Vedanta Limited

Sustainability Governance System

Management Standard

Incident Reporting, Classification and Investigation

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Management Standard – Incident Reporting, Classification and Investigation

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Document Issue and Revision History		
DATE	**REVISION NUMBER**	**CHANGE SUMMARY**
18/10/2011	1	Initial issue.
22/12/2001	2	Updated to include Classification and Escalation Elements. Renamed from Incident Reporting and Investigation to reflect this update.
01/04/2019	3	Updated definitions and classification process including ICMM guidance. Redundancies and conflicts removed.
12/09/2019	4	Clarification of reporting boundaries. Revised classifications notably health and environment. Some corrections in definitions
07/09/2020	5	Fatality Communication Procedure added as Appendix-3
06/07/2021	6	Classification and Reporting structure of Safety, Social & Environment Incidents revised; New Fatality Investigation Procedure updated
10/07/2024	7	Process Safety Event Categorization and High Consequence Work Related injury were added.

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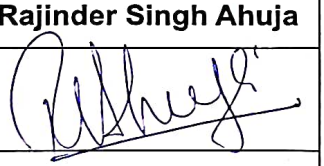
Signature	
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Management Standard – Incident Reporting, Classification and Investigation

1. Purpose

The purpose of this Management Standard is to describe the arrangements and requirements for the reporting, classification, escalation and investigation of incidents, which are crucial processes to enable Vedanta to understand the effectiveness of its risk management programmes and to ensure that the organisation learns lessons to avoid repeat incidents.

2. Scope

This Management 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. This Standard is applicable to the entire operation lifecycle (including exploration and planning, evaluation, operation and closure).

3. Definitions

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

Term	Definition
Cause	Event or condition without which the outcome / incident could not have occurred.
Contributing Factor	Event or condition that is partly responsible for an incident / outcome but without which the outcome / incident could still have occurred.
Disease	An abnormal condition or disorder of body functions or systems caused by acute or chronic exposure to agents, toxins, pathogens or other factors.
Environment	Surroundings in which an organization operates including air, water, land, natural resources, flora, fauna, humans and their interrelationship.
Environment condition	State or characteristics (attributes) of the environment at certain point in time
Environment Incident	Elements of an organizations' activities that interact with the environment and cause an environmental impact(s).
Environmental Impact	Change to the environment or environmental conditions wholly or partially resulting from an environmental incident.

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Fatality	The death of a worker as a direct result of an occupational injury or disease.
Group Incident Management Database & Reporting System	The electronic database – V-unified digital platform deployed by Group into which all data associated with incidents is stored and can be extracted in the form of various reports; including the Monthly Incident Report.
HIPO (High Potential Incident)	An actual Health, Safety, Environment or Community event or a near miss with the realistic potential to result in: • A fatality or permanently disabling injury. • A category 5 health, environment, social or labour event
Incident	An event or chain of events which caused or could have caused injury, illness, loss of assets or potential or actual damage to people, the environment or reputation.
Injury	Temporary or permanent damage to tissue, muscle or bone typically caused by an identifiable event.
Investigation	A systematic and structured analysis of an incident and the events and conditions leading up to it, with the aim of (i) identifying all contributing factors that allowed that incident to occur, and (ii) proposing effective corrective and preventive actions to prevent its recurrence.
Key Performance Indicator	A specific parameter that provides information about Vedanta's operational and management performance.
High Consequence Work Related Injury	High consequence work-related injury or ill health results in an injury from which the employee / worker cannot or is not expected to recover fully to the previous health status and is having Permanent disability (total or partial), which is statutorily required to submit to the statutory body. (Excluding Fatalities).
Lost Time Injury	Any occupational injury or disease that results in the worker's inability to perform routine work functions on the next calendar day after the injury. Inability to perform routine work functions includes cases where: a) The employee was assigned to another job on a temporary basis; or b) The employee worked at a permanent job less than full time; or c) The employee worked at his or her permanently assigned job but, due to the job-related injury, was physically or mentally unable to perform his or her routine work functions. Routine work functions are considered as those that the employee would be expected to perform at least once per week.
Monthly Incident Report	A monthly report produced by all Vedanta Companies that includes details of all incidents that have occurred in the month. The data for this report is extracted from the Group Incident Management Database & Reporting System.

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Near miss (or "near hit")	An event that, while not causing harm, had the potential to cause injury, ill health, environmental impact or property damage. A near-miss is an incident.
Occupational injury or disease	An injury or disease that results from work activities occurring in locations that are under the control of the employer or direction of the employer, regardless of location.
Operation(s)	A location or activity that is operated by a Vedanta Company and is part of the Vedanta Group locations, including mines, refineries, port or transportation activities, wind farms, oil and gas development sites, offices including corporate head offices and research and development facilities.
Recordable case	Any fatality, lost time injury or medical treatment case.
Recording Boundaries	Generally, any situation where there is a work relationship and an event occurs from an exposure in the workplace. See section 4.4 (c), (d) and (e) for detailed determination.
Remediation	Recovery of an environmental incident consistent with regulatory requirements and environmental norms.
Restricted Work Injury	See: Lost Time Injury
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 international third parties.
Top Management	All managers, and their line reports, that report directly to the most senior manager who has ultimate accountability at a Vedanta operation (who may also be a senior manager of one of Vedanta's subsidiary companies). A top management structure may also exist at the subsidiary Company level and Vedanta Group level.
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.)
Acids/Bases - Moderate	Substances with pH ≥ 1 and < 2, or pH > 11.5 and ≤ 12.5.

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Acids/Bases - Strong	Substances with pH < 1 or > 12.5.
Active Staging	Truck or rail cars waiting to be unloaded where the only delay to unloading is associated with physical limitations with the unloading process (e.g., number of unloading stations) or the reasonable availability of manpower (e.g., unloading during daylight hours only, unloading Monday - Friday only), and not with any limitations in available volume within the process. Active staging is part of transportation. Any truck or rail cars waiting to be unloaded due to limitations in available volume within the process are considered on-site storage.
Active Warehouse	An on-site warehouse that stores raw materials, intermediates, or finished products used or produced by a process. From a process perspective, an active warehouse is equivalent to a bulk storage tank. Rather than being stored in a single large container, the raw materials, intermediates, or finished products are stored in smaller containers (e.g., totes, barrels, pails, etc.).
Corrosive Material	A corrosive material is a highly reactive substance that causes obvious damage to living tissue. Corrosives act either directly, by chemically destroying the part (oxidation), or indirectly by causing inflammation. Acids and bases are common corrosive materials. Corrosives such as these are also sometimes referred to as caustics.
Direct Cost	Cost of repairs or replacement, clean-up, material disposal, and acute environmental cost associated with a fire or explosion. Direct cost does not include indirect costs, such as business opportunity, business interruption and feedstock/product losses, loss of profits due to equipment outages, costs of obtaining or operating temporary facilities, or costs of obtaining replacement products to meet customer demand. Direct cost does not include the cost of repairing or replacing the failed component leading to LOPC, if the component is not further damaged by the fire or explosion. Direct cost does include the cost of repairing or replacing the failed component leading to LOPC if the component failed due to internal or external explosion or overpressure.
Explosion	A release of energy that causes a pressure discontinuity or blast wave (e.g. detonations, deflagrations, and rapid releases of high pressure caused by rupture of equipment or piping).
Fire	Any combustion resulting from a LOPC, regardless of the presence of flame. This includes smouldering, charring, smoking, singeing, scorching, carbonizing, or the evidence that any of these have occurred.

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Flammable gas	Any material that is a gas at 35 °C (95 °F) or less and 101.3 kPa (14.7 psi) of pressure and is ignitable when in a mixture of 13 % or less by volume with air or has a flammable range of at least 12 % as measured at 101.3 kPa (14.7 psi).
Hazardous Zone 0	This is an area in which hazardous atmosphere is continuously present. As per applicable legal norms.
Hazardous Zone 1	Any area in which hazardous atmosphere is likely to occur under normal operating conditions. As per applicable legal norms.
Hazardous Zone 2	An area in which hazardous atmosphere is likely to be present under abnormal operating conditions. As per applicable legal norms.
Hospital Admission	Formal acceptance by a hospital or other inpatient health care facility of a patient who is to be provided with room, board, and medical service in an area of the hospital or facility where patients generally reside at least overnight. Treatment in the hospital emergency room or an overnight stay in the emergency room would not by itself qualify as a “hospital admission.”
Loss of Primary Containment (LOPC)	An unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air).
No Defined Property	Non-Toxic and Non-Flammable material
Normal Boiling Point	The temperature at which boiling occurs under a pressure of 101.3 kPa (760 mm Hg).
Office Building	Buildings intended to house office workers (e.g. administrative or engineering building, affiliate office complex, etc.).
Officially Declared	A declaration by a recognized community official (e.g. fire, police, civil defence, emergency management) or delegate (e.g. Company official) authorized to order the community action (e.g. shelter-in-place, evacuation).
Pollutant	Material with traces of environmentally hazardous chemical (any substance which causes deviation from normal physical chemical and biological property of air, water or land , upon injection) in it. E.g. Injection Fluid, Effluent Water, Power Fluid, etc.

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Precautionary (Evacuation, Public Protective Measures, Shelter-in-place)	Measure taken from an abundance of caution. For example, a company may require all workers to shelter-in-place in response to an LOPC independent of or prior to any assessment (e.g., wind direction, distance from the LOPC, etc.) of the potential hazard to those workers. For example, a recognized community official (e.g., fire, police, civil defence, emergency management) may order a community shelter-in-place, evacuation, or public protective measure (e.g., road closure) in the absence of information from a company experiencing a process safety event, or 'just in case' the wind direction changes, or due to the sensitive nature of the potentially affected population (e.g., school children, the elderly).
Pressure Relief Device	A device designed to open and relieve excess pressure (e.g. safety valve, thermal relief, rupture disk, rupture pin, deflagration vent, pressure/vacuum vents, etc.).
Primary Containment	A tank, vessel, pipe, truck, rail car, or other equipment designed to keep material within it, typically for the purposes of storage, separation, processing, or transfer of material.
Process	Production, distribution, storage, utilities, or pilot plant facilities used in the manufacture of petrochemical and petroleum refining products. This includes process equipment (e.g. reactors, vessels, piping, furnaces, boilers, pumps, compressors, exchangers, cooling towers, refrigeration systems, etc.), storage tanks, active warehouses, ancillary support areas (e.g. boiler houses and waste water treatment plants), on-site remediation facilities, and distribution piping under control of the Company.
Process Safety	A disciplined framework for managing the integrity of hazardous operating systems and processes by applying good design principles, engineering, and operating and maintenance practices. It deals with the prevention and control of events that have the potential to release hazardous materials or energy. Such events can cause toxic effects, fire, or explosion and could ultimately result in serious injuries, property damage, lost production, and environmental impact.
Process Safety Event	An unplanned or uncontrolled release of any material including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air) from a process.
Rainout	Two-phase relief (vapor and entrained liquid) from a vent or relief device with the vapor phase dispersing to the atmosphere and the remaining liquid falling to grade or ground.

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Rate of Release	Release of material in any, one-hour period. A “1-hour” rule applies for the purpose of the reporting Tier 1 or Tier 2 PSEs. Typically, acute releases occur in 1-hour or less; however, there may be some releases that would be difficult to prove if the threshold amount release occurred in 1-hour. (Example: A large inventory of flammable liquid is spilled from a tank or into a dike overnight due to a drain valve being left upon prior to a transfer operation. It may not be discovered for several hours, so it is difficult to know the exact time when the threshold quantity was exceeded.) If the duration of the release cannot be determined, the duration should be assumed to be 1 hour.
Secondary Containment	An impermeable physical barrier specifically designed to mitigate the impact of materials that have breached primary containment. Secondary containment systems include, but are not limited to tank dikes, curbing around process equipment, drainage collection systems, the outer wall of open top double walled tanks, etc.
Toxic Material	Toxic is defined by OSHA 29 CFR 1910.1200 App A as a chemical which falls in any of these three categories: A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally. **Or** more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin. **Or** In air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour.
Unsafe Location	An atmospheric pressure relief device discharge point or downstream destructive device (e.g. flare, scrubber) discharge point that results in a potential hazard to personnel, due to their proximity, such as the formation of flammable mixtures at ground level or on elevated work structures, presence of toxic or corrosive materials at ground or on elevated work structures, or thermal radiation effects from ignition of relief streams at the point of emission
Volume of Release	Total Release of Material due to LOPC in SCM (Standard Cubic Meter).

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4. Programme Requirements

All Vedanta subsidiary companies and operations are required to follow the requirements listed below with regards to incident reporting, classification, escalation and investigation.

4.1. General Requirements

Operations shall implement and maintain procedures and other arrangements for the effective reporting, classification, escalation, investigation, closure and communication of incidents and near misses.

These requirements also apply to incidents involving business partners directly commissioned by, or under the direction of, Vedanta whilst they are on Vedanta premises or engaged in off-site activities controlled by Vedanta. This normally excludes activities on the business partner's own premises.

Where incidents occur on Vedanta Joint Venture sites or premises and when the Vedanta Safety Management System applies, then incident reporting and subsequent investigations shall be managed in accordance with this Standard or equivalent Standards as defined in any Joint Venture Agreement.

It shall be ensured that personnel have the necessary competencies, appropriate to their role in the process (lead investigator/team member), to be able to conduct effective incident investigation and root cause analysis. This shall include formal training where necessary. See also the Vedanta Management Standard MS6 on *Competency, Training and Awareness*.

4.2. Initial Incident Actions

a) Procedures shall include mechanisms to ensure the prompt reporting of incidents.

b) Procedures shall identify those that are to be informed of an incident:

   i. An incident shall be reported to the relevant business or site personnel on the same work day on which it occurs (or is discovered). ii. Dependent on the incident classification, Vedanta Group shall be informed of incidents within the time period stated in Appendix 2.

c) In the case of a Category 5 and 5A incident, work shall be stopped, or additional controls implemented to ensure the safe continuation until the incident is investigated, risk controls reviewed, and preventive actions implemented.

d) Procedures shall ensure compliance with statutory reporting requirements.

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4.3. Incident Classification and Escalation Steps

Incidents shall be categorized in accordance with Appendix 2. The Incident Category shall be determined by the highest category of Severity Criteria. Each incident shall be:

- Reported by the actual severity
- Investigated by the maximum reasonable consequence.

4.4. Safety & Health Incidents

a) An injury or health impact is a Recordable Case if:

1. A work relationship is established regardless of whether the injury was foreseeable, preventable or related to a specific job or task
2. It occurs on company premises, except in an employee's "off-work" time - see points 9 & 10 below
3. It occurs when travelling for a work-related purpose, except in an employee's "off-work" time - see points 9 & 10 below

b) An injury is not a Recordable Case if:

4. It did not result from an event or exposure in the work environment
5. There is an aggravation of a previous injury that was not caused by a new incident
6. The injury results from a medical condition that is not work related
7. Preventative treatment is provided but there is no specific injury
8. An employee alleges an injury but there is no substantive or medical evidence to support the allegation
9. The injury occurs during "off-work" time at company-operated recreational facilities/events or parking lots, unless performing company work at these facilities
10. The employee is travelling on company business but has established a "home away from home", e.g. in a hotel

c) The ICMM guideline "Health and Safety Performance Indicators" is used to assist the final determination –see: https://www.icmm.com/en-gb/guidance/health-safety/performance-indicators or Appendix - 6

d) For any uncertainty or dispute the final determination will be made by the Vedanta Head HSE & Sustainability.

e) It should be noted that the Vedanta classification definitions may differ from those used in worker's compensation, local Factory Acts or similar.

4.5. Investigation

Safety Incidents Investigation:

- For Safety Incidents falling in the category of Cat. 5, 5A or High Potential Cat. 5A incidents (in accordance with Appendix-2), ICAM (Incident Cause Analysis Method) mentioned in Appendix-4 shall be followed for Incident Investigation.
- For all other Safety Incidents (Cat. 1,2,3,4, HIPO Cat. 5) site-specific investigation methods shall be followed for Incident Investigation.
- Group HSES Team may choose a Cross-Functional Investigation Team for all Critical Cat. 5 HIPOs that shall be investigated with ICAM methodology.

Health / Environment / Social / Legal / Labour Incident Investigation:

a) Procedures shall specify the arrangements for the investigation of incidents, including:

i. Composition of investigation teams:

- For any Category 5 incident the Lead Investigator as defined in "GN01 – Incident Investigations" shall be independent of the business in which the event occurred.
- For any other investigation, the team will vary depending on the actual/potential consequence of the incident.

ii. The investigation team must comprise individuals competent to complete the investigation. The local Supervisor(s) would typically be expected to be involved in all incident investigations. Area, line and site management would typically be expected to lead and/or participate in higher category incidents.

iii. Roles, responsibilities and authorization levels.

iv. Measures to ensure that legal defences are not compromised during the initial or subsequent management/investigation of an incident.

v. Mechanisms / methodologies / tools to establish the incident Causes and Contributory Factors.

vi. Category 5 incidents and HIPOs shall be investigated using the ICAM methodology defined in appendix 4..

vii. Reporting timescales and format (note; the formal written report should be produced within 28 days of the incident where feasible).

b) Prioritized corrective and preventive actions shall be identified to address the Causes. These shall be supported by clear responsibilities for completing the actions together with allocated timescales and resources. See also the Vedanta Management Standard MS13 on *Corrective and Preventive Action Management*.

c) Proposed corrective and preventive actions including identified control measures shall be reviewed and approved by senior management. They shall be subject to a risk assessment to ensure that (i) they are appropriate to the nature and scale of the hazards and associated risks and (ii) that additional risks are not unwittingly being introduced into the organization.

4.6. Closure

a) A formal system shall be in place to ensure that the status of corrective and preventive actions is monitored through to closure.
b) Confirmation of the effectiveness of corrective and preventive actions shall be undertaken.

4.7. Communication

a) Procedures shall ensure that lessons learned from incident investigations are documented and communicated to relevant Vedanta employees and, where appropriate, contractors.
b) Category 5 & 5A incidents and Category 5 & 5A HIPOs shall be communicated across relevant Vedanta companies by Vedanta Group HSE & Sustainability.
c) Systems shall be in place to manage the external communication of information relating to incidents where this is needed.

d) Systems shall be in place to review and, where appropriate, act upon incident information received from other Vedanta sites/companies.

4.8. Review

a) The senior management of every Vedanta Company shall undertake and document a periodic review that shall be at least annual of incident and investigation data to identify any trends, assess the effectiveness of current risk controls, and establish whether any additional measures are necessary. This may form part of a broader periodic management review.
b) Incident classification, reporting and investigation procedures shall be periodically reviewed to ensure that they remain current, relevant to the business, effective and in alignment with relevant Vedanta policies and standards.
c) The Vedanta CEO and Group Head HSE & Sustainability shall review all Class 5 & 5A incidents with the CEO of the impacted business in person or by Telepresence within one month of completion of the final investigation report.
d) Any Class 5 & 5A incident report will be submitted to the Board of Directors and the Sustainability Committee for review.
e) Consequence actions arising from Class 5 & 5A incidents will be reviewed for fairness and consistency by the Ethics Committee specifically expanded to include the Group Head HSE & Sustainability for this purpose.

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.

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6. Compliance and Performance

Each Vedanta operation shall ensure they comply with the requirements of this standard. Failure to comply may result in severe consequences to all involved, particularly if incidents are not reported or not reported properly in accordance with 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 and which meet the requirements as set out in the *Sustainability Data Management Technical Standard*.

The evaluation of performance shall include, as a minimum, confirmation that:

- Incidents are being reported and acted upon.
- Incidents are being correctly classified.
- Investigations are being carried out by competent personnel – including the active involvement of management – using appropriate methodologies.
- Investigations are identifying basic and underlying causes and contributory factors.
- Corrective and preventive actions, appropriate to the nature of hazards and level of risk, are being identified and implemented.
- The effectiveness of corrective and preventive actions is being assessed.
- Lessons arising from incidents are being communicated inside and, where appropriate, outside of the relevant Vedanta Company.

7. Supporting Information

	Description
ICMM (International Council of Mining and Metals) – Health & Safety Performance Indicator Definitions	The ICMM have produced a detailed set of H&S indicators and supporting definitions which have been incorporated into the Vedanta Sustainability Governance System and supporting Standards https://www.icmm.com/en-gb/guidance/health-safety/performance-indicators

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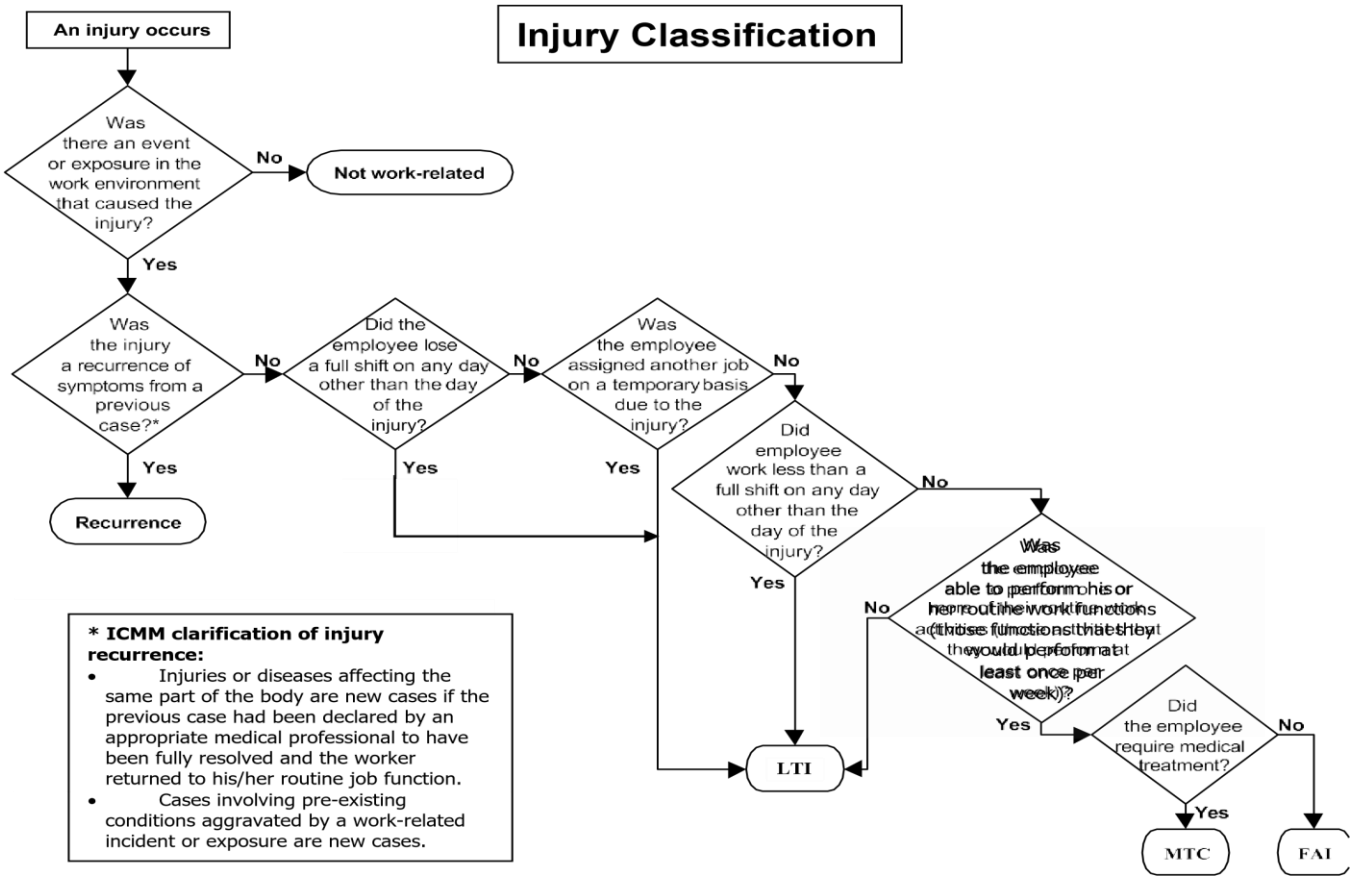
8. Review

This Management 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 24 months since the previous review.

9. References

Doc. Ref.	Title
MS 01	Leadership, Responsibilities and Resources
MS 06	Competency, Training and Awareness
MS 13	Corrective and Preventive Action Management
TS 13	Emergency and Crisis Management
API 754	Guide to Reporting Process Safety Events
IOGP Report 456	Process Safety – Recommended practice on key performance indicators.
MSHIC Rules 1989	

Appendix 1 – Incident Classification flowchart



Medical Treatment Case (MTC) Definition

Medical treatment is defined as occurring when an injury or disease requires a higher degree of patient management to ensure a full recovery. At a minimum, the following are considered medical treatment beyond first aid (regardless of the professional status of the person providing the treatment):

- Suturing of wounds
- Treatment of fractures
- Treatment of bruises by drainage of blood
- Treatment of second- and third-degree burns
- Providing prescription drugs or non-prescription drugs at prescription dosage to manage symptoms.

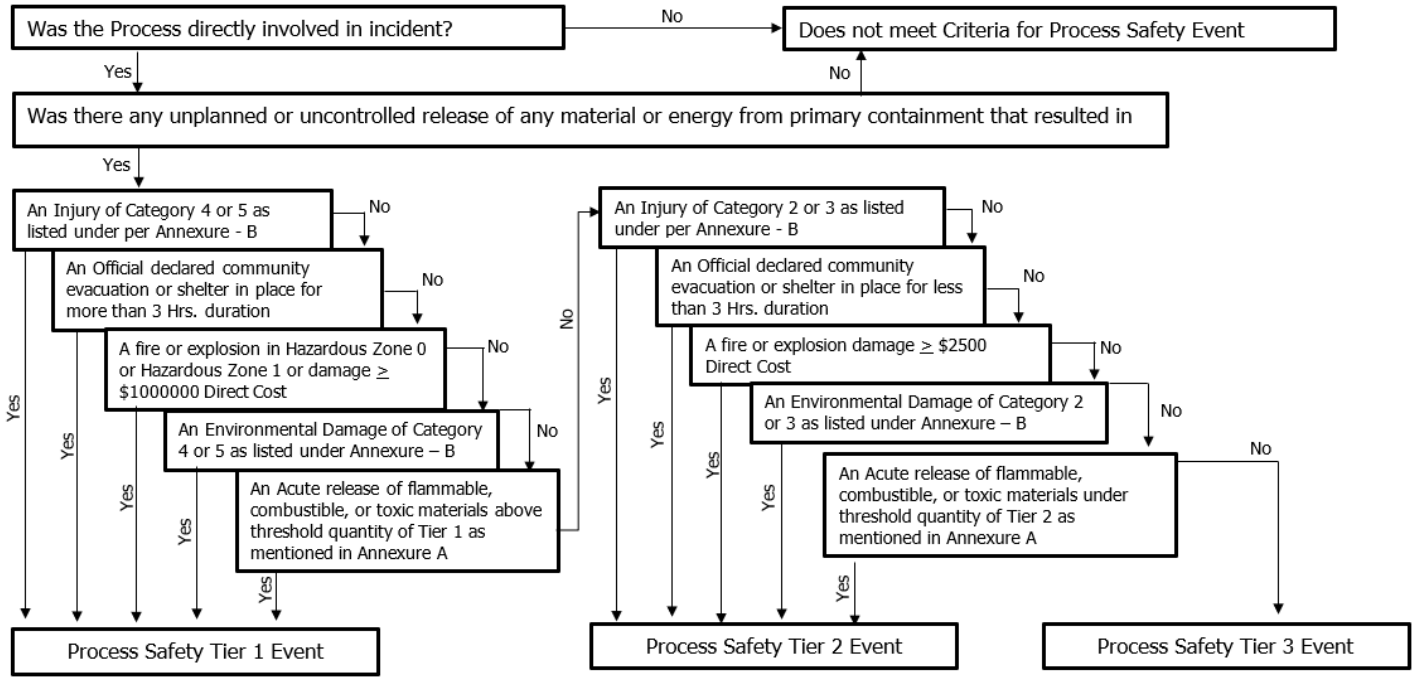
First Aid Injury (FAI) Definition

First aid describes a particular level of treatment for a work-related injury. First aid means the following treatments, regardless of the professional status of the person providing the treatment:

- Visit(s) to a health-care provider for the sole purpose of observation
- Diagnostic procedures including the use of prescription medications solely for diagnostic purposes.
- Use of non-prescription medications including antiseptics at non-prescription strengths
- Simple administration of oxygen
- Administration of tetanus/diphtheria shot(s) or booster(s)
- Cleaning, flushing or soaking wounds on skin surface.
- Use of wound coverings such as bandages, gauze pads, etc.
- Use of hot and cold therapy (e.g. compresses, soaking, whirlpools, non-prescription creams/lotions for local relief except for musculoskeletal disorders)
- Use of any totally non-rigid, non-immobilizing means of support (e.g. elastic bandages)
- Using temporary immobilization devices while transporting an accident victim (e.g. splints, slings, neck collars, backboards etc.)
- Drilling of a nail to relieve pressure or draining fluid from a blister.
- Use of eye patches
- Removal of foreign bodies embedded in the eye only if irrigation or removal with cotton swab is required.
- Removal of splinters or foreign material from areas other than the eyes by irrigation, tweezers, cotton
- swabs or other simple means
- Using finger guards
- Using massages
- Drinking fluids for relief of heat stress.

PROCESS SAFETY EVENT CATEGORIZATION

Detailed information of Process Safety Event Classification is mentioned in Appendix – 2. However, below flowchart outlines the categorization of process safety events.



Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat. 1	Negligible	First Aid Case	Incident that have localized short term impact on environment within the section of our premises (or) Unlikely to be of concern to internal or external stakeholders. (or) Remediation is not required, or clean-up is quick and easy. (Any one of the above) Examples: • Oil spillages within shop floor • Localized dust/fume leakage • Solid waste/ garbage at undesignated place • Used oil drums without secondary containment. • Solid waste mixed with hazardous waste/ e-waste. • Unintended minor release of natural resource with in section of plant	1. Manage locally in accordance with local procedures.	See Local Procedures	Section Head/Area-In Charge/Shift In-Charge & Respective Environment In- Charge	**Notification time** Reporting on the same day in the system. **Investigation Time Period-** Corrective actions shall be initiated.
				2. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement		
				3. Report monthly (only numbers) in the Monthly Incident Report	Monthly		

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria			Action	Timing
		Health	Social / Legal	Labour		
Cat. 1	Negligible	Irritation, small / minute lesions.	Complaints - Local complaints in company office (Written or verbal) from external sources.	Complaints - Concern / Grievances restricted to local complaints in company office (Written or verbal) by Employees / Contractors.	1. Manage locally in accordance with local procedures.	See Local Procedures
					2. All incidents recorded in the Group Incident Management Database & Reporting System	2 Weeks
					3. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
					4. Report monthly in the Monthly Incident Report	Monthly

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat. 2	Minor	Medical Treatment Injury	Incident that have localized short term impact on environment within the premises (or) Likely to have concern for internal stakeholders but not for external stakeholders. (or) Require minor intervention for remediation. **Examples** Oil/chemical spillages leading to drain/ wastewater storage pond Hazardous waste storage at undesignated location Leakages/ spillages of untreated wastewater inside plant Water leakage persisting beyond a day Accidental put off of flare/cold venting. Fugitive dust generation from tailing dam/ ash dyke/ waste dump (not affecting community)	1. Manage locally in accordance with local procedures. 2. Statutory report to authorities (as required by local regulatory agencies) 3. Report monthly (only numbers) in the Monthly Incident Report	1. See Local Procedures 2. Statutory Requirement 3. Monthly	Section Head/Area-In Charge/Shift In-Charge & Respective Environment In-Charge	**Notification time-** Reporting on the same day in the system. **Investigation Time Period -** Corrective actions shall be initiated

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria			Action	Timing
		Health	Social / Legal	Labour		
Cat. 2	Minor	Reversible health effects occurring immediately after exposure, e.g. acute irritations / dermatitis / sneezing / watering of eyes / cough / redness of eyes or skin / heat exhaustion / heat cramp etc.	Complaints - Receipt of multiple complaints on same topics from external sources (individuals)	Complaints - Receipt of multiple complaints on same topics by Employees / Contractors	1. Manage locally in accordance with local procedures.	See Local Procedures
			Protest - Minor protest (single family / small group less than 5 people) **with no work stoppage**	Protest Type - Minor protest (small group less than 5 people)	2. All incidents recorded in the Group Incident Management Database & Reporting System	1 Week
			Company gate closed, but no work stoppage		3. Report to Social Performance Manager (SPM) 4. Report to BU ExCo, BU Corp Comm	0 hours Within 24 hours
			Coverage - Minor / adverse local public or media attention	Coverage - Minor / adverse local public or media attention	5. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement
					6. Report monthly in the Monthly Incident Report	Monthly

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat. 3	Moderate	Lost Time Injury due to Restricted Work	Incident likely to cause short term impact on environment (inside/outside premises) (or) Likely to be of concern to internal stakeholders/ external stakeholders or attract local media coverage. (or) Remediation is required and likely to take less than 1 months. Examples: • Intermittent emissions beyond norms but no immediate health impact to workers/ communities • Hazardous waste disposal on land (unlined) inside the plant boundary • Leachate generated from hazardous waste storage reaching to soil • Fugitive dust generation from tailing dam/ ash dyke/ waste dump affecting nearby communities. • Unintended release of oil/ hazardous chemical on land.	1. Manage locally in accordance with local procedures. 2. Report one pager information by email to the Vedanta Company CEO, COO, Head HSES, Group Head HSES and Group Safety 3. Statutory report to authorities (as required by local regulatory agencies) 4. Report monthly in the Monthly Incident Report	1. See Local Procedures 2. Monthly 3. Statutory Requirement 4. Monthly	Section Head/ Area-In Charge & Environment Head,	**Notification time-** Reporting on the same day in the system. **Investigation Time Period-** Investigation within 5 days

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria			Actions	Timing
		Health	Social / Legal	Labour		
Cat. 3	Moderate	Adverse health effects that are not permanent and not life-threatening involving skin or peripheral nervous system / respiratory system / skin / acute exfoliative lesions / exfoliative dermatitis / acne etc. Exposure to hazardous agents 50%-100% OEL.	Complaints - Receipt of multiple complaints on same topics from/ to **Local** NGO/ Govt. body (agencies/ organizations)	Complaints – Receipt of complaints /multiple complaints on same topics from/ to Local Union/ Govt. body	1. Manage locally in accordance with local procedures	See Local Procedures
			Protest - Small scale demonstration (group including more than 5 and less than 20 people) with no work stoppage.	Protest Type - Small scale strike (group including more than 5 and less than 20 people)	2. Report by email to the Group CEO, COO, Group Head of HSE & Sustainability / Legal Counsel	24 Hours
			Petition given to District Administration related to issue/ complaint	-	3. Report to SPM 4. Report to BU EXCO, BU Head, BU Corp Comm, Group CSR Head	3. 0 hours 4. Within 12 hours
			Issue raised in State Assembly/ National Parliament	-	5. Report by email to the Sector Head, BU CEO, Group CEO, Group Head of HSE & Sustainability, Legal Counsel/concerned department and Group CSR Head	Within 12 hours
			Coverage - In Regional media- Newspaper / TV	Coverage – In Regional media- Newspaper / TV	6. Statutory report to authorities (as required by local regulatory agencies) 7. Report monthly in the Monthly Incident Report	6.Statutory Requirement 7. Monthly

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat. 4	Serious	Lost Time Injury / Illness	Incident very likely to cause short-term and/or long-term impacts on environment(or) Likely to be of major concern to external stakeholders or attract state level media coverage(or) Regulators likely to initiate show cause which may lead to fines or other sanctions due to Environment incident resulting in receipt of directions from regulatory authorities(or) Remediation is required and likely to take more than 1 months and less than 3 months Examples • Breach of ash dyke/waste disposal site but no immediate impact to communities/ water bodies • Unauthorized hazardous waste disposal on land (unlined) outside the plant boundary/unauthorized agencies. • Continuous emissions beyond norms but no immediate impact on health of communities and no treatment required. • Intermittent wastewater discharge outside plant (not meeting standards)	1. Manage locally in accordance with local procedures and where applicable using the subsidiary Emergency Plan produced under TS13 Emergency and Crisis Management Technical Standard.	See Local Procedures	Business CEO, Location head, Head-Operations followed by Section Head/Area-In Charge/Shift In-Charge & Respective Environment In-Charge & Head-Environment & Head-HSE. Group Head- HSE & Sustainability/Head-Environment	**Notification time-** Reporting within same shift in the system. **Investigation Time Period** Investigation within 7 days
				2. Report one pager information by email to the Vedanta Company CEO, COO, Head HSES, Group Head HSES and Group Safety	Monthly		
				3. Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement		
				4. Investigate using site specific investigation guidelines	Investigation report within 28 days		
				5. Report monthly in the Monthly Incident Report	Monthly		

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria			Actions	Timings
		Health	Social / Legal	Labour		
Cat. 4	Serious	Adverse health effects that are permanent but don't significantly affect quality of life or longevity. Health effects that may be mildly limiting or disabling and could lead to change of occupation and lifestyle, e.g. NIHL (Noise Induced Hearing Loss) / systemic lesions affecting reproductive system or having mutagenic potential / effects on musculoskeletal system / effects on central nervous system etc. Exposure to hazardous agents >100% OEL.	Complaints - Receipt of complaints / multiple complaints on same topics from/ to **National** NGO / **State** Govt. body	Complaints - Receipt of complaints / multiple complaints on same topics from / to National Union/ State Govt. body	1. Manage locally in accordance with local procedures and where applicable using the subsidiary Emergency Plan produced under TS13 Emergency and Crisis Management Technical Standard.	See Local Procedures
			Protest from community in front of District Administration Office for CSR related matters		Follow the action 1 along with: 2. Report to BU Corp Comm 3. Report to SPM, BU EXCO, BU Head.	0 Hours
			Protest - Small scale demonstration (group including more than 5 and less than 20 people) **with work stoppage**		Follow the action 1,2 ,3 along with: 4. Report by email to the Group ManCom, Group Head of HSE & Sustainability, Legal Counsel and Group CSR Head	0 Hours Within 12 Hours
			Protest - Large scale demonstration (group including more than 20 people) - No work-stoppage	Protest Type - Large scale strike (group including more than 20 people) - No work stoppage	5. Statutory report to authorities (as required by local regulatory agencies) 6. Investigate using the Vedanta Group defined methodology and tool	5. As per Statutory Requirement 6. Investigation report within 28 days
			Coverage - In National media- Newspaper / TV/ Internet	Coverage - In Regional media- Newspaper / TV/ Internet	7. Report monthly in the Monthly Incident Report	Monthly

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat. 5	Catastrophic	Single Fatality or Single permanently disabling injury	Incident certain to cause short term and long-term impacts on environment (or)Regulators likely to initiate show cause and may result in possible suspension or closure of operations; or attract national media coverage. (or)Remediation is required and likely to take more than 3 months Examples • Breach of ash dyke/waste disposal site affecting communities/ water bodies • Contamination of drinking water bodies resulting in health concerns in communities and affecting drinking water supply to communities • Emissions beyond norms and resulting in immediate health impact to stakeholders/ treatment is required. • Regular wastewater disposal outside plant	For Reporting of Cat. 5 Safety Incident follow 'Fatality Communication Procedure' mentioned in Appendix-3.		Group CEO, Head-Operations followed by Section Head/Area-In Charge/Shift In-Charge & Respective Environment In-Charge & Head Environment & Head-HSE. Group Head-HSE & Sustainability/Head-Environment	**Notification time-** Reporting within 4 hours shift in the system. **Investigation Time Period** Investigation within 7 days
				All Cat. 5 Safety Incidents to be investigated using ICAM (Incident Cause Analysis Method) described in Appendix-4.	Within 28 days		
				Manage locally in accordance with local procedures and where applicable using the subsidiary Emergency Plan produced under TS13 Emergency and Crisis Management Technical Standard.	See Local Procedures		
				Report immediately by verbal communication to the CEO, COO, Head HSE & Sustainability / Legal Counsel	0 Hours		
				Report by email to the Vedanta Company CEO, COO, Head HSE & Sustainability / Legal Counsel	12 Hours		
				Statutory report to authorities (as required by local regulatory agencies)	Statutory Requirement		
				Investigate using the Vedanta Group defined methodology and tool	Investigation report within 28 days		
				Report monthly in the Monthly Incident Report	Monthly		

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria			Actions	Timing
		Health	Social / Legal	Labour		
Cat. 5	Catastrophic	Adverse health effects or continued exposure that is likely to lead to permanent physical or mental disability / long term or permanent debilitating illness / significant reduction in quality of life / premature death; or diseases such as Silicosis / COPD (Chronic Obstructive Pulmonary Disease) / Cancer / HIV-AIDS etc. Exposure to life-threatening hazardous agents >100% OEL.	Complaints - Receipt of complaints / multiple complaints on same topics from / to International NGO / Central Govt. body	Complaints - Receipt of complaints / multiple complaints on same topics from / to Central Govt. body	1. Manage locally in accordance with local procedures and where applicable using the subsidiary Emergency Plan produced under TS13 Emergency and Crisis Management Technical Standard.	See Local Procedures
					2. Report to BU Corp Comm 3. Report to SPM, BU ExCo, BU Head 4. Report immediately by verbal communication to the Group ManCom, Head HSE & Sustainability / Legal Counsel and Group CSR Head	0 Hours
					5. Report by email to the Group ManCom, COO, Head HSE & Sustainability / Legal Counsel, and Group CSR Head	12 Hours
			Protest - Large scale demonstration (group including more than 20 people) - Stoppage of Work	Protest Type - Large scale strike (group including more than 20 people) - Stoppage of Work	Follow actions from 1-5, followed by: 6. Statutory report to authorities (as required by local regulatory agencies) 7. Investigate using the Vedanta Group defined methodology and tool	Statutory Requirement Investigation report within 28 days
			Coverage - In International media- Newspaper / TV/ Internet	Coverage - In International media- Newspaper / TV/ Internet	8. Report in the Monthly Incident Report	Monthly
Potential Cat. 5	HIPO					

Appendix 2 – Incident Classification & Reporting

Incident Category	Definition	Severity Criteria		For Safety Incidents		For Environmental Incidents	
		Safety	Environment	Actions	Timing	Escalation Matrix	Timing
Cat 5A	Catastrophic	Multiple Fatality & multiple permanently disabling injury	---	For Reporting of Cat. 5A Safety Incident, follow 'Fatality Communication Procedure' mentioned in Appendix-3.		---	---
				All Cat. 5A Safety Incidents to be investigated using ICAM (Incident Cause Analysis Method) described in Appendix-4.	Within 28 days	---	---
1) Potential Cat. 5 & 5A (Safety) 2) HIPO (Environment)	High Potential	Incident having a potential to cause impact equivalent to category 5 or 5A.	Incident having a potential to cause impact equivalent to category 4 or 5. Examples: • Breach of top raise of dyke/ waste disposal facility resulting in spillages in lower section but no spillages outside storage area. • Failure of slope of waste disposal facility but no impact outside storage area. • Malfunctioning of pollution control equipment, failure of controls which could have resulted in mis-happening of incident category- 4 or 5. • Storage of tailing beyond the design parameters of tailing pond.	Report initial details of the incident to Group HSE Head & Group Safety Head	72 hours	Immediate communication to Section Head/Area-In Charge/Shift In-Charge & Environment Head/ Head HSE, Group Head-HSE & Sustainability /Head-Environment	**Notification time**- Reporting within same day in the system **Investigation Time** Period Investigation within 7 days
				Investigate Cat 5 HIPO using site specific investigation guidelines.	14 days		
				Investigate Cat 5a HIPO using ICAM (Incident Cause Analysis Method) described in Appendix-4.	14 days		
				Corporate may choose a CrossFunctional Investigation Team for Critical Cat 5/5a HIPOs.			
				Report one pager alert after investigation by email to the Group HSE Head, Group Safety Head & Group Incident Management Database System	15 days		

Appendix 2 – Process Safety Event Classification

2.1 Exclusions

LOPC events associated with the following activities fall outside the scope of Process Safety Event Categorization as per API RP 754 and shall not be included in data collection or reporting efforts:

a) Release from Transportation Pipeline operations occurring outside the control of the responsible party;

b) Marine Transport operations, except when the vessel is connected or in the process of connecting or disconnecting to the process;

c) Truck or Rail transport operations, except when the truck or rail car is connected or in the process of connecting or disconnecting to the process or when the truck or rail car is being used for on-site storage.

d) Vacuum truck operations, except on-site truck loading or discharging operations, or use of the vacuum truck transfer pump;

e) Routine emissions from permitted or regulated sources;

f) Office, Shop and Warehouse building events;

g) Personal safety events (e.g. slips, trips, falls) that are not directly associated with on-site response or exposure to a loss of primary containment (LOPC) event;

h) LOPC events from ancillary equipment not connected to the process (e.g. small sample containers);

i) Quality assurance (QA), quality control (QC) and research and development (R&D) laboratories (pilot plants are included);

j) New construction that is positively isolated (e.g., blinded or air gapped) from a process prior to commissioning and prior to the introduction of any process fluids and that has never been part of a process;

k) Retail service stations; and

l) On-site fuelling operations of mobile and stationary equipment (e.g. pick-up trucks, diesel generators, and heavy equipment).

2.2 Reportable Process Safety Event

A reportable PSE is an unplanned or uncontrolled release of any material including non-toxic and non-flammable materials (e.g., steam, hot water, nitrogen, compressed CO2, or compressed air) from a process that meets the definitions for Tier 1, Tier 2 or Tier 3 Indicators.

2.2.1 Tier 1 PROCESS SAFETY INDICATOR DEFINITION AND CONSEQUENCES

A Tier 1 Process Safety Event is a loss of primary containment (LOPC) with the greatest consequence as defined by API RP 754. A Tier-1 PSE is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air), from a process that results in one or more of the consequences listed below:

- An injury of Category 4 or 5 as listed under per Annexure - B;
- An Official declared community evacuation or shelter in place for more than 3 Hrs. duration;
- A fire or explosion in Hazardous Zone 0 or Hazardous Zone 1 or damage greater than or equal to $1000,000 of direct cost ;
- An Environmental Damage of Category 4 or 5 as listed under Annexure – B;

- A PRD discharge to atmosphere whether directly or via a downstream device that results in one or more of the following consequences:
  - Liquid carryover; or
  - Discharge to a potentially unsafe location; or
  - An onsite shelter-in-place; or
  - Public protective measures (e.g. Road Closure); or
  - And PRD discharge quantity falling more than Tier 1 threshold as mentioned in Annexure - A; or
- A release of material from primary containment of greater than threshold quantities of Tier 1 as mentioned in Annexure - A in any, one-hour period.

2.2.2 Tier 2 PROCESS SAFETY INDICATOR DEFINITION AND CONSEQUENCES

A Tier 2 Process Safety Event is a LOPC with lesser consequence. A Tier-2 PSE is an unplanned or uncontrolled release of any material, including nontoxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air), from a process that results in one or more of the consequences listed below and is not reported as a Tier 1 PSE:

- An Injury of Category 2 or 3 as listed under Annexure - B;
- An Official declared community evacuation or shelter in place for less than 3 Hrs. duration;
- A fire or explosion damage greater than or equal to $2500 of direct cost;
- An Environmental Damage of Category 2 or 3 as listed under Annexure – B;
- A PRD discharge to atmosphere whether directly or via a downstream device that results in one or more of the following consequences:
  - Liquid carryover; or
  - Discharge to a potentially unsafe location; or
  - An onsite shelter-in-place; or
  - Public protective measures (e.g. Road Closure); or
  - And PRD discharge quantity falling more than Tier 2 threshold but less than Tier 1 threshold quantity as mentioned in Annexure - A; or
- A release of material from primary containment of greater than threshold quantities of Tier 2 but less than Tier 1 threshold quantity as mentioned in Annexure - A in any one-hour period.

2.2.3 Tier 3 PROCESS SAFETY INDICATOR DEFINITION AND CONSEQUENCES

A Tier 3 Process Safety Event is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air), from a process that results in one or more of the consequences listed below and is not reported as a Tier 1 or Tier 2 PSE:

- An Injury of Category 1 as listed under Annexure - B;
- A fire or explosion damage up to $2500 of direct cost;
- An Environmental Damage of Category 1 as listed under Annexure – B;
- A release of material from primary containment of threshold quantity of Tier 3 as mentioned in Annexure - A in any one-hour period.

2.3 Calculation of Process Safety Event Rate

The PSE Rate shall be calculated as follows:

Tier 1 PSE Rate = (Total Tier 1 PSE Count / Total Work Hours)/1000000
Tier 2 PSE Rate = (Total Tier 2 PSE Count / Total Work Hours)/1000000

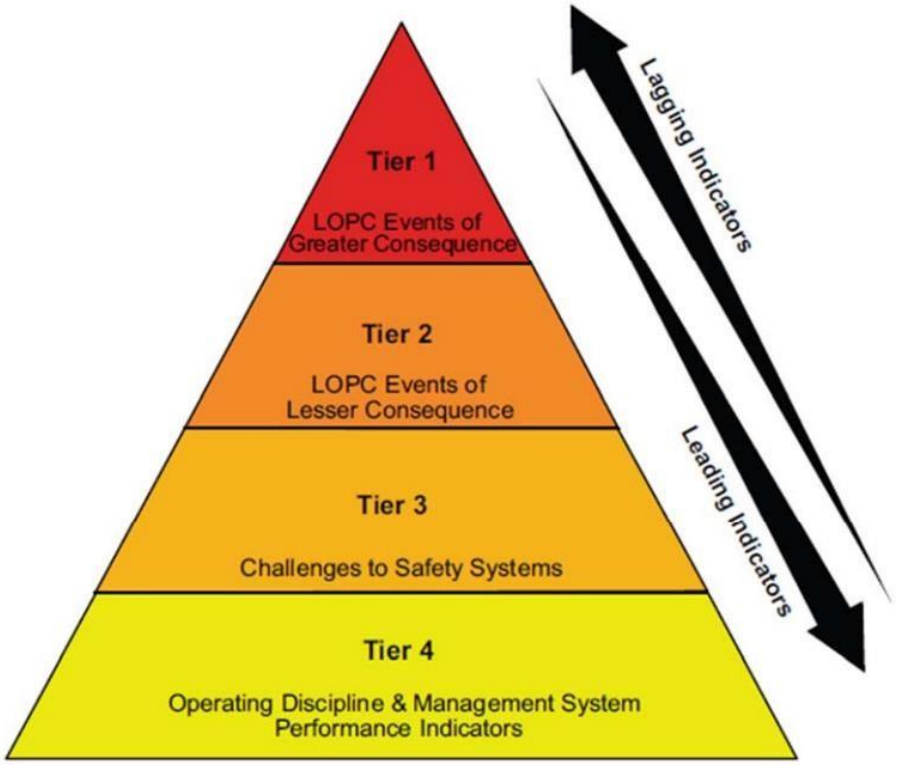
*PSE Rates shall be calculated only for Tier 1 and Tier 2 PSE events as mentioned above.

2.4 Tier 4 Process safety Indicator – Operating Discipline

Tier 4 indicators typically represent performance of individual components of the barrier system and are comprised of operating discipline and management system performance. Indicators at this level provide an opportunity to identify and correct isolated system weaknesses. Tier 4 indicators are indicative of process safety system weaknesses that may contribute to future Tier 1 or Tier 2 PSEs. In that sense, Tier 4 indicators may identify opportunities for both learning and systems improvement. The following list of indicators (but not limited to) shall be considered –

Barrier/ Risk Control Parameter	PSE Tier 4 Example
Inspection & Maintenance of Safety Critical Equipment	% of Compliance to Maintenance Plan of Safety Critical Equipment
Safety Instrumentation and Alarms (SIA)	# of individual SIA tests versus Schedule
Competence of Personnel	% of Personnel assessed for competence in asset integrity / process safety critical knowledge.
Start-Ups and Shutdowns (S&S)	% of relevant personnel trained on S&S
Management of Change (MOC)	# of Planned MOCs performed % of PSSR Conducted of implemented MOCs
Permit to Work	# PTW Audits
Contractor Safety Management	% of required training conducted on Process Safety
Emergency Management	% of Emergency Exercises conducted as per schedule % Compliance to testing schedule of emergency equipment and shutdown devices.

Process Safety Indicator Pyramid:



2.5 ANNEXURE A – Threshold Quantity of Material

1.

		Tier 1	Tier 2	Tier 3
Threshold Release Category	Material Hazard Classification	Threshold Quantity		
TRC 1	TIH Zone A Materials	>=5 Kg	>= 0.5 Kg and <5 Kg	<0.5 Kg
TRC 2	TIH Zone B Materials	>=25 Kg	>= 2.5 Kg and <25 Kg	<2.5 Kg
TRC 3	TIH Zone C Materials	>= 100 Kg	>= 10 Kg and <100 Kg	<10 Kg
TRC 4	TIH Zone D Materials	>= 200 Kg	>= 20 Kg and <200 Kg	<20 Kg
TRC 5	Flammable Gases	>=500 Kg	>=50 Kg and <500 Kg	<50 Kg
	Liquids with Normal boiling point <=35 C & Flash Point <23 C			

		Tier 1	Tier 2	Tier 3
Threshold Release Category	Material Hazard Classification	Threshold Quantity		
	Other Packaging Group I materials (Excluding acids/bases and excluding UNDG Class 1; Class 2.2; Class 4.2; Class 4.3; Class 7 & Class 9 materials)			
TRC 6	Liquids with Normal boiling point >35 C & Flash Point <23 C	>=1000 Kg	>=100 Kg and <1000 Kg	<100 Kg
	Crude Oil >= 15 API Gravity (Unless actual flash point available)			
	Other Packaging Group II materials (Excluding acids/bases and excluding UNDG Class 1; Class 2.2; Class 4.2; Class 4.3; Class 7 & Class 9 materials)			
TRC 7	Liquids with Flash Point >=23 C and =<60 C	>=2000 Kg	>=200 Kg and <2000 Kg	<200 Kg
	Liquids with Flash Point >60 C released at a temperature at or above flash point			
	Crude Oil < 15 API Gravity (Unless actual flash point available)			
	UNDG Class 2, Division 2.2 (Non-flammable, nontoxic gases) excluding air			
	Other Packaging Group III materials (Excluding acids/bases and excluding UNDG Class 1; Class 2.2; Class 4.2; Class 4.3; Class 7 & Class 9 materials)			
TRC 8	Liquids with Flash Point >60 C and =<93 C released at a temperature below flash point	NA	>=1000 Kg	<1000 Kg
	Strong acids/bases			

TIH – Toxic Inhalation Hazard; TRC – Threshold Release Category; UNDG – United Nations Dangerous Goods

2. In case Material released is Pollutant: *****

		PSE		
POLLUTANT MATERIAL	Pollutant Material	Tier 1	Tier 2	Tier 3
	Produced Water	Tier 1 (>=500 Kg)	Tier 2 (>=50 Kg and <500 Kg)	Tier 3 (<50 Kg)
	Power Fluid	Tier 1 (>=500 Kg)	Tier 2 (>=50 Kg and <500 Kg)	Tier 3 (<50 Kg)
	Injection Water	Tier 1 (>=500 Kg)	Tier 2 (>=50 Kg and <500 Kg)	Tier 3 (<50 Kg)

****: BUs shall add their respective applicable pollutant materials.**

Note: In case, if released material exhibit more than one property, then user shall follow Flammability over Toxicity over Corrosiveness of that material.

E.g., H2S being Toxic and Flammable Gas, its' prominent property is Toxicity and accordingly, if any LOPC occurs, it is to be considered as per Annexure A w.r.t toxicity.

2.6 ANNEXURE B – PSE Consequence Categories

PSE CATEGORY	CONSEQUENCE CATEGORIES				
	Safety	Environment Impact	Fire or Explosion / Asset Damage	Material Release	Community Impact
Tier 1 (LOPC resulting in anyone of these)	Injury Classification Category 4, 5 as per MS 11	Environment damage of Category 4, 5 as per MS 11	Fire or Explosion in Hazardous Zone 0 or Zone 1 or Fire & Explosion Damage to Asset resulting in ≥ $100,000 of direct cost	Acute rate of release of Material above threshold quantity mentioned in **Annexure A** or A PRD discharge to atmosphere whether directly or via a downstream device that results in one or more of the following consequences: —Liquid carryover or —Discharge to a potentially unsafe location; —An onsite shelter-in-place or —Public protective measures (e.g., Road Closure); And PRD discharge quantity greater than Threshold in **Annexure A;**	>=3 hrs duration Officially declared shelter-in-place or public protective measures Or Officially declared Community Evacuation.

Tier 2 (LOPC resulting in anyone of these)	Injury Classification Category 2, 3 as per MS 11	Environment damage of Category 2, 3 as per MS 11	Fire & Explosion Damage to Asset resulting in ≥ $2500 and < $100,000 of direct cost	Acute rate of release of Material above threshold quantity mentioned in **Annexure A** or A PRD discharge to atmosphere whether directly or via a downstream device that results in one or more of the following consequences: —Liquid carryover or —Discharge to a potentially unsafe location; —An onsite shelter-in-place or —Public protective measures (e.g., Road Closure); And PRD discharge quantity greater than Threshold in **Annexure A;**	<3 hrs duration Officially declared shelter-in-place or public protective measures Or Officially declared Community Evacuation.
Tier 3	Injury Classification Category 1 as per MS 11	Environment damage of Category 1 as per MS 11	Fire or Explosion damage to asset resulting in <$2500	LOPC resulting in release of Material below Threshold Quantity mentioned in Tier 2.	----

*Investigation of PSE (process safety event) classified based on “Fire or explosion or asset damage (or) Material release (or) Community Impact, follows as below

- PSE Tier-1 events shall follow the MS11 Category 5 Safety incident process.
- PSE Tier-2 events shall follow the MS11 Category 3 Safety incident process.
- PSE Tier-3 events shall follow the MS11 Category 1 Safety incident process.

*If PSE classification was based on safety or environment impact – investigation shall follow related to the category it belongs to, as per MS11)

IN CASE OF MULTIPLE SELECTION, HIGHEST OF ABOVE SELECTED WILL BE CONSIDERED FOR PSE CATEGORIZATION

Example for understanding of Process Safety Event Categorization:

A pipeline leaks and releases 1800 kg of flammable material (BP=47C and FP=59C) above ground within 1 hour leading to sever environmental damage that will require extensive measures to restore impact. No Fire / Explosion or Officially declared evacuation reported.

Process Safety Tier Classification:

Fire Incident	Incident Matrix	PSE Section 2	PSE Material Release Qty.
TIER 3	TIER 1	TIER 3	TIER 2
Since no Fire / Explosion reported	Environmental Impact of Category 4	Since no officially declared evacuation reported	Refer Annexure A for Flammable Material with BP>35 and 23<=FP<=60 having threshold qty. of 1800 Kg.

The above incident has Category 4 - Environmental Impact which calls for PSE Tier 1 categorization. Hence, this incident will be reported as PSE Tier 1.

2.7 ANNEXURE C – Material Density

Material with density is listed below for reference and for other material densities applicable to business – MSDS to be considered.

Name of Material Release	Density of Material Release (kg/m3)
Natural gas	0.75
LPG	1.89
Acetylene	1.17
Crude oil - Offshore	803
Crude Oil - RJ	880
Propane	1.81
Condensate (Hydrocarbon)	664.9
Diesel	830
Aviation Turbine Fuel	775
Methanol	792
Xylene	864
Bromine	3119
Carbon Monoxide (CO)	1.14
Hydrogen Sulphide (H2S)	1.36
Sulphur Dioxide (SO2)	2.63
Acrolein	839
Chlorine (Cl2)	2.89
Sulphur	2070
Hydrochloric Acid	1189
Sodium Hydroxide caustic)	1330

Name of Material Release	Density of Material Release (kg/m3)
Corrosion Inhibitor (di-ethylamine)	950
Biocide	670
Produced Water (Effluent Water)	803
Injection Water	823
Power Fluid	823
Production Fluid	823
Reverse Emulsion Breaker	1222
Drag Reducer	743
Lubricating oil	820
Transformer Oil	900
Polymer Solution	0.8
Steam	1
Compressed air	1.18
Compressed CO2	1.87
Compressed/ Liquified Nitrogen	1.25
High pressure water	1000
Hot water	1000
Glycol	1110
Tri-ethylene Glycol	1110
Heating Oil (Hot Oil)	995

Appendix 3 – Fatality Communication Procedure

In case of a Fatality or Category 5 & 5a Safety incident (in accordance with Appendix 2) the following communication procedure should be adopted by all the sites and the responsible authority:

S. No.	Responsibility	Timing	Means of Communication	Actions
1.	Line In charge / Location supervisor / Department HOD / SBU Chief HSE officer	Immediate	Verbal	Inform to SBU Heads, BU Director, CEO, COO, HSE Head and Legal Counsel of respective BUs.
		As soon as practicable	Mail	
2.	SBU Heads / B U Director / BU CEO	Immediate	Verbal	Inform to Group CEO, Group HSE Head.
		As soon as practicable	Mail	
3	Group CEO	After Receiving the Information	Mail	Inform to Group ExCO, Group Mancom.
4.	Group HSE Head	After Receiving the Information	Mail	All BU CEO and BU HSE Heads giving initial details of the incident.
5.	BU CEO / BU HSE Head	Within 24 hrs.	Mail	Send one pager detail to Group CEO, Group HSE Head giving details of preliminary analysis of incident.
6.	Group HSE Head	When received	Mail	Send one pager detail received to Group ManCom, Group ExCO, all BUs CEO & HSE Heads.
7.	Business CEO / HSE Head	Within 28 days*	Mail	Send detailed Investigation Report to Group CEO, Group HSE Head & Group Safety Head.
8.	Group Safety Head	When received	Mail	Send a one pager Safety Alert to ManCom, Group ExCO, all BUs CEO, BU HSE Heads & BU Safety Heads mentioning incident details & recommendations to be implemented by all sites.

*** In case the fatality is not concerned with an occupational / industrial accident and requires a statutory intervention the investigation report may get delayed as per the legal requirements.**
Note: BU Director/ BU HSE Heads will ensure to inform the statutory authorities within timelines as per the statutory requirement.

Appendix 4 –ICAM for Fatality & Critical HIPO Investigation

SCOPE: To provide a systematic approach to undertake a Fatality (Cat.5 or 5A) or HIPO (Cat. 5A) Investigation using Incident Cause Analysis Method (ICAM) involving the following steps-

i. Immediate Action & Incident Reporting
ii. Site preservation & initial evidence collection
iii. Investigation team formation
iv. Investigation Planning before reaching the site
v. Data Collection- PEEPO Method
vi. Data Organization- Timeline Mapping
vii. Analyzing findings- ICAM Analysis
viii. Development of Recommendations & Key Learnings
ix. Investigation Report Formation
x. Implementation of Learnings

INVESTIGATION PROCEDURE IN DETAIL:

1. **Immediate Action & Incident Reporting:**
   Following an incident, the job supervisor / shift in-charge / area in-charge / department head or any senior person present should immediately:

   i. Initiate the Site Emergency Response plan as appropriate / required.
   ii. Take action to make the area safe and prevent escalation of situation.
   iii. Cease the operations or tasks directly related to the event.
   iv. Provide necessary first aid or medical care to the injured.
   v. Evacuate people, as necessary.
   vi. Minimize environmental impact if any.
   vii. Inform family of the injured person with appropriate care & sensitivity.

- Reporting of the incident should be done as per **Appendix-2 (Incident Classification & Reporting)** of this Standard.
- Any Fatality / Multiple Fatality Incident shall be notified to the concerned authority as per the **Fatality Communication Procedure** mentioned in Appendix-3.

2. **Site Preservation & Initial Evidence collection:**
   After the initial rescue and evacuation process by Emergency Response team, it is necessary to keep the site undisturbed to avoid altering of the evidence. It is the responsibility of **Area In-charge** to keep the incident site preserved until the arrival of regulatory authority or incident investigation team. Also, the below mentioned initial evidence should be collected and kept ready by the **Site Safety Team** before the arrival of Investigation Team:

   i. Pictures or videos of the incident scene.
   ii. Drawings / maps / P&IDs of equipment or process involved.
   iii. CCTV footages in the area if any.
   iv. Initial witness statements with identities.
   v. Documentary evidence related to operating procedures (SOPs/SMPs), standards, permits etc.

vi. Evidence from clothes and belongings of the injured / deceased.
vii. Other physical evidence.

3. Investigation Team Formation:

The investigation team selection should be led by Group CEO and Group HSE Head and should include the following members:

i. Investigation Team Leader, preferably SBU Head Level (M3 and above), independent from Business where fatality has occurred.
ii. Subject Matter Expert (SME) from cross functional unit (1 or 2).
iii. One Group HSE representative.
iv. One Site liaison, who will assist the Investigation Team in gathering information & conducting interviews.

It is necessary that at least one of the members in the team is trained in ICAM Lead Investigator Training.

3.1 Objectives of Investigation:

The Investigation Team must be clear that the objective of the Investigation is to:

- Establish the facts.
- Identify contributing factors and latent hazards.
- Review adequacy of existing controls and procedures.
- Review related incidents / Safety Alerts / Safety Observations in past and actions taken.
- Report the findings.
- Recommend corrective actions which can improve efficiency, reduce risk, and prevent recurrence.
- Identify any key learning for distribution within the organization and externally as required.

The Investigation Team should understand that the Incident Investigation is NOT meant for the purpose of allocating blames and liability.

3.2 Role of Team Leader:

The Team Leader's role is to:

- Direct the investigation.
- Communicate and liaison with local management and Group HSE as required.
- Assign duties to the team.
- Obtain the services of specialist advisers as required.
- Schedule and co-ordinate investigation activities and resources.
- Supervise preparation of the investigation report.
- Brief management on the team's findings.

3.3 Role of Team Member:

The Team Member's role is to:

- Collect data, facts and evidence.
- Establish the sequence of events leading up to the occurrence.
- Analyze and integrate available information.
- Develop findings and conclusions.
- Determine the significance of findings.

- Write the investigation report.
- Present the report to management.

4. Investigation Planning before reaching the site:

Since it may take some time for the Investigation Team members to reach the incident site, it is important that the investigation team have a formal discussion on the incident prior to their visit to the incident location, to keep a plan ready to implement once they reach the site. This might be done on a virtual communication platform. The planning stage would normally commence with the following:

- Select a suitable secure virtual room as a platform to share information.
- Obtain copies of evidence collected by the Site Safety team / Site liaisons.
- Prepare tentative list of people to interviewed and communicate it to the local management prior to visit.
- Obtain maps, diagrams, and photographs that may be helpful to the investigation.
- Brainstorm the scope of the investigation.
- Outline a plan of action and allocate tasks.
- Identify any additional specialists required to assist in the investigation.
- Set up control and recording procedures for gathered evidence.
- Select a date to start preparing the incident report.
- Minute the meeting.
- Set the date, time, and place for the next meeting.

The team may ask for additional information or documents which they might need once they reach the site. The Site Liaisons should ensure all the required data is ready before all the members reach the site.

5. Data Collection:

Once all the investigation team members reach the preserved incident scene, the full-fledged investigation begins as per the plan in hand. The first step of this is Data Collection.

5.1 Preliminary data collection:

The preliminary information that the investigation team should collect from the incident location includes but is not limited to the below items:

- Positions of injured worker(s).
- Position & condition of equipment being used.
- Position of valves, switches, controls etc.
- Safety devices in use.
- Position of appropriate guards.
- Illumination, visibility, and noise levels at the site.
- State of housekeeping at the site.
- The effects of weather.
- Presence and location of witnesses.
- Presence of unauthorized personnel.
- Evidence of safety equipment failures.
- Evidence of loss of containment.
- Witness marks (gouges, scratches, smears, discoloration, burn marks etc.) if any.
- Presence or absence of warning signs or barriers.
- Results of other inspections by company representatives or external authorities.

5.2 Photography:

Photography is one of the most useful tools to the investigation team. Once the investigation team have left the scene, the photographs taken will be the only way for them to accurately recall exactly where something was.

Photographs taken at the accident scene should include the following:

- An overall view of the incident site taken from a minimum of four directions.
- Aerial views of the accident scene (equipment and weather permitting).

- Photos of objects struck by the equipment.
- Detailed photographs of suspected failed parts that contributed to the accident.
- Photos of failed personal protective clothing and equipment and the agents causing the failure or injuries.
- Photograph and measure skid marks, ground scars etc.
- Any other photographs deemed of interest to the investigation team.

Site team should take required permissions for taking photographs before the arrival of team.

5.3 Relevant data collection using PEEPO:

After preliminary data collection, further information gathering can be done under 5 main categories called as the PEEPO method:

P – People (The People involved)
E – Environment (The incident scene environment)

E – Equipment (The equipment involved)

P – Procedures (The relevant work procedures)

O – Organization (The organizational issues)

The data that must be gathered under these 5 categories has been briefed below.

5.3.1 People: Try to identify all the people who might have information about the incident and obtain testimonies from them. Interviewing is an essential technique for collected such information. The Investigation team should conduct interviews including the following individuals:

- Individuals directly involved in the incident.
- Supervisory personnel.
- Personnel at the scene.
- Management.
- Emergency Services personnel (if illness or injuries involved).
- Safety personnel.
- Subject matter experts.

Keep the interview short & simple and use language the person understands. Set a positive tone during the interview. Put the person at ease by conducting a friendly interview, not an interrogation.

Some points to remember while conducting an interview:

- Interview as soon as possible after the incident.
- Do not interrupt medical care to interview.
- Interview each person separately.
- People may be reluctant to discuss the incident, particularly if they think someone will get in trouble.
- Reassure them that this is a fact-finding process only.
- Remind them that these facts will be used to prevent a recurrence of the incident.
- Ask open-ended questions.
- Do not make suggestions.
- If the person is stumbling over a word or concept, do not help them out.
- Use closed-ended questions later to gain more detail.
- If the witness begins to offer reasons, excuses, or explanations, politely decline that knowledge, and remind them to stick with the facts.
- Ask the witness for recommendations to prevent recurrence; they will often have the best solutions to the problem.
- Get a written, signed testimony from the witness.

- It is best if the witness writes his or her own testimony. Interview notes signed by the witness may be used if the witness declines to write a testimony.

5.3.2 Environment: Examine the scene of the incident for information and to help understand the nature of the task being conducted and the local environmental conditions. Incident Investigators may gather information on:

- What were the weather conditions?
- Were any housekeeping issues involved?
- What were the workplace conditions?
- What surrounding noises were present?
- What were the light conditions?
- Were toxic or hazardous gases, dusts, or fumes present?
- Were the environmental risks communicated in anyway?

5.3.3 Equipment: Examine the equipment involved in the incident. Pay particular attention to the condition of equipment, anything that may have changed or be out of the ordinary e.g., abnormal stress, modifications, substitutions, distortions, fractures etc. Identify any design flaws, mismatched components or confusing labelling or marking. Ensure that the equipment was appropriate for the task being conducted. The investigation team may try to seek the following information:

- How did the equipment function?
- Were hazardous substances involved?
- Was any alternative equipment / material available?
- What was the condition of equipment / material?
- What personal protective equipment (PPE) was being used?

5.3.4 Procedures: Review the task that was being conducted. Examine the work procedures and the scheduling of the work to ascertain whether they contributed to the incident. Examine the availability, suitability, use and supervisory requirements of standard operating procedures or work instructions. Ensure the actual work procedure being used at the time of the incident is explored. The mode and efficiency of communication of the procedures should also be checked. The investigation team should look for answers to questions such as:

- What work procedure was used?
- Was a Job Safety Analysis conducted as part of planning prior to the task?
- Had conditions changed that would have affected the way normal procedures worked?
- How did the safety devices work?
- What lockout or isolation procedures were used?

5.3.5 Organization: Management holds the legal responsibility for the safety of the workplace and the workforce. The role of supervisors and management must always be considered in an incident investigation. Answers to any of the preceding types of questions logically lead to further questions such as:

- What applicable safety rules were communicated to employees? When?
- What written procedures were available?
- How were they enforced?
- What supervision was in place?
- What training was given in how to do the work? When? Is it still valid and current?
- How were hazards identified?
- What procedures had been developed to overcome them?
- How were unsafe conditions corrected?
- Was regular maintenance of equipment carried out?
- Were regular safety inspections carried out?
- Were there any changes to equipment, environment, people, or procedures?

5.4 Classification of gathered information:

Once the information is collected under the 5 Categories – People, Environment, Equipment, Procedure & Organization, the gathered information is placed in the form of a chart called as PEEPO Chart. It is NOT necessary that all the facts collected under PEEPO are contributing to the event, therefore, once the data is placed in PEEPO Chart it is necessary to color code the information as **'Contributing'** or **'Non-Contributing'** facts.

5.5 Releasing the Incident Scene:

Upon obtaining the information needed from the incident scene and once satisfied with the thoroughness of data gathering, the team should release the area to the responsible manager unless another investigation team (police, coroner, regulatory authority etc.) is conducting a concurrent investigation. The team leader should advise the manager of any hazardous condition and the removal of any equipment from the scene.

6 Data Organization - Timeline Mapping:

After examining all the evidence, conducting interviews, and collecting information, it is necessary to arrange the events in chronological order or in a logical and sequential path. There are several data organizing techniques such as Timelines, Event and Condition Charts, Time Ordered Event Charts, and Incident Trees that are available to assist in understanding the incident. The timeline should have sufficient information that a person who is not part of the investigation team can read the timeline and have a clear understanding of how the incident progressed.

The process for developing the Timeline is outlined below in Fig. 1. Follow numbers on order from 1 to 5.

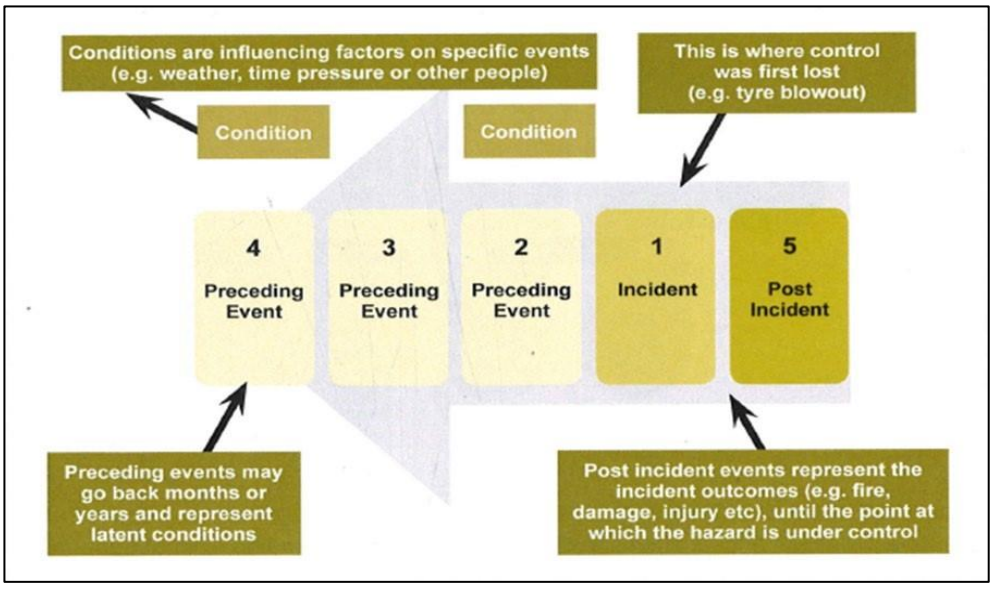


Figure 1: Timeline Process

7 Analyze Findings – ICAM Analysis:

The data gathered and organized should be analyzed using Incident Cause Analysis Method (ICAM) to identify the underlying causes of the incident, which are systemic in nature. This technique is designed to ensure that the investigation is not restricted to the errors and violations of people instead it identifies the workplace factors that contributed to the incident and the organizational deficiencies within the system that act as forerunners to an incident. An adaptation of the Reason 'Swiss Cheese Model' depicting ICAM terminology appears in Figure 2 below:

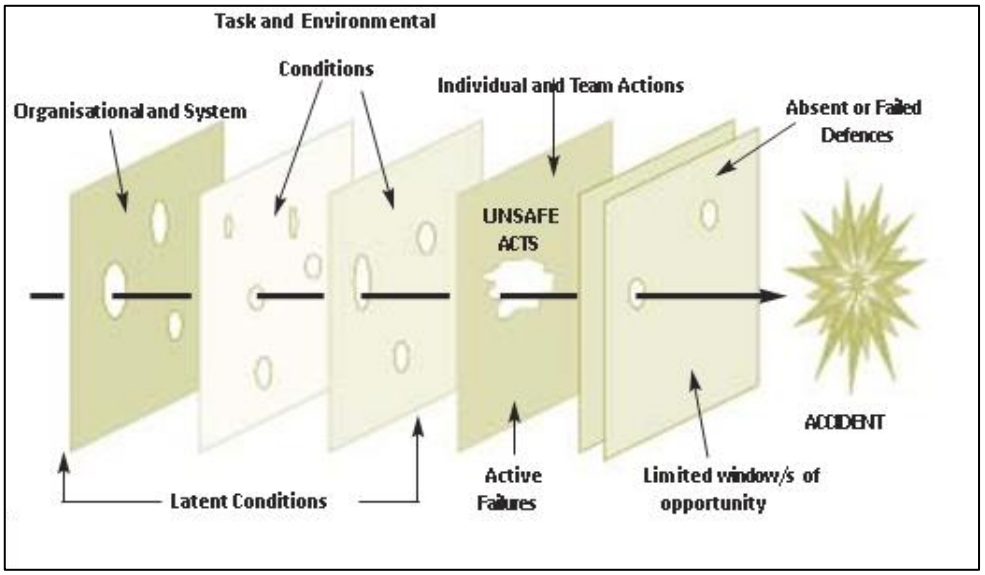


Figure 2: Reason's Swiss Cheese Model

As per Reason's theory, for an organizational incident, failures in the three basic elements are required:

- Organizational processes.
- Task and environmental conditions.
- Individual or Team Action.

These failures combined with a limited window of opportunity where the **system defences that normally control the hazard are absent or failed** results in the adverse outcome i.e. an accident, incident, near miss or operational failure.

7.1 Building the ICAM Chart:

To perform the ICAM Analysis all the 'Contributing Factors' marked in the PEEPO Chart are transported under the below 4 categories:

- Absent / failed defences
- Individual / Team Actions
- Task / Environmental Conditions
- Organizational Factors

The above 4 categories act as layers of defences to prevent a hazard to result into an incident. The gaps in these layers of defences results in the hazard turning into reality and causing the incident. While transporting the Contributing Factors under these 4 categories there is a **Check Question** that should be asked to ensure that the contributing factor has been correctly classified. More details regarding this have been mentioned below.

7.1.1 Identify the Absent or Failed Defenses:

These are basically the failure in Controls / Barriers that generally prevent that incident. Defenses are equipment or procedures for detection, warning, recovery, containment, escape and evacuation, as well as individual awareness and protective equipment. These contributing factors result from inadequate or absent defenses that failed to detect and protect the system against technical and human failures. These are the control measures which did not prevent the incident or limit its consequences.

Check question: Does this contributing factor describe the equipment, work process, control measure, detection system, procedure or attribute which normally prevents this incident or limits

7.1.2 Identify the Individual/Team Actions:

These are the errors or violations that led directly to the incident. They are typically associated with personnel having direct contact with the equipment, such as operators or maintenance personnel.

Check question: Does this contributing factor tell you about an **error or violation** of a standard or procedure made in the presence of a hazard?

Human error types:

The Individual / Team Actions can an intended action or unintended action. be further classified into following types of Human Error:

- ***Slips –*** errors in which the right intention or plan is incorrectly carried out. These usually occur during well practiced and familiar tasks in which actions are largely automatic.
- ***Lapses –*** failures to carry out an action. Lapses typically involve failures of memory.
- ***Mistakes –*** involve deficiencies or failures in the judgement process. These occur when rules are applied incorrectly or knowledge relevant to the situation is inadequate, and a flawed plan is developed. When carried out, the plan will not lead to the desired outcome.
- ***Violations –*** deliberate deviations from safe operating practices, procedures, standards or rules. These can be further categorized as:
- Routine (the breach of rules or corner cutting has become implicitly accepted, and a normal activity)
- Exceptional (one-off violation enacted in unusual circumstances)
- Acts of sabotage (deliberate action intended to cause damage).

Figure 3 below shows the various categories used to classify human error, which are initially separated into intended or unintended actions.

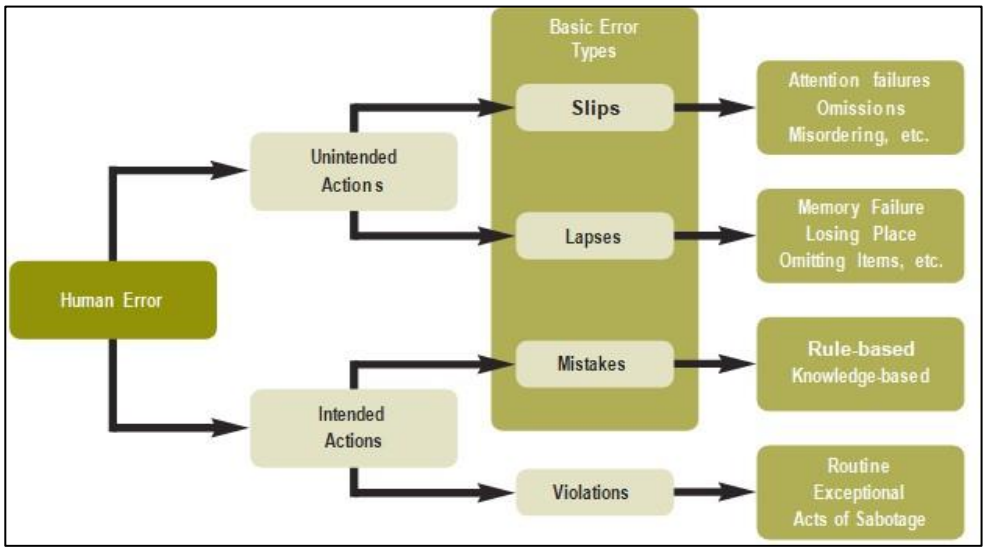


Figure 3 Classification of Human Error

7.1.3 Identify the Task/Environmental Conditions:

These are the conditions in existence immediately prior or at the time of the incident that directly influences human and equipment performance in the workplace. These are the circumstances under which the errors and violations took place and can be embedded in task demands, the work environment, individual capabilities, and human factors.

Deficiencies in these conditions can promote the occurrence of errors and violations. They may also stem from an Organizational Factor Type such as Risk Management, Training, Incompatible Goals, or Organization, when the system tolerates their long-term existence.

Check question: Does this contributing factor describe something about the task demands, work environment, individual capabilities or human factors that promoted errors/violations or undermined the effectiveness of the system's defences?

7.1.4 Identify the Organizational Factor Types:

These are the underlying organizational factors that produce the conditions that affect performance in the workplace. They may lie dormant or undetected for a long time within an organization and only become apparent when they combine with other contributing factors that led to the incident. These may include management decisions, processes, practices, risk management within the organization, Maintenance Management, Management of Change, Contractor Management etc.

Check question: Does this contributing factor identify a standard Organizational Factor present before the incident and which:

- produced adverse task/environmental conditions, or allowed them to go unaddressed,
- promoted or passively tolerated errors or violations,
- Undermined or removed the system defences?

8 Development of Recommendations & Key Learnings:

The investigation should identify recommendations for corrective actions to prevent recurrence, reduce risk and advance safety. This can best be achieved by addressing all **Absent or Failed defences** and **Organizational Factors** identified by the ICAM analysis. The task / environment conditions and the individual / team action can be used to develop some **local learnings** by the Business Unit but developing recommendations around them is **NOT** within the scope of the Investigation Team.

The corrective actions recommended by the investigation team should be specific, measurable, accountable, reasonable & effective. Each recommendation is a written statement of the action management should take to correct a contributing factor.

Recommendations should be based upon the Hierarchy of Controls.
The hazard controls in the hierarchy are, in order of decreasing effectiveness:

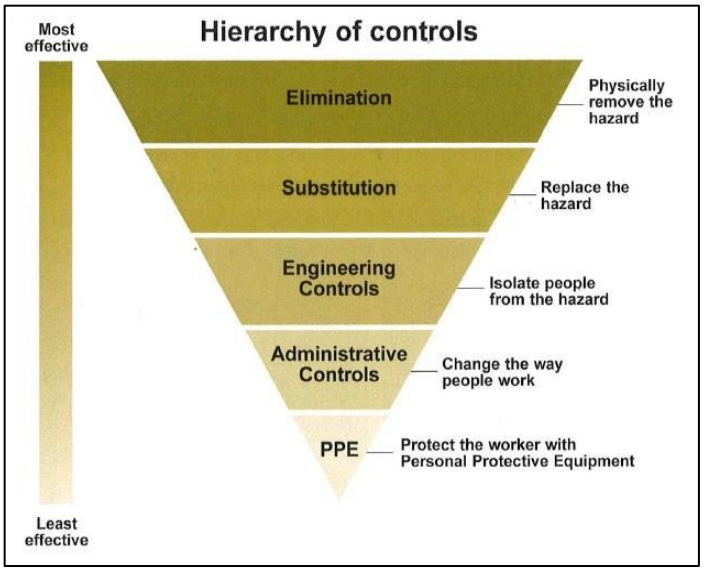


Figure 4: Hierarchy of Control

Key Learnings:

After developing the recommendations, the final step is to develop **2 or 3 Key Learnings** from the event to share around the organization. These are not a rehash of the recommendations but high-level takeaways from the event that can be horizontally deployed in other Businesses.

9 Investigation Report Formation:

The investigation report is the formal presentation of the investigation team's findings and recommendations.

Inclusion of the ICAM chart will assist management in understanding the factors contributing to the incident. As a minimum the report should include:

i. Incident Summary
ii. Timeline Chart
iii. PEEPO Chart
iv. ICAM Analysis
v. Conclusion & Observations
vi. Recommendations
vii. Key Learnings
viii. Report Sign-off
ix. Appendix-
    - Supporting Pictures
    - Supporting Evidence

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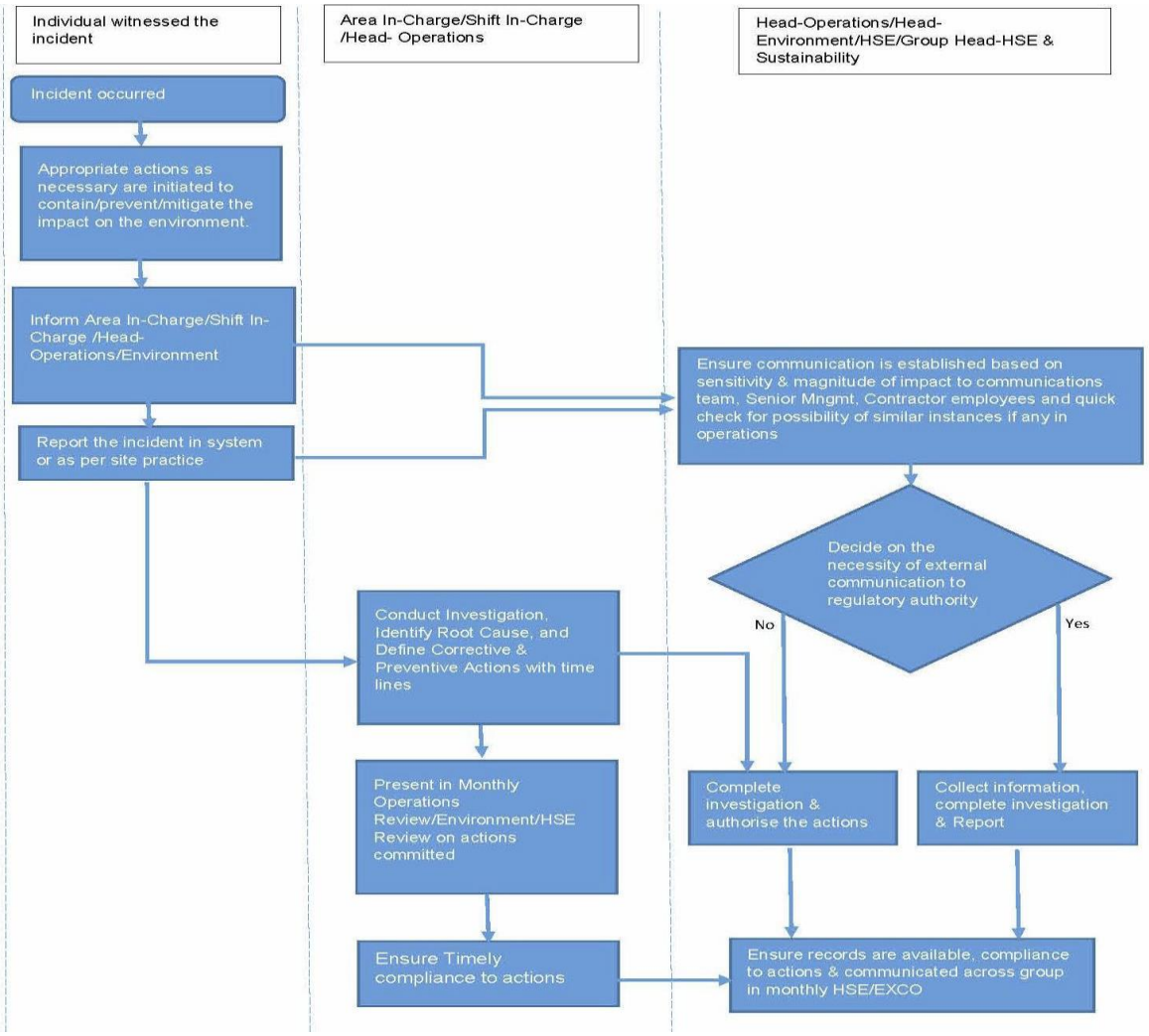
After developing the Investigation Report, the Investigation team should discuss the findings and recommendations with the Management of the Business Unit and notify them in case any immediate action needs to be taken. They should also inform the Management if they discover any additional findings that might not be relevant to the incident but may possess a serious hazard for the organization. After the management review, the Investigation Report should then be submitted to the Group CEO and Group HSE Head for their review and approval. The Investigation Report should be submitted to the Group HSE Head within 28 days of the incidence occurrence, unless there is an unavoidable delay due to legal or regulatory processes.

10 Implementation of Learnings:

Once the Investigation Report is approved by the Group HSE Head, the Group Safety Head will circulate the one pager Safety Alert to all HSE Heads mentioning the Learnings that should be horizontally deployed across all Businesses. It is the responsibility of BU HSE Head to circulate the Safety Alert, when received, within their unit to the respective department heads / area in-charges who will further communicate the same to operation and maintenance personnel in daily Toolbox Talks (TBTs). Once the Business Units receives the Safety Alert, each unit must develop and implement a system to address all the recommendations. The actions that need immediate focus must be completed within the target date and reported to Group Safety Team. For long-term system-related recommendations the BUs should provide periodic status reports to the Group Safety Team. The respective BUs should also include the verification of the implementation for the recommendations that they claim to have implemented supported by appropriate pictures, videos, documents or sign-off from the concerned area Incharge. The Safety Alert compliance report will be tracked monthly by Group Safety Team and actual site auditing of all the implemented recommendations will be a part of VSAP Audit.

Appendix 5 – FLOW CHART OF REPORTING, INVESTIGATION & COMMUNICATION FOR ENVIRONMENTAL INCIDENTS



Appendix 6 – ICMM RECORDING BOUNDARIES

6.1 Case and New Case Recording Boundary

- Only new cases are recordable.
- Each worker experiencing an injury or disease in a multi-worker work-related incident or exposure is considered a separate case.
- When a worker has never before experienced an injury or disease affecting the same body part, it is a new case.
- Reoccurrence of injuries or diseases affecting the same part of the body are new cases if the previous case had been declared by an appropriate medical professional to have been fully resolved and the worker returned to his/her routine job function.
- Cases involving pre-existing conditions aggravated by a work-related incident or exposure are new cases.

6.2 Occupational or Work Relatedness Boundary

A case is occupational when considering the employment status of the people involved, nature of the work, work location and whether variables which lead to the outcome of the incident were or should be considered recordable at the time of the incident.

6.2.1 Situations included as occupational cases

Employees and Contractors Performing Work-Related Activities On-Site

Injuries or diseases are occupational in the following circumstances:

- The injury or disease exposure is associated with work-related activities on-site.
- The injury or exposure occurs during work hours on-site, even if the employee or contractor is not immediately engaged in a work task. For example: - The worker is taking a short break between tasks. - The worker is on a meal break in the employer's dining hall.

Third Parties in On-Site Locations

Injuries or diseases occurring to a third party engaged in a work-related activity on-site are considered occupational. For example, delivering materials or occasional services to a mine is a work-related activity because the worker is required to follow the employer's safety standards while on-site and the employer can enforce those standards.

Employees and Contractors Performing Off-Site Work-Related Activities

Injuries and diseases occurring to workers while performing work-related activities off-site are occupational.

Commuting

Incidents occurring to workers commuting from their permanent residence are considered occupational once workers are on-site (e.g.: once the transporting vehicle has passed inside the gate or is on a controlled access road)

Business Travel

Injuries or diseases that occur while the employee or contractor is travelling in a transport where the company determines that it would have been possible for the company to have mitigated the incident consequence through the application of health and safety standards and is engaged in work-related activities in the interests of the employer are considered occupational.

Examples of such activities include:

- Driving or being driven in a vehicle for work-related travel purposes.
- Flying to visit another site or customer/supplier contact.
- Being transported to and from customer contacts after lodging has been established and as part of work-related activity.

However, when travelling employees or contractors check into a hotel, motel or other lodging, they establish a 'home away from home'. Thereafter, their activities are evaluated in the same manner as for non-travelling employees or contractors.

6.2.2 Situations Specifically Excluded as Occupational Cases

The following situations are specifically excluded from consideration as occupational injuries or diseases.

Non-Operated Joint Venture (NOJV) Locations
Joint ventures where the employer is not the operator are excluded. However, workers undertaking workrelated activities on behalf of the company that are injured at a NOJV would be included.

Commuting
Incidents occurring to a worker commuting from the worker's residence to the worksite are not occupational regardless of the mode of transport.

Business Travel
Incidents occurring to a worker travelling between sites during work hours or on work-related travel are not occupational if the worker engages in personal activities.
For example:
- A worker travelling between sites takes a detour to do a personal errand.
- A worker on work-related business travel attends a non-business entertainment event.

Workers on Personal Time
Incidents occurring to workers on personal time using camp facilities such as sleeping quarters, dining halls or exercise and recreation facilities are not occupational. For example, if a fire in a camp sleeping facility caused the death of a sleeping worker, the fatality would not be considered work-related, regardless of the cause of the fire.

Workers Present On-Site as a Member of the General Public
Incidents occurring to employees or contractors present on-site as a member of the general public (see the appendix for definition) are not occupational (eg a worker attending a safety fair during non-work hours).

Eating or Drinking
Injury or disease resulting solely from a worker eating, drinking, or preparing food or drink for personal consumption (whether purchased on the employer's premises or brought in) is not occupational. For example, if the employee or contractor is injured by choking on a sandwich while in the employer's establishment, the case would not be considered work-related.

A contractor working in their own location outside a company operated or tenured area
Incidents occurring to contractors in their own off-site location outside a company operated or

tenured area where the contractor company is responsible for the work activities and for establishing and applying work practices and health and safety standards are not occupational.

Working at Home
Injuries or illnesses occurring to workers working in their own home are considered occupational if it falls within the scope of being a recordable outcome.

Personal Activities Outside of Normal Work Hours
Injury or disease caused by workers performing personal tasks outside of normal work hours is not occupational, even if the workers are in their normal work environment.

Non-Work-Related Activities Outside the Work Environment
Injuries or diseases resulting solely from non-workrelated activities, events or exposures outside the work environment are not occupational even if the symptoms initially surface at work (eg a musculoskeletal injury resulting from weekend or off-shift recreational activity that leads to symptoms while working). If an incident occurs where a worker is injured during work-related activities, but the symptoms do not surface until later eg at home, then the incident would be occupational.

Other Situations
The following situations are also not considered to be occupational:

- Injury or disease caused by self-medication, alcohol consumption, illegal drugs use, intentionally self-inflicted or due to personal grooming.
- Routine diseases such as colds and flu

6.3 Recordable Outcomes Boundary

Regardless of whether a case is occupational, an incident is only to be regarded as a ‘Recordable Outcome’, if the company determines that it would have been possible for the company to have mitigated the incident consequence through the application of health and safety standards. If no health and safety standards would have mitigated the incident consequence, then this is an indication that the incident should not be classified as recordable. This determination is reliant on a company undertaking a quality incident investigation to ascertain the factors which contributed to the incident.

Examples of incidents that would not be recordable outcomes include incidents of criminality or violence against workers (including mine security personnel).