time, according to local risk analysis or procedure.

iv. Persyaratan area yang diperuntukkan bagi pekerjaan panas Agar dianggap dirancang untuk pekerjaan panas, area tersebut harus memenuhi kriteria berikut:

- Tidak adanya bahan, produk atau peralatan yang mudah terbakar, tidak termasuk bahan dan peralatan yang akan digunakan dalam pekerjaan panas;
- Memiliki struktur kerja tersendiri untuk pekerjaan panas, seperti bangku;
- Memiliki lemari tahan api untuk menyimpan bahan-bahan yang mudah terbakar;
- Memiliki perlindungan terhadap sprinkler, jika dinding dan langit-langit terbuat dari bahan

iv. Requirements for areas designated for hot work To be considered designed for hot work, the area must meet the following criteria:

- Absence of combustible materials, products or equipment, excluding the materials and equipment that will be used in the hot work;
- Have its own working structure for hot work, such as a bench;
- Have a flame retardant cabinet for the storage of flammable materials;
- Have sprinkler protection, if walls and ceiling are made of combustible materials (as defined by the fire project in the area);
  - ○ Have extra fire extinguishers for the activity, in addition to the fire extinguishers

yang mudah terbakar (sebagaimana ditentukan oleh proyek kebakaran di area tersebut);
- Memiliki alat pemadam api tambahan untuk kegiatan tersebut, selain alat pemadam api yang digunakan untuk keadaan darurat setempat;
- Tabung gas harus diisolasi dari risiko proyeksi percikan api;
- Diperiksa secara berkala untuk memverifikasi keberadaan bahan mudah terbakar

v. Persyaratan Spesifik untuk Area Khusus
- Pengosongan area harus dilakukan untuk menghindari penumpukan gas yang dapat menimbulkan kebakaran atau ledakan.
- Area tersebut harus mempunyai sistem ventilasi buatan atau alami.
- Penguncian jalur dan peralatan harus diterapkan, di mana tugas tersebut akan dilakukan.
- Kontrol akses harus diterapkan.
- Area tersebut harus mempunyai sistem hidrolik preventif.
- Pemantauan mudah terbakar harus dilakukan, dengan hasil yang dapat diterima sama dengan nol, untuk memulai tugas.

vi. Persyaratan Pemotongan Oxyfuel
- Silinder untuk pekerjaan panas harus mempunyai sistem pengatur tekanan dan aliran dengan dua alat pengukur tekanan.
- Gas LPG dilarang digunakan.
- Perangkat pengendali backfire flame harus digunakan pada selang dan saluran obor.
- Selang khusus harus digunakan untuk peralatan pemotongan oxyfuel yang mematuhi peraturan setempat.'

vii. Persyaratan penggunaan dalam pengelasan listrik
- Sistem VRD (Voltage Reducing Device) atau Perangkat Pengurang Tegangan harus diterapkan
- Residual Current Devices (RDC) atau Perangkat arus sisa pada soket diidentifikasi dengan benar
- Saklar Deadman untuk las MIG/MAG dan TIG

m. CAR – 13 : Pembukaan Jalur Pipa dan Peralatan

Kegiatan pembukaan jalur dan peralatan di industri secara umum telah menyebabkan kejadian serius yang melibatkan paparan orang terhadap cairan berbahaya, bahan dengan tekanan/aliran tinggi dan/atau suhu tinggi atau rendah, yang mengakibatkan cedera dan kematian.

Faktor utama yang terkait dengan peristiwa ini

of use for local emergencies;
  - Gas cylinders must be isolated from the risk of spark projection;
  - Be periodically inspected to verify the presence of combustible

v. Specific Requirements for Classified Areas
- Emptying/inerting of the area must be applied to avoid accumulation of gases that may generate fire or explosion.
- The area must have an artificial or natural ventilation system.
- Line and equipment lockout must be applied, where the task is to be performed.
- Access control must be adopted.
- The area must have a preventive hydraulic system.
- Flammable monitoring must be adopted, with an acceptable result equal to zero, to begin the task.

vi. Requirements for Oxyfuel Cutting
- The hot work cylinder must have a pressure and flow control system with two pressure gauges.
- LPG Gas is prohibited to use.
- Backfire flame control devices must be used in the hose and torch feeds.
- Specific hose must be used for the oxyfuel cutting equipment that complies with local legislation.

vii. Requirements for use in electric welding
- VRD (Voltage Reducing Device) system must be adopted
- Residual current devices (RCD) in the sockets properly identified
- Deadman switch for MIG / MAG and TIG welds.

m. CAR – 13 : Line and Equipment Opening

Line and equipment opening activities in the industry in general have caused serious events involving the exposure of people to dangerous fluids, materials with high pressures/flows and/or high or low temperatures, with disabling injuries and deaths.

The main factors associated with these events include :
- Failure to apply and to test the effectiveness

meliputi:

- Kegagalan menerapkan dan menguji efektivitas lockout (zero energy) sesuai dengan RAC 04;
- Penguncian energi diterapkan pada katup/perangkat yang tidak sesuai;
- Material dan/atau residu berbahaya tidak dikeluarkan dari jalur dan peralatan di bagian hilir lockout;
- Tekanan/aliran tidak berkurang;
- Bahan panas atau dingin (misalnya air, nitrogen) tidak dihilangkan;
- Membuka jalur dan peralatan yang salah;
- Kurangnya/kegagalan isolasi di sekitar bukaan;
- Kurangnya/kegagalan penggunaan APD yang sesuai selama proses pembukaan;
- Kurangnya/kegagalan grounding pada saluran dan peralatan di layanan yang mudah terbakar;
- Kurangnya/kegagalan dalam pemantauan lingkungan;
- Kurangnya/kegagalan dalam memantau dan/atau memasang bantalan gas inert pada saluran dan bukaan peralatan di layanan yang mudah terbakar

Menetapkan persyaratan minimum untuk menyelamatkan nyawa orang-orang di Vale, dalam aktivitas yang memerlukan pembukaan jalur dan peralatan yang terhubung ke proses/sistem yang mengandung cairan berbahaya, bahan dengan suhu tinggi atau rendah, bahan dengan tekanan atau aliran tinggi dan jika ada adalah potensi paparan pada manusia.

Berlaku untuk aktivitas yang dapat menghasilkan sumber penyulutan, seperti nyala api atau percikan api. Pekerjaan panas antara lain meliputi pengelasan busur listrik dan gas, pengelasan aluminotermik atau eksotermik, pencungkilan, penggilingan, pembakaran dan pengenceran. Pada area yang tergolong mudah terbakar, segala aktivitas yang menimbulkan gesekan atau panas tergolong pekerjaan panas.

Aplikasi:

Persyaratan ini berlaku untuk kegiatan Pemeliharaan atau servis yang melibatkan pembukaan jalur dan peralatan, untuk memastikan pengendalian potensi pelepasan cairan berbahaya.

Pengecualian:

- Kegiatan pengumpulan sampel rutin dan operasi bongkar muat produk, dilakukan oleh tenaga profesional yang terlatih dan

of lockouts (zero energy) in accordance with RAC 04;

- Energy lockout applied to unsuitable valves/devices;
- Hazardous materials and/or residues not removed from lines and equipment downstream of the lockout;
- Pressure/flow not relieved;
- Hot or cold materials (e.g. water, nitrogen) not removed;
- Opening wrong lines and equipment;
- Lack of/failure in the isolation around openings;
- Lack of/failure to use appropriate PPE during the opening process;
- Lack of/failure in the grounding in lines and equipment in flammable service;
- Lack of/failure in environmental monitoring;
- Lack of/failure to monitor and/or to install inert gas pad in line and equipment openings in flammable service

To establish minimum requirements to preserve the lives of people at Vale, in activities that require the opening of lines and equipment connected to a process/system that contains hazardous fluids, materials at high or low temperatures, materials at high pressure or flow and where there is the potential for exposure of people.

Applies to activities that may produce ignition sources, such as flames or sparks. Hot work includes electric and gas arc welding, aluminothermic or exothermic welding, gouging, grinding, burning and thinning, among others. In areas classified as flammable, all activities that generate rubbing or heat are classified as hot work.

Application:

This requirement applied for Maintenance or service activities involving the opening of lines and equipment, in order to ensure control of the potential for a release of hazardous fluids

Exceptions :

- Routine sample collection activities and product loading and unloading operations, carried out by trained and authorized professionals and covered by specific operating procedures;
- Opening containers not connected to a process/system (e.g. drums, totes, isotanks, cylinders);
- Opening water lines at temperatures below 60ºC and pressure below 10barg;
- The use of water, air, steam or condensate, nitrogen or other inert gases from utility stations and hoses, valves and fittings that have been designed for this purpose, allowing contact with the atmosphere,

berwenang serta tercakup dalam prosedur operasi khusus;

- Membuka kontainer yang tidak terhubung ke suatu proses/sistem (misalnya drum, tote, isotank, silinder);
- Pembukaan saluran air pada suhu di bawah 60ºC dan tekanan di bawah 10barg;
- Penggunaan air, udara, uap atau kondensat, nitrogen atau gas inert lainnya dari stasiun utilitas dan selang, katup dan perlengkapan yang telah dirancang untuk tujuan ini, memungkinkan kontak dengan atmosfer, asalkan hal tersebut tercakup dalam prosedur operasi khusus;
- Membuka hidran selama pengujian dan tanggap darurat atau menggunakan dan menguji pancuran pengaman dan/atau pencuci mata;
- Membuka saluran LPG ketika digunakan di restoran (misalnya kompor);
- Pembukaan jalur nitrogen cair, LPG dan bahan bakar bila kegiatan tersebut dilakukan oleh pemasok produk (misalnya menurunkan truk ke tangki penyimpanan tertentu);
- Membuka jalur dan peralatan laboratorium dan bangku, asalkan tercakup dalam prosedur operasi tertentu.
- Pemasangan pipa dilakukan oleh tenaga profesional yang terlatih dan berwenang serta tercakup dalam prosedur operasi khusus.

Persyaratan:

- Perangkat isolasi seperti dayung, tirai kacamata, flensa buta, dan elemen penyekat seperti gasket harus sesuai dengan kelas tekanan saluran dan peralatan serta kompatibel dengan bahan yang terkandung dalam saluran dan peralatan.
- Di area yang diklasifikasikan menurut PNR-000027, perangkat penerangan, alat ukur, perlengkapan dan perkakas harus diklasifikasikan untuk digunakan di atmosfer yang mudah terbakar.
- Peralatan dan saluran harus mempunyai sistem grounding sesuai dengan PNR-000052.

1. Perencanaan

- Kegiatan harus direncanakan sedemikian rupa untuk memastikan kepatuhan terhadap persyaratan dalam dokumen ini.
- Kebutuhan akan penilaian dan pemantauan kualitas atmosfer/udara (awal dan berkala) harus ditentukan, untuk menjamin konsentrasi zat berbahaya, batas ledakan dan/atau batas oksigen di udara dalam batas yang dapat

provided they are covered by specific operating procedures;

- Opening hydrants during tests and emergency response or using and testing safety showers and/or eye washers;
- Opening LPG lines when in use in restaurants (e.g. stoves);
- Opening liquid nitrogen, LPG and fuel lines when the activity is carried out by the product supplier (e.g. unloading a truck into a specific storage tank);
- Opening laboratory and bench lines and equipment, provided they are covered by specific operating procedures.
- Pigging of pipelines carried out by trained and authorized professionals and covered by specific operating procedures.

Requirements :

- Isolation devices such as paddles, spectacle blinds, blind flanges, and sealing elements such as gaskets must be suitable for the pressure class of the line and equipment and compatible with the material contained in the line and equipment.
- In areas classified according to PNR-000027, lighting devices, measuring instruments, equipment and tools must be classified for use in flammable atmospheres.
- Equipment and lines must have grounding systems in accordance with PNR-000052.

1. Planning

- Activities must be planned in such a way as to ensure faithful compliance with the requirements in this document.
- The need for assessment and monitoring of the atmosphere/air quality (initial and periodic) must be defined, in order to guarantee airborne concentrations of dangerous substances, explosive limits and/or oxygen limits within acceptable limits, according to the fluid in the line and equipment.

2. Lockout

- The requirements set out in RAC 04 – Lockout, Tagout and Zero Energy, must be met in order to lockout the line and equipment.
- The following hierarchy must be followed for lockout of lines and equipment:
  - Physical disconnection;
  - Block valve and paddle, blind flange, spectacle blind;
  - Double block, drain and vent: two in-line valves closed with an open drain and an open vent between the closed valves or

diterima, sesuai dengan cairan dalam saluran dan peralatan.

2. Penguncian

- Persyaratan yang ditetapkan dalam RAC 04 – Lockout, Tagout dan Zero Energy, harus dipenuhi untuk mengunci jalur dan peralatan.
- Hirarki berikut harus diikuti untuk lockout jalur dan peralatan:
  - Pemutusan fisik;
  - Blok katup dan dayung, flensa buta, tirai tontonan;
  - Blok ganda, saluran pembuangan dan ventilasi: dua katup segaris ditutup dengan saluran pembuangan terbuka dan ventilasi terbuka di antara katup tertutup atau dengan saluran pembuangan terbuka atau saluran pembuangan terbuka di antara dua katup tertutup;
  - Dua katup in-line ditutup.
- Dilarang menerapkan penguncian jenis ini pada gas cair di bawah tekanan pada suhu kamar.
- Dilarang menggunakan katup periksa, katup kontrol, sakelar kontrol sirkuit, dan katup pengaman kegagalan otomatis dalam posisi terbuka untuk melakukan penguncian.
- Tindakan tambahan harus diambil untuk memastikan integritas katup pengaman kegagalan otomatis dalam posisi tertutup dengan memutuskan sumber penggerak otomatis.

3. Persiapan

- Persiapan pembukaan harus mencakup penurunan tekanan, pengurasan, ventilasi, pembersihan, dan pembilasan saluran dan peralatan.
- Isi saluran dan peralatan harus dialirkan ke tempat yang aman untuk menghindari paparan terhadap manusia dan lingkungan, serta untuk mencegah risiko kebakaran.
- Dalam kasus produk yang mudah terbakar, integritas saluran dan grounding peralatan harus diperiksa.
- Dalam kasus produk yang mudah terbakar, saluran dan peralatan yang akan dibuka harus dalam keadaan inersia sebagaimana tercantum dalam Lembar Data Keselamatan (SDS) dan/atau dalam Analisis Tugas.
- Penilaian atmosfer/kualitas udara (awal dan berkala) harus dilakukan untuk memastikan bahwa konsentrasi zat berbahaya dan batas ledakan atau oksigen berada dalam batas yang dapat diterima sebelum pembukaan dimulai, sebagaimana ditentukan dalam tahap

with an open drain or an open purge between the two closed valves;
  - Two in-line valves closed. It is forbidden to apply this type of lockout to liquefied gases under pressure at room temperature.
- It is forbidden to use check valves, control valves, circuit control switches and automatic fail-safe valves in the open position to make lockouts.
- Additional measures must be taken to ensure the integrity of automatic fail-safe valves in the closed position by disconnecting the automatic drive source.

3. Preparation

- Preparation for opening must include depressurizing, draining, venting, purging, and flushing the line and equipment.
- The contents of the line and equipment must be drained to a safe place to avoid exposing people and the environment, as well as to prevent fire risks.
- In the case of flammable products, the integrity of the line and equipment grounding must be checked.
- In the case of flammable products, the line and equipment to be opened must be inerted when indicated in the Safety Data Sheet (SDS) and/or in the Task Analysis.
- Atmosphere/air quality assessments (initial and periodic) must be carried out to ensure that concentrations of hazardous substances and explosive or oxygen limits are within acceptable limits before opening begins, as defined in the planning stage.

4. Isolation of the Opening Area

The area around the opening point(s) of the line and equipment must be isolated with rigid barriers, at a distance compatible with the engineering standards established for each product and pressure in the line

5. Identification of the opening point(s).

Opening point must be physically identified or a trained and authorized person must be present

6. Opening

Local procedures for carrying out activities involving the opening of lines and equipment must include, as a minimum:

- The scope of the work;
- Identification of the line(s) and equipment included in the scope
- The functions authorized to perform the opening;
- The training required to perform the opening;
- The method(s) used to confirm that the line and

perencanaan.

4. Isolasi Area Pembukaan

Area di sekitar titik pembukaan saluran dan peralatan harus diisolasi dengan penghalang yang kaku, pada jarak yang sesuai dengan standar teknik yang ditetapkan untuk setiap produk dan tekanan di saluran.

5. Identifikasi titik pembuka.

Titik pembukaan harus diidentifikasi secara fisik atau orang yang terlatih dan berwenang harus hadir.

6. Pembukaan

Prosedur setempat dalam melaksanakan kegiatan yang menyangkut pembukaan jalur dan peralatan paling sedikit harus mencakup:

- Ruang lingkup pekerjaan;
- Identifikasi jalur dan peralatan yang termasuk dalam ruang lingkup
- Fungsi yang diberi wewenang untuk melakukan pembukaan;
- Pelatihan yang diperlukan untuk melakukan pembukaan;
- Metode yang digunakan untuk memastikan bahwa jalur dan peralatan telah dibersihkan dengan benar, bahwa isinya telah dikurangi hingga tingkat yang dapat diterima dan bahwa perangkat isolasi telah ditutup dan dikunci secara efektif sesuai dengan RAC-04;
- Alat, perlengkapan dan alat ukur yang akan digunakan;Alat Pelindung Diri (APD) ditentukan berdasarkan bahaya yang teridentifikasi pada setiap fase pembukaan;
- Metode yang digunakan untuk membuka jalur dan peralatannya;
- Indikasi jenis pemantauan dan lokasi alat ukur, jika pemantauan diperlukan sebagaimana ditentukan dalam tahap perencanaan
- Untuk kegiatan pembukaan jalur dan peralatan yang melibatkan pemasukan ruang terbatas dan/atau pekerjaan panas, harus dipastikan dipenuhinya persyaratan yang ditetapkan dalam CAR-06 – Ruang Terbatas dan CAR 12 – Pekerjaan Panas harus dipastikan.

equipment has been properly cleared, that contents have been reduced to acceptable levels and that isolating devices are effectively closed and locked in accordance with RAC-04;

- The tools, equipment and measuring instruments to be used;
- Personal Protective Equipment (PPE) defined according to the hazards identified in each phase of the opening;
- The methods used to open the line and the equipment;
- Indication of the type(s) of monitoring and location of the measuring instruments, if monitoring is required as defined in the planning stage
- For activities of line and equipment opening involving confined space entry and/or hot work, compliance with the requirements set out in CAR-06 – Confined Spaces and CAR 12 – Hot Work must ensured.

9.6. ALAT PELINDUNG DIRI (APD)

Persyaratan standar minimum APD untuk lokasi proyek adalah:

- Keamanan helm (EN397 dengan tali pengaman internal) - ANSI Z 89.1 2014. Untuk Helm Pengaman tanpa pengikat jalur cepat, tali pengikat dagu adalah wajib.
- Sarung tangan pengaman untuk pekerjaan ringan (EN388) - ANSI/ISEA 105

9.6. Personal Protective Equipment (PPE)

The minimum standard requirements for PPE for project sites are:

- Helmet safety (EN397 with internal harness) – ANSI Z 89.1 2014. For Safety Helmet without fast-track fastener, chin strap are mandatory.
- Safety gloves for light work (EN388) - ANSI/ISEA 105

- Sepatu keselamatan dengan ujung baja dan midsole baja (ISO 20345:2011, Peringkat Minimum S1P) ASTM 2413 & EN ISO 20345
- Kacamata pengaman (ANZI Z87.1 / EN 166)
- Kemeja lengan panjang berwarna cerah dengan reflektor / Hi-vis dan celana panjang
- Rompi kerja berwarna cerah dengan reflektor (untuk personel yang mengenakan kemeja lengan panjang berwarna gelap tanpa reflektor). ANSI/ISEA 107-2015
- Catatan: Persyaratan di atas adalah standar minimum. Jika ada tugas khusus yang dilakukan, APD yang harus dikenakan harus sesuai dengan SWP (Prosedur Kerja Aman) atau JSA (Job Safety Analysis) yang disetujui.
- Untuk APD khusus dari setiap pekerjaan, Anda dapat merujuk ke (Matriks Alat Pelindung Diri dan Katalog APD STM) atau Anda dapat berkonsultasi dengan Departemen HSR Principal.

- Safety shoes with steel toe and steel midsole (ISO 20345:2011, Minimum Rating S1P) ASTM 2413 & EN ISO 20345
- Safety glasses (ANZI Z87.1 / EN 166)
- Bright colored long sleeved shirt with reflectors / Hi-vis and long trousers
- Brightly colored work vests with reflectors (for personnel who wear dark colored long-sleeved shirts without reflectors). ANSI/ISEA 107-2015
- Note: The above requirements are minimum standards. If a special task is being carried out, the PPE that must be worn must comply with the approved SWP (Safe Work Procedure) or JSA (Job Safety Analysis).
- For specific PPE of each work you can refer to (Personal Protective Equipment Matrix and STM PPE Catalog) or you may consult with Principal's HSR Department

9.7. Hydrogen Sulfide (H2S)

H2S adalah gas beracun yang berpotensi membunuh. Beberapa area kerja di Proyek STM memiliki paparan risiko H2S. Setiap kali diperlukan dalam lingkup pekerjaan, kontraktor harus menyediakan tindakan pencegahan atau mitigasi risiko H2S seperti Prosedur, Perlindungan Pernafasan, peralatan atau sistem deteksi gas, dll.
Mengevaluasi setiap pekerjaan untuk bahaya H2S sebelum memulai dan saat melakukan pekerjaan.
Gunakan peralatan pendeteksi H2S kapan pun Anda mencurigai adanya H2S. Jangan pernah bekerja sendirian di area yang dicurigai mengandung H2S.
Jangan pernah memasuki area terlarang atau terisolasi yang memiliki riwayat kejadian H2S tanpa izin dari pemilik area.

9.7. Hydrogen Sulfide (H2S)

H2S is a poisonous gas which has the potential to kill. Several working area in STM Projects have H2S risk exposure. Whenever its necessary in scope of work, the contractor shall provide any preventive or mitigative measure of H2S risks such as Procedures, Respiratory Protections, Gas detections equipments or systems, etc.
Evaluate each job for H2S hazards before starting and while doing the work.
Uhse H2S detection equipment anytime you suspect H2S might be present.
Never work alone in an area where suspected H2S might be present.
Never enter any restricted or isolated area that have historical of H2S occurrence without authorization of the area owners.

9.8. Bahan Kimia Berbahaya

- Untuk setiap bahan kimia yang akan digunakan oleh kontraktor, Lembar Data Keselamatan Bahan Kimia harus tersedia di wadah bahan kimia, dan salinan lunaknya harus diserahkan ke Departemen HSR.
- Kontraktor harus mempertimbangkan Daftar Hitam dan Daftar Abu-abu Bahan Kimia yang ditentukan oleh Vale sebelum mengirimkan bahan kimia ke lokasi STM (Daftar tersebut tersedia di lampiran Daftar Hitam dan Daftar Abu-abu Bahan Kimia)
- Semua bahan kimia berbahaya harus disimpan di dalam wadah yang tepat dengan piktogram bahan kimia berbahaya yang jelas.

9.8. Hazardous Chemical

- For every chemical that will be use by the contractor's the Chemical Safety Data Sheets shall be available on the chemical containers, and the soft copy shall be submitted to the HSR Department.
- Contractors shall consider the Black list and grey list of Chemical that determined by Vale prior sending the chemical to STM sites (The list are available in the appendix Black and Grey List Chemical)
- All hazardous chemicals shall be stored in the proper container with clear hazardous chemical pictograms.
- Proper Safety Equipment and or PPE, as prescribed by Safety Data Sheet, must be

- Peralatan Keselamatan dan atau APD yang tepat, seperti yang ditentukan oleh Lembar Data Keselamatan, harus digunakan saat menangani bahan kimia berbahaya.
- Personel harus dilatih dengan baik sebelum menangani bahan kimia berbahaya.
- Pembuangan bahan kimia berbahaya harus sesuai dengan persyaratan peraturan yang berlaku dan berhubungan erat dengan Departemen Lingkungan di STM.

utilized when handling hazardous chemicals.
- Personnel shall be well trained before handling the hazardous chemicals.
- Disposal of hazardous chemicals shall be in accordance with applicable regulatory requirements and liaison closely with Environmental Department in STM.

9.9. Parang

Hanya personil yang memiliki otorisasi untuk menggunakan parang yang diizinkan untuk membawanya ke dalam lokasi Proyek STM. Pihak keamanan akan meminta izin penggunaan parang sebelum memasuki area kerja, personil yang tidak membawa izin yang sah tidak diperbolehkan membawa parang ke dalam area STM.

i. Spesifikasi Persyaratan Minimum Parang:

- Made - Terbuat dari besi tempa (bahan pelat baja karbon tidak disarankan)
- Panjang parang tidak lebih dari 50 cm.
- Gagangnya stabil, tidak goyah, kuat dan tidak rusak sehingga dapat dipegang dengan baik dan mengurangi risiko tergelincir
- Parang dalam kondisi tajam, bersih dan bebas karat;
- Sarung pengaman dalam kondisi baik, tersedia yang sesuai dengan jenis dan ukurannya sehingga dapat melindungi seluruh bagian tajam parang.
- Tersedia sabuk dan tali pengaman agar sarung tidak terlepas secara tidak sengaja
- Golok jenis Billhook atau golok yang memiliki lekukan di ujungnya dilarang digunakan di Area STM.
- Semua pengguna parang harus menggunakan sarung tangan Anti-cut level 5 saat memegang parang.machete.

Figur 2 : Parang Billhook

9.9. Machete

Only personnel who have the authorization to utilize Machete that allowed to bring one into the STM Site Project. The security will ask for the Machete permit before entering the working area, personnel who didn't bring the valid permit are not allowed to bring the machete inside STM premises.

i. Minimum Machete's Requirements Specification:

- Made from forged iron (carbon steel plate material are not recommended)
- Machete's length are not exceed than 50 centimeters.
- The handle is stable, not wobbling, strong and not damaged so it can be held well and reduces the risk of slippage
- The machete is in sharp, clean and rust-free conditions;
- The Safety sheath is in good condition, available which is macthes the type and size so it can protects all the sharp parts of the matchete.
- Belt and safety strap is available so that the cover does not come off accidentally
- Billhook type machetes or thos with a curve at the end are Prohibited to use in STM Area.
- All machete users shall use Anti-Cut level 5 handgloves when handling machete.

Figure 2 : Billhook Machete

9.10. Bekerja di Remote Area

Kontraktor harus menyiapkan rencana kerja khusus untuk daerah terpencil termasuk namun tidak terbatas pada Tujuan, lokasi rencana kerja, jumlah personel, peralatan yang diperlukan dan jangka waktu kegiatan dengan rencana mobilisasi dan demobilisasi dari daerah terpencil lengkap dengan titik penjemputan dalam situasi darurat. Kontraktor diharapkan menyediakan peralatan logistik dan kelangsungan hidup mereka sendiri termasuk telepon Satelit, GPS dan komunikasi Radio.

Sebelum memulai pekerjaan di daerah terpencil, PJO kontraktor harus mempresentasikan Rencana tersebut kepada STM termasuk tim Tanggap Darurat dan melaporkan posisinya secara tepat waktu selama kegiatan berlangsung.

9.10. Working at Remote Area

Contractor shall prepare the specific working plan for remote area including but not limited to the Objectives, working plan location, personel number, tools needed and timeframe of the activity with the mobilization and demobilization plan from remote area complete with pick up points in emergency situations. Contractor are expected to provide their own logistic and survival tools including the Sattelite phone, GPS and Radio communications.

Prior start working at remote area, the contractor's PJO shall present the Plan to the STM including Emergency Response team and report the position in timely manner during the activity

9.11. Housekeeping and Program 5R

Tata kelola rumah tangga yang baik sangat penting bagi keberhasilan program keselamatan. Pembersihan yang benar akan menghilangkan potensi bahaya dan membantu pekerjaan berjalan dengan lancar.

Ketika tata graha yang baik dipraktikkan, bahaya terpeleset dan tersandung akan berkurang. Hal ini juga akan mencegah penumpukan sampah yang berbahaya dan mencegah bahaya kebakaran.

Tata graha yang baik membuat rute penyelamatan diri menjadi jelas.

Penyedia layanan harus menerapkan, memelihara, dan memverifikasi efisiensi Program 5R, yang penting untuk meningkatkan produktivitas, mengoptimalkan sumber daya, menghindari kecelakaan, dan meningkatkan kepuasan karyawan dengan tempat kerja.

9.11. Housekeeping and 5 S Program

Good housekeeping is very important to a successful safety program. Proper housekeeping will eliminate potential hazards and help the job run smoothly.

When good housekeeping is practiced, slipping and tripping hazards will be reduced. It will also prevent the dangerous accumulation of trash and prevent fire hazards.

Good housekeeping keeps escape routes clear.

The service provider must implement, maintain, and verify the efficiency of the 5S Program, which is important to increase productivity, optimize resources, avoid accidents, and increase employee satisfaction with the workplace.

9.12. Merokok

Kegiatan proyek STM berkaitan dengan produk hidrokarbon yang merupakan bahan yang mudah terbakar seperti bahan bakar mesin (Bensin, Diesel, dan Jetfuel). Risiko kebakaran juga ada di kamp lapangan yang dapat membahayakan semua personil kamp. Oleh karena itu, merokok dilarang di semua area kecuali di area yang secara khusus ditetapkan sebagai area merokok.

STM tidak memberikan toleransi kepada pelanggar yang merokok di luar area khusus merokok yang akan berakibat pada tindakan disipliner.

9.12. Smoking

STM project's activities are related to the hydrocarbon products which is flammable materials such as Engine fuel (Gasoline, Diesel, and Jetfuel). The fire risk also present in the field camp which might endangered all camp personnel. Therefore smoking is prohibited in all area except in the area specially designated as the smoking area.

STM implement NO TOLERANCE to the violators that smoking outside the dedicated smoking area which will be result in disciplinary action.

9.13. Perkelahian, Penindasan, Pelecehan, Perjudian dan Bercanda

Semua personel yang terlibat dalam perkelahian, perjudian, intimidasi, pelecehan dan / atau permainan kuda di setiap Tempat STM akan dikenakan tindakan disipliner yang sesuai

9.13. Fighting, Bullying, Harassment, Gambling and Horseplay

All personnel involved in fighting, gambling , bullying, harassment and/or horseplay at any STM Premises will be subject to appropriate disciplinary action

9.14. Tansportasi

i. Transportasi Darat

a. Kontraktor harus mempertimbangkan dan mematuhi Rencana Manajemen Transportasi & Lalu Lintas STM (STM-TTMP-001) setiap kali ruang lingkup pekerjaan relevan dengan transportasi darat di lokasi proyek STM.
b. Untuk mobilisasi peralatan, kontraktor harus menyiapkan rencana Manajemen Perjalanan dan menyerahkannya kepada STM sebelum mengirim peralatan ke lokasi STM.
c. Kontraktor atau Pemasok dapat mengatur transportasi darat mereka sendiri dengan menggunakan kendaraan khusus selama persyaratan spesifikasi Kendaraan Ringan dan persyaratan pengemudi termasuk SIMPER yang sesuai yang dikeluarkan oleh Departemen HSR setelah personil tersebut melalui penilaian uji SIMPER.
d. Karyawan kontraktor dapat meminta manifes transportasi darat dari bus karyawan STM jika tersedia.
e. Keselamatan Mengemudi :

- Setiap personel termasuk karyawan, kontraktor, pengunjung, vendor, dan pemasok harus mengemudi dengan hati-hati, berkendara sesuai kondisi, dan mengikuti rambu-rambu lalu lintas. Aturan ini berlaku di setiap tempat STM dan area Proyek Eksplorasi Hu'u ketika pekerja bepergian ke dan dari tempat kerja mereka.
- Batas kecepatan maksimum adalah (Kecuali dinyatakan lain):
  - ✓ STM Area Staging – 20 km/jam
  - ✓ Area sekitar Field Camps – 10 km/jam
  - ✓ Jalur akses kedua– 20 km/jam
  - ✓ Area Proyek / Nangadoro Access Road.
    - ➢ Jalan utama: Semua kendaraan 40km / jam atau seperti yang sudah ditentukan
    - ➢ Pit / Construction Roads : 30 km/hr, or as posted
    - ➢ Area yang berdekatan dengan personel lapangan (dalam jarak 50 m dari pekerjaan aktif, area konstruksi, atau pejalan kaki: semua kendaraan 20 km/jam.
    - ➢ Area bengkel, kantor, dan perkemahan: semua kendaraan 10 km/jam.
  - ✓ Jalan umum (melalui desa) – 40 km/jam atau sesuai kondisi.
  - ✓ Jalan umum terbuka – 60 hingga 80 km/jam atau sesuai dengan yang dipasang di jalan umum.
- Pengemudi harus memeriksa keamanan kendaraan dengan mengikuti formulir pemeriksaan standar. PIC harus meninjau

9.14. Transportations

i. Land Transportation

a. The contractor's shall consider and comply with the STM's Transportation & Traffic Management Plan (STM-TTMP-001) whenever the scope of work is relevant with the land transportation at STM project site.
b. For the equipment mobilizations the contractor shall prepare the Journey Management plan and present to STM before sending the equipment to STM Premises.
c. Contractor or Supplier may arrange their own land transport using dedicated vehicles as long as the requirements for Light Vehicle specifications and the driver's requirements including the suitable SIMPER that released by HSR Department after the personnel going through the SIMPER test assessment.
d. The contractor's employees might request land transportation manifest of the STM employee's bus if its available.
e. Safe Driving :

- Each personnel including employees, contractors, visitors, vendors, and suppliers shall drive with caution, drive to the conditions, and follow traffic signs. These rules are apply on every STM premises and Hu'u Exploration Project area when workers are commuting to and from their place of work.
- Maximum speed limits are (Except where stated otherwise) :
  - ✓ STM Staging Areas – 20 km/hr
  - ✓ Proximity to Field Camps – 10 km/hr
  - ✓ Secondary access tracks – 20 km/hr
  - ✓ Main Project / Nangadoro Access Road.
    - ➢ Main haul roads : All vehicles 40km/hr or as posted
    - ➢ Pit / Construction Roads : 30 km/hr, or as posted
    - ➢ Areas adjacent to ground personnel (within 50 m of active work, construction areas or pedestrians : all vehicles 20 km/hr.
    - ➢ Workshops, office and camp area : all vehicles 10 km/hr.
  - ✓ Public road (through villages) – 40 km/hr or by conditions.
  - ✓ Open public road – 60 to 80 km/hr or as posted on public road.
- Drivers should check vehicles safety following a standard checking form. The PIC should review the checklist on a monthly basis or when a new different vehicle is

daftar periksa tersebut setiap bulan atau ketika ada kendaraan baru yang digunakan. Hasil peninjauan harus dilaporkan.
- Memarkir kendaraan di area yang telah ditentukan dengan cara parkir mundur.
- Bak belakang truk atau pick-up hanya untuk material. Dilarang digunakan untuk penumpang.

f. Sabuk Pengaman
- Semua kendaraan harus memiliki sabuk pengaman yang dipasang sesuai dengan persyaratan.
- Kursi kendaraan tanpa sandaran kepala dilarang untuk digunakan.
- Sabuk pengaman harus selalu dikenakan oleh pengemudi dan semua penumpang.

g. Surat Izin Mengemudi
- Semua pengemudi harus memiliki Surat Izin Mengemudi Perusahaan (SIMPER) yang masih berlaku sesuai dengan jenisnya (G, R, dan F) dan area mengemudi dibatasi oleh masing-masing jenis SIMPER. Kontraktor harus mendaftarkan pengemudi atau personil khusus yang akan ditugaskan untuk mengemudi ke Departemen HSR dan sesuai dengan persetujuan KTT.
- Sepeda motor dapat digunakan untuk pergi ke dan dari tempat kerja. Namun hanya di tempat parkir sepeda motor yang dekat dengan akses gerbang. Helm standar wajib dikenakan dan personil dilarang memasuki gerbang jika tidak menggunakan helm standar sepeda motor termasuk pemboncengnya.

ii. Transportasi Udara (Aktivitas Helikopter)
- PIC Kontraktor harus meminta manifes internal dan/atau eksternal Heli setidaknya satu (1) hari sebelum penerbangan jika dianggap perlu.
- Semua karyawan dan pengunjung wajib mengikuti Induksi Keselamatan Helikopter sebelum keberangkatan dan mengikuti semua instruksi dari Awak Darat Heli untuk prosedur naik atau turun.
- Untuk muatan eksternal, PIC kontraktor harus menyebutkan dengan jelas pada formulir manifes tentang dimensi, berat, dan karakteristik muatan. Alat pengangkat dan/atau keranjang pengangkat yang tepat dan sesuai harus digunakan untuk memuat peralatan. Catatan: Untuk beban kompleks yang mungkin memiliki dimensi yang tidak biasa, pusat gravitasi, dan bagian yang hilang harus dikomunikasikan kepada STM dan Load Master untuk dinilai sebelum dimobilisasi oleh Helikopter.

used. The review results shall be reported.
- Parks the vehicle in the designated area with reverse parking way.
- The rear tray of trucks or pick-ups is for material only. The use for passenger is prohibited.

f. Seat Belts
- All vehicles shall have seat belts installed based on requirements.
- The vehicle seat without headrest are prohibited to use.
- Seat betls must be worn at all times by the driver and all passengers.

g. Driving license
- All drivers must have a current Company Driving License (SIMPER) based on the type (G, R, and F) and driving area are restricted by each type of SIMPER. The contractor shall register their dedicated driver or personnel who will be assigned to drive to HSR Department and as per approval of KTT.
- Motorbikes may be used for commuting to and from place of work. But only in the motorbikes parking lot near gate access. Standard helmet are mandatory to be worn and personnel are prohibited to enter the gate if did not use standard motorbikes helmet including the passenger.

ii. Air Transportation (Helicopter Activity)
- Contractor's PIC shall request the Heli internal and/or external manifest at least one (1) day before the flight whenever it deemed necessary.
- All employees and visitors are mandatory to attend in the Helicopter Safety Induction before departure and follow all instructions of Heli Ground Crew for the procedure embarking or disembarking.
- For external load, the PIC contractor's shall mention clearly on the manifest form of the load's dimension, weight and characteristics. The proper and suitable lifting gear and/or lifting basket shall be use to load the equipments.
- Note : For the complex load which might have unusual dimensions, center of gravity, and lossen parts shall be communicated to STM and Load Master to be assess before mobilized by Helicopter.
- The sharps object or loosen metal parts are

- Benda tajam atau bagian logam yang longgar dilarang untuk dibawa dalam bagasi internal kecuali jika kemasan pengaman disetujui oleh Load Master.
- Semua penumpang harus melaporkan berat bagasi dan AVSEC (Keamanan Penerbangan) akan memeriksa semua bagasi sebelum Heli Induksi. Barang-barang yang dilarang akan diamankan oleh tim keamanan. Silakan berkonsultasi dengan Awak Kabin untuk mengetahui daftar barang yang dilarang.
- Dilarang menggunakan peralatan elektronik selama penerbangan termasuk namun tidak terbatas pada radio Citizen band, telepon seluler, pemancar atau remote control, perangkat hiburan elektronik, komputer atau laptop, dll.
- Harap perhatikan zona aman berikut ini saat naik atau turun dari Helikopter.

prohibited to be carry on the internal baggage unless the securing packaging is approved by Load Master.
- All passengers must declare baggage weight and AVSEC (Aviation Security) will check all the baggage before Heli Induction. Any prohibited items will be secured by security team. Please consult the all prohibited items list with Air Crew.
- The use of electronic equipment during flight are prohibited including but not limited to Citizen band radio, cellular telephone, transmitter or remote control, electronic entertainment devices, computer or laptop, etc.
- Please consider the following safety zone of Embarking or Disembarking Helicopter

Figur 3 : Zona Keamanan Helikopter

Figure 3 : Helicopoter Safety Zone

- Saat helikopter melakukan pengangkatan beban luar, menjauhlah dari area pengangkatan dan berlindung pada area yang ditentukan oleh HLO. Hanya personel bersertifikat yang diizinkan menangani beban tersebut

- While the helicopter conduct the external load lifting, stay away from lifting area and take cover to the designated area that determined by HLO. Only certified personnel that allowed to handle the load.

9.15. Manajemen Perubahan (MOC)

Apabila terdapat perubahan yang dapat berdampak langsung atau tidak langsung terhadap HSE (dengan mengubah risiko proses/kegiatan dalam lingkup kontrak), kontraktor harus terlebih dahulu memberitahukan kepada Manajer Kontrak/Inspektur dan melakukan analisis sesuai

9.15. Management of Change

When any change that may directly or indirectly impact HSE is identified (by changing the risks of the processes/activities in the scope of the contract), the contractor must previously inform the Contract Manager/Inspector and make an analysis following the guidelines in PNR-000101 (Management of

dengan pedoman dalam PNR- 000101 (Manajemen Perubahan) dan STM-OHS-SWP-042 : Manajemen Perubahan.
Kontraktor meminta MOC untuk menggunakan proses dan formulir mereka sendiri untuk diserahkan kepada tim multidisiplin STM untuk mendapatkan persetujuan.

9.16. Management of Non-Conformities and Unsafe Conditions

a. Pengelolaan Ketidaksesuaian : Kontraktor harus memastikan bahwa ketidaksesuaian yang berdampak pada HSE (termasuk ketidakpatuhan terhadap persyaratan yang ditentukan oleh undang-undang dan STM) diidentifikasi, dilaporkan ke Vale, dicatat, dianalisis, dan diselesaikan secara efektif, sehingga mencegah terulangnya ketidaksesuaian melalui perencanaan dan pelaksanaan tindakan perbaikan dan pencegahan
b. Pengelolaan Kondisi Tidak Aman : Kontraktor harus mengidentifikasi, mencatat, mengkomunikasikan, mengendalikan, atau menghilangkan kondisi tidak aman untuk mencegah kecelakaan, berkembangnya penyakit akibat kerja dan kerusakan lingkungan apa pun. Kontraktor dapat menggunakan prosesnya sendiri untuk mencatat kondisi tidak aman jika ia menyajikan sistematisasi proses ini dan mendapat persetujuan dari manajer kontrak.

9.17. Komunikasi mengenai event dan Analisis yang dapat diterapkan

Layanan harus menginformasikan kepada karyawannya tentang kewajiban untuk memberi tahu atasan langsung mereka tentang terjadinya segala jenis peristiwa. Semua kejadian K3LL (pribadi, material, dan lingkungan), kejadian yang melibatkan masyarakat, pemberitahuan pelanggaran, denda atau pemberitahuan yang diterima dari pihak berwenang, serta keluhan dari pihak-pihak yang berkepentingan, harus segera didaftarkan dan dikomunikasikan kepada Vale.
Jika suatu peristiwa terjadi, kontraktor harus bekerja sama dalam penyelidikan penyebabnya, tanpa mengubah area kejadian tanpa izin sebelumnya, menyediakan karyawannya untuk diwawancarai, memberikan bukti yang diminta, dan berkolaborasi dalam penyelidikan fakta-fakta yang ada.
Pada akhir investigasi atau setiap kali ada peristiwa lain yang terjadi, kontraktor harus melakukan analisis internal untuk memverifikasi apakah

Change) and STM-OHS-SWP-042 : Manajemen Perubahan.
Contractor's requested the MOC shall use their own process and forms to be presented to STM multidisciplinary team for approval.

9.16. Management of Non-Conformities and Unsafe Conditions

a. Management of Non Conformities : The contractor must ensure that non-conformities that impact HSE (including non-compliance with requirements provided by law and by STM) are identified, reported to Vale, recorded, analyzed, and solved effectively, preventing their recurrence through planning and execution of corrective and preventive actions
b. Management of unsafe Conditions : The contractor must identify, record, communicate, control, or eliminate unsafe conditions to prevent accidents, the development of occupational illnesses and any environmental damage. The contractor may use its own process to record unsafe conditions if it presents the systematization of this process and receives approval from the contract manager

9.17. Event Communications and Applicability Analysis

The service must inform its employees of the obligation to notify their immediate superior the occurrence of any type of event. All HSE events (personal, material, and environmental), events involving the community, infraction notices, fines or notifications received from authorities, as well as complaints from interested parties, must be immediately registered, and communicated to Vale.
Should an event occur, the contractor must collaborate with the investigation of the causes, without changing the event area without prior authorization, making its employees available for interviews, presenting the requested evidence, and collaborating in the investigation of the facts.
At the end of the investigation or whenever other events are shared, the contractor must conduct an internal analysis to verify if these same causes that contributed for the occurrence of these events exist in its processes and adopt an action plan for their elimination or control

penyebab yang sama yang berkontribusi pada terjadinya peristiwa ini ada dalam prosesnya dan mengadopsi rencana tindakan untuk menghilangkan atau mengendalikannya.

9.18. Pelaporan Insiden

a. Kontraktor harus melaporkan semua insiden dan melakukan investigasi sebagaimana diperlukan atau diminta oleh STM. Setiap insiden yang melibatkan personil, rencana atau peralatan kontraktor STM atau pihak ketiga, informasi informal harus dilaporkan kepada STM dalam kesempatan paling awal (1 jam setelah kejadian) apakah mengakibatkan cedera pada personil dan/atau kerusakan/kerugian pada peralatan atau tidak.
b. Laporan insiden awal formal harus dibuat dalam waktu 24 jam setelah kejadian dan dikirimkan kepada pemilik kontrak dan Departemen HSR.
c. Insiden berikut harus dilaporkan seperti:
- Kerusakan pada harta benda atau peralatan milik Klien, pihak ketiga, Kontraktor atau Sub-Kontraktor;
- Cedera pada personel Klien, Pihak Ketiga, Kontraktor atau Subkontraktor dan Komunitas;
- Hampir celaka termasuk yang mungkin mempunyai konsekuensi serius (HIPO / Insiden Berpotensi Tinggi)
- Setiap kejadian dan kerusakan lingkungan hidup;
- Hubungan eksternal termasuk kerusuhan sipil
- Kasus Kebakaran/Ledakan;
- Pencurian/Kejahatan;
- Kecelakaan Transportasi (darat, laut dan udara).

d. Kontraktor dan semua sub-kontraktor harus memiliki sistem pelaporan dan investigasi insiden, yang rinciannya harus dimasukkan dalam HSER Plan. Klien (STM) berhak untuk berpartisipasi dalam investigasi setiap insiden yang timbul dari kegiatan kontraktor;
e. Kontraktor harus menyelesaikan laporan investigasi akhir dalam jangka waktu yang telah disepakati yang diberikan oleh STM dan menyampaikan hasil investigasi kepada Pemilik Kontrak dan Departemen HSR sebagai bahan untuk ditinjau. STM berhak untuk membuka kembali proses investigasi jika rekomendasi tindakan dari Kontraktor tidak memadai;
f. Kontraktor harus menyimpan dan menyerahkan kepada STM, ringkasan bulanan dari kinerja HSER terhadap Indikator Kinerja Utama yang telah disepakati selama rapat Evaluasi KPI Keselamatan setiap bulan.

9.18. Incident Reporting

a. Contractor shall report all incident and investigate as necessary or requested by STM. Any incident involving STM contractor's or any third party's personnel, plan or equipment, informal information shall be reported to the STM in the earliest opportunity (1 hours after the incident) whether or not injury to personnel and/or damage/loss to equipment resulted.
b. The formal preliminary incident report should be made within 24 hours after the incident and send to the contract owners and HSR Department.
c. The follow incident shall be reported such as :
- Damage to property or equipment belonging to Client, third parties, Contractor or Sub-Contractor;
- Injury to personnel of Client, Third Parties, Contractor or Sub.contractor and Communities;
- Near misses including which may have had serious potential consequences (HIPO / High Potential Incidents)
- Any environmental incident and damage;
- External relation including civil unrest
- Fire / Explosion Cases;
- Theft/Crimes;
- Transportation Incident (Land, Sea and Air)

d. The contractor and all sub-contractors shall have an incident reporting and investigation system, details of which shall be included in the HSER Plan. Client (STM) reserves the right to participate in the investigation of any incident arising out from the contractor's activities;
e. The contractors shall complete its final investigation report within the agreed timelines that given by STM and present the investigation result to Contract Owners and HSR Department as a subject to be review. STM reserves the right to re-open the investigation process if the recommendation action items from Contractors are not adequate;
f. Contractor shall maintain and submit to STM, a monthly summary of its HSER performance against the agreed Key Performance Indicators during the Safety KPI Evaluation meeting on each month

9.19. Kesiapsiagaan dan tanggap darurat.

STM/Principal akan menggunakan Spesifikasi Teknis atau Permintaan Teknis untuk menginformasikan kebutuhan untuk menyiapkan Rencana Tanggap Darurat (ERP) oleh kontraktor (termasuk sumber daya yang akan disediakan untuk tanggap darurat) atau apakah akan dimasukkan dalam Rencana Tanggap Darurat Vale.
Jika berlaku, kontraktor harus menyiapkan dan menerapkan Rencana Tanggap Darurat sesuai dengan persyaratan hukum setempat dan skenario keadaan darurat yang melekat pada ruang lingkup kegiatannya dan sesuai dengan Rencana Tanggap Darurat Vale setempat, yang paling tidak berisi:

- Skenario kegiatan dan sumber daya yang dibutuhkan untuk menanggapi keadaan darurat.
- Alur komunikasi dan tindakan mitigasi dan pengendalian dampak dalam keadaan darurat.
- Jadwal sesi pelatihan dan latihan.
- Daftar Rumah Sakit yang mengirimkan karyawannya.

Kontraktor harus menjamin bantuan medis dan rumah sakit yang berkualitas bagi karyawan yang mengalami kecelakaan.

9.20. Ketentuan Akhir

Penyedia Jasa, ketika melakukan kegiatan untuk STM/Kepala Sekolah, bertanggung jawab untuk mengelola karyawan, proses, layanan, kegiatan, fasilitas, dan peralatan yang digunakan untuk menyelesaikan ruang lingkup kontrak, bertanggung jawab atas kesehatan dan keselamatan karyawan dan lingkungannya.
Kepatuhan terhadap kewajiban K3LL yang diatur di sini tidak akan membebaskan Penyedia Jasa untuk mengadopsi, mengikuti, dan mematuhi tindakan lain, baik secara hukum maupun tidak, yang dapat mencegah risiko dan memastikan kesehatan, keselamatan, dan integritas fisik karyawan dan Lingkungan.
Prinsipal dapat mengembargo atau melarang layanan yang diberikan oleh kontraktor, secara keseluruhan atau sebagian, setiap kali terdapat situasi risiko K3LL yang "parah dan akan segera terjadi" atau bagi masyarakat atau karena ketidakpatuhan terhadap undang-undang dan standar Prinsipal.
Jika informasi yang diberikan dalam dokumen K3LL yang disediakan untuk Kontraktor tidak cukup untuk mengklarifikasi keraguan, Manajer Kontrak harus dikonsultasikan untuk mendapatkan klarifikasi.

9.19. Emergency Preparedness and Response.

STM/Principal will use in the Technical Specification or Technical Requisition to inform the need to prepare the Emergency Response Plan (ERP) by the contractor (including the resources it will provide for emergency response) or whether it will be included in Vale's Emergency Response Plan.
If applicable, the contractor must prepare and implement the Emergency Response Plan in accordance with local legal requirements and emergency scenarios inherent to the scope of its activities and compatible with the local Vale Emergency Response Plan, containing at least:

- Scenarios of its activities and resources needed to respond to emergencies.
- Communication flow and mitigation and impact control actions in case of emergencies.
- Schedule of training sessions and drills.
- List of Hospitals to which its employees are sent.

The contractor shall assure quality medical and hospital assistance for employees who suffer accidents

9.20. Final Provisions.

Service Providers, when performing activities for STM / Principals, are responsible for managing the employees, processes, services, activities, facilities, and equipment used to accomplish the scope of the contract, being responsible for the health and safety of their employees and the environment.
Compliance with HSE obligations provided herein will not exempt the Service Provider from adopting, following, and complying with other measures, legal or not, that may prevent risks and ensure the health, safety, and physical integrity of their employees and the Environment.
Principal may embargo or interdict the services provided by the contractor, in whole or in part, whenever there is a situation of “severe and imminent” risk of HSE or for the communities or due to non-compliance with legislation and Principal’s standards.
If the information provided in the HSE documents made available to the Contractors is not sufficient to clarify doubts, the Contract Manager must be consulted for clarification

10. PEDOMAN SISTEM MANAJEMEN KESELAMATAN KONTRAKTOR STM

Pedoman yang berlaku bagi kontraktor dan subkontraktor ini bertujuan untuk memastikan keseragaman dan transparansi dalam hubungan dengan pemasok produk dan layanan dalam 4 langkah utama manajemen supplier.

Figur 4 : Langkah Utama CSMS STM

10.1. Penilaian Risiko Awal dan Persiapan Kontrak.

Pada fase ini, setiap pemilik kontrak dengan Departemen HSR akan melakukan penilaian risiko awal untuk kontrak atau lingkup pekerjaan tertentu yang akan diusulkan ke Departemen Pengadaan. Dalam proses ini, persyaratan Kesehatan dan Keselamatan untuk kontrak tertentu akan ditentukan berdasarkan hasil penilaian risiko awal dan peringkat CSMS minimum yang harus dicapai peserta lelang untuk berpartisipasi dalam proses seleksi kontraktor berikutnya akan ditentukan sebagai referensi bagi Departemen Pengadaan untuk mengumumkan proses tender.

Referensi : STM-FRM-065-Formulir Identifikasi dan Penilaian Risiko

Tabel 12 : Proses persyaratan berdasarkan penilaian risiko awal

DESKRIPSI	ASSESSED RISK OF WORK		
	LOW	MEDIUM	HIGH
Penilaian Risiko Awal dan Persiapan Kontrak	Discretionary	Diperlukan	Diperlukan
Penentuan Peringkat Minimum CSMS	Discretionary	Diperlukan	Diperlukan
Penilaian Pra-Kualifikasi HSR dan Seleksi Kontraktor	Discretionary	Diperlukan	Diperlukan
Contract Award dan Orientasi Pelatihan	Discretionary	Diperlukan	Diperlukan
Mengelola Pekerjaan yang Sedang Berlangsung & Evaluasi Kinerja	Discretionary	Diperlukan	Diperlukan

10. PEDOMAN SISTEM MANAJEMEN KESELAMATAN KONTRAKTOR STM

Pedoman yang berlaku bagi kontraktor dan subkontraktor ini bertujuan untuk memastikan keseragaman dan transparansi dalam hubungan dengan pemasok produk dan layanan dalam 4 langkah utama manajemen supplier.

Figure 4 : STM CSMS Major Steps

10.1. Penilaian Risiko Awal dan Persiapan Kontrak.

In this phase, each contract owner with HSR Department will conduct the initial risk assessment for the specific contract or scope of work that will be propose to the Procurement Department. In this process, Health and Safety requirement for the particular contract will be define based on the initial risk assessment result and the minimum CSMS rating that the bidder shall achieve to participate in the next contractor selection process will be determined as reference for the Procurement Department to announce the tender process.

Reference : STM-FRM-065-Contract Risk Identification and Assessment Form

Tabel 12 : Proses persyaratan berdasarkan penilaian risiko awal

DESCRIPTION	ASSESSED RISK OF WORK		
	LOW	MEDIUM	HIGH
Initial Risk Assessment and Contract Preparation	Required	Required	Required
Determine the Minimum CSMS Rating	Discretionary	Required	Required
HSR Pre-Qualification Assessment and Contractor Selection	Discretionary	Required	Required
Contract Award and Training Orientation	Discretionary	Required	Required
Managing Work in Progress & Performance Evaluation	Discretionay	Required	Required

10.2. Pra-Kualifikasi dan Seleksi HSER Kontraktor

Selama proses ini, peserta lelang yang diundang untuk ruang lingkup pekerjaan tertentu yang telah ditetapkan harus mengisi dan melengkapi formulir Prakualifikasi HSER dengan
dokumen yang terbaru dengan bukti-bukti yang jelas terkait antara dari dan lampiran dari setiap kriteria.
Setiap kriteria yang dipertimbangkan dari Elemen Vale Production System (VPS) memiliki nilai dan bobot masing-masing berdasarkan masing-masing kategori (Memenuhi Persyaratan, Memenuhi Pengecualian, Tidak Memenuhi Persyaratan, dan/atau Tidak Dapat Diterapkan) dengan komentar pada setiap sub-kriteria untuk perbaikan pemasok di masa depan untuk berpartisipasi dalam tender STM. Pedoman ini hanya didedikasikan untuk kualifikasi HSE, bukan untuk aspek teknis atau komersial.

- Tim HSER akan melakukan Penilaian PQ Awal untuk setiap peserta lelang berdasarkan jawaban dan bukti yang diberikan oleh peserta lelang pada Formulir Prakualifikasi STM-HSR-FRM HSE.
- Calon kontraktor atau peserta lelang harus mengisi formulir yang telah disediakan dan mengembalikannya bersama dengan bukti dari setiap pertanyaan pada subkriteria formulir tersebut.
- Peserta lelang akan memiliki kesempatan untuk mengklarifikasi beberapa pernyataan dari masing-masing pihak selama pertemuan klarifikasi PQ. Jika peserta lelang tidak dapat memberikan jawaban yang jelas dan bukti yang valid dari item-item tindakan yang diajukan selama Rapat Klarifikasi PQ, maka nilai subkriteria akan diberikan apa adanya. Proses ini dapat dilakukan di kantor STM atau kantor atau lapangan calon kontraktor untuk melakukan verifikasi jika dianggap perlu.
- Total nilai dari setiap pembobotan dari semua subkriteria akan memberikan Peringkat CSMS yang harus dicapai sesuai dengan Peringkat CSMS minimum yang telah ditetapkan dalam undangan lelang.

Tabel 13 : Kategori Peringkat CSMS STM

Kategori Peringkat CSMS STM	Skor Penilaian PQ HSR
A	≥90
B	80 - <90
C	70 - <80
D	60 - <70
E	<60

10.2. HSER Contractor Pre-Qualification and Selection

During this process, the invited bidders for the specific scope of work that has been defined shall fill out and completed the HSER Pre-Qualification form with the respective documents which up to date with clear linked evidence between the from and the attachment of each criteria.
Each of criteria was considered from Vale Production System (VPS) Element are have each own scores and weighing based on each category (Meet with Requirements, Meet with Exception, Does not Meet with Requirements, and/or Not Applicable) with remarks on each sub-criteria for the suppliers future improvement to participate in STM tenders. These guidelines only dedicated for HSE qualifications not technical or commercial aspects.

- HSER team will conduct the Initial PQ Assessment for each participating bidders based from the answer and the evidence that provided by bidders on STM-HSR-FRM HSE Prequalification Form.
- Contractors candidates or bidder must fill the provided form and return it together with evidence of each question on sub-criteria of the form.
- Bidders will have the opportunity clarify several remarks from each parties during PQ clartification meeting. If the bidders could not provide the clear answer and valid evidence from the action items that raised during the PQ Clarification Meeting, the score of sub-criteria will be given as it is. This process can be done in STM offices or Contractor candidates office or field to do the verification if deemed required.
- Total scores of each weighing from all sub-criterias will provide the CSMS Rating that should be achieved as per minimum CSMS Rating that has been defined on the Bidding invitation.

Table 13 : STM CSMS Rating Category

PT STM CSMS Rating Category	HSR PQ Assessment Score
A	≥90
B	80 - <90
C	70 - <80
D	60 - <70
E	<60

- Perhatian : Peserta Lelang atau calon Kontraktor yang memperoleh Peringkat CSMS di bawah Minimum, tidak berhak melanjutkan proses seleksi Kontraktor berikutnya (Evaluasi Teknis dan Harga) dan dapat meminta penilaian ulang dalam 6 bulan berikutnya.
- Setiap kontraktor akan menerima Sertifikat Hasil Penilaian CSMS dari Departemen HSR berdasarkan Peringkat CSMS mereka yang dicapai selama Proses PQ. Sertifikat Pemeringkatan CSMS ini berlaku hingga 2 tahun kecuali Sertifikat baru diterbitkan.
- Peserta lelang dapat mengikuti proses tender serupa lainnya di STM yang memiliki Peringkat CSMS minimum yang sama atau lebih rendah dari penilaian sebelumnya tanpa mengikuti Proses PQ HSR lagi selama Sertifikat PQ masih berlaku.valid.

- Attention : Bidders or Contractors candidate which get CSMS Rating below Minimum, are not eligible to proceed in the next Contractors selection process (Technical and Price Evaluation) and may request re-assessment in the next 6 months.
- Each contractors will received the CSMS Assessment Results Certificate from HSR Department based on their own CSMS Rating achieved during PQ Process. This CSMS Rating Certificate is valid until 2 year unless a new Certificate is released.
- Bidders will be able to participate in another similar tender process on STM which have same or lower minimum CSMS Rating than they had from previous assessment without following HSR PQ Process anymore as long as the PQ Certificate still valid.

10.3. Pra-Kualifikasi dan Seleksi HSER Kontraktor

Proses ini mempertimbangkan praktik HSER kontraktor dan pemasok serta kinerja historis melalui indikator proaktif dan reaktif.

Dalam kontrak yang melibatkan subkontrak (yang memerlukan otorisasi dari Vale), perusahaan yang disubkontrakkan harus mematuhi semua klausul kontrak, standar HSE, dan peraturan perundangan yang berlaku, di samping semua persyaratan yang disajikan dalam panduan ini. Kontraktor Vale bertanggung jawab untuk memastikan kepatuhan terhadap hal-hal tersebut dan harus memberikan semua dokumentasi atau informasi K3LL subkontraktor kepada Vale.

a. Spesifikasi atau Permintaan Teknis

Untuk menginformasikan klasifikasi kontrak berdasarkan risiko HSER yang teridentifikasi dalam ruang lingkup, berdasarkan Matriks Risiko Vale. Risiko HSE dapat diklasifikasikan menjadi Rendah, Sedang, Tinggi dan Sangat Tinggi

Spesifikasi atau permintaan teknis akan menginformasikan hal-hal khusus yang dapat mengganggu pelaksanaan ruang lingkup kontrak dan yang harus dipertimbangkan dalam proposal teknis yang akan disiapkan oleh peserta lelang, serta hal-hal yang diidentifikasi dalam dokumen ini.

b. Technical Visit

Perlu atau tidaknya dilakukan kunjungan teknis diinformasikan, yang bertujuan untuk menyelesaikan keraguan termasuk permasalahan HSE. Untuk kontrak dengan peringkat menengah atau CSMS C, atau lebih tinggi, diperlukan

10.3. Pra-Kualifikasi dan Seleksi HSER Kontraktor

This process considers the contractor's and supplier's HSER practice and historical performance through proactive and reactive indicators.

In contracts that involve subcontracting (which requires authorization from Vale), the subcontracted companies must comply with all contractual clauses, HSE standards and current legislation, in addition to all the requirements presented in this guide. Vale contractors are responsible for ensuring compliance with these items and must provide Vale with all the subcontractor's HSE documentation or information

a. Technical Specification or Requistion

To inform the classification of the contract according to the HSER risks identified in the scope, based on Vale's Risk Matrix. HSE risks can be classified as Low, Medium, High and Very High

The technical specification or requistion will inform the particularities that may interfere with the performance of the scope of the contract and that must be considered in the technical proposal that will be prepared by the bidder, as well as items identified throughout this document.

b. Technical Visit

The need or not for a technical visit is informed, which aims to resolve doubts, including HSE issues. For contracts with medium or CSMS Rating C, or higher, the participation of a professional HSE from the bidder who has knowledge in HSER is required. Examples of items that can be addressed, but not limited to these :

- Risk scenarios and HSE aspects of processes

partisipasi HSE profesional dari penawar yang memiliki pengetahuan di bidang HSER.
Contoh item yang dapat diatasi, namun tidak terbatas pada hal berikut :

- Skenario risiko dan aspek proses HSE
- Mengetahui lokasi STM atau Vale di mana layanan akan dilakukan dan aktivitas yang berkaitan dengan ruang lingkup tersebut
- Kewajiban kontraktor dengan aspek HSE.
- Lokasi pemasangan di lokasi konstruksi (jika ada) dan kondisi minimum HSE

c. Technical Offer Assessment

Pemasok harus menyerahkan informasi K3LL dalam proposal teknis mereka seperti yang diminta dalam spesifikasi teknis.
Dalam analisis proposal teknis yang disiapkan oleh kontraktor, pemilik kontrak akan memverifikasi kepatuhan terhadap Panduan ini dan item K3LL yang ditetapkan dalam Spesifikasi Teknis. Pada tahap ini, peserta lelang akan memiliki kesempatan untuk menyelesaikan keraguan tentang persyaratan K3LL.

Tabel 14 : Skenario Resiko Berdasarkan Ruang Lingkup Kontrak

- Know the STM or Vale locations where the service will be performed and activities that interface with the scope
- Obligations of contractors with HSE aspects.
- Location for installation of construction sites (if applicable) and minimum HSE conditions

c. Technical Offer Assessment

Suppliers must submit HSE information in their technical proposals as requested in the technical specifications.
In the analysis of the technical proposal prepared by the contractor, the contract owner will verify the adherence to this Guide and to the HSE items defined in the Technical Specification. At this step, the bidder will have the opportunity to resolve doubts about the HSE requirements.

Table 14 : Risk Scenario According to Scope of Contract

RISK SCENARIO ACCORDING TO THE SCOPE OF THE CONTRACT OR SERVICE ORDER								
HS REQUIREMENT X RISK SCENARIO			CLASSIFICATION ACCORDING TO NOR-0003-G*					
			LOW		MEDIUM		HIGH / VERY HIGH	
	Time for execution of activity provided for in contract or service order		< 1 month	≥1 month	< 1 month	≥1 month	< 1 month	≥1 month
STAGES OF MANAGEMENT OF CONTRACTORS	BIDDING / CONTRACTING	Technical Specification - Participation of the local HSE team in the preparation	N	N	N	M	M	M
		Technical Proposal - Participation of the local HSE team in the evaluation and approval of the proposal submitted by the supplier	N	N	N	M	M	M
		Technical visit - local HSE team participation	N	N	N	It is mandatory when there is a formal request by contract manager or local procedure		
	MOBILIZATION	Kickoff Meeting - local HSE team participation	N	N	N	M	M	M
	MANAGEMENT	Assessment of HSE performance	N	N	N	M	N	M
		Vale HS Inspections (1)	N	N	N	M	M	M
		Review of Job Risk Analysis (JRA) of Contractor Activities by the Local HSE Team. (2)	N	N	N	M	M	M
		Recognition of Contractors	N	N	N	M	N	M
	DEMOBILIZATION	Participation of HSE local team in the contract closure inspection	N	N	N	M	N	M

Additional Guidelines:

Regardless of the type of contracting, the requirements mapped in this matrix must be met.

(1) Vale HSE inspections must be carried out by the Contract Manager / Inspector and / or HSE teams from the locality following the area's Inspection Program according to the minimum periodicity defined in this document.

(2) Job risk analysis (JRA) of the Contractor's activities must be evaluated by the local HSE team in order to understand the risks and controls that must be implemented before, during and after the consummation of the contract.

Glossary:

M: Mandatory
N: Non-mandatory

10.4. Pemberian Kontrak, Orientasi Pelatihan dan Mobilisasi

Selama fase ini, jika kontraktor yang dipilih atau diberikan penghargaan yang memiliki Peringkat CSMS minimum (C) untuk kontrak RISIKO TINGGI diharuskan untuk melakukan Rencana Peningkatan CSMS untuk mengidentifikasi area perbaikan dalam Sistem Manajemen Kontraktor dan menerapkan langkah-langkah dan upaya untuk memitigasi atau menghilangkan dampak negatif pada kontrak. Item tindakan dengan tanggal jatuh tempo disepakati pada pertemuan Kick Off dengan HSR dan Pemilik Kontrak. Dokumen ini akan dilacak setiap bulan, ditinjau dan diperbarui sesuai kebutuhan, sebagai hasil dari upaya perbaikan proses yang berkelanjutan oleh Pemilik Kontrak.

Catatan: Departemen Pengadaan STM akan secara resmi menyerahkan kontrak kepada masing-masing pemilik kontrak.

Dalam masa persiapan setelah kontrak diberikan, Kontraktor harus memastikan seluruh proses di bawah ini diselesaikan secara profesional dan tepat waktu sebelum melaksanakan kegiatan penuh sesuai Ruang Lingkup Pekerjaan.

i. Kick off Meeting: Dijelaskan pada sub bab 6.1

ii. Proses Penerimaan Karyawan : Dijelaskan pada sub bab 5.1

iii. Mobilisasi dan Komisioning Peralatan Logistik : Dijelaskan pada sub bab 4.1

10.4. Contract Award, Training Orientation and Mobilization

During this phase, if the selected or awarded contractor that have the minimum CSMS Rating (C) for HIGH RISK contract is required to conduct CSMS Improvement Plan to identify areas of improvement in the Contractors' Management System and implement measures and works to either mitigate or eliminate the negative impacts on the contract. The action items with due date are agreed during Kick Off meeting with HSR and Contract Owners. This document will be tracked monthly, reviewed and updated as needed, as a result of continuous process improvement efforts by the Contract Owner.

Note : STM Procurement Department shall formally hand over the contract to each contract owners.

Within the preparation period after the contract awarded, the Contractor shall ensure all the process below are completed in professional and timely manner before having full activities as per Scope of Work.

i. Kick off Meeting : Explained on sub chapter 6.1

ii. Personnel Onboarding Process : Explained on sub chapter 5.1

iii. Equipment Logsitic Mobilization and Commissioning : Explained on sub chapter 4.1

Diagram Alir 2: Penilaian Risiko Awal, Evaluasi HSR PQ, Seleksi dan Pemberian Kontrak

Flow Chart 2 : Initial Risk Assessment, HSR PQ Evaluation, Contractor Selections and Awarding

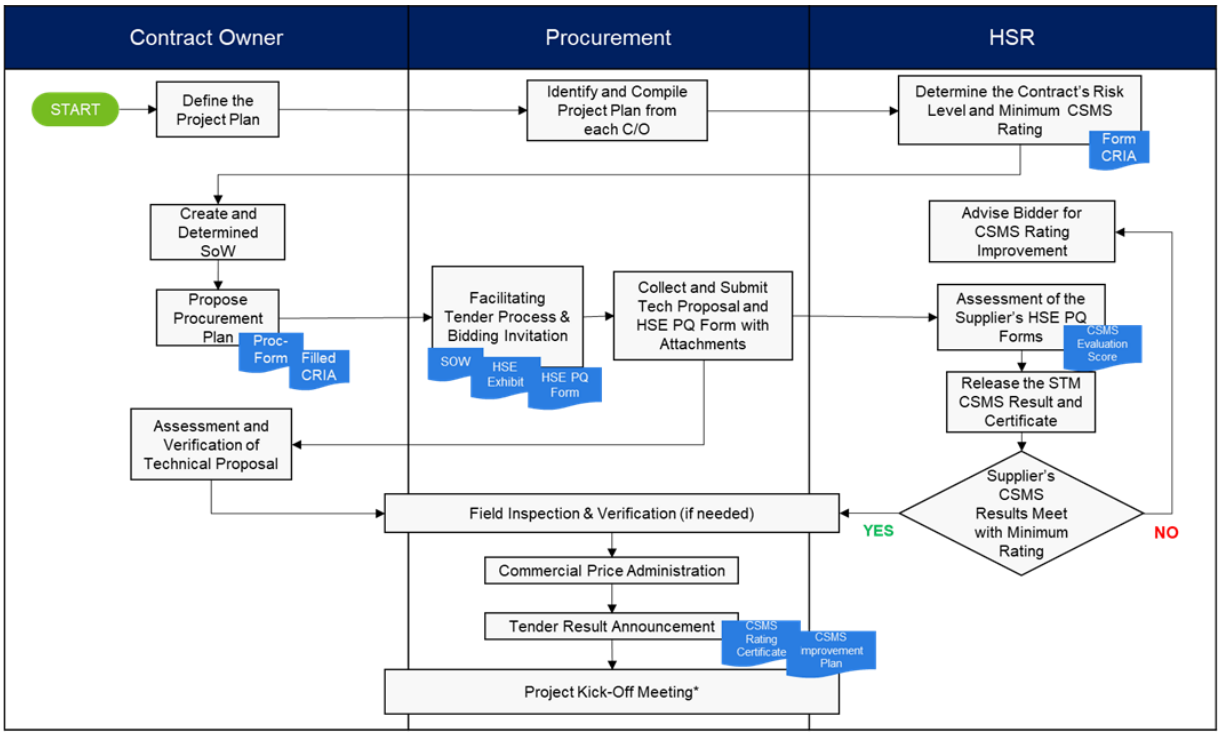
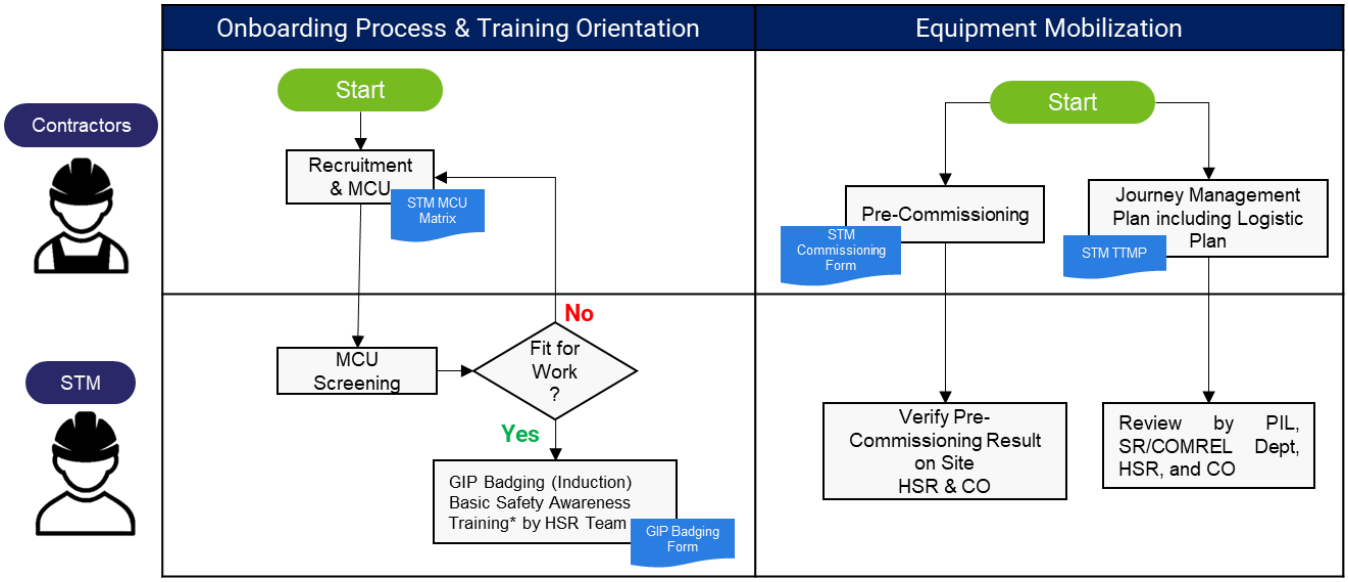


Diagram Alir 3 : Mobilisasi On Boarding dan Peralatan ntraktor

Flow Chart 2 : Initial Risk Assessment, HSR PQ Evaluation, Contractor Selections and Awarding



10.5 Pekerjaan yang Sedang Berlangsung dan Evaluasi Berkala

Pada tahap ini kontraktor dapat memberikan layanan penuh sesuai Kontrak atau Lingkup Pekerjaan, mereka harus mengawasi dan mengelola keselamatan mereka sendiri sesuai harapan rekan STM yang telah ditentukan pada awal proses dan pertemuan awal.

i. Untuk persyaratan keselamatan tertentu, kontraktor harus mengikuti Sistem Izin Kerja Aman PT STM dan/atau menyusun daftar periksa mereka sendiri berdasarkan Persyaratan Kegiatan Kritis Vale
ii. Kontraktor harus memberikan dan mempresentasikan JSA atau Prosedur Kerja mereka kepada Pemilik Kontrak dan STM sebagai bahan untuk ditinjau.
iii. Kontraktor harus mengembangkan Statistik Keselamatan dari kinerja keselamatan mereka baik indikator utama maupun indikator yang tertinggal dan melaporkan Induksi Keselamatan, Rencana Pelatihan, Rapat Keselamatan, Inspeksi, Pengamatan Keselamatan Tugas, dan audit dengan menggunakan Program KPI Keselamatan STM.
iv. Kontraktor harus menindaklanjuti setiap temuan yang ditangani secara tepat waktu. STM berhak untuk menghentikan kegiatan kontraktor (sebagian atau keseluruhan) jika ada item tindakan kritis atau temuan yang tidak ditindaklanjuti tanpa alasan atau mitigasi yang jelas.
v. PT STM berhak untuk meminta tindakan disipliner atau bahkan pemecatan untuk

10.5. Work in Progress and Periodic Evaluation

In this phase the contractor are able to deliver its full service as per Contract or Scope of Work, they shall supervise and manage their own safety as peer STM expectation that already specify during the beginning of the process and kick off meeting.

i. For specific safety requirements, contractors must follow PT STM Safe Work Permit System and/or develop their own checklist based on Vale's Critical Activity Requirements
ii. Contractor shall provide and present their JSA or Working Procedures to Contract Owners and STM as a subject to be review.
iii. Contractors should develop Safety Statistics of their safety performance either leading or lagging indicators and report their Safety Induction, Training Plan, Safety Meeting, Inspection, Task Safety Observation, and audits by using STM Safety KPI Program.
iv. Contractor shall follow up any findings addressed in timely manner. STM reserves the right to Stop contractor's activities (partially or whole) if there is critical action items or findings that was due without clear justification or mitigation.
v. PT STM reserves the right to request for disclipinary action or even dismissal for safety non-compliance and/or violation based on Policy Sanction for Goods and Services Providers Procedures (PRO-0022-Sanction for Goods and Services Providers)
vi. Periodic Evaluation :

ketidakpatuhan dan/atau pelanggaran keselamatan berdasarkan Kebijakan Sanksi untuk Prosedur Penyedia Barang dan Jasa (PRO-0022-Sanksi untuk Penyedia Barang dan Jasa)

vi. Evaluasi Berkala :

- Pemilik Kontrak dibantu oleh HSR akan mengevaluasi kinerja kontraktor mereka untuk memastikan kontraktor telah memberikan layanan atau barang dengan keamanan dan kualitas sesuai dengan harapan STM.
- Evaluasi berkala terdiri dari Evaluasi Kinerja KPI Keselamatan, Evaluasi PJO, Verifikasi Kontrol Kritis, Audit CSMS Interim, Audit Wajib (seperti SMKP untuk IUJP).

- Contract Owners assisted by HSR will evaluate their contractor performance to ensure the contractor have deliver their services or goods with safety and quality as per STM expectations.
- Periodic evaluations consists of Safety KPI Performance Evaluations, PJO Evaluations, Critical Control Verifications, Interim CSMS Audit, Mandatory Audits (such as SMKP for IUJP).

Tabel 15: KPI Keselamatan Kontraktor* (Subyek KPI dan perhitungan di bawah ini dapat berubah sesuai Program STM HSR)

Table 15: Contractor's Safety KPI* (KPI subjects and calculation below may changes as per STM HSR Programs)

No	Description		Weighting factor (%)	Period objective
1	Lagging Indicators	No Fatality, No Major Fire, or No Major Environmental Impact and No LTI with permanent disability. Note: minus 40 % per single case in YTD	-40%	Monthly Basis
2		LTI Cases. Note: minus 20 % per single case in YTD	-20%	Monthly Basis
3		MTC & RWDC Cases. Note: minus 5 % per single case in YTD	-10%	Monthly Basis
4	Compliance	Key personnel certification (POP, AK3U, AK3 Listrik, Crane Opt, SIO, HLO, Rigger, Load Master, Scaffolder Inspector, Scaffolder Operator, Welder, Juru Bor, Pilot) Note: <95% = 0	5%	Monthly Basis
5		Medical Check Up & SIMPER Validation Record	5%	Monthly Basis
6		- Equipment Appliances (Based on Task Contractors) - Lifting Appliance for Contractors that have Lifting Equipments	5%	Monthly Basis
7		Other Safety Violations (PPE, JSA, Etc)	-5%	Monthly Basis
8		Non compliance / violations to Golden Rules, Critical Activity Requirement (CAR), Contract, & Covid-19 Protocol – *Based on Hazard Report, Management Findings, Incident Investigations and Audits*	-10%	Monthly Basis
9	Inspections	PPE Inspection 1/month	5%	Monthly Basis
10		House Keeping (Area Office / Workshop and Drill-site) Inspections 1/month	5%	Monthly Basis
11		Fire fighting appliances 1/unit/month	5%	Monthly Basis
12		Mechanical & Protection Inspections 1/month	5%	Monthly Basis
13		Electrical inspection (include grounding and inhibition) 1/month	5%	Monthly Basis
14		Light Vehicle Inspection 1/unit/month	5%	Monthly Basis
15	Management commitment	PJO or Company Representative participation in monthly steering committee / fatality prevention meeting + Contractors steering committee meeting	10%	Monthly Basis
16		Management visit (Manager level): 1. National Contractor (Quarterly) 2. Local Contractor (Monthly – 2 place)	10%	Monthly Basis for Local Quarterly Basis for National
17	Hazards & Behaviourial Reporting	- Nearmiss Reporting Minimal 1 report - Hazard report raised by Contractors – 5 Hazard Hunt / Month	5%	Monthly Basis
18		Task Safety Observation / BBS – 4 / Supervisor On Duty (or Per Company	5%	Monthly Basis
19		Overdue critical action list (Incident Investigation, Audit, Hazard Report, etc) Note: minus 10 % per single case in affected month	-10%	Monthly Basis
20	INITIATIVE	1. Thematic Safety Campaign on Site 1/month (ex. Hand Finger Safety, Machine Guarding, Drop Objects, etc) 2. Golden Rules Talk	5%	Monthly Basis
21		Program campaign-Quarterly 1. Annual Refresher 2. Housekeeping (Newstaging, Old staging, Camp Facilities) 3. Structural Building (Drop Object, Pinch Point, Sharp Object, and other damaged visual) – Camp Site, New-staging, and Old-staging 4. Walk-path of Drill-site (Slip, Trip, and Fall Prevention)	5%	Quarterly Basis;
22		Emergency Drill by 2 x / Year	10%	Semester Basis;
23		KPI Contractors Review involving with Contract Owner (Monthly)	5%	Monthly Basis
24		Overdue Manpower and KPI report submission	-5%	Monthly Basis
		TOTAL	100%	

Tabel 16 : Program Penghargaan Performa HSR

Kontrol	Deskripsi
Penilaian kinerja	Evaluasi kinerja HSR kontraktor harus dilakukan secara berkala selama pelaksanaan kontrak dan harus dicatat untuk memastikan kepatuhan kontrak dan mengupayakan perbaikan berkelanjutan dari pemasok. Evaluasi akan dilakukan sesuai dengan pedoman STM dan hasil evaluasi akan mendukung tindakan pengakuan, pemilihan pemasok dalam kontrak-kontrak berikutnya dan, jika perlu, pemblokiran.
Recognition in HSE	Pengakuan kontraktor dalam tema HSE sebaiknya dilakukan oleh area HSE setempat dengan persetujuan manajer kontrak dengan tujuan untuk memperkuat keterlibatan dan komitmen perusahaan dalam hal-hal yang berkaitan dengan HSE. Kontraktor dengan korban jiwa, perubahan nyawa atau kecelakaan lingkungan dengan tingkat keparahan yang sangat kritis atau sangat kritis tidak akan berpartisipasi dalam Program Pengakuan hingga akhir masa kontrak

Table 15: Contractor's Safety KPI (KPI subjects and calculation below may changes as per STM HSR Programs)*

Controls	Description
Performance assessment	The evaluation of the HSR performance of the contractors must be conducted periodically during the execution of the contract and must be recorded to ensure contractual compliance and seek the supplier's continuous improvement. The evaluation will be conducted in accordance with STM guidelines and the results of the evaluations will support the recognition actions, selection of the supplier in future contracts and, when necessary, the blocking thereof.
Recognition in HSE	The recognition of contractors in HSE theme should be conducted by the local HSE area with the agreement of the contract manager with the objective of reinforcing the engagement and commitment of companies in matters related to HSE. Contractors with fatalities, changed lives or environmental accidents with real critical or very critical severity will not participate in the Recognition Program until the end of the contract term

I. ANNEXES

- ANNEX 1 – HSER Pre-Qualification Evaluation Form
- ANNEX 2 – STM Standard PPE Catalogue
- ANNEX 3 – Vale's Black List Lists Chemical (Prohibited)
- ANNEX 4 – Vale's Grey Lists Chemical (Restricted)

I. ANNEXES

- ANNEX 1 – HSER Pre-Qualification Evaluation Form
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II. HISTORIKAL DOKUMEN

II. SUMMARY VERSION

REV	DATE	DEVELOPMENT ELABORATION	APPROVAL	DESCRIPTION
00	01/03/2024	M. Evin Armedco	Yan Fuadi	Initial issue
01	23/06/2024	M.Evin Armedco	Yan Fuadi	Additional CAR 12 & 13 aligned with the new revision of PNR-000069.Rev10 (Bilingual Version

PT Sumbawa Timur Mining, hereinafter referred to as PT.STM is continually improving a safe and healthy place for employees, contractors, and neighbors. Only those contractors who have demonstrated management leadership and system resulting in good HSE performance are added to the approved contractors list.

Compliance with this assessment does not infer preferred contractor status. Selection is also based on STM's & Ministry Energy and Mineral Resource of Indonesia service requirements, inspection of operating equipment support equipment, HSE , Environmental management systems and company facilities. To be considered as a contractor qualified to perform the specified work for PT. STM, you must meet the minimum acceptance criteria established at the discretion of PT. STM

As minimum but not limited to items below, PT STM expects that you as a contractor's management representative :

- Have a the written HSE Policy signed by the director and hold the commitment to the HSE matters at the highest level;
- Have a comprehensive HIRA and others safety documents relevant to the service or scope of work;
- Have a documented and measurable HSE program / plan that meet PT STM standard requirements applicable to the scope of work;
- Agree that any utilized sub-contractor into the PT STM premises and/or align with PT STM's interest within the agreed scope of work will be meet with the same requirements applied and took full responsibility to ensure that all sub-contractors involved will obey any HSE requirements that listed on the (Document's name of HSE Guidance for STM Contractor's).

Please complete this pre-qualification form with the respective document (hardcopy and/or softcopy is preferable). Please provide the up to date (latest) document with clear linked evidence between this form and attachment. Certain items within this assessment must be complied with, if the contractor is non-compliant the company will not be accredited to provide services to STM until compliant.

PT STM hereby reserves the right to inspect and interview any of your key personnel according to the existing HSE Pre-qualification Audit stipulated in the STM-HSR-SWP-005 Contractor Safety Management System . Any information that does not correspond to reality and manipulating or fabricating the data will result in rejection/disqualification of your company as a contractor approved by PT STM

Please send completed form to :
(Name Procurement Officer/Analyst & E-mail)

Please return this form and any supporting document in accordance of criteria and sub-criteria below, before :

Date :
Time :

GENERAL INFORMATION

1.	Company Name :		Phone :	
	Company Address :		Mailing Address :	
2.	Officer's name completing this form	Position	Working duration	E-mail address
3.	President Director's Name :			
4.	Parent Company Name (if any) : City : State/Country : Subsidiaries Companies under common control from parent company (Please list below, if any) a. b.			
5.	Under Current Management Since (MM/YYYY) :			
6.	Form of Business : ☐ Perseroan Terbatas ☐ Firma/CV ☐ Others _____ Kode Jenis Bidang Usaha Jasa (KBLI 2020 - https://oss.go.id/informasi/kbli-berbasis-risiko) : Type of business license : Risk Category : Describe what services are provided by your company :			

7 Organization Data & Management

List of Company Management Members

No	Name	Position	Identity Number (KTP)	Working Period in the Company

8. List the type of work that you will sub-contract to support the service within the scope of work.

a.
b.
c.
d.

Does your company evaluate your Subcontractors OHS & Environmental Management Systems prior to engagement?	YES ☐	NO ☐

9.	HSR Pre-Qualification Authorized by* : *)This PQ form must be authorized by the Contractor's Top Management	Name : Title/Position : Phone Number : Signature :

COMPANY WORK HISTORY

10. Major Job in Progress

Customer / Location	Type of Work	Contract Value	Customer's Name / Contact Number

11. Major Jobs Completed in the Past 3 Years

Customer / Location	Type of Work	Contract Value	Customer's Name / Contact Number

12. Are there any judgments, claims or suits pending or outstanding against your company related to HSE matters ?

Yes ☐ No ☐

If Yes, please explain or attach the details :

HSE MANAGEMENT PERFORMANCE

During the preceding **three years period** please provide the following details (Please include incident involving sub-contractors)

Description	Years		
Man-hours Worked Without Lost Time Injury			
Number of Fatality Case			
Number of Lost Time Injuries Case			
Number of Restricted Work Case			
Number of Medical Treatment Case			
Recordable Injury Frequency Rate			
Recordable Injury Severity Rate			

Has your company received a stop work order, or equivalent from any statutory authority in the last three years? If yes, describe and attach details.	Yes ☐	No ☐
Has your company been convicted for breaches of any Occupational Health and Safety legislation in the previous three-year period? If yes, describe and attach detail.	Yes ☐	No ☐

CRITERIA 1 : BEHAVIOR AND COMMITMENT OF LEADERSHIP	
1.1	**Leadership Commitment and Obsession with Safety**
	a) Is there HSE Policy in your company ? is it up to date and approved by company's director ? Evidence : HSE Policy Answer : Yes, It is update and approved by company's director, See the attachment.
	b) Describe the method by which you have drawn your HSE policy to the attention and all your employees and sub contractors ? Evidence : MOM HSE Policy communication and Employee attendance list, Bulletin board, Induction slides, etc Answer :
	c) How are Top Management and Senior Manager involved in HSE Management System Implementation ? Evidence : HSE Manual, HSE Plan / Program, Management Involvement in HSE Meeting, Answer :
1.2	**Open Discussion and Transparent Dialogue**
	How do Top Management and Senior Manager promote a positive culture towards HSE and other good safety initiative or safe work practice ? Evidence : HSE Campaign, Site Visit, and Safety Reward or Recognition, MOM HSE Meeting Answer :
1.3	**Empowerment with Accountability**
	Who has the overall and final responsibility for HSE in your Organization ? Evidence : Company Organization Chart including HSE, Management HSE Accountability and Responsibility Answer :
CRITERIA 2 : PEOPLE MANAGEMENT AND TRAINING	
2.1	**Performance and Meritocracy**
	a) Is your company implementing periodic employee review performance ? (If Yes, please answer the point (b)) Answer : b) How your company identifies the employee HSE performance and determine the HSE recognitions program to employee ? Evidence : Relevant SOP and evidence of employee HSE Recognitions documentation, HSE incentive, Best Hazard reporting, etc Answer :
2.2	**Recruitment and Selection**
	a) How your company ensure that all employees are having enough experiences and competency as per required by Client ? Answer : b) What arrangement does your company have to ensure new employee (new recruit, rotational personnel, subcontractor) have basic HSE knowledge (policy, specific hazard related to work activity, emergency response, etc) ? Evidence : Employee Recruitment SOP, HSE Induction SOP, Evidence Employee HSE Induction & Orientation Answer :
2.3	**Training, Competency & Development**
	a) How your company managing the employee training, competency and development program to ensure all HSE Training has been defined and adequate for each existing function and Government of Indonesia regulations ?

	Evidence : SOP HSE Training and Development Answer : b) What is the HSE Training required for managers / supervisors with respect to conducting the work comply with HSE requirements? Provide CV and Training Record of Manager, PJO, Supervisors, Specific Expertise Personnel (with the Valid Mandatory Training Competency Certificate including but not limited to AK3U, POP, POM, TOT, Juru Bor, Rigger, SIO, etc) Answer : c) Describe the HSE Training Need Analysis or Training Matrix for all function within organization ? What is your plan to fulfil the need ? Evidence : Training Matrix or TNA, HSE Training Plan that has been approved by Top Management Answer :
CRITERIA 3 : ORGANIZATIONAL	
3.1	**Organization Chart, Role and Responsibility**
	a) Is your company define HSE role and responsibility in all function ? Provide the organization chart and job description of every function Answer :
	b) How your company ensure all the personnel from each function are understand their role and responsibilities ? Answer :
	c) Are employees who hold supervisory roles within your company certified (POP-Pengawas Operasional Pratama) in accordance with local regulation requirements? If Yes, please provide a copy of POP certification for each person who is to be assigned a supervisory role as an evidence Answer :
	d) Are employees who are assigned responsibility for overseeing / managing your business interest on projects appointed as the PJO-Penanggung Jawab Operational (Operationally Responsible Person) ? If yes please provide a copy of the letter of appointment as evidence. Answer :
	e) Does your company employ or provide a full time OHS and/or Environmental professional at project site based on the risk of the job? Provide the details CV and Certifications of HSE professional in your organization at Project Site Answer :
3.2	**Assessment of Subcontractor**
	a) Do your company have subcontractor ? If Yes, Provide the name of major sub-contractor and their work services **If No, skip question 3.2. b - c**
	b) How do you assess the subcontractor during selection process? Provide Standard Operating Procedure (SOP) Subcontractor Management, evidence assessment of subcontractor related with HSE requirement (e.g. HSE commitment / policy, HSE competency of personnel, operational procedure, etc). Answer :
	c) Have you described HSE requirement in contract document with your subcontractor? Answer :
SECTION 4 : RISK PERCEPTION AND RISK MANAGEMENT	
4.1	**Hazard Identification and Risk Assessment**
	a) How do you identify the hazard, assess and control the risk of your work activity and all the risks or controls are updated accordingly ?

	Provide Standard Operating Procedure (SOP) hazard identification and risk assessment (HIRA) and its implementation (related to the work to be performed). HIRA shall cover Health, Safety and Environment aspects Answer :
	b) Have you communicated the HIRA to the respective personnel? Provide the evidence of MOM HIRA Review and JSA Review or communication Answer :
4.2	**Control of Potential Hazards**
	a) How is your employees advised on potential hazards encountered in the course of their work ? Provide the evidence of hazard control activity (e.g. work permit, hazard and behavior reporting program, lock out tag out, hazard sign/line, MSDS – Material Safety Data Sheet, HSE Talk / Toolbox Meeting, etc)? Answer :
	b) Describe your action to control the potential hazard identified or encountered during performing work activity in the project ! Answer :
4.3	**Personnel Protective Equipment (PPE)**
	a) What is your procedure to ensure PPE used by employees comply with standard specification? Provide SOP PPE covering procurement, standard specification, dissemination, stock, inspection, etc. Answer :
	b) How your company ensure that every function and positions employees are using the correct PPE based on the potential hazards exposure on their tasks ? Provide PPE Matrix based on each activities used for the scope of work. Answer :
	c) Do you provide training on how to use PPE? Provide evidence of the training and the content. Answer :
CRITERIA 5 : HEALTH SAFETY AND RISKS	
5.1	**Working Conditions & Housekeeping**
	What is your arrangement to maintain the housekeeping and hygiene of work place? Provide evidence of SOP housekeeping and hygiene inspection record. Answer :
5.2	**Management of Ergonomics, Occupational Hygiene, Fatigue and Fitness to Work**
	a) What is your system to measure the degree of medical fitness of workforce? Does it comply with regulation? Provide SOP Medical Check Up (MCU) covering pre employment, periodic and specific employment Answer :
	b) Describe the health insurance for your workforce? Provide evidence of your health insurance provider (e.g. JAMSOSTEK, membership of workforce, etc) Answer :
	c) What is your arrangement to control the maximum work duration and minimum rest period for the workforce? Answer :
	d) What is your policy for drugs and alcohol abuse? Do you have system to monitor the implementation of drugs & alcohol policy (pre employment and/or random test)? Provide policy and the test Answer :
	e) What systems are in place to monitor or measure the exposure of your employee to chemical or physical hazards? Provide evidence of monitoring or measurement of workplace (e.g. noise, lighting, temperature,

	volatile organic compound, etc), evidence of Material Safety Data Sheets (MSDS) register from chemical being use. Answer :
5.3	**HSE Objective, Target, Programs and Implementation**
	a) What is your HSE Manual and Procedures? Provide evidence HSE Manual including list of procedures. Answer :
	b) What are your HSE Objective & Target ? Who has approved the objective & target ? Provide evidence of company HSE Objective & Target that has been approved by Top Management Answer :
	c) What are your HSE Program / Plan ato achieve your objective & target ? Who has approved the program ? Provide evidence of corporate HSE Program / Plan Answer :
	d) How do you cascade your HSE Objective, Target & Program to all of function within your organization ? Are all function involved in achieving HSE Objective, Target & Program ? Answer :
	e) How do you monitor and review your HSE Objective, Target & Program? By whom? Provide evidence of HSE Objective, Target & Program monitoring & review e.g. minutes of meeting, achievement/progress report Answer :
	f) What is your Operational Procedures? Does it cover all potential hazards of operation (incl. HSE aspects)? Provide list of Operational procedures (e.g. scaffolding erection & dismantling, lifting operation, crane operation, welding, pressurised cylinders, excavation, etc). Answer :
	g) How do you ensure the implementation of HSE and Operation Procedures on site. Provide evidence record of HSE Implementation (Regular site inspection, Hazard Report, BBS Report, Training documentation, Pre-job safety meetings, monthly HSE meeting internal, management review meeting) Answer :
	h) What is your system to ensure HSE and Operation Procedures approved by management, up to date (maintained) and disseminated to all employees? Provide Documents and Record Procedures Answer :
5.4	**Equipment Control and Certification**
	a) How do you ensure that your facilities/equipments are maintained properly? Provide SOP Equipment Maintenance, schedule and evidence of preventive maintenance (including emergency equipment). Answer :
	b) What is your system to ensure special equipment certified by authorized party? Provide list of equipment certification and example of certificate (i.e Valid Heavy Equipment SLO Certificate, Lifting Equipment Certification, Equipment Calibration Certificates, Certificate of Conformance) Answer :
5.5	**Transport Safety Management**
	What arrangement does your company have for transport incidents prevention? Provide procedure transport safety management and its implementation Answer :
5.6	**HSE Communication and Meeting**
	a) How do you organize HSE Communication and Meetings (covering the frequency, attendant and topic)? Does it cover from Top Management level up to work force onsite?. Please provide the SOP HSE Communication and Meeting, MOM HSE meeting, Toolbox Meeting Attendance List

	Answer :
	b) How do you cascade (up and down) the HSE information through the communication & meeting? Please the evidence (MoM, list of attendance, HSE Talk / Toolbox Talk, etc). Answer :
	c) How do you follow up all action plans coming from the meeting? Please the evidence (linkage between previous MoM and the next MoM). Answer :
	d) Is there any campaign of specific hazard related to operational activities or H, S or E Events? Provide evidence HSE awareness campaign (e.g. World Safety Day, OHS month event, world environmental day, etc) Answer :
	e) Do you have tools / media to communicate HSE aspects internally? Provide evidence HSE Notice Board, Bulletin, Intranet, Booklet, etc Answer :
5.7	**Incident Investigation and Reporting**
	a) What is your arrangement to investigate, report and follow-up of incident? Including investigation method, severity matrix. Provide procedure investigation, reporting of incident and follow up Answer :
	b) Please provide copies of incident investigation and reporting for the last 12 months Answer :
	c) How do you report the incident to your management? How do you communicate finding / feedback related to the incident to your work force? Provide evidence communication of finding / feedback related to incident (internal or other company's incident). Answer :
	d) Do you have trained investigation team? Provide the list / certificate Answer :
	e) Do you have near miss or anomaly (unsafe action / unsafe condition) reporting system? Provide the example of anomaly or near miss report implementation. Answer :
	NOTE: If the assessor gets evidence that contractor hide any incident, the Sub-criteria 5.7 is automatically ZERO and the worst consequence is the contractor's candidate will be disqualified from HSE Pre-Qualification Assessment process or applied sanction to the contractor !
5.8	**Problem Identification Corrective Action and Continuous Improvement**
	a) How do you manage all the findings from HSE inspections, HSE Audit, HSE meeting follow up, Hazard Report, Behavior Report, Incident Investigation, etc to ensure all the items are monitored periodically and the actions items or recommendations are followed up accordingly and timely manner. Provide the evidence of PICA record and updates Answer :
SECTION 6 : MANAGEMENT OF CHANGES	
	How your company managing and implementing any changes within the organization, operation, machinery, etc that might affecting the HSE aspect or creating risks related to HSE Provide the SOP of Management of Changes and the Implementation Management of Changes Answer :
SECTION 7 : EMERGENCY RESPONSE	
	a) How do you manage your company's preparedness in case of emergency condition ?

	Provide the evidence of SOP Emergency Response which as the minimum covered the relevant potential of emergency condition/scenario at client's site or scope of work. Answer :
	b) Is your emergency response team trained? Have you communicated the procedure to all workforces? Provide evidence certificate and/or list of internal training attendance (i.e Basic Fire Fighting, Basic First Aid, etc) Answer :
	c) Have you performed emergency drill/exercise periodically? After performing the drill, do you evaluate the effectiveness (facility, team, procedure)? Do you follow up the recommendation related to the drill? Provide evidence the last 2 drill/exercises and evaluation report Answer :
SECTION 8 : HSE AUDIT, INSPECTION AND COMPLIANCE	
8.1	**HSE Audit and Inspection**
	a) Do you have HSE Audit & Inspection procedure? Is it performed periodically? Provide procedure HSE Audit & Inspection and HSE Audit & inspection report Answer :
	b) Who is your qualified auditor? Provide CV or certificate of the auditor Answer :
	c) How do you follow up all recommendations related to HSE Audit & Inspection? Provide evidence Answer :
8.2	**Law and Regulation Compliance**
	Do you have the Law and Regulation Compliance monitoring systems ? How your company ensure that the compliance of legal aspect relevant with the business process and HSE are monitored periodically ? Provide the evidence of Legal Compliance Registers Answer :
SECTION 9 : MANAGEMENT REVIEW	
	a) Do you have management review system? Provide the SOP of Management Review Answer :
	b) Is the management review performed periodically? Is it chaired by Top Management? What is the agenda of management review? Provide evidence for the last 2 management reviews (MoM, list of attendance, etc). Answer :
SECTION 10 : BEST PRACTICE – ADDITIONAL MERIT POINT	
	a) Does your company have any H, S, or E certification (e.g. ISO 14001, ISO 45001, SMK3, etc)? Provide copy of certificate Answer :
	b) What is your company's participation in the H, S, or E association relevant to your company's industry? Provide evidence membership of association Answer :
	c) Has your company received any award for HSE performance achievement from government or client? Yes ☐ No ☐ If yes, please submit the evidence. Answer :

SUMBAWA TIMUR MINING

Standard Catalogue Personal Protective Equipment PT Sumbawa Timur Mining

Refer to Standard Procedure STM-OHS-SWP-001

Important Note:

This Catalogue is developed based on STM-OHS-SWP-001 and risk assessment conducted for PT. STM activities.

As STM activities could differ with contractor's activities, Contractors SHALL conduct their own risk assessment to determine appropriate PPE for their activities

Released date: May 2020

Rev.04 Date 7th March 2021

SUMBAWA TIMUR MINING

HEAD PROTECTION

White Safety Helmet	
Sizes	One Size
Colours	White
Standard	EN397
Optional Brand	M S A

Size	White safety helmet is used by permanent personnel on the site. Minimum weight: 320 grams Stamped with STM Logo at front of helmet (not sticker). Free from paint, stickers, except STM logo and issuance sticker. Fitted with a chinstrap. Shall be replaced after a physical impact, if broken, worn, or 5 years after the **manufacturing date**.
N/A	

Internal Harness	
Sizes	One Size
Colours	N/A
Standard	EN397
Optional brand	MSA

Size	Internal harness for safety helmet. Two pieces of plastic package. Replaced every confirmed defect conditions (crack, bent, or struck by object), and/or maximum as per helmet duration (5 years from the manufacturing date).
N/A	

Chin Strap	
Sizes	One Size
Colours	N/A
Standard	EN397
Optional Brand	MSA

Size	Elastic chin strap for safety helmet. Completed with plastic hooks & buckle. Replaced every year or maximum as per helmet duration (5 years from the manufacturing date). Chinstrap shall be worn properly when: - working at height, - working above water, - working and walking in congested area, and - ascending or descending ladder.
N/A	

SUMBAWA TIMUR MINING

EYE PROTECTION

Safety Clear Glasses

Sizes One Size Colours Clear Standard EN166 & EN 170 Optional CIG brand MSA UVEX	
Size SAP Code N/A	Safety clear glasses are used for day-to-day work. **Not suitable for use over prescription glasses.** Scratch Resistant. C/W : -UV Protection -Anti fog -Side shield -Lens made of polycarbonate

Safety Clear Glasses Over Prescription

Sizes One Size Colours Clear Standard EN166 & EN 170 Optional CIG brand MSA UVEX	
Size SAP Code N/A	Safety clear glasses over prescription are used for day-to-day work. **Suitable for use over prescription glasses**. Scratch Resistant. C/W: - anti fog - UV protection Side shield is hard coated. Lens made of polycarbonate.

Safety Dark Glasses

Sizes One Size Colours Dark Standard EN166 & EN 170 Optional CIG brand MSA UVEX	
Size SAP Code N/A	Safety dark glasses are used for day-to-day work when sun protection is required. **Not suitable for use during night activities or on low illumination.** **Not suitable for use over prescription glasses.** Scratch Resistant. C/W: - anti fog - UV protection Side shield is hard coated. Lens made of polycarbonate.

SUMBAWA TIMUR MINING

FACE & EYE PROTECTION

Welding Helmet

Sizes	One Size
Colours	N/A
Standard	EN379 EN175
Optional brand	OPTREL

Size	SAP Code
N/A	

Welding helmet is used when performing welding activities.

C/W Auto-Darkening Filter (ADF).

Variable shades 9 - 13 (can be adjusted on the outside of helmet).

Adjustable delay (from light to dark).

Solar powered (no batteries required).

Telescoping headgear.

Face Shield Mounted to Helmet (Chemical)

Sizes	One Size
Colours	N/A
Standard	EN 1731

Size	SAP Code
N/A	

Attachable to Safety Helmet (Hat Mounted).

Compatible with MSA V-Gard Safety Helmet

Face shield is used when handling chemicals that produced splashing, and also for grinding, oxy-cutting, or working with live electrical.

Large brow guard protects from splashes and flying particles.

C/W:
- locking-arm system that keeps visor in place
- ratchet headgear to adjust size for fit

Pivoting features allow window to kickup when not in use.

Polycarbonate window for impact protection.

Face Shield Mounted to Helmet (Welding)

Sizes	One Size
Colours	N/A
Standard	ANSI Z87.1

Size	SAP Code
N/A	

Attachable to Safety Helmet (Hat Mounted).

Compatible with MSA V-Gard Safety Helmet

Face shield is used when welded from low category risk, limited to some high risk job.

Large brow guard protects from fire sparks and flying particles. Not for high risk job.

Material
-Aluminium
Type
- Mounted on safety helmet
- Lens holder flip-up

Reccommendation lens size: 4 ½" x 2" (108 x 51 mm)

SUMBAWA TIMUR MINING

HEARING PROTECTION

Disposable Ear Plug (As per Requested / If Necessary)		
Sizes	N/A	
Colours	As per manufacture	
Standard	EN352-2	
Optional brand	EAR AO 3M	
Size N/A	SAP Code	Ear plug is usedinall areas designated by signs as hearing protection zones or areas with overall noise level is 80 dBA or more. **Disposable type.** Made of PVC or PU Foam. Moisture resistant. Dermatologically safe, not irritating. Noise Reduction Rating (NRR): minimum 29 dB.

Reusable Ear Plug (Primary use)		
Sizes	N/A	
Colours	As per manufacture	
Standard	EN352-2	
Optional Brand	EAR AO 3M	
Size N/A	SAP Code	Ear plug is usedinallareas designated by signs as hearing protection zones or areas with overall noise level is 80 dBAor more. Corded type. C/W carryingcase. Madeof rubber **Washable.** Dermatologically safe, not irritating No rolling or touching plug portion duringinsertion. Noise Reduction Rating (NRR): minimum 25 dB.

SUMBAWA TIMUR MINING

HEARING PROTECTION - HLO

Earmuff for HLO		
Sizes	N/A	
Colours	Yellow Orange or Black	
Standard	ANSI S3.19	
Optional brand	N/A	
Size N/A	SAP Code	Earmuff is used in all areas designated by signs as hearing protection zones or areas with overall noise level is 80 dBA or nearby helicopter operation area **Non-disposable type.** Made of PVC or PU Foam. Moisture resistant. Dermatologically safe, not irritating.

Earmuff Attachable to Helmet		
Sizes	N/A	
Colours	Black	
Standard	ANSI S3.19	
Optional brand	N/A	
Size N/A	SAP Code	Earmuff is attached to helmet and used in all areas designated by signs as hearing protection zones or areas with overall noise level is 80 dBA or nearby helicopter operation area **Non-disposable type.** Made of PVC or PU Foam. Moisture resistant. Dermatologically safe, not irritating.

SUMBAWA TIMUR MINING

RESPIRATORY PROTECTION

Full Face Mask

Sizes N/A	
Colours N/A	
Standard EN 136	
Optional brand : 3M, Honeywell, Dragger, MSA	
Size N/A SAP Code	Full face mask is used when the Assigned Protection Factor (APF) is 100. Single Cartridge System. Standard Thread. Only used if expected concentration of toxic gas is low and exposure time is short. Never used if there is a lack of oxygen, such as in confined spaces, tanks or vessels.

Half Face Mask (filter will be adjust)

Sizes N/A	
Colours N/A	
Standard EN 140	
Optional brand : 3M, Honeywell, Dragger, MSA	
Size N/A SAP Code	Half face mask is used when the Assigned Protection Factor (APF) is 10. Single Cartridge System. Standard Thread. Only used if expected concentration of toxic gas is low and exposure time is short. Never used if there is a lack of oxygen, such as in confined spaces, tanks or vessels.

Cartridge & Canister - Color Code

NOTE :

Misuse the cartridge type might cause serious respiratory issue or might result death.

Please consult to the PT.STM OHS Team before purchase or use any kind of Gas Mask's cartridge & canister for your activity.

Color Coding for NIOSH Approved Respirator Cartridges and Canisters

ALWAYS Consult the Pesticide Label for Respirator and Cartridge Selection

Used for:	Assigned Color
Organic Vapors	BLACK
Ammonia	BRIGHT GREEN
Acid Gasses	WHITE
Organic Vapors (OV) and Acid Gasses	YELLOW
Organic Vapors (OV), Ammonia, Acid Gasses	OLIVE/BROWN
High Efficiency (HE) Filter, P100 Filters	MAGENTA
Organic Vapors **AND** High Efficiency (HE) Filter, P100 Filters	BLACK / MAGENTA
Organic Vapors (OV), Acid Gasses **AND** High Efficiency (HE) Filter, P100 Filters	YELLOW / MAGENTA
Organic Vapors (OV), Ammonia Acid Gasses **AND** High Efficiency (HE) Filter, P100 Filters	OLIVE/BROWN / MAGENTA

SUMBAWA TIMUR MINING

RESPIRATORY PROTECTION

Particulate Mask - Facepiece

Sizes	One Size
Colours	N/A
Standard	NIOSH
Optional brand	3M

Size	SAP Code
N/A	

Dust mask is used when the work generates mechanically and thermally particulate.

Protect against Dust & Particles.

Protection Level P1 - 4 times OEL.

Shall not be used in toxic/ noxious or oxygen deficient atmosphere.

May be medically recommended for preventing disease propagation.

Welding Fume Mask FFP2 9925 - Facepiece

Sizes	One Size
Colours	N/A
Standard	NIOSH
Optional brand	3M

Size	SAP Code
N/A	

Welding fume mask is used especially for welding activity that generates welding fumes.

Flame retardant outer surface minimizes effect of welding splatter, collapse-resistant, valved

Shall not be used in toxic/ noxious or oxygen deficient atmosphere.

Recommended applications : welding Chemical Processing, Metal Processing, Metalworking, Paint Preparation

Standard Particulate Respirator

- N Series - Not resistant to Oil. Respirators with N codes indicate that the respirator cannot be used in an environment or atmosphere that contains aerosol oil, or can only be used for areas that are free of oil aerosols or oily particles.
- R series - Resistant to Oil. Can be used for environments containing aresol oil in the atmosphere or oily particles.
- P series - Oil Proof. Can be used for environments containing aresol oil in the atmosphere or oily particles.

- Class 100%, which is a respirator capable of filtering particles with sizes of 0.3 microns to >/ = 99.97% (efficiency>/ = 99.97%)
- Class 99%, ie respirators capable of filtering particles with sizes of 0.3 microns to >/ = 99% (efficiency>/ = 99%)
- Class 95%, ie respirators capable of filtering particles with sizes of 0.3 microns to >/ = 95% (efficiency>/ = 95%)

SUMBAWA TIMUR MINING

HAND PROTECTION

Cut Resistant Gloves

Sizes 7 – 10 Colours N/A Standard EN388 Optional Brand : Jogger, Ansell	
Size SAP Code 7 (S) 8 (M) 9 (L) 10 (XL) **Abrasion resistance : 2** **Blade cut resistance : 5** **Tear resistance : 2** **Puncture resistance : 2** **Cut Resist (Coupe test) : E** **ANSI / ISEA 2016 (TDM Test) A5**	Cut Resistant gloves are used for: - Small parts handling, - Handling Sharp Objects, - Handling material < 10 kg, - General maintenance. Minimum requirement to EN388:2016 2-5-2-2-E ANSI A5 Superior wet and dry grip Textured palm coated. Can be used for precision job / handling small parts. Do not protect from heavy Impact movement and pinched hazards, no heat resistant. Washable

Impact Resistant Gloves

Sizes S – XL Colours N/A Standard EN388 Optional Mechanix– ORHD Knit brand CR5 Uvex Impact 1 PN 60598	
Size SAP Code S M L XL **Abrasion resistance : 3** **Blade cut resistance : 2** **Tear resistance : 2** **Puncture resistance : 2** **Cut Resist (Coupe test) : B** **Impact Testing : P (Passed)**	Impact resistant gloves are used for: - Woodworking, - Using Pipe Wrench, - Drilling & well intervention activities, - Deckhand activities, - Warehousing / load handling, - Construction & scaffolding. Minimum requirement to EN388: 3-2-2-2-B-P Impact resistant on back of hand and finger. Enhanced grip for oily environment. High visibility colour. Printed / embossed with STM logo on the cuffs. Cannot be used for superior tactile sensitivity (precision work)

SUMBAWA TIMUR MINING

Refer to Standard Procedure STM-OHS-SWP-001

Reviewed Date: 28th May 2020

HAND PROTECTION

Cut Resistant Gloves

Sizes 7 – 10 Colours N/A Standard EN 388 Optional Brand : Jogger, Ansell	
Size SAP Code 7 (S) 8 (M) 9 (L) 10 (XL) **Abrasion resistance : 2** **Blade cut resistance : 5** **Tear resistance : 2** **Puncture resistance : 2** **Cut Resist (Coupe test) : E** **ANSI / ISEA 2016 (TDM Test) A5**	Cut Resistant gloves are used for: - Small parts handling, - Handling Sharp Objects, - Handling material < 10 kg, - General maintenance. Minimum requirement to EN388:2016 2-5-2-2-E ANSI A5 Superior wet and dry grip Textured palm coated. Can be used for precision job / handling small parts. Do not protect from heavy Impact movement and pinched hazards, no heat resistant. Washable

Stainless Chainmail Gloves

Sizes S – XL Colours N/A Standard EN 388, EN 420 Optional Brand : Honeywell, FORTEM, ARCLIBER,	
Size SAP Code S M L XL **Abrasion resistance : X** **Blade cut resistance : 5** **Tear resistance : X** **Puncture resistance : X** **Cut Resist (Coupe test) : F**	Stainless chainmail gloves are used for: - Butchering, - Using Meat slicer / grinder, - Food Processing Minimum requirement to EN388:2016 X-5-X-X-F Flexible and sensitive ideal for handling knives High quality stainless steel chainmesh that prevents cuts Fitted with a plastic strap to ensure a safe and secure fit.

SUMBAWA TIMUR MINING

HAND PROTECTION

Chemical Gloves	
Sizes 8, 9, 10 & 11 Colours N/A Standard EN 374 Optional brand	
Size SAP Code	Protective gloves against dangerous chemicals and micro-organisms Made from nitrile, latex, neoprene, vinyl, PVC or rubber. Perform a hazard assessment as gloves made from different materials have different properties and chemical resistances. Performs in a wide range of temperatures, from -4° to 149°C (25°-300°F) Resistant to Nitric Acid up to a 10% concentration. Resistant to Hydrochloric Acid up to a 10% concentration. Resistant to Sulphuric Acid up to a 47% concentration.

Welding Gloves	
Sizes One size Colours N/A Standard EN12477 Optional brand	
Size SAP Code One size	The welding gloves should fulfill this criteria below: - Fully lined for heat resistance - Rugged gauntlet cuff for full forearm protection against sparks, heat and abrasion - Wide thumb strap

SUMBAWA TIMUR MINING

BODY PROTECTION

Flame Retardant Jacket

Sizes	
Colours	
Standard NFPA 2112 ISO 11612	
Optional Brand Daletec	
Size SAP Code	Flame retardant jacket is used by personnel who work on process area, wells, GTS or platforms in offshore area, for more than 6 hours per day for 3 consecutive days. Long-sleeved. Reflective stripes in arm areas.

Rain Jacket & Trousers

Sizes	
Colours High Vissibility	
Standard EN471 (Class3)	
Optional Brand MSA CIG	
Size SAP Code	Rain jacket & trousers are used in wet weather condition. High visibility colour Two-piece type. Made of polyester / polyurethane C/W - hood - 2" silver reflective stripe Lining : 100% nylon Padding : 100% polyester 180 grams

Welding Jacket

Sizes N/A	
Colours N/A	
Standard EN ISO 11611	
Optional Brand MSA – Flashmaster	
Size N/A SAP Code	Welding jacket is used when performing welding activities. Made of heavy duty split leather (Cowhide) Protects arm, forearm, chest

SUMBAWA TIMUR MINING

FEET PROTECTION

Safety Shoes

Sizes	4 – 11
Colours	Light brown
Standard	ASTM F2413-11 M I/75 C/75 EN ISO 20345 classification I-SB-SRC
Optional Brand	Aetos

Size	SAP Code
3 (37)	
4 (38)	
5 (39)	
6 (40)	
7 (41)	
8 (42)	
9 (43)	
10 (44)	
11 (45)	
12 (46)	

Description: 8 inch lace up safety boot incorporating a quick release system (side zipper) for easy donning and doffing, padded collar and tongue. Fully lined incorporating a steel toecap (Impact Resistance & Compression Resistance).
Upper Material: Water Proof leather. High wicking internal lining material. Lace up to maintain good ergonomic.
Sole: Directly moulded Polyurethane midsole for greater shock absorption and an antistatic (Electrical Hazard Resistance) TPU (Thermoplastic Urethane) outsole for superior wear and slip resistance properties. The sole contains an anti-hydrolysis additive that dramatically slows the hydrolysis attack that polyurethane soles are subjected to in countries of hot, humid climate, The sole is also oil and acid resistant (Resistance to Hot Contact & Fuel Oil)
Slip Resistance: This boot complies with the EN
ISO 20345 slip resistance ceramic with NaLS, stainless steel with Glycerine, and Abrasion Resistance. Slip resistance classification SRC.

Safety Boots (Field Area)

Sizes	5 – 12
Colours	Dark brown Black
Standard	ISO 20345 (min. classS1-P)
Optional Brand	Krushers / Aetos

Size	SAP Code
5 (39)	
6 (40)	
7 (41)	
8 (42)	
9 (43)	
10 (44)	
11 (45)	
12 (46)	

Manuf. Date:
Apr (4) 2013 (13)

Safety boots are used for all work on site.

C/W:
- Dual density polyurethane sole
- Anti Static
- SteelMidsole
- Steel ToeCap
- Anti Puncture

Resistant against oil, heat, chemical.

Slip Resistance tested on smooth surfaces - ceramic & steel.

In good condition and free from grease/dirt.

Not worn with the coveralls tucked-in.

Shall be replaced if soles are worn out or the metal of the safety toe cap starts to become visible.

Note also the manufacturing date engraved on the soles.

SUMBAWA TIMUR MINING

FEET PROTECTION

Safety Rubber Boots

Sizes	6 – 10
Colours	Black
Standard	ISO 20345 (min. classS5)
Optional Brand	Petrova Kings Hazmax Dusafe

Size	SAP Code
6	
7	
8	
9	
10	

Safety rubber boots are used when handling acid, caustic and other chemicals, or when working in swamp areas.

C/W:
- Anti Static
- Steel Midsole
- Steel Toe Cap
- Anti Puncture

100% waterproof.

Slip Resistance tested on smooth surfaces - ceramic & steel.

In good condition and free from grease/dirt.

Fire Fighter Boots

Sizes	N/A
Colours	N/A
Standard	EN 15090
Optional Brand	Harvik

Size	SAP Code
N/A	

Fire fighter boots are used by fire fighters.

Made of protective ensemble element designed to provide minimum protection to feet, ankle and lower leg.

Consist of:
- Sole with heel
- Upper with lining
- Insole with puncture resistant device
- Impact and compression resistant toecap (permanently attached)

In good condition and free from grease/dirt.

SUMBAWA TIMUR MINING

FALL PROTECTION

Full Body Harness

Sizes N/A	
Colours N/A	
Standard EN 361	
Optional MSA:502736 Brand SALA:E531-EXP	
Size SAP Code N/A	Full body harness is used when working at height of more than one point eight (1.8) meters, or at any exposed location where there is a danger of falling. Minimum 4 D Rings (Including Chest's D-Ring)  Additional (If Necessary) : - Suspended trauma Kit - Work Positioning Kit and Stopper

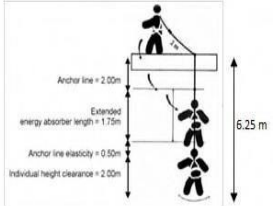
Shock Absorbing Securing Double Lanyard

Sizes N/A	
Colours N/A	
Standard EN 355	
Optional - Brand	
Size SAP Code N/A	Shock absorbing safety lanyard is used with full body harness after vertical clearance has been calculated. Vertical clearance is defined as the free distance that must be allowed beneath the user from the anchor point, taking into account the length of the anchor line + its extension + the height of an individual, such that the user does not hit the ground during a fall.

Special attention shall be paid to this notion, because this safety height can be of critical importance:

For instance, for an energy absorber with a **2m** long anchor line, **6.25m** of vertical clearance is required.

Anchor line	= 2.00 m
Extended energy absorber length	= 1.75 m
Anchor line elasticity	= 0.50 m
Individual height clearance	= 2.00 m
	---------- +
Vertical clearance required	= **6.25 m**



Prohibited Products

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
1	Organochlorine	Dichlorodiphenyltrichloroethane (DDT)	50-29-3 (DDT) 72-54-8 (DDD) 72-55-9 (DDE)	Pesticide for use in agriculture for insect control, especially in cotton, apple, peanut and soy Malaria, typhus and other insect-borne diseases vector control Control of forest pests Health agent for moth eradication and control of head lice	Stockholm Convention Rotterdam Convention	HSE
		Aldrin	309-00-2	Pesticide for use in agriculture for insect control, especially in cotton and corn	Stockholm Convention Rotterdam Convention	HSE
		Dieldrin	60-57-1	Pesticide for use in agriculture for insect control, especially in cotton and corn		HSE
		Chlordane	57-74-9	Pesticide for use in agriculture to control insects in a wide range of crops, such as vegetables, cotton, corn, fruit, sugarcane and vegetables Termite control, applying directly in the soil	Stockholm Convention Rotterdam Convention	HSE
		Heptachlor	76-44-8	Biocide used in soil treatment for seeds, beans and sorghum Insecticide Wood preservative	Stockholm Convention Rotterdam Convention	HSE
		Toxaphene	8001-35-2	Pesticide for use in agriculture for insect control, especially in cotton, cereals, grains and oilseeds Control mites and ticks in cattle	Stockholm Convention Rotterdam Convention	HSE
		Hexachlorobenzene	118-74-1	Pesticide for use in agriculture to control fungi, particularly in protecting onion seeds, sorghum and wheat Wood preservative Industrial application as solvent and additive in the manufacture of rubber, PVC and coloring	Stockholm Convention Rotterdam Convention	HSE

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
1	Organochlorine	Hexachlorobenzene (BHC)	319-84-6 319-85-7	Pesticide for use in agriculture to control insects, especially in crops of fruit and vegetables Pharmaceutical application Combating malaria and Chagas disease	Stockholm Convention Rotterdam Convention	HSE
		Lindane (BHC isomer)	58-89-9	Pesticide for application on agricultural activity for the control of mites and lice, especially in cutting cattle ranches and cotton crops Wood preservative	Stockholm Convention Rotterdam Convention	HSE
		Polychlorinated Biphenyls (PCB)	1336-36-3	Industrial use in transformers, capacitors, hydraulic fluids and plasticizers resins Termiticide used as a stabilizer in various plastics formulations and special rubbers, particularly PVC and chlorinated rubber	Stockholm Convention Rotterdam Convention	HSE
		Pentachlorophenol and its salts and esters	87-86-5	Biocide with broad spectrum of activity (insecticide, fungicide, bactericide and molluscicide) Wood preservative Disinfectant	Stockholm Convention Rotterdam Convention	HSE
		Endosulfan	115-29-7	Pesticide used in agriculture to control mites, lice and insects in crops of fruits and legumes and breeding for commercial purposes	Rotterdam Convention	HSE
		1.2 – Dichloroethane	107-06-2	Industrial application as an intermediate for synthesis of other chemicals such as vinyl chloride, which is used to produce polyvinyl chloride (PVC) and other building materials Solvent extractor in synthesis of other chlorinated solvents Additive in leaded gas, being used in lead removal Constituent of products intended for cleaning fabrics, metal fat removal, breaking oils, fats, waxes, resins and rubber Component of certain cleaning solutions for adhesion, painting, varnish, paint removal Pesticide with broad performance spectrum	Rotterdam Convention	HSE

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
1	Organochlorine	C2H3Cl3 – 1,1,1-trichloroethane	71-55-6	Industrial use for cooling (cooling gases) Industrial application for the production of organic solvents, fire extinguishers and foam, insulating (extruded polystyrene) Aerosol package (sprays	Montreal Protocol of 1989	Environment
2	Auxin	2,4,5 – Trichlorophenoxyacetic acid and its ester salts	93-76-5	Powerful pesticide with broad performance spectrum	Roterdam Convention	HSE
3	Ariloxialcanoic acid and pyridinecarboxylic acid	Dinoterb	1420-07-1	Systemic action selective herbicide to control dicotyledonous	1907/2006/CE	HSE
4	Chloroacetanilides	Alachlor	15972-60-8	Herbicides used to control the growth of broadleaf weeds and grasses in maize crops and many other	Rotterdam Convention	HSE
5	Carbamates	Aldicarb	116-06-3	Pesticide for application on agricultural activity for the control of mites, lice, insect and nematode worms, particularly in livestock farming of beef and dairy, and cotton, soybean and oilseeds	Rotterdam Convention	HSE
6	Dinitrophenols	Binapacryl	485-31-4	Powerful pesticide with broad performance spectrum	Rotterdam Convention	HSE
		Dinitro-ortho-cresol (DNOC) and its salts (such as ammonium, potassium and sodium)	534-52-1	Efficient herbicide used in agriculture to control pests such as weeds in grain crops, citrus and hops It has side effects such as insecticidal, acaricidal and fungicidal	Rotterdam Convention	HSE
		Dinoseb and its salts and esters	88-85-7	Efficient phenolic herbicide used in agriculture for the selective control of pests such as weeds and broadleaf, in soybean, citrus fruits, nuts and vegetables Selective insecticide used in the cultivation of grapes Seed drying agent	Rotterdam Convention	HSE
		1.2 – dibromoethane (EDB)	106-93-4	Powerful pesticide with broad performance spectrum	Rotterdam Convention	HSE
7	Carboxamides	Captafol	2425-06-1	Pesticide used in agriculture fungus control in fruit and leguminous crops Used as an additive for fungicide products to control pests in woods	Rotterdam Convention	HSE

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
8	Formamidines	Chlordimeform	6164-98-3	Pesticide used in agriculture, in control of mites, lice and insects in crops of fruits and legumes and breeding for commercial purposes Application to the pharmaceutical industry as an additive for non-injectable drug of control of parasites and in therapeutic cosmetic	Rotterdam Convention	HSE
		Chlorobenzilate	510-15-6	Pesticide used in agriculture to control mites, lice and insects in crops of fruits and legumes and breeding for commercial purposes	Rotterdam Convention	HSE
9	Ethers	Ethylene oxide	75-21-8	Pesticide with broad spectrum of activity, especially in the control of bacteria and spores, fungus and non fungal yeast Sterilization of medical-hospital materials and food Production of ethylene glycol for later production of polyester polymers	Rotterdam Convention	HSE
10	Non classified	Fluoracetamide	640-19-7	Rodenticide used to control urban pests as rats and other rodents of sanitary interests	Rotterdam Convention	HSE
11	Organophosphates	Monocrothophos	6923-22-4	Pesticide used in agriculture in control of mites and insects and weeds in crops of fruits and legumes and breeding for commercial purposes Plant growth hormonal regulator	Rotterdam Convention	HSE
		Parathion	56-38-2	Pesticide used in agriculture to control mites, insects and weeds in crops of fruits and legumes and breeding for commercial purposes Plant growth hormonal regulator	Rotterdam Convention	HSE
12	Chemical combinations	Powdered formulations containing: benomyl > 7%, carbofuran > 10%, thiram > 15%		Powerful pesticides used in agriculture to control fungus (broad spectrum of activity) and ectoparasites	Rotterdam Convention	HSE
		Phosphamidon (soluble liquid formulations of methamidophos that exceed 1,000 g active ingredient/l)	13171-21-6	Pesticide used in agriculture to control mites, insects, nematodes and weeds in crops of fruits and legumes and breeding for commercial purposes It is used directly on the soil Plant growth hormonal regulator	Rotterdam Convention	HSE
13	Organometallic	Tetraethyl lead	78-00-2	Gasoline additive to improve the octane Industrial application, especially in boiler Naval painting	Rotterdam Convention	HSE
		Tetramethyl lead	75-74-1		Rotterdam Convention	HSE

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
14	Asbestos	Crocidolite Amosite Anthophyllite Actinolite Tremolite	12001-28-4 12172-73-5 77536-67-5 77536-66-4 77536-68-6	Industrial application in the production of materials, especially those used in construction - fiber cement tiles; coating for covering of buildings and edifices; plaster and stucco; fire proof coating; thermal and acoustic insulation; plates for closing (Eternite) —, also protective clothing for firefighting; coating to the braking system and car clutches	Rotterdam Convention International Labor Organization 769/1976/UE 69/1997/UE 31/1999/UE	HSE
		Chrysotile (white asbestos)	12001-29-5 32207-32-0 12172-73-5 12001-28-4			HSE
15	Aromatic Amines	Benzidine and its salts	92-87-5	Industrial application for the production of inks, dyes and pigments Hardening agent in rubber industry Pharmaceutical application, mainly as an analytical indicator in diagnostic procedures Reactant substance in chemical laboratory for the determination of metals, in particular heavy metals	Rotterdam Convention 769/1976/UE	HSE
16	Fluorocarbons	Chlorofluorocarbons (CFCs) CFCl3 (CFC-11) CF2Cl2 (CFC-12) C2F3Cl3 (CFC-113) C2F4Cl2(CFC-114) C2F5Cl (CFC-115)	75-69-4 75-71-8 76-13-1 76-14-2 76-15-3 353-59-3 598-73-2 124-73-2 75-72-9 354-56-3 76-12-0 422-78-6 3182-26-1 29255-31-0 1599-41-3 661-97-2 422-86-6	Industrial use for cooling (cooling gases) Industrial application for the production of organic solvents, fire extinguishers and foam, insulating (extruded polystyrene) Aerosol package (sprays)	Montreal Protocol of 1989	Environment

Item	Group	Chemical Substance	CAS	Reference of Use	Legal basis	Requirement
16	Fluorocarbons	Hydrochlorofluorocarbons (HCFCs)	75-43-4 75-45-6 593-70-4 354-14-3 354-21-2 306-83-2 2837-89-0 359-28-4 1649-08-7 75-88-7 1717-00-6 75-68-3 110587-14-9 422-26-4 422-49-1 422-52-6 422-54-8 422-56-0 431-87-8 421-94-3 460-89-9 7125-84-0 425-94-5 460-92-4 666-27-3 460-63-9 460-69-5 134190-50-4 421-41-0 819-00-1 460-35-5 420-97-3 421-02-03 430-55-7	Industrial use for cooling (cooling gases) Industrial application for the production of organic solvents, fire extinguishers and foam, insulating (extruded polystyrene) Aerosol package (sprays)	Montreal Protocol of 1989	Environment

Restricted Products

Item	Group	Chemical Substance	CAS Number	Reference of Use	Legal basis	Requirement
1	Azo-compounds (dye)	Azo dyes	92-67-1 92-87-5 95-69-2 91-59-8 97-56-3 99-55-8 106-47-8 615-05-4 101-77-9 91-94-1 119-90-4 119-93-7 838-88-0 120-71-8 101-14-4 101-80-4 139-65-1 95-53-4 95-80-7 137-17-7 90-04-0 60-09-3	Industrial Applicability for the production of inks, dyes and pigments	Directive 1.907/2006/EU	HSE
2	Carbamates	Carbaryl	63-25-2	Pesticide		HSE
3	Formamidines	Amitraz	33089-61-1	Pesticide		HSE
4	Ethers	Polybrominated biphenyl (PBB) including hexabromobisfenil (HBB)	67774-32-7	Flame retardant (mainly plastics)	Directive 60/2006/EU	HSE
		Polybrominated diphenyl ethers (PBDE) Tetra BDE Penta BDE Penta BDE (commercial mixtures)	40088-47-9 5436-43-1 32534-81-9 60348-60-9			
		Polybrominated Diphenyl Ethers (PBDE) Hexa BDE Hepta BDE Octa BDE Nona BDE Deca BDE Octa BDE (commercial mixtures)	36483-60-0 68631-49-2 207122-15-4 68928-80-3 446255-22-7 207122-16-5 32536-52-0 63936-56-1 1163-19-5			

Item	Group	Chemical Substance	CAS Number	Reference of Use	Legal basis	Requirement
5	Aliphatic Halogenated	Methyl bromide	74-83-9	Pesticide Herbicide applied to the soil to control weeds Wood and seeds preservative		HSE
6	Organophosphates	Azinphos-methyl	86-50-0	Pesticide	Directive 414/1991/EU	HSE
7	Organosulfur	Perfluoroalkyl-octanesulfonic acid (PFOS) PFOS potassium salt PFOS ammonium salt PFOS lithium salt PFOS diethanolamine salt Perfluoro-octane sulfonyl fluoride (PFOSF)	1763-23-1	Pesticide used in textiles and leather, firefighting foams, metal plating, additives for coatings	Regulation 2006/122/ECOF	HSE
8	Metals	Mercury and its compounds	7439-97-6	Industrial applications in instrumentation (automation), electronic equipment and fluorescent lamps Wood preservative (antifouling) , vaccines , cosmetics, bleaching soaps and as agrochemicals Some inorganic salts and some organomercury compounds have biocidal, antiseptic and fungicide activity	Directive 1.907/2006/EU	HSE
		Nickel and its compounds	7440-02-0 7718-54-9 10028-18-9 13462-88-9 7786-81-4	Industrial application in instrumentation, various electronic devices and batteries Protection of metal parts (oxidation resistance), special steel (stainless steel)		HSE
		Cadmium and its compounds	7440-43-9	Batteries, electrical and electronic equipment Anti-corrosion coating on metal structures		HSE
		Lead	7439-92-1	Batteries, electrical and electronic equipment Gasoline additive to improve the octane Industrial application, especially in boiler Naval painting	Directive 1.907/2006/EU	HSE
		Arsenic and compounds	7440-38-2	Electronic equipment Insecticide Leather and wood preservative	Directive 1.907/2006/EU	HSE
		Beryllium and compounds	7440-41-7	Electronic equipment Metallic alloys Nuclear reactors	Directive 1.907/2006/EU	HSE

Item	Group	Chemical Substance	CAS Number	Reference of Use	Legal basis	Requirement
		Hexavalent chromium	18540-29-9	Pigment in inks Plastic Leather tanning Metallurgy, stainless steel, protection of metal parts (oxidation resistance) Wood preservation	Directive 95/2002/EU	HSE
9	Polybrominated diphenyl ethers	Hexabromocyclododecane	25637-99-4	Flame retardant in textiles, plastics, foams and expanded polystyrene (styrofoam)	Directive 1.907/2006/EU	HSE
		Alpha-hexabromocyclododecane	134237-50-6			
		Beta-hexabromocyclododecane	134237-51-7			
		Gamma-hexabromocyclododecane	134237-52-8			
10	Alkanes	Chlorinated paraffins	085535-85-9	Lubricating oil for cutting Plasticizer, plastics, paints, sealants and rubbers	Directive 1.907/2006/EU	HSE
		Isobutane	75-28-5	Industrial refrigeration		HSE
11	Esters of phthalic acid (phthalates)	Dibutylphthalate (DBP)	84-74-2	Plasticids in Adhesive PVC Use in industries in the manufacture of paints	Directive 1.907/2006/EU	HSE
		Hexilftalato Diethyl-phthalate (DEHP)				
		Butilbenzal phthalate (BBP)				
		Diisodecyl phthalate (DIDP) diisononyl phthalate (DINP) Di-n-octyl phthalate (DNOP)	26761-40-0 28553-12-0 117-84-0	Industrial application, used as an additive in the manufacture of plastics, adhesives, sealants and paints	Directive 1.907/2006/EU	HSE
12	Esters	Dimethyl fumarate (DMF)	624-49-7	Pesticide for use in agriculture to control fungi, particularly in onion seed protection, soybeans and wheat Drying agent and preservative of wood and seeds	Directive 251/2209/EU	HSE
13	Ariloxialcanoic acid and pyridinecarboxylic acid	Acrylonitrile	107-13-1	Industrial use as an additive in dyes It is used in the manufacture of resins such as acrylonitrile-butadiene-styrene, plastics, acrylic fibers and nitrile rubber	Directive 1.907/2006/EU	HSE
14	Organotin	Bis-tributyltin oxide and compounds		Industrial application as a stabilizer in anti-fouling paints	Directive 1.907/2006/EU	HSE
15	Phenols	Alkyl phenol ethoxylates (especially octylphenol and nonylphenol - EPA)		Industrial applicability used as an additive in the manufacture of plastics, adhesives and various cleaning materials	Directive 1.907/2006/EU	HSE
		Bisphenol A (BPA)	80-05-7	Industrial application in the production of polycarbonates, epoxy resin and flame retardants		HSE
16	Volatile Organic Compounds (VOCs) and	Benzene	71-43-2	Industrial solvent for paints, glues and varnishes	Directive 1.907/2006/EU	HSE

Item	Group	Chemical Substance	CAS Number	Reference of Use	Legal basis	Requirement
	solvents			Raw material for the production of nylon and polystyrene		
16	Volatile Organic Compounds (VOCs) and solvents	1.1 Dichloroethylene (vinyl chloride)	75-35-4	Industrial application in the production of resins, adhesives, refrigerants, synthetic fibers Application in the pharmaceutical industry in the production of cosmetics, especially in aiding collagen replacement	Directive 1.976/768/EU	HSE
		Toluene	108-88-3	Industrial solvent for the production of rubber, paints, coatings and oils Polymer production in common use, such as nylon, plastics and bottles	Directive 1.907/2006/EU	HSE
		Methylene chloride	75-09-2	Solvent for the production of special lacquers and lacquer Propellant aerosol and plastic foam	Directive 1.976/768/EU	HSE
		Formaldehyde		Industrial applicability for the production of resins Application in the pharmaceutical industry in the production of cosmetics Binder resin used in industrial wood (MDF, MDP, OSB etc.)		HSE
		Perchlorethylene	127-18-4	Industrial applicability for the production of cleansing agents Degreasing solvent	Stockholm Convention	HSE
17	Antibacterial	Triclosan	3380-34-5	Application in the pharmaceutical industry to produce various medicines and personal care products		HSE
18	Fluorocarbons	Perfluorinated carbons (PFCs) Perfluormethane, perfluoretane, perfluoropropane, perfluorobutane, perfluorocyclobutane and perfluoropentane	678-26-2 382-28-5 355-42-0 335-57-9 307-34-6 338-84-1 143356-32-5	Production of fluorinated polymers, coatings for food packaging and components of firefighting foams Surfactant in polymerization in emulsion of fluoropolymers Used in textile and leather as a preservative Used as additive for coatings	Directive 842/2006/EU	HSE
		Sulfur hexafluoride (SF6)	02551-62-4	Production of fluorinated polymers Insulation of high voltage equipment (substations)		HSE

Item	Group	Chemical Substance	CAS Number	Reference of Use	Legal basis	Requirement
		Hydrofluorocarbon (HFCs)		Industrial use for cooling (cooling gases) Industrial application for the production of organic solvents, fire extinguishers and foam, insulators (extruded polystyrene) Aerosol package (sprays)	Directive 842/2006/EU	HSE