

## DEPARTMENT OF TRANSPORT

NO. 118

08 FEBRUARY 2019

## RAILWAY SAFETY REGULATOR

**DETERMINATION IN TERMS OF SECTION 28 OF THE NATIONAL RAILWAY  
SAFETY REGULATOR ACT 16 OF 2002 AS AMENDED**

The Railway Safety Regulator, hereby in terms of sections 28, 37 and 40 of the National Railway Safety Regulator Act, 2002 (Act No. 16 of 2002) publishes for comments a determination regarding the category and type of all notifiable railway occurrences to be managed in the Operator's safety management system that is required by the Regulator to perform its functions in terms of this Act.

Interested persons are invited to submit written comments to the Chief Executive Officer, Railway Safety Regulator, within 30 days after the date of publication of this notice, for the attention of:

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**RAILWAY SAFETY MANAGEMENT SYSTEMS**

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### 1. INTRODUCTION

1.1 Key to safe railway operations is the development, implementation and maintenance of a robust Safety Management System (SMS) by each railway operator as well as a positive safety culture embedded within their railway operations.

1.2 This document aims to:

- Inform railway operators of the mandatory occurrence reporting and recording categories to be incorporated within their SMS,
- and to assist and support the operator with the documenting their SMS arrangements and procedures in a manner that allows for compliance with this directive.

1.3 The reporting of occurrences to the RSR is a legal requirement in terms of Section 37 of the Act. Section of the Act states that “an operator must report to the chief executive officer the category and type of all railway occurrences in the manner and form prescribed by the Minister”.

1.4 Non-reporting of occurrences to the Regulator, late reporting or underreporting of railway occurrences is an offence in terms sections 45 (30 and (4) of the Act which may lead to a fine or imprisonment for a period not exceeding 5 years , or to both a fine and imprisonment.

1.5 This document gives effect to Sections 28, 37 and 40 of the Act insofar that it determines the category and type of all railway occurrences which the operator must manage within the safety management system and which information is required by the Regulator to perform its functions in terms of the Act.

### 2. PURPOSE

2.1 The purpose of this Determination is to ensure that notifiable occurrences are adequately managed within the operator’s Safety Management System and that the SMS include systems and procedures for;

- the reporting of notifiable occurrences to the RSR, within the time and manner required in the legislation, including all the information required by the RSR as per this determination;
- conducting safety trend analysis, corrective action development and annual safety improvement plans;
- the management of the scene of a notifiable occurrence and for the preservation of evidence where reasonably practicable;
- management of all notifiable occurrences, including procedures to enable the determination of which notifiable occurrences are to be investigated and how investigations are to be conducted; and

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- supporting systems and procedures to ensure staff are appropriately trained and competent to deal with a notifiable occurrence.

#### 3. SCOPE AND CONTENT

3.1 This directive, adopted by the Regulator, is intended to support, through practical advice and suggestions, the design, implementation and delivery of a structured and organisation-wide railway SMS. The overall aim is to provide a tool for the ease of use by railway operators and, at the same time, for facilitating compliance with legal requirements. This directive is intended to be read in conjunction with the SANS 3000 series of standards.

3.2 The following types of railway operators shall put into place systems and procedures for the recording and reporting of notifiable occurrences:

- Network Operators
- Train Operators,
- Station Operators; and/or
- A combination of network, train and station operator

3.3 Notifiable occurrences that happen on, or in relation to the operator's railway premises or railway operations, must be reported by the operator to the RSR in the form, format and within the specified timeframes as prescribed by this Determination and the SANS 3000 series of standards.

3.4 Notifiable occurrences which are reportable to the Regulator can be related to:

- Operational railway safety occurrences;
- Security related occurrences;
- Transportation of Dangerous goods;
- Fatalities and injuries to employees, contractors, passengers, members of public;
- Damage to railway assets;
- Damage to the environment;
- Crowd related;
- Labour unrest.

3.5 The management of notifiable occurrences is also closely related to emergency management planning [Occurrence Management], which may be triggered by an emergency which is also a notifiable occurrence. For this reason, the two processes should be aligned. For instance, the procedures for the management of personnel at the scene of an incident in an emergency situation and responsibilities for notifying the RSR may overlap.

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### 4. LEGAL BASIS

- 4.1 The legal basis for the implementation of the SMS is the National Railway Regulator Act (Act 16 of 2002 as amended).
- 4.2 Section 1 defines a SMS as “ a formal framework for integrating safety into day-to-day railway operations and includes safety goals and performance targets, risk assessments, responsibilities and authorities, rules and procedures, monitoring and evaluation processes and any other matter prescribed”.
- 4.3 Section 28 of the National Railway Regulator Act (Act 16 of 2002 as amended) stipulates that the Regulator must determine (a) the form and content of a safety management system that is required for the different categories and types of a safety permit; (b) the form, content and manner of submission of a safety management system report; and (c) the circumstances under which the Regulator may require the holder of a safety permit to revise or amend a safety management system or safety management systems report.
- 4.4 Occurrence recording and the reporting thereof are mandatory elements of the Safety Management System and is addressed in Regulation 866 (Regulations regarding Safety Management System Reports, Railway Occurrence Reporting and Assessment of Performance of Operator)
- 4.5 Section 37 of the Act stipulates that an Operator must report to the chief executive officer the category and type of all railway occurrences in the manner and form prescribed by the Minister.
- 4.6 Section 40 of the Act stipulates that the Regulator may require, in writing that a person must, within a specified time or on a regular basis, provide the Regulator with data, information, documents, samples or materials required by the Regulator to perform its functions in terms of the Act.
- 4.7 Sections 5, 6 and 7 below of this determination constitutes the RSR determination on the mandatory notifiable railway occurrences to be managed within the Operator’s SMS as well as the railway occurrences that must be reported to the RSR.

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### **5 MANDATORY NOTIFIABLE OCCURRENCES TO BE MANAGED WITHIN THE OPERATORS SAFETY MANAGEMENT SYSTEM**

#### **5.1 Notifiable Railway Occurrence Categories**

##### **5.1.1 Operational Railway Occurrences:**

Operational railway occurrences shall be recorded and reported to the RSR in the categories A to O as per Appendix A (Table 1). These railway occurrences shall reflect the number of occurrences and not the consequences thereof, which are to be recorded and reported as indicated in 5.1.5 below.

##### **5.1.2 Security related Occurrences:**

Security related incidents shall be recorded and reported to the RSR in the categories 1 to 11 as per Appendix A (Table 2). These records and reports shall reflect the number of incidents and not the consequences thereof.

##### **5.1.3 Precursors/Leading Indicators**

In addition to the recording and reporting of occurrences as required in Table 1, the precursors/leading indicators of railway occurrences shall be reported and recorded in the categories and sub-categories as required in Appendix A (Table 3) and reported in the quarterly reports as required in section 7 below.

##### **5.1.4 Human Factor Occurrences**

5.1.4.1 In addition to the recording and reporting of occurrences as required in Tables 1, 2 and 3, the human factor root causes of railway occurrences shall be recorded in the categories and sub-categories as required in Appendix A (Table 4) and reported in the quarterly reports as required in section 7 below.

##### **5.1.5 Fatalities and Injuries**

The operator shall record and report fatalities and injuries resulting from railway occurrences that are recorded in the categories and sub-categories A to O (see Table 1), in the categories as required in the Appendix (Table 5), in accordance with the requirements of section 6 below and in accordance with the relevant national health and safety legislation.

### **6. RAILWAY OCCURRENCE RECORDING, NOTIFICATION AND REPORTING TO THE RAILWAY SAFETY REGULATOR**

#### **6.1 General**

6.1.1 Operators shall ensure that procedures for recording and reporting of occurrences are established, developed or adopted and maintained in compliance with this directive.

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6.1.2 The format of the documentation shall be in accordance with the directives provided by the RSR. In the event of more than one operator being involved in a railway occurrence, all affected operators shall report the occurrence to the Regulator.

6.1.3 In addition to the railway occurrences that are reported to the Regulator, operators are expected to track those occurrences that could assist them in assessing their own safety performances. These occurrences might be incidents that could serve as leading indicators of problems and that could be used to identify shortcomings in procedures or products, or they could be used to identify specific problem areas.

Operators shall identify the safety data to be collected to assess performance with regard to their annual safety targets and to address other analytical requirements.

### 6.2 Immediate telephonic notification

6.2.1 Railway occurrences (see categories A to O as provided in Table 1) that result in injuries or fatalities to people, or significant damage to property and the environment shall be reported telephonically by the operator to the relevant national Railway Safety Regulator within fifteen (15) minutes.

6.2.2 These occurrences include significant damage to rolling stock and infrastructure, threats to nearby communities, including the environment resulting from a release/spillage of dangerous goods, major train disruptions that affect normal train operations as a result of force majeure or any other railway occurrence that may affect or threaten the safety of railway operations and passengers.

### 6.3 Immediate written notification (within 12 hours)

6.3.1 Railway occurrences (see categories A to O as provided in Table 1) that have been notified in terms of 6.2 above shall be confirmed via e-mail to the Railway Safety Regulator within 12 hours.

6.3.2 The written notification shall provide at least the following information:

- a) the safety permit number;
- b) the name of the operator;
- c) the physical address of the operator;
- d) the date of reporting the occurrence;
- e) the date of the occurrence;
- f) the time of the occurrence;
- g) the place of the occurrence;
- h) the province of the occurrence;

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- i) a short description of the occurrence;
- j) details of dangerous goods involved, including details of the consignor, the quantity spilled, the shipping name, the United Nations (UN) number and also damage to property, assets and the environment; and
- k) the name and contact details of the reporting person.

### 6.4 The Daily Occurrence Report

- 6.4.1 The RSR shall receive daily reports of all the occurrences (Tables 1, 2, 3 and 5) that occurred in the prevailing period 00:00 to 23:59 by 11:00 on the following day, except for weekends or holidays in which case the reports shall be provided by 11:00 on the next working day.
- 6.4.2 These reports shall include fatalities and injuries that emanate from attempted suicides or people struck by trains whilst trespassing on the railway reserve.
- 6.4.3 The daily reports shall include the immediate reportable occurrences as described in section 6.3 above.
- 6.4.4 The daily reports shall provide at least the following information:
  - a) the safety permit number;
  - b) the name of the operator;
  - c) the name of the reporting person;
  - d) the physical address of the operator;
  - e) the date of reporting the occurrence;
  - f) the date of the occurrence;
  - g) the time of the occurrence;
  - h) the place of the occurrence;
  - i) the province of the occurrence;
  - j) a short description of the occurrence;
  - k) the railway occurrence category and sub-category;
  - l) the operator's occurrence reference number.
  - m) details of dangerous goods involved, including details of the consignor, the quantity spilled, the shipping name, the UN number and also damage to property, assets and the environment; and
  - n) the names of the persons contacted.

### 6.5 Ad Hoc Reports

In addition to the information to be provided in terms of sections 6.2, 6.3 and 6.4 above, RSR may request additional information, such as

- a) the exact location of the occurrence (i.e. the kilometre point or mast pole(s) number(s)),
- b) the train number(s) involved,

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- c) the type of train (i.e. passenger, freight, tourism, or mixed trains, inspection trolleys and on-track maintenance machinery),
- d) the type of braking system (i.e. vacuum or air brake),
- e) the gradient at the point of occurrence,
- f) the type of power (i.e. 3 kV dc, or 25 kV ac, or 50 kV ac,) or non-electrified,
- g) the classification of the line (i.e. light rail, heavy rail (N1, N2, N3 or S1), or monorail),
- h) the motive power (locomotives, whether electric multiple units (EMUs) or diesel multiple units (DMUs),
- i) the name of the network operator (if different from that of the train operator),
- j) the name of the station operator (if different from that of the train operator),
- k) the content of the load of the freight train (if applicable),
- l) the names of train personnel involved,
- m) the weather conditions (at the time of the occurrence),
- n) a description of the immediate natural and built environment,
- o) the method of train authorization,
- p) normal or abnormal train working,
- q) the possible cause of the incident, and
- r) the number of injuries and fatalities.

6.5.1 The RSR shall receive prompt notification of any occurrence that otherwise might not have been reported in terms of Section 6 in order to be in a position to respond to queries. Such queries might include queries from Government (on national, provincial and municipal level), the community, local interest groups and the media.

### 7. Additional Occurrence Information to be submitted

#### 7.1 Quarterly Reports

7.1.1 Quarterly reports shall be submitted not later than the end of the month following the quarter under review. The quarters shall follow the cycle

- a) April to June,
- b) July to September,
- c) October to December, and
- d) January to March.

7.1.2 In addition to the railway occurrence recording, notification and reporting required in section 6 above, operators shall submit to the RSR quarterly railway occurrence reports and security related incident reports that shall comprise a summary of the following:

- a) The railway occurrences in accordance with the sub-categories listed in categories A to O as described in section 5.1.1 and Table 1;

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- b) Security related incidents in accordance with the sub-categories listed in the categories 1 to 11 as described in 5.1.2 and table 2.
- c) The precursors and leading indicators as described in 5.1.3 and Table 3;
- d) The human factor root (basic) cause as described in 5.1.4 and Table 4;
- e) Fatalities and injuries as described in 5.1.5 and Table 5;

7.1.3 Quarterly reports shall also provide the following management information:

- a) Explanations of significant changes in trends in each category and sub-category;
- b) Recommendations that are proposed and accepted to address the trends in (a);
- c) Actions taken to address any adverse trends;
- d) Actions that lead to favourable results and lessons learned; and
- e) Traffic information, in order to normalize occurrence trends.

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## APPENDIXES

## Appendix A

<b>Table 1: Operational Occurrences</b>	
<b>Category</b>	<b>Category Description</b>
<b>Category A</b>	<b>Collisions During Movement Of Rolling Stock</b>
A-a	Collision between rolling stock on a running line;
A-b	Collision of rolling stock with an obstruction on a running line (including road vehicles that collide with rolling stock);
A-c	Collision of rolling stock with a stop block on a running line;
A-d	Collision between rolling stock other than on a running line;
A-e	Collision of rolling stock with an obstruction other than on a running line; and
A-f	Collision of rolling stock with a stop block other than on a running line.
<b>Category B</b>	<b>Derailments During Movement Of Rolling Stock</b>
B-a	Derailment of rolling stock on a running line
B-b	Derailment of rolling stock on a line other than a running line
B-c	Derailment during tippler activities
<b>Category C</b>	<b>Unauthorized Movements (Rolling Stock Movements Exceeding The Limit Of Authority In Respect Of Position)</b>
C-a	Signal passed at danger (SPAD) on a running line
C-b	Signal passed at danger (SPAD) on any other line
C-c	Authority (Verbal or written) exceeded on a running line; and
C-d	Authority (Verbal or written) exceeded on any other line
<b>Category D</b>	<b>Level Crossing Occurrences</b>
D-a	Collision between rolling stock and a road vehicle(s) (including motor vehicles, bicycle or animal-drawn vehicles) at a recognized level crossing on a running line
D-b	Collision between rolling stock and a road vehicle(s) (including motor-powered, bicycle or animal-drawn vehicles) on any line other than a running line (including yards, sidings and private sidings) at a recognized level crossing
<b>Category E</b>	<b>Persons Struck During Movement Of Rolling Stock</b>
E-a	Occurrence where a <i>member of the public</i> is struck by rolling stock on a running line
E-b	Occurrence where an <i>employee</i> is struck by rolling stock on a running line
E-c	Occurrence where a <i>contractor or contractor's</i> employee is struck by rolling stock on a running line
E-d	Occurrence where a <i>member of the public</i> struck by rolling stock on a line other than a running line
E-e	Occurrence where an <i>employee</i> is struck by rolling stock on a line other than a running line
E-f	Occurrence where a <i>contractor or contractor's</i> employee is struck by rolling stock on a line other than a running line
<b>Category F</b>	<b>People Related Occurrences: Trains Outside Station Platform Areas (In Section)</b>

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F-a	Occurrence where a <b>passenger</b> fell or was pushed from inside a moving or stationary train
F-b	Occurrence where an <b>employee</b> fell or was pushed from inside a moving or stationary train
F-c	Occurrence where a <b>contractor</b> or contractor's employee fell or was pushed from inside a moving or stationary train
<b>Category G</b>	<b>Passenger Related Occurrences: Travelling Outside Designated Passenger Area</b>
G-a	These occurrences cover the number of occurrences as a result of passengers travelling outside the designated passenger area of the train
<b>Category H</b>	<b>People Related Occurrences: Station Platform-Train Interchange</b>
H-a	Occurrence where a passenger fell between the train and the platform whilst entraining/detraining a stationary or moving train
H-b	Occurrence where a passenger fell on the platform whilst entraining/detraining a stationary or moving train
H-c	Occurrence where an employee fell between the train and the platform whilst entraining/detraining a stationary or moving train
H-d	Occurrence where an employee fell on the platform whilst entraining/detraining a stationary or moving train
H-e	Occurrence where a contractor or contractor's employee fell between the train and the platform whilst detraining a stationary or moving train
H-f	Occurrence where a contractor or contractor's employee fell on the platform whilst entraining/detraining a stationary or moving train
<b>Category I</b>	<b>People Related Occurrences At Stations (This Category Includes All Injuries at Stations, Including Those Resulting From Slips, Trips And Falls At Public Area Of Stations, Station Concourse Or Revenue Area Of The Station. (The Scope Includes Overhead Pedestrian Bridges, Subways, Stairs, Travelators, Escalators, Elevators, Turnstiles, and Electric Sliding Doors).</b>
I-a	Occurrence resulting in injuries and fatalities to members of the public in the public area of the station
I-b	Occurrence resulting in injuries and fatalities to passengers in the passenger area of the station
I-c	Occurrence resulting in injuries and fatalities to an employee in the public area of the station
I-d	Occurrence resulting in injuries and fatalities to an employee in the passenger area of the station
I-e	Occurrence resulting in injuries and fatalities to a contractor or contractor's employee in the public area of the station
I-f	Occurrence resulting in injuries and fatalities to a contractor or contractor's employee in the passenger area of the station
<b>Category J</b>	<b>Electric Shock Occurrences</b>
J-a	Electrical shock to a member of the public on the network infrastructure
J-b	Electrical shock to an employee on the network infrastructure
J-c	Electrical shock to a contractor or contractor's employee on the network infrastructure

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J-d	Electrical shock to the member of the public including passengers whilst on or in rolling stock
J-e	Electrical shock to an employee whilst positioned on or part of rolling stock
J-f	Electrical shock to a contractor or contractor's employee whilst positioned on or part of rolling stock
<b>Category K</b>	<b>Spillage, Leakage Or Release Of Dangerous Goods</b>
K-a	Spillage or leakage of dangerous goods (solids and liquids) en route;
K-b	Release of dangerous goods (gases) en route;
K-c	Spillage or Leakage of dangerous (solids and liquids) whilst staged;
K-d	Release of dangerous goods (gases) whilst staged;
K-e	Spillage or Leakage of dangerous goods (solids and liquids) during shunting operations;
K-f	Release of dangerous goods (gases) during shunting operations;
<b>Category L</b>	<b>Fires And Explosions</b>
L-a	Fires on a fixed operational asset impacting on operational safety;
L-b	General freight fires;
L-c	Technical fault rolling stock fires;
L-d	Veld fires that threaten operational safety.
L-e	Dangerous goods fires
L-d	Dangerous goods explosions
<b>Category M</b>	<b>Procedural Irregularities (And Near Misses)</b>
M-a	Averted collisions and derailments on running line; and
M-b	Averted collisions and derailments on any line other than a running line.
M-c	Hard Coupling
M-d	Points run through
M-e	Wrong train authorization issued
<b>Category N</b>	<b>Pantograph Hook-Up's</b>
N-a	Pantograph Hook-up
<b>Category O</b>	<b>Passenger Related Occurrences: On-Board</b>
O-a	Slips, trips or fall on-board a train
O-b	Passengers injured on-board due to falling foreign objects while on-board
O-c	Death due to natural causes on-board train

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<b>Table 2: Security Related Occurrences</b>	
<b>Category</b>	<b>Category Description</b>
<b>Category 1</b>	<b>Theft Of Assets Impacting On Operational Safety</b>
1-a	Theft of rolling stock components in section
1-b	Theft of rolling stock components in yards and sidings
1-c	Theft of civil infrastructure components in section
1-d	Theft of civil infrastructure components in yards and sidings
1-e	Theft of overhead traction equipment in section
1-f	Theft of overhead traction equipment in yards and sidings
1-g	Theft of train authorization, control and telecommunication systems and equipment in section;
1-h	Theft of train authorization, control, and telecommunication systems and equipment in yards and sidings;
1-i	Theft of ancillary equipment, including public address (PA) systems, information boards and closed circuit television (CCTV);
1-j	Theft of freight, including dangerous goods in section; and
1-k	Theft of freight, including dangerous goods in yards and sidings.
<b>Category 2</b>	<b>Malicious Damage (Vandalism) of Assets Impacting On Operational Safety</b>
2-a	Malicious damage (vandalism) of rolling stock components in section
2-b	Malicious damage (vandalism) of rolling stock components in yards and sidings
2-c	Malicious damage (vandalism) of civil infrastructure components in section
2-d	Malicious damage (vandalism) of civil infrastructure components in yards and sidings
2-e	Malicious damage (vandalism) of overhead traction system equipment in section
2-f	Malicious damage (vandalism) of overhead traction equipment in yards and sidings
2-g	Malicious damage (vandalism) of train authorization and control, and telecommunication systems and equipment in section;
2-h	Malicious damage (vandalism) of train authorization and control, and telecommunication systems and equipment in yards and sidings; and
2-i	Malicious damage (vandalism) of ancillary equipment including, PA systems, information boards and CCTV.
<b>Category 3</b>	<b>Threats Of Operational Safety</b>
3-a	A bomb threat to network
3-b	A bomb threat to station
3-c	A bomb threat to rolling stock
3-d	Threats due to electrical power outages
3-e	Threats other than bomb and power outage threats
<b>Category 4</b>	<b>Train Hijacking</b>
4-a	hijacking of passenger trains
4-b	hijacking of freight trains
4-c	hijacking of other rolling stock

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<b>Category 5</b>	<b>Crowd-Related Incidents</b>
5-a	Crowd related incidents and includes stampede action
<b>Category 6</b>	<b>Industrial Action</b>
6-a	Industrial action that causes a threat to safe railway operations
<b>Category 7</b>	<b>Personal Safety On Trains</b>
7-a	Murder
7-b	Attempted murder
7-c	Rape
7-d	Compelled rape;
7-e	Assault
7-f	Indecent assault
7-g	Sexual assault
7-h	Compelled sexual assault
7-i	Aggravated robbery
7-j	Ordinary robbery
7-k	Theft
7-l	Bomb explosions
<b>Category 8</b>	<b>Personal Safety On Stations</b>
8-a	Murder
8-b	Attempted murder
8-c	Rape
8-d	Compelled rape;
8-e	Assault
8-f	Indecent assault
8-g	Sexual assault
8-h	Compelled sexual assault
8-i	Aggravated robbery
8-j	Ordinary robbery
8-k	Theft
8-l	Bomb explosions
<b>Category 9</b>	<b>Personal Safety Outside Station Platform Area (In Section Between Stations, Including Yards, Sidings And Depots)</b>
9-a	Murder
9-b	Attempted murder
9-c	Rape
9-d	Compelled rape;
9-e	Assault
9-f	Indecent assault
9-g	Sexual assault
9-h	Compelled sexual assault
9-i	Aggravated robbery

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9-j	Ordinary robbery
9-k	Theft
9-l	Bomb explosions
<b>Category 10</b>	<b>Human Bodies Found Within The Railway Reserve</b>
10-a	A body of a dead person found within the railway reserve and clear of the railway line; and
10-b	A body of dead person found on the railway line.
<b>Category 11</b>	<b>Trespassing</b>
11-a	Accidental Electrocution whilst making contact with electrical object
11-b	Accidental Electrocution whilst making contact with electrical high voltage

<b>Table 3: Reportable Precursors and Leading Indicators</b>	
<b>Category:</b>	<b>Category Description</b>
1. Track and Civil Infrastructure related	The category of track and civil infrastructure failures, including deviation from the standard or rule covers the following: a) rail breaks; b) kick-outs; c) track geometry, including slacks, twists and cants (super elevations); d) gauge widening; e) wash away; f) defective points and crossings; g) structural failure (bridges, culverts, tunnels and overhead traction equipment; h) cuttings or embankment failure i) level crossing warning system failures; j) lack of track-side indicators; and k) structure clearances
2. Signalling Failures	The category of signalling failures covers the following: a) signal equipment defects; b) electromagnetic interference
3. Operational Train Working Irregularities	The category of operational irregularities covers the following deviations from the standard/rule/norm : a) loading profile irregularities; b) exceedance of speed limits; c) shunting irregularities; d) uncontrolled movement of rolling stock (runaway rolling stock); e) authorizing of conflicting train movements; f) near misses (averted collisions); g) illegal occupation (trespassing and illegal crossing); h) train overshooting platform; i) inadequate protection of work area; j) disregard of track-side indicators and hand signals;

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	l) points run through m) Safety critical employee failing substance abuse tests
4. Rolling Stock Related	The category of rolling stock failures and deviation from the standard covers the following: a) broken axle; b) braking system failure; c) coupler failure; d) wheel profile including a sharp wheel flange; e) high-tension equipment fire; f) hot axle boxes; g) defective couplers; h) cracked wheels; i) loose tyres; j) defective handbrakes k) defective steps; and l) defective train doors.
5. Station Related	Deviations at Stations from standards include the following: a) unavailability or malfunctioning (or both) of PA systems and CCTV; b) unscheduled changes to platform working; c) safety-related complaints; d) failure of AFC e) failure of access control f) failure of lifts or escalators
6. Externalities	The category of externalities covers the following: a) power outages; b) adverse weather conditions; c) non-compliance with road signage;
7. Wrong Side Failures	Wrong Side equipment failure of safety critical equipment include the following: a) Wrong side signal failure b) Wrong side door failure

**Table 4: Notifiable Human Factor Occurrences****Category of Human Factor Occurrences Covers the Following:**

- |                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a) failure of the human resources procurement and placement process (recruitment);<br>b) substance abuse;<br>c) shift work and fatigue;<br>d) training;<br>e) unfit for duty owing to a physical or psychological condition (or both);<br>f) gross negligence |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Table 5: Fatalities And Injuries**

<b>Category</b>	<b>Description Of Category</b>
Members of the Public	The number of members of the public: a) fatally injured, b) seriously injured, and c) that suffered minor injuries shall be recorded and reported as specified in section 6.2
Employees	The number of employees a) fatally injured, b) seriously injured, and c) that suffered minor injuries.

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	shall be recorded and reported as specified in section 6.2
Contractors and Subcontractors	The number of contractor or contractor employees a) fatally injured, b) seriously injured, and c) that suffered minor injuries shall be recorded and reported as specified in section 6.2
Passengers	The number of passengers a) fatally injured, b) seriously injured, and c) that suffered minor injuries shall be recorded and reported as specified in section 6.2