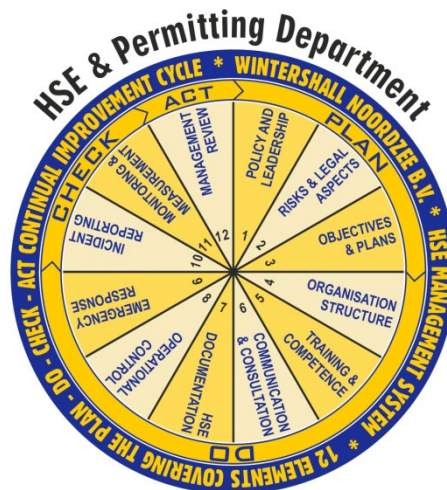


INCIDENT INVESTIGATION PROCEDURE



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Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	1 of 18

TABLE OF CONTENTS

0.	DOCUMENT CONTROL	3
0.1.	Distribution list of controlled copies.....	3
0.2.	Authorisation	4
0.3.	Revisions.....	4
0.4.	Next update.....	4
1.	PURPOSE / INTRODUCTION.....	5
2.	PERSONNEL RESPONSIBILITIES	6
3.	PROCEDURE FLOW SCHEME	7
3.1.	Flow scheme	7
3.2.	Explanation of numbers in flow scheme.....	8
4.	REFERENCES.....	10
5.	DEFINITIONS / ABBREVIATIONS	11

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	2 of 18

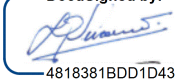
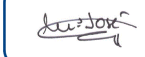
0. DOCUMENT CONTROL

0.1. Distribution list of controlled copies

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Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	3 of 18

0.2. Authorisation

	Name / function	Signature / date
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0.3. Revisions

Rev.	Description of changes	Date
0	Original issue	28-01-2004
1	Changed distribution list	08-05-2008
2	Changes to the investigation process. Rejecting the incident investigation report by the responsible Manager is no longer possible. The procedure is aligned with WIHO procedure GLOBAL-HSE-PR-028 dd. July 2015 and with the incident reporting procedure HSE-10-P001.	01-02-2016
3	General Update	20-07-2020

0.4. Next update

The review period for this document is 3 years (maximum). Next update: July 2023.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	4 of 18

1. PURPOSE / INTRODUCTION

According to the incident reporting procedure (HSE-10-P001 [1]) the decision to execute an incident investigation is taken by the members of the Incident Task Force (ITF), with support of the HSE Manager, the responsible line manager and the Department Head Asset Operations.

This procedure is written to ensure that all investigated incidents and accidents that occur during Wintershall Noordzee B.V. (WINZ) activities and / or on WINZ locations are investigated using a structured approach.

The Investigation activities are directed towards defining the circumstances, determining the immediate and basic causes, and developing remedial actions to control the risk and prevent recurrence.

This procedure meets the expectations of Management standard 10, concerning incident reporting, investigation and corrective action.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	5 of 18

2. PERSONNEL RESPONSIBILITIES

Managing Director

Based on the incident severity the MD decides on the level of investigation of the incident and the composition of the investigation team.

- Monitoring the ITF process
- Intervene in case of dispute
- He can decide to call for an internal or external investigation

Department Head Assets Operations

Based on the advice from the ITF to investigate an incident the Department Head Assets Operations decides on the investigation of the incident.

HSE Manager

Based on the severity of the incident the HSE manager in consultation with the MD and/or responsible department head composes an incident investigation team to independently investigate or support an investigation. The objective of the investigation is to find basic causes and organisational learning.

The HSE manager is responsible for the

- Correct application of incident investigation methods
- Investigation team composition with the correct skills and competences
- Setting the scope of investigation
- Hiring of outside expertise when deemed necessary
- Support of the incident investigation, reporting and formulation of action points / parties

Based on systematic trends, observations and other potential impacting HSE performance the HSE manager can call for investigation.

Responsible Department Manager

Following the incident investigation, the Responsible Manager:

- Should agree with the scope of the investigation
- Is responsible for the execution of the investigation (with support of the HSE Manager)
- Is responsible for the follow-up of the action plan, stating the actions, responsible person(s) for implementation and the deadline for completion of actions.
- If required/demanded the action plan is discussed in the SMT

Incident Task Force

The bi-weekly held incident task force is responsible for:

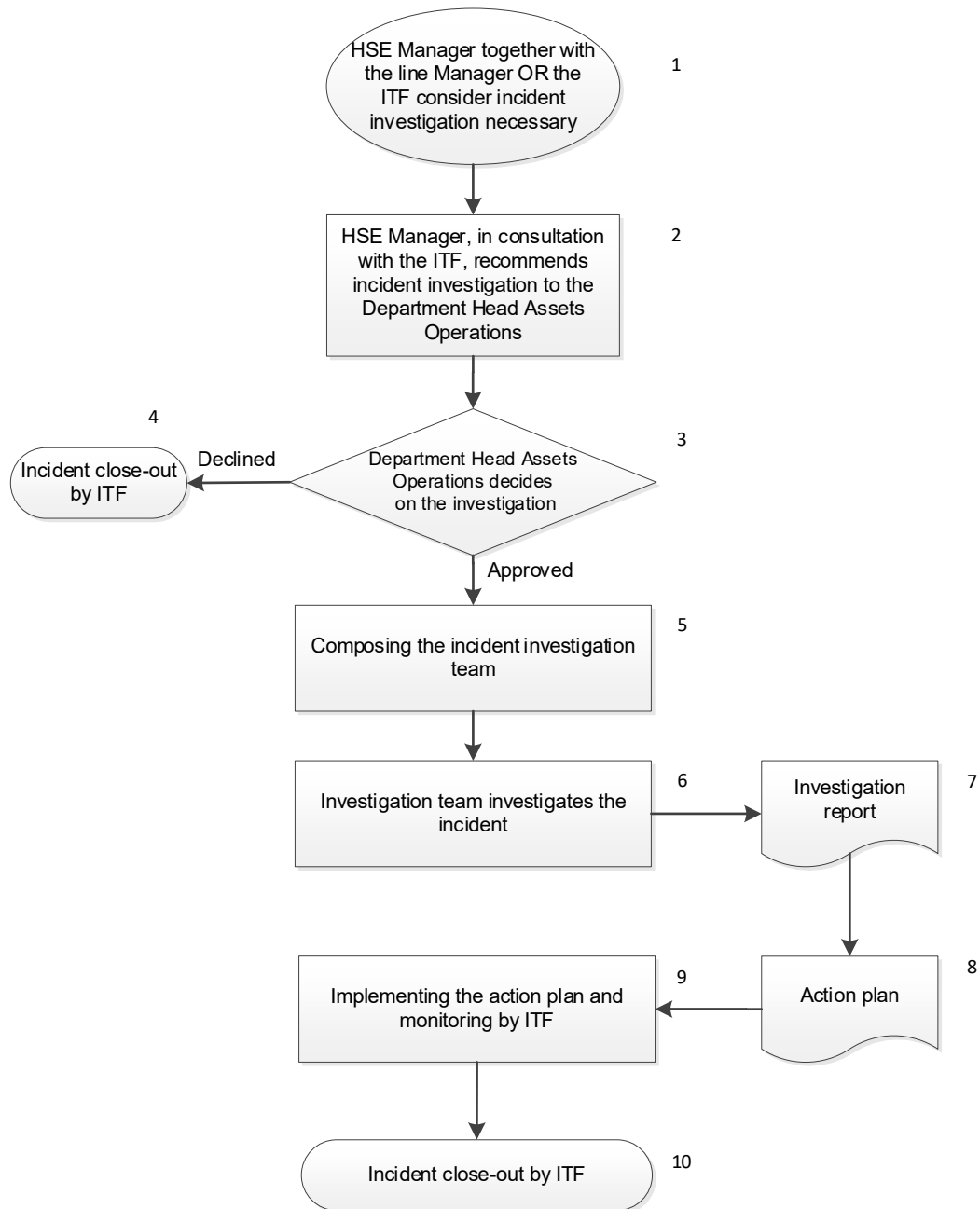
- Determining the final incident severity ranking of incidents
- Maintaining and monitoring the action following the incident investigation
- The close out of actions is based on the determination (by ITF, SMT) whether the actions taken have sufficiently remedied the identified problems

More detailed information about the ITF is described in the HSE meeting structure list HSE-06-L001 [2].

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	6 of 18

3. PROCEDURE FLOW SCHEME

3.1. Flow scheme



Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	7 of 18

3.2. Explanation of numbers in flow scheme

In this paragraph the numbered steps from the flow scheme as indicated in 3.1 are described in more detail.

1. Incident report

In the incident reporting procedure (HSE-10-P001) the reporting of an incident is described. It is up to the discretion of the Department Head Assets Operations to decide if an incident will be investigated.

2. Advise to investigate

Based on considerations of the HSE Manager and the responsible Line Manager the ITF recommends to investigate the incident to the Department Head Assets Operations.

3. Managing Director decision

Based on the incident and the advice to investigate, the Department Head Assets Operations decides on the execution of the incident investigation. In case of dispute, he can be overruled by the Managing Director.

4. No incident investigation

If the Department Head Assets Operations declines the execution of an incident investigation the incident will be closed-out by the ITF after satisfactory follow-up. The minutes of the ITF will reflect the incident investigation was requested but rejected.

5. Composing incident investigation team

If the Department Head Assets Operations approves the incident investigation the HSE Manager, will compose an incident investigation team.

The team consists of at least two persons with relevant, different skills and competencies, although more people may be involved in supplying evidence and information. At least one of the team members has knowledge of the Systematic Cause Analysis Technique (SCAT) and/or Barrier Based Systematic Cause Analysis Technique (BSCAT) investigation method. Investigation team members are neutral/independent and are not directly involved in the incident.

6. Incident investigation

The investigation team:

- Starts the investigation as soon as possible after the incident
- Has the mandate to collect evidence, documentation, make photos and interview staff.
- Ensures sufficient details about the incident and the circumstances are known to identify the basic causes.

All team members conduct the investigation in a fair and reasonable manner. Further information about the correct way of collecting evidence is described in Appendix A. Investigation will take place according to the Det Norske Veritas / International Loss Control Institute (DNV/ILCI) model SCAT or BSCAT. A description of these models is added to this procedure as Appendix B. For both methods the SCAT chart must be applied. The SCAT chart is added to this procedure as Appendix C.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	8 of 18

7. Investigation report

The investigation report will at least describe:

- The incident
- A timeline
- The incident potential
- Immediate and basic causes
- Recommendations

The investigation report shall be signed and dated by the investigation team leader. Signing indicates the investigation is complete and basic causes are identified and recommendations on corrective and preventive actions have been made. The investigation report shall be countersigned by the responsible Manager for operations at the site of the incident.

8. Action plan

Based on the recommendations an action plan must be developed by the responsible Line Manager. A copy of the action plan will be sent to the ITF, to all the participants of the investigation team, the involved Superintendents, Supervisors and Asset Managers.

9. Implementing the action plan

The implementation of the actions as described in the action plan shall be carried out according to the action plan. The continuation and finalization of implementation is monitored by the ITF.

The monitoring will comprise of:

- The implementation of controls (target dates, implementation in organisation, etc.)
- The effectiveness of the controls, once in place
- Identification of any secondary substandard acts and/or conditions arising from the implementation of controls
- Action to be monitored by relevant department head and SMT representative

10. Close-out by the ITF

The conclusions of the incident report and the implemented incidents will be sent to other internal interested parties via the existing bi-weekly 'recent incident report'.

In case all recommended actions are implemented, the ITF will close-out the incident during the ITF bi-weekly meeting. The minutes of meeting will reflect the discussed topics per incidents.

In case the recommended actions are not implemented, the ITF will write this down in a closing report. This report will be sent to the Department Head Assets Operations, the HSE Manager and other relevant personnel.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	9 of 18

4. REFERENCES

Number.	Document title	Document number
1	Incident reporting procedure	HSE-10-P001
2	HSE meeting structure	HSE-06-L001

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	10 of 18

5. DEFINITIONS / ABBREVIATIONS

Abbreviation	Explanation
Basic cause	The "basic causes" of incidents are the underlying or real causes behind the symptoms; the reasons why the substandard acts and conditions occurred. When identified, these factors permit meaningful management control
BSCAT	Barrier based Systematic Cause Analysis Technique
Incident	An event or chain of events which has caused or could have caused injury, illness and/or damage (loss) to assets, the environment, business reputation or third parties.
ITF	Incident Task Force
SCAT	Systematic Cause Analysis Technique

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	11 of 18

APPENDIX A: GUIDANCE ON COLLECTING EVIDENCE

Protection of evidence

In most instances it is necessary to protect the site of an incident in order to prevent evidence from being disturbed. In the case of a fatal accident there will be a legal restriction imposed on the site until the Police or other authorities are able to investigate the site. However, in other situations there might be a conflict because of the desire on one hand to preserve evidence for the investigation team and on the other hand the need to continue the normal work activity. This conflict should be resolved by the manager present at the site. Photographs and drawings may be a useful methods of recording the situation following the incident, and may allow a later reconstruction of the site, if this is required.

Confidentiality

All information collected during the investigation should be considered as confidential. This is particularly important for witness statements. A witness may not be prepared to give a true account of his observations if he believes the confidentiality of the information will not be respected. The investigation team should be sensitive to confidentiality when they prepare the investigation report; they may state their conclusions without describing the detailed evidence used to arrive at those conclusions.

Legal Proceedings

The investigation team need to be aware that legal proceedings may follow after a serious incident. The investigation report and the supporting evidence may be required to support the legal arguments of either side in a legal dispute or compensation claim. As the dominant purpose of the investigation report is not for the purpose of legal proceedings it probably cannot be considered as “privileged information” in the legal sense. Therefore, the investigation team must report their findings in a fair and objective manner, based on an assessment of the available evidence.

Deductive approach

The purpose of the investigation models is to provide a deductive approach, arriving at conclusions from an assessment of the evidence. Rarely are the basic causes of an incident obvious from the start, so care should be taken not to collect evidence that only supports a pre-conceived view.

Fact-finding not fault-finding

It is undesirable to conduct an investigation for the purpose of finding out who is to blame for the incident. A “blame culture” in an organisation will make it very difficult to collect reliable evidence from witnesses, it may also discourage incidents from being reported.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	12 of 18

Interviewing witnesses

The purpose of interviewing witnesses and those involved in the incident is to gather information which is as objective as possible i.e. fact finding, not fault finding. The following guidance on interviewing is provided:

- Interview individuals separately
- Conduct the interview in a quiet place
- Put the person at ease
- Explain the purpose of the interview, fact finding, not fault finding
- Get the individuals version of events
- Ask open questions, do not lead or prompt
- Record information quickly
- Review the information with the person
- End on a positive note
- Keep the communication line open

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	13 of 18

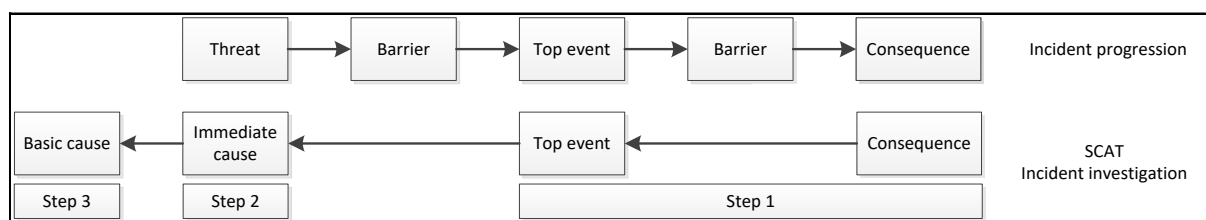
APPENDIX B: INCIDENT INVESTIGATION METHOD

Incidents are investigated in order to determine basic causes and then recommend appropriate corrective / preventive actions. The DNV/ILCI SCAT model is used for relative simple and straight forward incidents. When the incident is more complex or needs to be investigated in more detail the DNV/ILCI BSCAT method can be applied.

SCAT

SCAT (Systematic Cause Analysis Technique) is a basic cause analysis approach. The model is a sequence establishing the hierarchy of accident progression from the immediate cause back to basic causes. This is schematically indicated in Figure 1.

Figure 1



The process consists of a series of “why” questions. At each step you go back one stage in the causation model.

Step 1

Describe what happened (top event) and what the consequences were. The nature of the incident and the type of loss should be described in more detail as is already reported on the incident report form.

The investigation team should ensure that enough detail about the incident and the circumstances are known. Information can be obtained from personnel via interviews but also from data stored by the system.

Step 2

Investigation of Immediate Causes. Ask the question “why was there contact with the harmful energy or substance?” to determine the immediate causes. Immediate causes fall into two main groups - Substandard Conditions and Substandard Acts. There might be of immediate causes. Also, Substandard Conditions arise because of the acts or omissions of individuals, for this reason the majority of incidents have immediate causes which are predominantly due to Substandard Practices (although both conditions and actions should be recorded). A standard list of these immediate causes is used to speed up the investigation process and assists in recording of the information.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	14 of 18

Substandard actions	Substandard conditions
Operating equipment without authority	Inadequate condition of floor/surface
Failure to warn	Defective tools or equipment
Failure to secure	Inadequate tools or equipment
Operating at improper speed	Inadequate integrity of equipment
Making safety devices inoperative	Inadequate settings
Using defective equipment or tools	Failure to measure/detect
Improper use of equipment or tools	Inadequate measurement/signal
Improperly working on/at equipment or tools in operation	Inadequate materials
Use of inappropriate/inferior materials	Inadequate composition material/gas
Failing to use personal protective equipment properly	Inadequate guards or barriers
Improper loading	Inadequate or improper personal protective equipment
Improper placement	Congestion or restricted action
Improper lifting	Inadequate warning system
Improper position for task	Fire & explosion hazards
Horseplay	Presence of dangerous goods without permission
Under influence of alcohol/drugs	Poor housekeeping/disorder
Failure to follow procedure	Noise exposure
Failure to notice a danger	Radiation exposure
Improper action of a third party (out of own control)	Inadequate or excess illumination
	Vibrations
	Temperature extremes
	Pressure extremes
	Inadequate ventilation
	Inadequate information
	Other dangerous working condition/-environment
	Dangerous external source
	Adverse weather conditions

Step 3

Investigation of Basic Causes. Ask the question “why did the immediate causes exist?”. This question should be asked for each of the Substandard Practices and Substandard Conditions identified in the previous step. Basic Causes are classified into two groups: Personal Factors and Job Factors.

Personal Factors	Job factors
Inadequate physical/psychological capability	Unclear organization structure
Inadequate mental/psychological capability	Inadequate leadership

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	15 of 18

Personal Factors	Job factors
Physical or physiological stress	Inadequate supervision/coaching
Mental or physiological stress	Inadequate change
Lack of knowledge	Inadequate Supply Chain Management
Lack of skill	Inadequate maintenance/inspection
Improper motivation	Excessive wear and tear
	Inadequate tools/equipment/machinery
	Inadequate product
	Inadequate work/production standards
	Inadequate communication/information

Step 4

Categorisation of Lack of Control. For each Personal Factor and Job Factor identified in Step 3, ask the question “why did the basic cause exist?”. Each basic cause was allowed to arise because there was inadequate control of a particular area of the operation.

Understanding the lack of control in the operation assists in determining corrective and preventive actions which will address the basic causes.

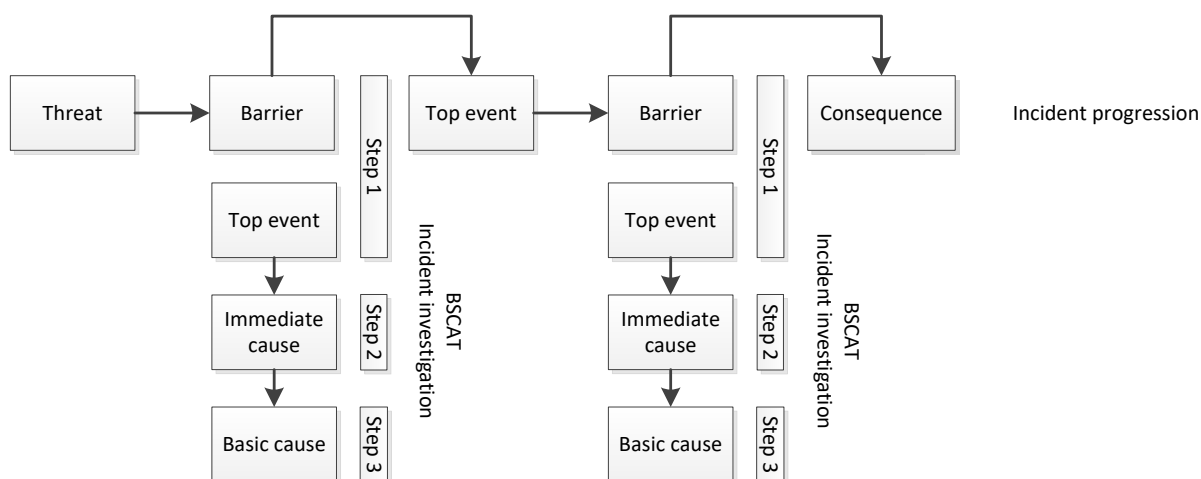
Lack of control	Examples
Inadequate Programme	Training and competence programmes not adequately covering HSE critical activities; Inadequate screening of suitable staff (related to competence); Screening of contractors; Supervision and monitoring of personnel not at the required level; Inspection programmes not comprehensive enough or infrequent; Inadequate preventive maintenance; Hazard and risk assessments programmes in insufficient detail;
Inadequate Standards	PPE requirements defined but are not appropriate to the hazard; Permit to Work system not covering all non-routine operations; Crane not rated to the correct load; Control and warning systems not to the correct specification;
Inadequate Compliance to Standards	Deliberate disregard of standard; Ignorance of the appropriate standard; Ignorance of own responsibility to comply with the standard; Misleading or badly communicated requirements.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	16 of 18

BSCAT

The BSCAT method is much like the SCAT method. Major difference is that the BSCAT method doesn't look into the consequence of an incident but looks into the barriers which have failed making the incident possible. For each barrier that failed the basic cause must be determined. This is schematically indicated in figure 2.

Figure 2



The steps as described in the SCAT method are also applicable in the BSCAT model. Additional descriptions are described below.

Prior to the investigation

A good preparation before building the BSCAT diagram is to make a timeline of the incident. This will help getting a good overview of the events that occurred before, during and after the incident. The timeline will assist in identifying the breached barriers which resulted in the top event and resulted in the incident.

Step 1

Describe the barrier and the top event (reason why it failed).

Step 2

Identify the immediate cause of the breach of the barrier. The same list with immediate causes as used for the SCAT method can be applied. Similar to the SCAT model there can be multiple immediate causes selected.

Step 3

The basic cause for all the identified immediate causes must be defined.

Step 4

Based on all identified basic causes of the broken barriers the lack of control can be defined. Because there are more basic causes more detailed recommendations can be made.

Document number	Revision	Revision date	Page
HSE-10-P002.00	3	20-Jul-2020	17 of 18

APPENDIX C: SCAT CHART

