

Gasutsläpp och brand på ett oljeraffinaderi.

870521 MARS 1987_01

En ledning brast och gasformiga och flytande kolväten släppte ut och antändes. Larmet gick och räddningstjänsten tillkallades. Närliggande installationer hotades av branden.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
flytande och gasformiga kolväten		5000 kg

Skador:

Människor: Inga.
Materiella: Inga.
Miljö/ekologi: Inga effekter rapporterade.
Infrastruktur: Inga.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1987_001_01

reported under Seveso I directive as major accident reports: SHORT+FULL

Date of Major Occurrence: Time of Major Occurrence

start: 1987-05-21 start:

finish: finish:

Establishment:

name:

address:

industry: 2002 petrochemical, refining, processing

Petroleum Refinery

Seveso II status: not applicable: Yes art. 6 (notification): No

art. 7 (MAPP): No

art. 9 (safety report): No

Date of Report:

short: full:

Authority Reporting:

name:

address:

Authority Contact:

rep_cont_name:

rep_cont_phone:

rep_cont_fax:

Additional Comments:

- a) - not applicable -
- b) - not applicable -
- c) - not applicable -
- d) - not applicable -
- e) - not applicable -

Short Report

country: FA ident key: 1987_001_01

Accident Types:

release: Yes explosion: No

water contamination: No other: No

fire: Yes

description:

ACCIDENT CASE HISTORY DESCRIPTION:... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: No explosive: Yes

ecotoxic: No other: No

flammable: Yes

description:

- Gaseous and Liquid Hydrocarbons: amount involved = 5,000 kg.

Immediate Sources of Accident:

storage: No transfer: No

process: Yes other: No

description:

The accident occurred during normal operation of a coking plant in a petroleum refinery. The component involved was a joint connection between the sump circuit filter station and the seal system operating at 50 bar.

Suspected Causes:

plant or equipment: Yes environmental: No

human: No other: No

description:

CAUSES:

The hydrocarbons release was caused by the rupture of a joint connection due to an inadequate component design.

Immediate Effects:

material loss: Yes

human deaths: No

human injuries: No **community disruption:** No

other: No

ecological harm: No

national heritage loss: No

description:

MATERIAL LOSS:

The plant was damaged by the fire but no data are available about the cost of the material losses.

Emergency Measures taken:

on-site systems: Yes **decontamination:** No

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

INTERNAL TO THE ESTABLISHMENT:

The alarm was given and the plant fire brigade intervened to avoid the propagation of the fire to the nearby installations.

Immediate Lessons Learned:

prevention: No **other:** No

mitigation: Yes

description:

MEASURES TO MITIGATE THE EFFECTS OF THE ACCIDENT:... see Appendix Short Report / description of immediate lessons learned

A Occurrence Full Report

country: FA **ident key:** 1987_001_01

1 Type of Accident

remarks: A joint connection between the sump circuit filter station and the seal system ruptured, resulting in a gaseous/liquid hydrocarbons escape (codes 1101 and 1102). The escaped gas and liquid caught fire (code 1202). The fire propagated from t... see Appendix Full Report A / type of accident

2 Dangerous Substances

remarks: The total establishment and the potential directly involved inventories of gaseous/liquid hydrocarbons refer to the amount released during the accident.

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred during normal operation of a coking plant (code 3101) in a petroleum refinery (code 2002). The component involved was a joint connection (code 4011) between the sump circuit filter station and the seal system operating... see Appendix Full Report A / source of accident -

remarks

4 Meteorological Conditions

precipitation none: fog: rain: hail: snow:

No No No No No

wind speed (m/s):

direction (from):

stability (Pasquill):

ambient temperature (°C):

remarks: - not applicable -

5 Causes of Major Occurrence

main causes

technical / physical 5102 operation: component/machinery failure/malfunction

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational 5308 organization: design of plant/equipment/system (inadequate, inappropriate)

- not applicable -

- not applicable -

- not applicable -

- not applicable -

remarks: The hydrocarbons release was caused by the rupture (code 5102) of a joint connection due to an inadequate component design (code 5308).

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1987_001_01

event:

major occurrence 1202 fire: pool fire (burning pool of liquid, contained or uncontained)

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA ident key: 1987_001_01

a) total establishment inventory

CAS number: identity: Gaseous/liquids Hydrocarbons

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: - not applicable -

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): 5

use of substance as: NORMAL FINISHED PRODUCT

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 5 **potential quantity:** 5

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: -1 **indir_pot_quant:** -1

Source of Accident - Situation country: FA ident key: 1987_001_01

situation

industry

initiating event 2002 petrochemical, refining, processing

associated event - not applicable -

activity/unit

major occurrence 3101 process: chemical batch reaction

initiating event 3101 process: chemical batch reaction

associated event - not applicable -

component

major occurrence 4011 general pipework/flanges

initiating event 4011 general pipework/flanges

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1987_001_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: No

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks In the Original Report there is no evidence of significant effects outside the e... see Appendix

Full Report B / area concerned - remarks

2 People

establishment popul. emergency personnel off-site population

total at risk

immediate fatalities

subsequent fatalities

hospitalizing injuries

other serious injuries

health monitoring

remarks No people were injured during the accident.

3 Ecological Harm

pollution/contamination/damage of:

- residential area (covered by toxic cloud) Suspected
- common wild flora/fauna (death or elimination) Suspected
- rare or protected flora/fauna (death or elimination) Suspected
- water catchment areas and supplies for consumption or recreation Suspected
- land (with known potential for long term ecological harm or preventing human access or activities) Suspected

- marine or fresh water habitat Suspected

- areas of high conservation value or given special protection Suspected

remarks In the Original Report there is no evidence of significant ecological harms.... see Appendix

Full Report B / ecological harm

4 National Heritage Loss

effects on:

- historical sites not applicable - historic monuments not applicable
- historic buildings not applicable - art treasures not applicable

remarks No data available.

5 Material Loss

establishment losses off site losses

costs (direct costs to operator) (social costs)

in ECU ECU

material losses

response, clean up, restoration

remarks The plant was damaged by the fire but no data are available about the cost of th... see Appendix

Full Report B / material loss

6 Disruption of Community Life

establishment/plant evacuated disabled/unoccupiable destroyed

- nearby residences/hotels No No No
- nearby factories/offices/small shops No No No
- schools, hospitals, institutions No No No
- other places of public assembly No No No

interruption of utilities etc. no / yes duration

- gas No

- electricity No

- water No

- **sewage treatment works** No

- **telecommunications** No

- **main roads** No

- **railways** No

- **waterways** No

- **air transport** No

significant public concern none local level national level

- **off site populations** Yes No No

- **media interest** No No No

- **political interest** No No No

remarks In the Original Report there is no evidence of significant effects outside the e... see Appendix

7 Discussion of Consequences

C Response Full Report

country: FA **ident key:** 1987_001_01

1 Emergency Measures

taken - on site - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

- **off site** - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

still - on site - not applicable - - not applicable -

required

- not applicable - - not applicable -

- not applicable - - not applicable -

- **off site** - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

continuing contamination or danger

-**on site** not applicable

-**off site** not applicable

remarks - not applicable -

2 Seveso II Duties

pre-accident evaluation

Article item not due yet not done done/submitted evaluated

6 notification No No No No

7 policy (MAPP) No No No No

9 safety report No No No No

9, 10, 11 update No No No No

11 internal plan No No No No

11 external plan No No No No

13 informing public No No No No

9, 12 siting policy No No No No

post-accident evaluation

Seveso II duty was actual were actual compared with actual

contingency consequences consequences, the

addressed? addressed? predicted extent was?

Article item

7 policy (MAPP) not applicable not applicable not applicable

9 current safety report not applicable not applicable not applicable

11 internal plan not applicable not applicable not applicable

11 external plan not applicable not applicable not applicable

13 informing public not applicable not applicable not applicable

9, 12 siting policy not applicable not applicable not applicable

evaluation of safety organisation

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- written policy objectives No

- specified management No

structure

- specified responsibilities No

- specified working procedures No

- specified procedures for No

assessment/auditing of

management system

- specified procedures for No

review and update of

management policy

- specified general training No

procedures

- specified emergency No

training procedures

evaluation of ecological impact control

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- ecological status review No

before incident

- potential ecological No

consequences assessment

- ecological impact review No

after incident

- ecological restoration No

procedures

- subsequent review of No

restoration success

remarks - not applicable -

3 Official Action Taken

legal action

- not applicable -

other official action

- not applicable -

4 Lessons Learned

measures to prevent recurrence

After the accident, it was sug... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

- not applicable -

useful references:

- not applicable -

5 Discussion about Response

- not applicable -

Appendices for the FA / 1987_001_01 report

Appendix Short Report / description of accident types:

ACCIDENT CASE HISTORY DESCRIPTION:

A joint connection between the sump circuit filter station and the seal system ruptured, resulting in a gaseous/liquid hydrocarbons escape. The escaped gas and liquid caught fire. The fire propagated from the ground to a 22m high platform. The alarm was given and the fire brigade intervened. Nearby installations were in danger.

Appendix Short Report / description of immediate lessons learned:

MEASURES TO MITIGATE THE EFFECTS OF THE ACCIDENT:

After the accident, it was suggested, in order to minimize the amount of escaping materials should such a failure occur again, to install isolation valves closer to the vessels.

Appendix Full Report A / type of accident:

A joint connection between the sump circuit filter station and the seal system ruptured, resulting in a gaseous/liquid hydrocarbons escape (codes 1101 and 1102). The escaped gas and liquid caught fire (code 1202). The fire propagated from the ground to a 22m high platform.

Appendix Full Report A / source of accident - remarks:

The accident occurred during normal operation of a coking plant (code 3101) in a petroleum refinery (code 2002). The component involved was a joint connection (code 4011) between the sump circuit filter station and the seal system operating at 50 bar. From the Original Report it is not fully clear if coking is a batch chemical reaction or not.

Appendix Full Report B / area concerned - remarks:

In the Original Report there is no evidence of significant effects outside the establishment.

Appendix Full Report B / ecological harm:

In the Original Report there is no evidence of significant ecological harms.

Appendix Full Report B / material loss:

The plant was damaged by the fire but no data are available about the cost of the material losses.

Appendix Full Report B / disruption of community life:

In the Original Report there is no evidence of significant effects outside the establishment.

Appendix Full Report C / lesson learned - prevent:

After the accident, it was suggested, in order to minimize the amount of escaping materials should such a failure occur again, to install isolation valves closer to the vessels.