

DOKUMENTATIONEN

25/2015

Checklists for surveying and assessing industrial plant handling materials and substances, which are hazardous to water

Nº 17

Checklists for oil processing / industrial plants

Part 1

Safety management systems

DOKUMENTATIONEN 25/2015

Advisory Assistance Programme (AAP) of the
Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

Checklists for surveying and assessing industrial plant handling materials and substances, which are hazardous to water

Nº 17

Checklists for oil processing / industrial plants

Part 1 Safety management systems

by

Gerhard Winkelmann-Oei (idea and conception)
Federal Environment Agency, Dessau (Germany)

Jörg Platkowski
R+D Industrie Consult, Adelebsen (Germany)

United Nations Development Programme (UNDP)/ Global Environment Facility
(GEF)

International Commission for the Protection of the Danube River (ICPDR),
Vienna (Austria)

On behalf of the Federal Environment Agency (Germany)

Imprint

Publisher:

Umweltbundesamt
Wörlitzer Platz 1
06844 Dessau-Roßlau
Tel: +49 340-2103-0
Fax: +49 340-2103-2285
info@umweltbundesamt.de
Internet: www.umweltbundesamt.de

 [/umweltbundesamt.de](https://www.facebook.com/umweltbundesamt.de)
 [@umweltbundesamt](https://twitter.com/umweltbundesamt)

Updated:

09/2014

Edited by:

III 2.3 Plant Safety
Gerhard Winkelmann-Oei

Publication as pdf:

<http://www.umweltbundesamt.de/publikationen/checklists-for-surveying-assessing-industrial-plant-16>

ISSN 2199-6571

Dessau-Roßlau, June 2015

This publication is financed by the German Federal Environment Ministry's Advisory Assistance Programme (AAP) for environmental protection in the countries of Central and Eastern Europe, the Caucasus and Central Asia and other countries neighbouring the European Union.

The responsibility for the content of this publication lies with the authors.

Recommendations for oil processing / industrial plants

Recommendations for oil processing plants are divided into two parts.

The first Part covers mainly issues of safety management in general.

The second Part covers recommendations on safety procedures to prevent accidents during construction and equipment of industrial plants regarding protection of water bodies.

Part 1. Recommendations on safety management

1. The manager of the working area should develop a Safety Report in accordance with the extended Seveso-II Directive (2003/105/EG from 16 September 2003). In the Safety Report it should be reflected, that the Accident Prevention Plan was implemented and there is in place a system of safety management to be maintained.

At developing the Safety Management System it is necessary to consider requirements of the “Guidelines on a Major Accident Prevention Policy and Safety Management System, as required by Council Directive 96/82/EC (SEVESO II)”.

2. The Safety Management System should consider following points:

- a. Organization and personnel;
- b. Finding and evaluation of a danger caused by accidents;
- c. Control over the plant;
- d. Safe introduction of changes;
- e. Development of a plan for extreme cases;
- f. Control over effectiveness of the Safety Management System;
- g. Systematic check and evaluation

3. The Safety Management System should be regularly check as an integral part of the Safety Report, and in case of necessity be renewed in the following way:

- at least every five years;
- in the every other case, if new facts justify this, or in order to take in account new data on safety operation, as well as modern conclusions for evaluation of danger.

Checklist to control implementation of recommendations

0 Definition

Working area: The working area is a whole area, being under control of the manager, where hazardous substances are available at present, or have to be present, or will be there in future in the quantity specified in the paragraph 2 of the Directive 96/82/EC, because they can appear in the case beyond control. The working area can cover several plants, the combined infrastructure and activity, including storage, in accordance with the Paragraph 3 of the Directive №8 96/82/EC.

1 Link with the authorized agency

2.1. Is there an exchange with the authorized agency of information on development of internal documentation for the working area?

- Accident prevention plan yes no
- Safety Management System yes no
- Safety Report yes no
- Plan for prevention of danger and alarm signal yes no
 not applicable

Activity

No action

2.2. Is there a cooperation with the authorized agency about internal requirements?

- Informing the publicity yes no
- Transfer of production data for development of a plan to prevent danger and alarm signal yes no
 not applicable

Activity

No action

Note:

Determination of the real risk

Was the sub-point of the recommendation implemented?

Yes <input type="checkbox"/> RC=1	Partly <input type="checkbox"/> RC=5	No <input type="checkbox"/> RC=10
---	--	---

2 Safety Report (see also the Checklist 12 „Safety Report“)

2.1. Was the Safety Report developed showing implementation of the Accidents Prevention Plan?

- Yes No Not applicable
- Activity No action

2.2. Is it mentioned in the Safety Report, that there is a Safety Management System for its application?

- Yes No Not applicable
- Activity No action

Note:

Determination of the real risk

Was the sub-point of the recommendation implemented?

Yes	Partly	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RC=1	RC=5	RC=10

3 Safety Management System

3.1. Organization and personnel

3.1.1. Were the challenges and areas of responsibility of the personnel taken into attention in developing any measures aiming at preventing accidents and limiting their impact at all the organizational levels?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.1.2. Is a need for appropriate access to education / professional development set up regularly?

<input type="checkbox"/> Yes	<input type="checkbox"/> No → 3.2	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.2. Are the necessary measures undertaken to achieve education / professional development based on identified needs?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.2.1. In order to realize these objectives, are the workers involved, as well as any appropriate contractors if necessary?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.3. Finding and evaluation of danger of accidents

3.3.1. Are the measures developed and implemented aiming at systematic detection of risk from accidents in the company according the directives?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.3.2. Are the measures developed and implemented aiming at systematic detection of risk from accidents in the company not following the directives?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.3.3. Is the probability and seriousness of such accidents determined?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.4. Control over the plant

3.4.1. Were the instructions for safe operation of the company developed, including oversight of industrial sites, instructions for operations, equipment and temporary disturbances?

<input type="checkbox"/> Yes	<input type="checkbox"/> No → 3.5	<input type="checkbox"/> Not applicable.
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.4.2. Are these activities checked and controlled / documented?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.5. Safe undertaking of changes

3.5.1. Were there any activities developed to introduce changes in existing industrial facilities or in existing processes?

<input type="checkbox"/> Yes → 3.5.1.1	<input type="checkbox"/> No → 3.5.2	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.5.1.1. Are these activities implemented and controlled / documented?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.5.2. Were any activities developed for introduction of new industrial object or a new process?

<input type="checkbox"/> Yes → 3.5.2.1	<input type="checkbox"/> No → 3.6	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.5.2.1. Are these activities implemented and controlled / documented?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.6. Development of a plan for extreme cases

3.6.1. Were any activities developed as a reaction towards predictable extreme cases on the basis of a systematic analysis?

<input type="checkbox"/> Yes → 3.6.1.1	<input type="checkbox"/> No → 3.6.2	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.6.1.1. Are these activities implemented and controlled / documented?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.6.2. Were any activities developed to implement, test and verify plans on prevention of danger / alarm signal in extreme cases, in order to be able to respond appropriately?

<input type="checkbox"/> Yes → 3.6.2.1	<input type="checkbox"/> No → 3.7	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.6.2.1. Are these activities implemented and controlled / documented?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.7. Control of effectiveness of the Safety Management System

3.7.1. Were the actions defined on the basis of research for the ongoing evaluation, achievability of the manager's goal - within the Accidents Prevention Plan and within the Safety Management?

<input type="checkbox"/> Yes	<input type="checkbox"/> No → 3.8	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.7.2. Do these activities contain a notification system, developed on the basis of a study,

About accidents yes no

Of almost to happen accidents, especially when failure would be caused by defects in, yes no

And also corresponding examination and following security measures? yes no
 Not applicable

Activity No action

3.7.3. Were any mechanisms for examination and correction established, if goals specified in paragraph 3.7.1 are unreachable?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

3.7.4. Do these activities contain a system of notification about accidents and accidents almost to happen, especially at failure of security measures, - developed on the basis of a corresponding study, as well as subsequent safety measures?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Activity	<input type="checkbox"/> No action	

Note:

3.8. Systematic check and evaluation

- In managing the working area is a documented test over the effectiveness and timeliness done regarding the: Yes No
- Accidents prevention plan, and effectiveness and correspondence of the Safety Management System Yes No

Not applicable
 Activity No action

Note:

Determination of the real risk

Was the sub-point of the recommendation implemented?

Yes <input type="checkbox"/>	Partly <input type="checkbox"/>	No <input type="checkbox"/>
RC=1	RC=5	RC=10

4. Proof of safety management system

4.1. Checking the Safety Report, the Accident Prevention Plan and the Safety Management System in the following time-terms

Safety Report Widely.	Safety Plan. Major responsibilities	
Responsibilities	responsibilities	
<input type="checkbox"/>	--	Minimum every five years
<input type="checkbox"/>	<input type="checkbox"/>	At changing a working area
<input type="checkbox"/>	<input type="checkbox"/>	At changing the method where the dangerous substance is used
<input type="checkbox"/>	<input type="checkbox"/>	when changing the mass of hazardous substance in respect of

data specified in the report on security

changing the type and physical form of a hazardous substance in respect of data specified in the report

at any other time, if required by the new circumstances

at any other time, if required by new circumstances or to reflect the new data on safety, as well as new findings for assessing the risk

Yes → 4.2 No → the Checklist is finished Not applicable

Activity No action

4.2. Are the documents updated without delay on the basis of examining the paragraph 4.1?

Yes No Not applicable

Activity No action

Note:

Examples of activities

Medium-term

- Development of the Safety Management System in accordance with the “Guidelines on a Major Accident Prevention Policy and Safety Management System, as required by Council Directive 96/82/EC (SEVESO II)“.
- Implementation of the Safety Management System.

Determination of the real risk

Was the sub-point of the recommendation implemented?

Yes

RC=1

Partly

RC=5

No

RC=10

Summary of the Checklist

Sub-point of the Recommendation	Possible Risk Category	Risk Category RC
1	1 / 5 / 10	
2	1 / 5 / 10	
3	1 / 5 / 10	
4	1 / 5 / 10	

Average Risk of the Checklist (ARC)