Vedanta Resources Plc

Sustainability Governance System

Technical Standard

Transport and Logistics Management

Technical Standard – Transport and Logistics Management

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Technical Standard – Transport and Logistics Management

Contents **Page**

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1. INTRODUCTION

The purpose of this Technical Standard is to ensure that Vedanta operations implement a consistent framework for assessing and controlling risks associated with transport and logistics activities to ensure the health and safety of Vedanta employees and others. This Technical Standard also supports our policies in relation to sustainability and protection of the environment. This Standard supports Vedanta's *Health, Safety and Environmental Policy* and *Social Policy*.

2. SCOPE

This Technical Standard is mandatory and applies to all Vedanta subsidiaries, operations and managed sites, including new acquisitions, corporate offices and research facilities and to all new and existing employees and contractor employees. This Standard is applicable to the entire operation lifecycle (including exploration and planning, evaluation, operation and closure). The standard covers light vehicles and surface mobile surface equipment owed or hired or leased by Vedanta and excludes rail, underground vehicles and equipment and airfreight.

3. DEFINITIONS

Definitions of key terms used in this document are shown in the following table.

Term	Definition
Affected Communities	Local communities directly affected by the new or existing project.
ALARP (As Low as Reasonably Practicable)	Consideration of the risk against the benefits or non-benefits that are needed to implement measures/controls to avoid the risk – where the cost (not just financial) of implementation of the measures is disproportionate to the benefits, it is not considering to be reasonably practicable.
Competent Person	An individual who has the necessary and sufficient knowledge, skills and experience, as well as the necessary experience to complete their responsibilities safely, effectively and consistently.
Contractor	Any third party organisation which is engaged or commissioned by Vedanta to undertake work or provide services.
Contractor employee	An employee of a contracted company engaged or commissioned by Vedanta to undertake work or provide services, but who are not directly employed by Vedanta. For example, contractor employees working on Vedanta operations, persons working for Vedanta through staff/employment agencies, contract cleaners etc.
Environmental and Social Management System	The structured framework that provides the arrangements for managing the environmental, health, safety and social aspects through the lifetime of the project.
Environmental Social Impact Assessment (ESIA)	A formalised process designed to identify, assess and document environmental and social impacts associated with a project, along with the mitigation measures and management arrangements for ensuring such measures are implemented.

Term	Definition
Hazard	An object, property or an activity that can cause adverse effects e.g. a high voltage electricity supply or a toxic chemical may present a hazard, meaning that they present the potential for harm.
ICMM (International Council on Mining and Metals)	The International Council on Mining and Metals (ICMM) was established in 2001 and seeks to drive performance improvement through its members which comprise 20 mining and metals companies, as well as 30 national and regional mining associations and global commodity associations.
IFC (International Finance Corporation)	Member of the World Bank that finances and provides advice to private sector ventures and projects in developing countries.
Light Vehicle	Light vehicles can be registered for use on public roads and has four or more wheels, seats a maximum of 12 people (including the driver) and does not exceed 4.5 tonnes Gross Vehicle Mass (GVM), as specified by the manufacturer or an approved automotive engineer if the vehicle has been modified. They may be Vedanta owned or leased vehicles, hire vehicles, contractor or supplier vehicles and private vehicles used for work related activity. Examples of light vehicles covered by this standard are passenger cars, four wheel drives, sports utility vehicles (SUVs), pickups (utilities, bakkies), mini buses, vans and others).
Operation(s)	A location or activity that is operated by a Vedanta Company and is part of the Vedanta Group. Locations could include mines, refineries, ports or transportation activities, wind farms, oil and gas development sites, offices including corporate head offices, and research and development facilities.
Risk	The effect of uncertainty on objectives (as defined by the ISO 31001 Standard). Uncertainties include events (which may or not happen) and uncertainties caused by a lack of information or ambiguity.
Stakeholder	Persons or groups that are directly or indirectly affected by a project as well as those that may have interests in a project and/or the ability to influence its outcome, either positively or negatively. This can refer to shareholders, lenders, employees, communities, industry, governments and interested third parties.
Stakeholder Engagement	An umbrella term encompassing a range of activities and interactions between Vedanta and its stakeholders over the life of a project that are designated to promote transparent, accountable, positive, and mutually-beneficial working relationships. Stakeholder engagement includes stakeholder identification and analysis, information disclosure, problem/conflict anticipation and prevention, ongoing consultation, formation of partnerships, construction of grievance resolution mechanisms, negotiated problem solving, employee involvement in project monitoring,

Term	Definition
	regular reporting forums and procedures, and other related management activities.
Surface Mobile Vehicles	Surface mobile vehicles include equipment such as rear dumps, belly dumps, water trucks, grazers, dozers, loaders and tankers. It does not include draglines, shovels, excavators, forklift trucks, mobile cranes, backhoes, bob-cats and other trucks larger than light vehicles.
Vedanta Company	A subsidiary of Vedanta Group either fully or majority owned that has its own management structure (e.g. Hindustan Zinc Limited, Vedanta Aluminium Limited, Sterlite Industries limited, etc.)

4. PROGRAMME REQUIREMENTS

This Standard aims to define the minimum requirements for processes that need to be established to manage health, safety, social and sustainability risks associated with transport and logistics activities. The requirements described below shall be followed by all Vedanta subsidiary companies and operations with regards to the management of transport and logistics.

4.1. General Requirements

a) Vedanta Group and operations shall ensure that the requirements of this Technical Standard are adhered to as part of their operations to ensure that environmental, social, safety and health risks are systematically considered in the effective management of transport and logistics risks.

b) Transport and logistics management shall also meet the requirements of the *IFC Performance Standards.* These requirements are summarised as follows*:*

- Performance Standard 4 – Community Health, Safety and Security. Vedanta will ensure that the safeguarding of personnel and property is carried out consistently with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities. Security will be provided in a manner that does not jeopardize the community's safety and security, or the Vedanta's relationship with the community and it will be consistent with national requirements, including national laws implementing host country obligations under international law, and the requirements of Performance Standard 4 which are consistent with good international practice.

4.2. Transport and Logistics Hazard Identification and Risk Assessment

a) Operations shall develop, implement and maintain procedures for carrying out transport and logistics hazard identification and risk assessments to identify risks associated with its activities and to manage the risks to a level which is as low as reasonably practicable through appropriate control measures.

b) The transport and logistics hazard identification and risk assessment process shall be applied over the entire life cycle of the transport and logistics activities within the operation, including at the design and procurement stage and during decommissioning.

c) The key transport and logistics considerations that shall be included in the risk assessment include, but are not limited to:

- The workplace, such as layout suitability and safety features of the route for vehicles and interaction with pedestrians;
- The vehicle, including suitability for the work they do and their maintenance;
- Drivers and other people; to ensure drivers are able to work safety and responsibly and there is suitable management control and supervision for drivers and other people;
- Vehicle activities including reversing; parking, loading and unloading.

d) Following the hazard identification and risk assessment, the assessed risks shall be eliminated as a first priority, or controlled to a level which is as low as reasonably practicable, by implementation of risk reduction and control measures.

e) The hazard identification and risk assessment process and the risk reduction/control measures in place must be recorded to demonstrate that:

- All foreseeable hazards associated with transport and logistics have been identified;
- The likelihood and consequences of unwanted events have been assessed;
- Controls to reduce risks are in place (refer to (d) above); and
- Emergency response procedures for incidents involving transport and logistics activities are in place.

f) Transportation and logistics hazard identification and risk assessments shall be undertaken prior to activities commencing and reviewed when there is a change which warrants review of the risk assessment (e.g. relating to layout, change to operations, traffic movements or road systems, and after emergencies and audits where required).

g) Operations shall ensure transport and logistics control measures are supported by training and competency processes and the visible demonstration of commitment by management and on-site supervisors, as well as by the understanding and ownership of the measures by employees.

h) All operations must clearly document and implement a night driving policy as a result of the transport and logistics risk assessment.

4.3. Transport and Logistics Management Plan

a) Operations shall develop, implement and maintain a management plan to outline the arrangements for organising transport and logistics activities at its operations, in accordance with the outputs from the transport and logistics risk assessment.

b) The transport and logistics management plan shall define and describe the arrangements for the implementation of Requirements 4.4 to 4.10 of this Standard (as applicable to the operation).

4.4. Traffic Routes and Roadways

a) Operations shall ensure that traffic routes are established which ensure the segregation of pedestrians, light vehicles and heavy vehicles/mobile equipment.

b) Operations shall define right of way rules, including overtaking restrictions.

c) Roadways shall be suitably designed and constructed, and line markings shall be provided on sealed roads as far as is reasonably practicable.

d) Operations shall ensure that appropriate traffic signage is provided and that it conforms to local and national standards and legislation and, is consistent throughout the operation, is placed at height at which can be easily observed and is firmly secured in place. Signage provided shall be suitable for low light and night time situations.

e) Operations shall ensure that adequate protection, such as protection bollards or barriers are provided to prevent damage to infrastructure (e.g. open drains, where the cover may not support the vehicle); and where necessary to protect pedestrians. These devices must be highly visible to drivers of vehicles and warning signs shall be in place where necessary (i.e. where there is a risk they might not be seen and could present an additional hazard).

f) Access control shall be in place in areas identified as hazardous and having significant associated risk (e.g. high voltage installations, power lines etc) to prevent vehicles accessing hazardous areas.

g) Speed limits shall be established which are suitable for the prevailing road conditions and pedestrian hazards at the operation. Speed limits signage shall be in place.

h) Speed bumps shall be constructed and in place to control excessive vehicle speeds.

i) Processes shall be in place to ensure driver visibility is maintained and nuisance dust is minimised by managing and suppressing dust on operational roads. Consideration shall be given to hazards of extreme wet weather and overwatering.

j) Procedures shall be implemented to ensure that vehicles and surface mobile equipment shall only be operated on sufficiently stable surfaces and gradients that are suitable for safe operation.

k) Operations shall ensure that roadways are maintained in a safe condition.

l) A maintenance programme shall be established for the roadside vegetation such that trees or vegetation growth that could pose a visibility hazard shall be suitably trimmed or removed.

m) A programme shall be established for the inspection, maintenance and cleaning of traffic signage and delineators such as lines, and barriers.

4.5. Parking Areas

a) Operations shall provide adequate sized designated parking areas for all private vehicles, and visitor's vehicles entering the operations and shall also ensure sufficient parking spaces are provided for all other non-operational vehicles. This shall include provision of disabled parking facilities and suitable and safe bus pick up and drop off points where appropriate.

b) Designated parking areas shall be provided for all operational heavy vehicles and light vehicles including around maintenance areas.

c) Parking areas shall be designed such that traffic flows and routes are defined including entry and exit points, vehicle parking bays are of a suitable width and construction; pedestrians are segregated from vehicles; and elimination of the need for reverse parking where possible.

d) Parking standards shall be in place to include requirements for immobilisation of surface vehicles to prevent uncontrolled vehicle movements (wheel stops, bumps etc).

4.6. Pedestrian Safety

a) Each operation shall ensure the hazard and risk assessments include a site based review of pedestrian vehicle interaction, including road design and layout, (entry exit points, intersections etc).

b) Pedestrians shall be segregated from vehicles and mobile equipment. Systems shall be in place to control movements of vehicles and mobile equipment in areas accessible to pedestrians, into and out of workshops and for controls on pedestrian and light vehicle movements around mobile equipment.

c) Clear instructions shall be established for pedestrians and right of way rules;

d) Systems to alert mobile operators of pedestrian presence shall be implemented

e) Pedestrian walkways shall be provided in all areas where vehicles and mobile equipment is used; walkways shall be located at a safe distance from the roadways, be a suitable width and be constructed of a suitable surface to avoid slips and trips.

f) Barriers shall be provided on pedestrian walkways where they are located beside roadways or where there is a high pedestrian flow.

g) Designated and suitably designed pedestrian crossings shall be provided at strategic locations and crossing warning signs shall be in place.

h) Operations shall ensure high visibility clothing is provided to pedestrians who work or pass through operational areas involving vehicle movement.

i) Adequate protection and controls shall be provided where pedestrians exit buildings.

j) Visitors shall be informed of relevant requirements for vehicle pedestrian safety upon arrival at the operations.

4.7. Vehicle Safety

a) Operations shall ensure that vehicle selection and acceptance criteria are established that is based on risk assessment; taking into account the tasks and application of the vehicle (e.g. roll over and crash worthiness ratings). Operations shall define and implement minimum safety specifications of all vehicles they procure.

b) A formal inspection and preventative/condition based maintenance system shall be in place to ensure that vehicles are maintained in a safe and roadworthy condition and as a minimum serviced in line with the vehicle manufacturers service schedule. Operations shall ensure inspection and maintenance is undertaken on safety critical equipment and components and records kept.

c) Selection of vehicles and any modification shall be subject to change management processes as outlined in the Vedanta Management Standard MS07 on *Management of Change*.

d) A pre-use vehicle safety check and familiarisation system shall be implemented. For operational vehicles, log books shall be maintained on the vehicle.

e) Vehicles loading and unloading procedures shall be in place to avoid material or objects and people falling out of the vehicles, this shall include procedures to ensure vehicles are not overloaded.

f) Operations shall ensure measures are taken to prevent falls from vehicles or people being hit by an object that is likely to hurt them.

g) Controls shall be in place to ensure the safety of people working on road-ways, including working on vehicle breakdowns.

h) The operation shall ensure processes are in place to ensure vehicles and mobile equipment have seat belts and that seat belts are worn by the occupants of all vehicles at all times the engine is running.

i) Clear communication procedures and interactions shall be established between all vehicles whilst moving about the operation or undertaking activities associated with the operation.

j) Operations shall ensure that processes are in place to control and manage the transport of hazardous materials. This shall be undertaken in accordance with (i) local laws and regulations, (ii) UN Regulations on the transport of dangerous goods and (iii) the International Maritime Dangerous Goods Code (IMDG Code). Operations shall establish a process for the use of material safety data sheets and placarding when transporting hazardous cargoes.

4.8. Driver Safety and Other People

a) Operations shall ensure drivers (employees whose main documented duty for the company is driving) are medically fit to drive such that being in charge of a vehicle does not pose a risk to their own health and safety, or that of others. Medical assessments of fitness shall be conducted in accordance with local laws and regulations (if established) and shall at a minimum cover:
   - Eyesight/Vision;
   - Physical mobility (ability to fully control and operate the vehicle);

- Hearing (for warning signs and spoken instructions); and
- Understanding of instructions and risks associated with duties.
- Employees who drive on behalf of the company, but whose main documented duties for the company is not driving shall undergo the medical tests required to obtain and retain a valid license in the country in which they are employed.

b) A system shall be in place to ensure drivers are competent to operate the type of vehicle they are required to drive in its intended environment. This shall include recruitment, including checks on previous experience and qualifications, where appropriate, induction processes and, training by the Vedanta operation (see below). The type and level of training will depend on their previous experience and the type of work that they do. Such training must meet or exceed the requirements of National Law. Appropriate records must be maintained. The operation shall establish an effective process to test that competency and training objectives have been achieved and to assess driver competence.

c) All employees who drive on business for Vedanta Operations must have a valid national driving license appropriate to the vehicle driven and be knowledgeable of the rules of the road in the country in which they drive. Processes shall be in place to ensure licenses are checked upon recruitment and at regular intervals.

d) All newly appointed drivers shall attend a driving induction course before being allowed to drive for Vedanta operations. The induction training shall be specific to the job requirement and task.

e) Refresher training must be provided at regular intervals to ensure good driving habits are maintained, new skills are learned where appropriate and for re-assessment of abilities. The frequency of refresher training shall be defined by the operation, so as to maintain optimum driver HSE performance. but shall occur when:

f) An aspect of the driver's performance (knowledge, skill or attitude) does not meet current requirements or specifications.

g) An aspect of the driver's job is about to change (e.g. promotion, new duties, new type of vehicle, new procedures, or a change in layout and environment).

h) Operations shall provide those that drive a company vehicle on company business with a suitable documented authorisation from the company e.g. internal driving license which specifies the type of vehicles they are permitted to drive. This must only be issued after a driver has completed the requisite training and associated competence assessment test and subject to a satisfactory medical. This information shall be kept on a central register. Employees shall not be permitted to drive without this document. A document for safe driving is not required in the case of use of personal vehicle, driven on company business.

i) Each driver shall be given appropriate instructions and information for reference that will help him/her undertake his/her duties for safe and efficient driving. The reference material shall be provided in a language appropriate for the driver (typically this may comprise a company specific driver’s handbook).

j) Operations shall never permit any employee to drive whilst under the influence of drugs or alcohol . A fit for work policy shall be in place incorporating defined action levels for drugs and alcohol.

k) A system shall be in place to manage driver fatigue. This shall include empowerment of drivers who feel tiredness (fatigue) and consider that that this tiredness is or will impair their ability to drive safely, being able to stop the vehicle in a safe location and to take an appropriate period of rest before recommencing the drive; specifications for maximum continuous driving hours in any 8 and 24 hour period and rest breaks and journey planning (See Section below on Journey Planning).

l) Mobile phones, whether hands free or not shall only be used whilst the vehicle is stationary and in a safe location.

m) Processes shall be established for drivers and operators of vehicles and mobile equipment during abnormal conditions such as inclement weather (e.g. rain, high winds) and go/no go criteria and stating the responsible person for this decision.

n) To aid visibility to other road users and pedestrians all vehicles will be driven with headlights on dipped beam at all times of the day or night.

o) Processes shall be in place to ensure that risks associated with vehicles journeys are managed and controlled by journey management, which shall include but not be limited to:

- Reducing the exposure of drivers and passengers by avoiding unnecessary journeys.
- To maximise the efficiency of each journey, reducing fuel consumption and so reducing emissions to the environment.
- To avoid (preferably) or minimise the effect of all identified hazards likely to be encountered.
- To be able to recover in a timely manner from any incident.
- To ensure that drivers are fully aware of journey plans and any hazards.
- Planning and schedules that take account of human factors.
- Planning of routes to avoid potential hazards e.g. unsafe areas.

4.9. Transport & Logistics Incident Procedures

a) Each operation shall have in place procedures for incidents and emergencies involving transport and logistics. The operation shall define what events constitute a transport incident, the required action, roles and responsibilities of those involved (including employees, contractors, emergency services etc), who is to be notified and the escalation process involved, requirements for post incident procedures, which include at a minimum, initial incident report, making the scene safe, treatment of injured parties and vehicle recovery. Typically this shall include:

- Collisions involving fatalities;
- Road accident;
- Driver lost in hostile environment;
- Overturned vehicle;
- Vehicle fire / explosion in al likely situations;
- Loss of load or cargo or incident involving hazardous cargo;
- Pollution incident (water, air, land).

b) The provision of medical response shall be included in the procedures, including when driving in remote locations.

c) Operations shall provide suitable emergency equipment in order to be able to respond effectively to transport and logistic incidents.

d) Procedures shall be available in local languages and carried on vehicles. A communication system shall be in place, which is effective in all areas in which the vehicle is travelling in case of an emergency.

e) The plans shall be coordinated with the operations emergency preparedness and response plan to ensure that decisions involving regional and corporate crisis management team are detailed along with engagement with the media, community and other stakeholders. See also the requirements of the Vedanta Technical Standard TS13 on *Emergency and Crisis Management*.

f) Procedures shall be in place to test the incident response plan by scenario drills and other means, at appropriate intervals,

g) A procedure shall be implemented for investigation of transport and logics incidents and the requirements for investigation, including identifying areas for improved control measures and implementing such measures. See also the requirements of the Vedanta Management Standard MS11 on *Incident Reporting, Escalation and Investigation*.

h) Transport and logistics incidents shall be reported by operations in the local reporting system and to Vedanta Group in line with the Incident Reporting and Investigation Management Standard MS11.

4.10. Transport and Logistics Audit

a) The operation shall define how the transport and logistics management plan and arrangements are audited. This shall include periodicity, audit team, reporting requirements and follow up.

b) Regular audits shall be undertaken of the transport and logistics management plan and arrangements, to evaluate the effectiveness of arrangements and risk control techniques. Findings from audits shall be actioned and the plan updated as required.

5. ROLES AND RESPONSIBILITIES

Vedanta Resources, subsidiaries, businesses, operations and sites shall ensure that roles and responsibilities for implementing and complying with this Standard are allocated. Key responsibilities shall be included in job descriptions, procedures and/or other appropriate documentation.

6. COMPLIANCE AND PERFORMANCE

Each Vedanta operation shall ensure it complies with the requirements of this standard. Performance against meeting the requirements of this Standard shall be assessed periodically documented and, where required, reported to Vedanta Group. The assessment of performance shall include setting and reporting on key performance indicators (KPIs) where these have been established at Vedanta Group, Company or local level. The evaluation of performance shall include, as a minimum, confirmation that:

- Transport and logistics hazard identification and risk assessments undertaken;
- Transport and logistics management plan in place.
- Traffic routes and speed limits established and signposted, and are of suitable construction and maintained.
- Pedestrian vehicle segregation is in place.
- Vehicle procurement processes established with defined minimum safety criteria.
- Vehicles are subject to preventative and reactive maintenance.
- Driver competency and training processes in place.
- Incident procedures in place for transport and logistics incidents.
- Audits of the transport and logistics management plan undertaken.

7. SUPPORTING INFORMATION

Reference	Description
ICMM (International Council of Mining and Metals)	The ICMM has produced and published good practice guidance on a range of health, safety, environment and community issues relating to mining. http://www.icmm.com/library
International Finance Corporation Performance Standards Guidance Notes	The IFC has published Guidance Notes to guide the implementation of the full range of performance standards. These are available on the website. The guidance is currently being updated and draft versions (V2) are available however these

Reference	Description
	have not yet been finalised and formally published. http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards

8. REVIEW

This Technical Standard shall be periodically audited and reviewed to determine its accuracy and relevance with regard to legislation, education, training and technological changes. In all other circumstances, it shall be reviewed no later than 12 months since the previous review.

9. RELATED DOCUMENTATION

A summary of the references and supporting documents relevant to this document is provided in the following table.

Doc. Ref.	Document name
	Vedanta Code of Conduct
POL 01	Social Policy
POL 06	HSE Policy
MS 02	Stakeholder Materiality and Risk Management
MS 06	Competency, Training and Awareness
MS 07	Management of Change
MS 11	Incident Reporting, Escalation and Investigation
TS 10	Safety Management
TS 13	Emergency and Crisis Management