

Strömförsörjningproblem till följd av en brand i lastpallar på ett lager för gödningsämnen.

890901 MARS 1989_22

Lastpallarna fattade eld av okänd anledning. Branden släcktes inom ganska kort tid. Det mest besvärande rörde elförsörjningen till företag och bostäder i närheten. Flera elkablar som försörjde ett större industri- och bostadsområde befann sig ovanför brandområdet. Röken och hettan orsakade flera överslag mellan ledningarna. Strömförsörjningen blev mycket ojämn i 30 minuters tid, för att försvinna helt i 15 minuter. Strömförsörjningen var begränsad i de två följande dagarna.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
lastpallar av trä		okänt

Skador:

Människor: Inga.

Materiella: Lastpallarna brann upp.

Miljö/ekologi: Inga effekter rapporterade.

Infrastruktur: Flera elkablar som försörjde ett större industri- och bostadsområde befann sig ovanför brandområdet. Röken och hettan orsakade flera överslag mellan ledningarna. Strömförsörjningen blev mycket ojämn i 30 minuters tid, för att försvinna helt i 15 minuter. Strömförsörjningen var begränsad i de två följande dagarna.

Erfarenheter redovisade (Ja/Nej):

Kortfattat anges förebyggande åtgärder.

Report Profile

Identification of Report:

country: FA ident key: 1989_022_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 1989-09-01 start:

finish: finish:

Establishment:

name:

address:

industry: 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk distrib., more: F1!)

Storage Plant (also Petroleum Refineries and Petrochemical Industries were affected)

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:** 1989_022_01

Accident Types:

release: No **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:** No

ecotoxic: No **other:** No

flammable: Yes

description:

- Wooden Pallets: amount involved = not known.

Immediate Sources of Accident:

storage: Yes **transfer:** No

process: No **other:** No

description:

The accident occurred in a storage plant for ammonium nitrate fertilizers but the fire was confined to a large

store of wooden pallets in another area of the site. The site concerned was subjected to article 5 of

Directive EEC/501/82 because... see Appendix Short Report / description of immediate sources

Suspected Causes:

plant or equipment: No **environmental:** No

human: No **other:** Yes

description:

CAUSES:... see Appendix Short Report / description of suspected causes

Immediate Effects:

material loss: No

human deaths: No

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

other: Yes

ecological harm: No

national heritage loss: No

description:

COMMUNITY DISRUPTION:... see Appendix Short Report / description of immediate effects

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** Yes

evacuation: No

description:

INTERNAL TO THE ESTABLISHMENT:... see Appendix Short Report / description of emergency measures taken

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:... see Appendix Short Report / description of immediate lessons learned

A Occurrence Full Report

country: FA **ident key:** 1989_022_01

1 Type of Accident

remarks: A fire occurred in a large store area of wooden pallets (code 1201). Cable carrying the main 132 kv electricity supply to a large industrial and residential area passed immediately over the site where the fire developed and heat, flames an... see Appendix Full Report A / type of accident

2 Dangerous Substances

remarks: No data are available about the amount of wooden pallets involved in the accident.

3 Source of Accident

illustration: - not applicable -

remarks: The accident occurred in a storage plant for ammonium nitrate fertilizers (codes 2008 and 3202) but the fire was confined to a large store of wooden pallets (code 4006) in another area of the site. The site concerned was

subjected to articl... 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 5501 other: not identified

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational 5307 organization: process analysis (inadequate, incorrect)

5308 organization: design of plant/equipment/system (inadequate,

inappropriate)

- not applicable -

- not applicable -

- not applicable -

remarks: When the Original Report was prepared, no information were available about the causes of

the wooden pallets fire (code 5501). The enquiry carried out by Health and Safety

Executive allowed to identify some problems in process analysis and ... see Appendix Full

Report A / causes of major occurrence

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1989_022_01

event:

major occurrence 1201 fire: conflagration (a general engulfment fire)

initiating event 1201 fire: conflagration (a general engulfment fire)

associated event 1999 other: other

Dangerous substances

country: FA ident key: 1989_022_01

a) total establishment inventory

CAS number: identity: Wooden Pallets

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): -1

use of substance as:

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: -1 **potential quantity:** -1

c) substance belongs to relevant inventory indirectly involved: No

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

Source of Accident - Situation country: FA ident key: 1989_022_01

situation

industry

initiating event - not applicable -

associated event 2002 petrochemical, refining, processing

activity/unit

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

component

major occurrence - not applicable -

initiating event - not applicable -

associated event - not applicable -

situation

industry

initiating event 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk distrib., more: F1!)

associated event 2001 general chemicals manufacture

activity/unit

major occurrence 3202 storage: distribution-associated (not on-site of manufacture)

initiating event 3202 storage: distribution-associated (not on-site of manufacture)

associated event 3101 process: chemical batch reaction

component

major occurrence 4006 free placement (unconfined pile, stack,etc; if bagged or in cylinders, more...F1!)

initiating event 4006 free placement (unconfined pile, stack,etc; if bagged or in cylinders, more...F1!)

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1989_022_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: Yes

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks A large industrial area (comprising twenty installations subjected to article 5 ... 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 Suspected

preventing human access or activities)

- 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 No material losses occurred except the wooden pallets burnt during the fire.... 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 2 days

- **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** No Yes No

- **media interest** No No No

- **political interest** No No No

remarks Cable carrying the main 132 kv electricity supply to a large industrial and resi... see Appendix

7 Discussion of Consequences

C Response Full Report

country: FA **ident key:** 1989_022_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

The Health and Safety Executiv... 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 / 1989_022_01 report

Appendix Short Report / description of accident types:

ACCIDENT CASE HISTORY DESCRIPTION::

Although the storage installation was submitted to article 5 of Directive EEC/501/82 because of ammonium nitrate fertilisers, the fire was confined to a large store of wooden pallets in another area of the site. No dangerous substances were involved and the incident was not a Major Accident as defined in article 1(2)(c) of the Directive. Cable carrying the main 132 kv electricity supply to a large industrial and residential area passed immediately over the site where the fire developed and heat, flames and smoke caused repeated arcing between lines carrying separate phases. The power supply became erratic for 30 minutes, was then lost completely for 15 minutes and a restricted supply only was possible during the following 2 days.

As part of its article 7(2) inspection duties, the Health and Safety Executive (H.S.E.) decided to carry out an enquiry in each affected installation (submitted to article 5) to establish how they had coped with the loss of power supply. The installations included two major oil refineries. The following potential serious deficiencies were identified:

- 1- Several manufacturers had stated in their Safety Reports that they had alternative source of mains electricity supply to their sites but they had failed to identify that both sources originated from a common supply to the area.
- 2- Major manufacturers such as oil refineries have on-site generation capacity which can also be used to export electricity to the local supply company. They had failed to foresee that on disconnection of the external grid the internal generators would trip on overload as they tried to feed in to the external load. When the generators tripped out pre-scheduled load shedding and shut-down was triggered.
- 3- Some automatic emergency generator start-up devices failed to operate. In one instance, the on-site generator tripped in and out rapidly and frequently as a result of the erratic nature of the public supply and the starting battery was flat by the time the supply was totally lost.
- 4- Several manufacturers had failed to foresee that problems with so called Uninterruptable Power Supply (UPS) could result when the public supply was restored if the supplies were running out of phase.
- 5- Several manufacturers found that they were unable to reach full deluge rates for firewater when their stand-by generators fail due to inadequate capacity of diesel driven fire water pumps.

Appendix Short Report / description of immediate sources:

The accident occurred in a storage plant for ammonium nitrate fertilizers but the fire was confined to a large store of wooden pallets in another area of the site. The site concerned was subjected to article 5 of Directive EEC/501/82 because of the storage of ammonium nitrate fertilizers.

Appendix Short Report / description of suspected causes:

CAUSES:

When the Original Report was prepared, no information were available about the causes of the wooden pallets fire. The enquiry carried out by Health and Safety Executive allowed to identify some problems (such as sources of common cause failure from power supply, unforeseen trip of on-site power generation, inability of emergency power supply systems to cope with an erratic public power supply, phasing out of Uninterruptable Power Supplies, inability to reach full deluge rates for firewater) in process analysis and plant design of the installations in case of loss of public power supply.

Appendix Short Report / description of immediate effects:

COMMUNITY DISRUPTION:

Cable carrying the main 132 kv electricity supply to a large industrial and residential area passed immediately over the site where the fire developed and heat, flames and smoke caused repeated arcing between lines carrying separate phases. The power supply became erratic for 30 minutes, was then lost completely for 15 minutes and a restricted supply only was possible during the following 2 days.

OTHER:

No material losses occurred except the wooden pallets burnt during the fire.

Appendix Short Report / description of emergency measures taken:

INTERNAL TO THE ESTABLISHMENT:

Firefighting operations to extinguish the fire.

EXTERNAL TO THE ESTABLISHMENT:

Twenty installations subjected to article 5 of Directive EEC/501/82 were affected by the loss of power supply and about half of these had to implement their on-site emergency plan as a direct result of the accident.

Appendix Short Report / description of immediate lessons learned:

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:

The Health and Safety Executive intended to use the experience it has gained from this accident to improve the effectiveness of its assessment of Safety Reports prepared by manufacturers and as a useful example during testing of manufacturer's performance in the course of routine inspections of installations.

Appendix Full Report A / type of accident:

A fire occurred in a large store area of wooden pallets (code 1201). Cable carrying the main 132 kv electricity supply to a large industrial and residential area passed immediately over the site where the fire developed and heat, flames and smoke caused repeated arcing between lines carrying separate phases. The power supply became erratic for 30 minutes, was then lost completely for 15 minutes and a restricted supply only was possible during the following 2 days (code 1999).

Appendix Full Report A / source of accident - remarks:

The accident occurred in a storage plant for ammonium nitrate fertilizers (codes 2008 and 3202) but the fire was confined to a large store of wooden pallets (code 4006) in another area of the site. The site concerned was subjected to article 5 of Directive EEC/501/82 because of the storage of ammonium nitrate fertilizers. 20 factories (codes 2001 and 2002) were affected by the loss of power supply caused by the fire in the wooden pallets store.

Appendix Full Report A / causes of major occurrence:

When the Original Report was prepared, no information were available about the causes of the wooden pallets fire (code 5501). The enquiry carried out by Health and Safety Executive allowed to identify some problems in process analysis and plant design of the installations in case of loss of public power supply (codes 5307 and 5308).

Appendix Full Report B / area concerned - remarks:

A large industrial area (comprising twenty installations subjected to article 5 of Directive EEC/501/82) and the residential area were affected by the loss of power supply. About half of the factories had to implement their on-site emergency plan as a direct result of the accident.

Appendix Full Report B / ecological harm:

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

Appendix Full Report B / material loss:

No material losses occurred except the wooden pallets burnt during the fire.

Appendix Full Report B / disruption of community life:

Cable carrying the main 132 kv electricity supply to a large industrial and residential area passed immediately over the site where the fire developed and heat, flames and smoke caused repeated arcing between lines carrying separate phases. The power supply became erratic for 30 minutes, was then lost completely for 15 minutes and a restricted supply only was possible for next 2 days.

Appendix Full Report C / lesson learned - prevent:

The Health and Safety Executive intended to use the experience it has gained from this accident to improve the effectiveness of its assessment of Safety Reports prepared by manufacturers and as a useful example during testing of manufacturer's performance in the course of routine inspections of installations.