Guideline reporting, investigating and reviewing SHE incidents

SSC15-009

Public Information

Version 1.3

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Index of changes and releases

Date	Changes	Version	Author	Authorised by
02-04-2015	Guideline SSC13-071 Investigations of incidents regarding SHE is fully integrated into this guideline and is therefore withdrawn.	1.0	F. Geijlvoet (SSC)	R. Marchal (SSC), after consultation with COO
16-11-2015	Scope set to segments instead of legal entities. In addition to FAT, LWC and HRI: MTC and RWC must also be investigated. LSR violations are no longer HRI but as a separate category. Fixed template for investigation report is abandoned. Basis for investigation report is iTask.	1.1	F. Geijlvoet (SSC)	R. Marchal (SSC)
09-1-2017	The default method for investigating TenneT SHE incidents is Tripod Beta. Contractor SHE incidents are preferably to be investigated using Tripod Beta, but alternatively, a different method that is on a list of methods that is approved by TenneT may be used. Methods that are not on the list may only be used after approval by SSC	1.2	F. Geijlvoet (SSC)	D.J. Haverkamp (SSC)
01-02-2018	Life Saving Rule violations and fair approach added. Incident categories of Major and Minor SHE incidents and ditto criteria for investigation added: Major: Tripod Beta (or equivalent), Minor: choice of method is free. Escape criterion for no investigation added.	1.3	F. Geijlvoet (SSC)	D.J. Haverkamp (SSC)

Information protection classification	A1, I1, C1: Public Information

Content

1. Introduction

1.1 Purpose of the guideline

In this guideline you will find the TenneT requirements on reporting and investigating SHE incidents and on reviewing SHE incident investigations. With it, we offer a framework to develop and align work processes on these matters. This guideline aims to set companywide standards, harmonization and quality assurance. TenneT is of the opinion that reporting and investigating SHE incidents and reviewing SHE incident investigations are important factors to realize our safety goal of 'zero harm'. Learning from SHE incidents is an important element in this development.

1.2 Scope

This guideline applies to all departments that fall under the 'regulated tasks' part of the TenneT Group Legal Overview organization chart as published on the TenneT site on intra- and internet. In this guideline these entities are collectively referred to as “TenneT”.

This guideline also applies to the joint ventures of TenneT whenever TenneT:

- is the operator; or:
- has majority or controlling interest and has an officer assigned as the senior managing director of the joint venture operation.

The guideline applies to all contractors of TenneT. The guideline is implemented by way of contracts, general terms and conditions, supplier qualification terms etc.

1.3 Main changes compared to the previous version

- Life Saving Rule violations and fair approach added.
- Incident categories of Major and Minor SHE incidents added to provide for differentiation in investigation: Major: Tripod Beta (or equivalent), Minor: choice of method is free. Escape added for not investigating incidents where investigation is pointless.

1.4 Relation with other TenneT guidelines

- Guideline SSC13-014 *Definitions and classification of SHE incidents.* The present guidelines uses this guideline as a frame of reference, mostly for definitions relating to incidents.
- Process description SSC14-037 *Investigation of SHE incidents*. In this document, the process of the investigation of SHE incidents is described in detail.

- *List of approved methods for SHE incident investigation* SSC17-005. The list includes methods that can be used for investigating SHE incidents. The methods included are suitable for identifying both direct and underlying causes of the incident.
- Guideline SSC15-010 *Information protection.* This guideline is relevant as it contains TenneT rules on confidentiality that apply to the investigation report (and other related documents).
- Process description SSC17-031 *Applying the FAIR Approach.*

1.5 Relation with legislation

Wherever this document in conflict with national, European or international maritime legislation, the latter prevail. In all other cases, the guideline is to be followed.

1.6 Responsibilities

This guideline has the following layering regarding responsibilities:

- Operational management is responsible for the implementation and execution of this guideline
- Corporate Safety and Security (SSC) is responsible for keeping the guideline up-to-date and for checking the measures of operational management on compliance, reviewing the effectiveness and reporting the findings to the board. SSC supports the business with the implementation and if needed the execution of this guideline
- Corporate Audit (AUD) checks whether the above processes have been implemented and are executed conformably.

2. Incident reporting

2.1 Which SHE incidents to report, when and how

With TenneT, all Safety, Health and Environment (SHE) incidents including potential SHE incidents must be reported. A SHE incident is 'an unplanned event or chains of events that has, or could have resulted in injury or damage to the environment' (see Annex A for further guidance). If SHE incidents are not reported, no further actions can be taken. A SHE incident has to be reported as soon as reasonably practicable after its occurrence (within 24 hours). All SHE incidents, including SHE incidents of contractors and third parties have to be reported accordingly.

2.2 Responsibilities regarding the reporting of SHE incidents

All TenneT employees have the responsibility to:

- report all (potential) SHE incidents they have knowledge of as soon as practicable after their occurrence (within 24 hours) in the designated reporting system.
- to provide a complete and reliable report. This includes giving all required information and providing documents, pictures, sketches etc. where relevant. In the Netherlands, the SHE incident reporting system (iTask) guides the employee through all relevant questions. In Germany, the Marine Operations Centre (MOC) or the SHE Hotline staff will ask all relevant questions.

Senior managers are responsible for their subordinates and their contractors to report SHE incidents (including the quality of these reports). Furthermore, they are responsible for the formal classification of the SHE incident following the guideline *Definitions and classification of SHE incidents*. The aim of the classification is to label the SHE incident as a Fatality, Lost Workday Case, Restricted Work Case, Medical Treatment Case, First Aid Case, Near Miss, Potential Incident, Environmental Incident or High Risk Incident.

3. Investigation of SHE incidents

3.1 SHE incidents requiring investigation

TenneT distinguishes two categories of SHE incidents that must be investigated. These categories are:

- Major SHE incidents
- Minor SHE incidents

Investigation of SHE incidents not belonging to the categories above is optional.

Notwithstanding the above requirements and in exceptional cases only, it may be decided not to investigate a major or minor SHE incident, e.g. when the causes of the incident are clear from the start, such as cutting your finger on a piece of paper or having a collision with a ghost driver. The decision not to investigate lies with the senior manager. The decision not to investigate - and the considerations not to do so- must be submitted to SSC for approval.

Harm level

All SHE incidents that are reported are assessed by the SHE expert on both the actual and potential harm level. The harm levels are indicated in table 1. Guidance for determining the harm level can be found in Annex B.

Harm level		Duration	Examples
4	Death		One or more fatalities
3	Severe harm	Long term, life altering	Amputation / severe disfigurement / permanent handicap Permanent loss of hearing / vision Third and fourth degree burns
2	Moderate harm	Weeks to months	Bone fractures, significant lacerations Temporary hearing / vision loss Second degree burns
1	Minor harm	Hours to days	Minor cuts / bruises / sprains / strains Mild temporary hearing loss / corneal abrasions First degree burns
0	No harm		Object in eye removed by flushing Slip, trip, fall with no bruising or swelling General soreness

Table 1. Harm levels

Major SHE incident

SHE incidents with an actual or potential harm level of 3 or 4 are classified as major SHE incidents.

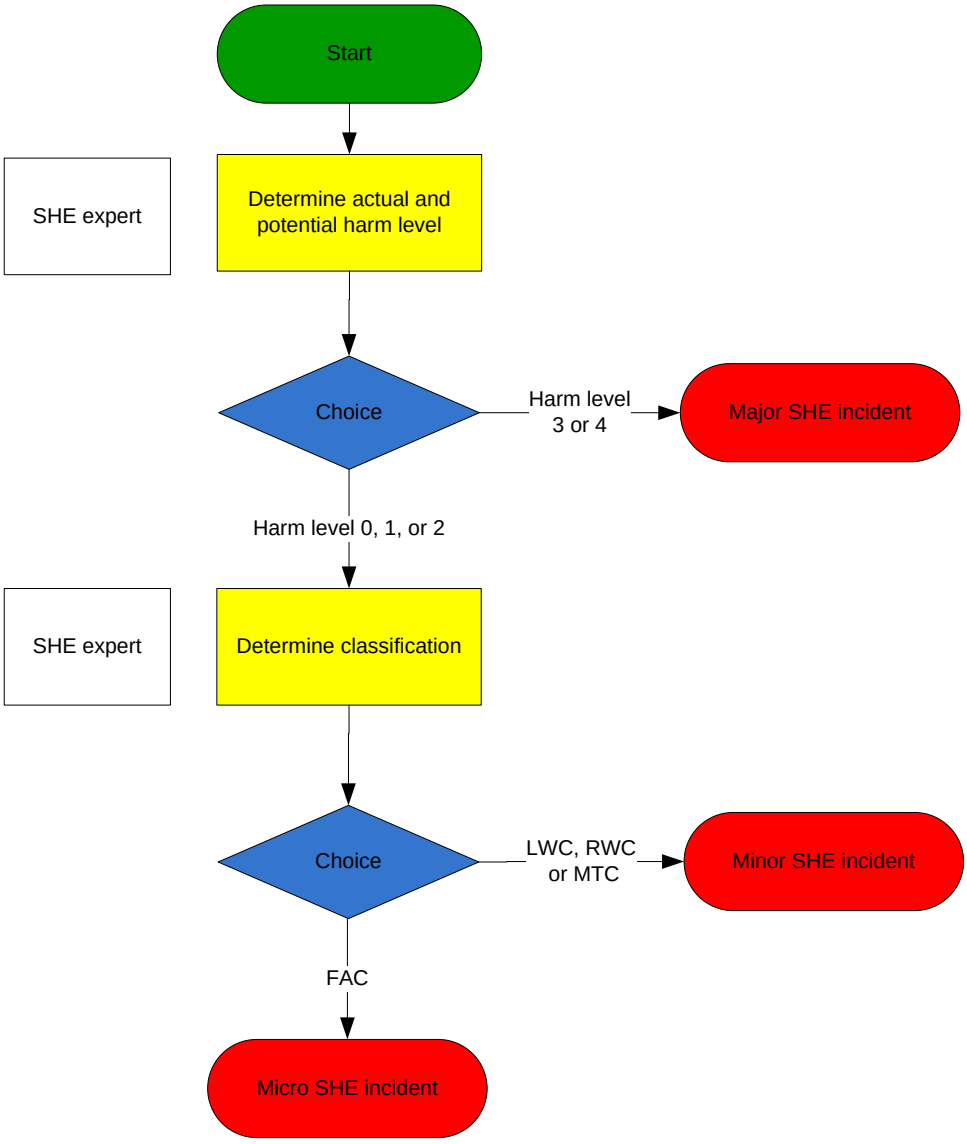
Minor SHE incident

SHE incidents with harm levels of 0, 1 or 2 and being of the categories Medical Treatment case (MTC),

Restricted Work Case (RWC) or Lost Workday Case (LWC) are classified as a minor SHE incident.

Flow chart

The flow chart below visualises how the incident categories are determined.



Life Saving Rule violation

Additionally to the investigation, SHE incidents where a Life-Saving Rule was broken or not complied with, the TenneT FAIR Approach has to be applied according to the Process description SSC17-031 *Applying the FAIR Approach*.

3.2 Roles and responsibilities for SHE incident investigation

Senior manager

The senior manager of the victim is responsible for the SHE incident investigation. In the case of SHE incidents without a victim (e.g. near miss), the senior manager who is responsible for the work that was carried out is responsible for the investigation. In case of a contractor SHE incident, the senior manager of the department that hired the contractor is responsible.

The responsibility includes:

- to investigate every SHE incident where investigation is required (see 3.1), including contractor incidents.
- to investigate SHE incidents where investigation is not mandatory whenever he (she) sees reason to do so. The SHE expert advises him (her) on this matter.
- to appoint an investigation leader[1].
- to provide necessary resources to the investigation team (FTE, time, and budget).
- to enable the investigation team access to information, persons and locations.
- to translate the investigation team's recommendations into specific measures, controlling the implementation of these measures and evaluating their effect.
- to put the investigation report on the agenda of the MT for review (see chapter 4).

The incident investigation report submitted by the contractor should be reviewed and agreed with by the investigation leader. Despite the above, TenneT, based on the judgement of responsible management, can perform its own investigation into an incident as a result of the client responsibility that TenneT has.

Investigation leader

When an incident is investigated that occurred during work that was carried out on behalf of TenneT, the investigation is preferably done jointly by the contractor and TenneT.

The investigation leader is responsible for:
Contractor incidents:

- making agreements with the contractor about the investigation:
  - how the joint investigation will be done and who will be involved;
  - which method will be used;
  - the deliverables and acceptance criteria;
  - the time frame.

[1] The investigation leader is not a SHE expert but someone of the line organisation.

- ensuring that the investigation meets the quality requirements as set in this guideline

TenneT incidents:

- assembling an investigation team.
- making agreements with the investigation team:
  - the method to be used;
  - the deliverables and acceptance criteria;
  - the time frame.
- ensuring that the investigation meets the quality requirements as set in this guideline.

Investigation team members

Members of the investigation team are responsible for:

- cooperating with the other team members and carrying out instructions of the investigation leader
- carrying out the investigation according to the process description *Incident Investigation*.
- The quality of the investigation
- the timely completing the investigation.

3.3 Time frame of the investigation

As evidence can be volatile, it is important that the investigation of SHE incidents starts as quickly as possible. In order to make this possible, everyone involved in the process preceding the actual investigation must take the following actions without delay:

1. to report the SHE incident (every employee)
2. to assess the SHE incident to determine the need to investigate (SHE expert)
3. to appoint the investigation leader (senior manager)

The default term for the completion of an investigation is:

- major SHE incidents: 2 months
- minor SHE incidents: 4 weeks

When it is foreseeable that the investigation will take longer, the investigation leader makes a formal note in the incident reporting system (iTask) explaining the need for a longer investigation period.

3.4 Investigation method and quality requirements

Major investigable SHE incidents

The designated method for investigating major investigable SHE incidents is Tripod Beta. Contractor SHE incidents are preferably investigated using Tripod Beta, but different methods are allowed as well. A list of

approved methods is published on the in- and external website (SSC17-005). Contractors wanting to use a method that is not on the list must refer to SSC for approval.

As a minimum, the investigation leads to:

- An account of what happened;
- An account of the direct and underlying (root) causes;
- Specific recommendations addressing the direct and underlying (root) causes;
- A full investigation report that covers the three aspects listed above.

Minor SHE incidents

The choice for the investigation method is free; the only precondition is that the method enables systematic analysis of the incident and is a generally accepted method in the field of safety.

As a minimum, the investigation leads to:

- An account of what happened;
- An account of the direct and underlying (root) causes;
- Specific recommendations addressing the direct and underlying (root) causes;
- A full report that covers the three aspects listed above.

A detailed description of the investigation process (of both major and minor SHE incidents) can be found in the Process description SSC14-037 *Investigation of SHE incidents.*

3.5 Investigation report

The investigation leads to a comprehensive investigation report that can be read independently of any other information available in iTask, sub- or specialist reports. The minimum requirements for the report are included in Annex C.

When it is foreseeable that the investigation report is to be made available to third parties (e.g. Labour Inspectorate, Berufsgenossenschaft, National Safety Board, lawyers, etc.), the investigation leader must consult with Legal Affairs (LA) before doing so. Request for copies of incident investigation reports – whether internal or external - should be considered individually in accordance to the guideline *Information protection*.

3.6 Confidentiality

Investigators will use all information confidentially. The guideline Information protection applies to all documentation that is written in course of the investigation process, including the final report.

4. SHE incident review

4.1 Introduction

SHE incident investigations are to be reviewed systematically. TenneT has implemented an SHE incident review system (SIRS) consisting of four different levels. The aim of the SIRS is to check the quality of the investigations, the translation and implementation of the recommendations and to expand the learning curve from the level of individual incidents to the entire organization. An important aspect in the prevention of SHE incidents is learning from previous incidents. The SIRS identifies areas of poor and good practice, risks and lessons learnt with the aim to improve the safety management and culture.

4.2 Which SHE incidents have to be reviewed

All SHE incidents that have to be investigated are to be reviewed. The list includes: fatalities (FAT), lost workday cases (RWC), restricted work cases (RWC), medical treatment cases (MTC) and high risk incidents (HRI).

4.3 Structure of the SIRS

The SHE incident review system consists of four levels.

First level SIRS

The first level of review is by the senior manager who is responsible for the incident investigation.
Participants of the 1st level SIRS are:

- senior manager(s) responsible for the investigation;
- investigation leader.

Responsibilities of the 1st level SIRS are to ensure that all relevant incidents are investigated and to review the quality of the investigation by assessing the corrective actions. Also, to adapt the relevant risk assessment in agreement with the relevant safety expert accordingly and to document the incident and results of the investigation in the incident reporting (iTask) system.

Second level SIRS

The second level of review is during the MT meetings (MTM) of TenneT TSO B.V. and TenneT TSO GmbH. Every MT reviews all investigated SHE incidents that occurred under its scope of control.

Participants of the 2nd level SIRS are:

- MT members;
- the senior manager(s) responsible for the investigation(s).

The MTs make a selection of incident investigations to be discussed in the IRB (see next paragraph). Criteria for the selection may be: seriousness and complexity of the incident, impact on TenneT's company values, scope and complexity of the recommendations, lessons to be learnt on corporate level, etc. The selected incident investigations to be discussed in the IRB must be handed to the secretary of the IRB, viz. SSC.

Responsibilities of the 2nd level SIRS are to review all investigations, examine the root causes, consider relevance of recommendations and to add recommendations if needed. Also, to make suggestions how lessons learned can be proactively shared within the organisation and to send proposals of relevant incident investigations and findings for IRB and IRB-C to SSC.

Third level SIRS (Incident Review Board, IRB)

Incidents proposed by the MT (see previous paragraph) or proposed by SSC are reviewed in the IRB.
Participants of the IRB are:

- chairman of the executive board;
- 2nd executive board member;
- senior manager(s) responsible for the investigation(s);
- secretary (SSC).

Responsibilities of the IRB are to review incident investigations and give recommendations on corporate and strategic level to further improve the safety culture at TenneT.

Fourth level SIRS (Incident Review Board with contractor, IRB-C)

Incidents proposed by the MT or proposed by SSC concerning a contractor are reviewed in the IRB-C.
Participants of the IRB-C are:

- chairman of the executive board;
- CEO of the contractor;
- responsible senior manager of TenneT;
- responsible senior manager of the contractor (or equivalent, e.g. relevant overall project manager);
- secretary (SSC).

Responsibilities of the IRB-C are the same as for the IRB.

In the diagram below, all four levels of the IRS and the interrelations are shown.

4.4 Elements of the review

When reviewing a SHE incident investigation (report), both the process and the findings and recommendations shall be reviewed. Annex D contains a sheet with topics for evaluation and a frame of reference for each of these topics.

Annex A Definition of incidents

Introduction

This annex gives basic definitions of the most relevant terms (SHE incident, potential SHE incident and high risk incident) as these form the basis of this guideline. A full overview of incident related definitions is given in the guideline *Definitions and classification of SHE incidents*.

SHE incident

In the guideline *Definitions and classification of SHE incidents*, a SHE incident is defined as "an unplanned or uncontrolled event or chain of events that has – or could have - resulted in at least one fatality, injury or illness, or physical or environmental damage". When the incident results in injury or damage to the environment, the incident may be classified as a (e.g.) fatality, lost workday case or first aid case (see guideline *Definitions and classification of SHE incidents* for further guidance). When the incident did not lead to injury of damage to the environment, it is commonly called a near miss.

Potential SHE incident

The guideline *Definitions and classification of SHE incidents* also distinguishes potential incidents, being "an unsafe practice or hazardous situation that may cause an incident'. Mark that the 'unplanned or uncontrolled event or chain of events' did not occur and that no injury or damage to the environment was caused. Examples of potential incidents are: an icy office entrance (hazardous situation), working without a work permit when its use prescribed (violation of safety regulation), not wearing a safety helmet on a construction site (violation of safety regulation), drinking and driving (violation of life-saving rule).

High risk incident

In many cases, an incident could have resulted in a slightly different outcome; a twisted ankle instead of a bruise. A (potential) incident that could, in other circumstances, have realistically resulted in one or more fatalities is classified as a high risk incident. In addition, an environmental incident which, in other circumstances, could have realistically resulted in very serious environmental damage is also counted as a high risk incident.

Annex B Guidance for assessing the harm level of incidents

The harm levels are based on ExxonMobil's approach to incident investigation, as described in Smith and Jones (2013)[2]

Actual harm level

The actual harm level is the level of harm of that was actually inflicted to the victim: the injury as it is.

Potential harm level

The potential harm level is the level of harm of that could have been inflicted to the victim in a realistic worst case scenario: the injury as it could have been. For determining the potential harm level, the process is to:

- use the actual SHE incident and do not speculate on what could have happened at this point;
- use the actual hazards that existed at the time of the event and do not add fictional or additional hazards;
- determine any applicable pre-event mitigations in place at the time of the event;
- discuss 'feasible-but-reasonable scenarios' that would result in the highest risk to people and to what level the pre-event mitigations in place would have eliminated or reduced the severity of an injury in these scenarios;
- using the potential harm that could have occurred in the 'worst case feasible-but reasonable scenario', use the harm based severity scale to assign a potential harm level;
- document the potential harm level rationale in iTask (scenario used, mitigations in place, maximum harm possible, etc).

Harm level		Duration	Examples
4	Death		One or more fatalities
3	Severe harm	Long term, life altering	Amputation / severe disfigurement / permanent handicap Complex bone fractures or shattered bones Permanent loss of hearing / vision (partial or total) Third and fourth degree burns or frostbites
2	Moderate harm	Weeks to months	Simple bone fractures, significant lacerations Torn tendons Temporary hearing / vision loss (partial or total) Second degree burns or frostbite
1	Minor harm	Hours to days	Minor cuts / bruises / sprains / strains / swelling Mild hearing loss / corneal abrasions Blue finger- or toenail Small blood blister Insect sting or bite First degree burns or frostbite
0	No harm	No body damage	Object in eye removed by flushing or a cotton swab Slip, trip, fall with no bruising or swelling Having suffered pain General soreness

[2] Smith, M. and M.L. Jones (2013). A hurt based approach to safety, presented at SPE Americas E&P Health, Safety, Security and Environmental Conference, Galveston (TX), 2013. Society of Petroleum Engineers, Richardson (TX).

Annex C Requirements for the investigation report

A report of a SHE incident investigation meets the following requirements:

1. Title
2. Document status (e.g. draft, final) and date
3. Unique document ID
4. Author's name, position, contact details
5. Investigation leader's name, position, contact details
6. Investigation method used
7. Scope of the investigation
8. Purpose of the investigation
9. If applicable: reference list according to internationally accepted citation rules.
10. Language: Dutch, German or English.

Annex D Reference guide for SHE incident review

This annex offers guidance for those involved in the review of SHE incident investigations. The topics mentioned in this reference sheet can be discussed during a review of an incident investigation. The document offers a frame of reference to evaluate the quality of the investigation. For easy use, the criteria are presented in the form of a table. This reference document is based on the present guideline reporting, investigation and review of SHE incidents and the Process description *Investigation of SHE incidents* (SSC14-037).

Nr	Topic	Description
	Report (technical requirements)	Report meets the requirements for the investigation report, see Annex C.
	Report (content)	Report must contain: - overview of facts; - direct and underlying (root) causes; - recommendations
	Timeliness of the investigation	Report must be delivered: - major SHE incidents: 2 months after incident date - minor SHE incidents: 4 weeks after incident dateμ
	Analysis method	Use of Tripod Beta (TenneT) or another approved method (contractors).
	Investigation team	The team must consist of a minimum of two persons. It's recommended one of these persons must be a silver accredited Tripod Beta practitioner.
	Immediate causes	Could any of the immediate causes have been foreseen? Why did any of the direct factors that caused the incident exist? Were any of these factors 'business as usual'?
	Barriers	Were the barriers in theory adequate to prevent the accident from happening? Were missing barriers identified and why were these missing?
	Underlying causes	Did the analysis establish underlying causes? Is every step in the analysis based on factual information?
	Recommendations	Does the report contain specific recommendations? Are the recommendations based on the findings of the analysis? Do the recommendations address barriers and underlying causes alike?
	Actions	Are the recommendations translated into SMART actions? Which actions will be taken and when? Who is responsible to take these actions? Who will monitor the progress and to whom will this person report?
	Communication	How are the lessons learnt communicated to a broader public?