Utsläpp av kväveoxider från en fabrik för produktion av gödningsämnen

901122 MARS 1990_12

Klockan 11:00 släpptes en mindre mängd kväveoxider ut på grund av att en säkerhetsventil öppnats. Det framgår inte varför så skedde. Mängden var 500 kg under 2,5 minuter vilket var den maximala mängden utsläpp innan larm gavs. Fabriken låg nära gränsen mellan Holland och Belgien. Varningen som gavs på den belgiska sidan var allvarligare än vad som krävdes av situationen varför en högre beredskap än nödvändigt inträdde. Å andra sidan informerades inte de lokala holländska myndigheterna alls. Efter tre timmar blåstes faran över. Man fann att bättre rutiner behövdes dels för att korrekt ange farans omfattning, och dels för att kommunicera över gränsen.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
kväveoxider		500 kg

Skador:

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

Erfarenheter redovisade (Ja/Nej): Ja

Kortfattat anges förebyggande åtgärder.

Report Profile

Identification of Report:

country: FA **ident key:** 1990_012_01

reported under Seveso I **directive as** major accident **reports:** SHORT

Date of Major Occurrence: Time of Major Occurrence

start: 1990-11-22 **start:**

finish: finish:

Establishment:

name:

address:

industry: - not applicable -

Production of raw materials required for artificial fertilizers.

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:** 1990_012_01

Accident Types:

release: Yes **explosion:** No

water contamination: No **other:** No

fire: No

description:

On 22 11 90 at about 11.00 the opening of a safety valve at DSM's nitric acid plants caused release of a certain amount of nitrous gases into the atmosphere. This emission did not endanger the environment as was subsequently confirmed by th... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes **explosive:** No

ecotoxic: Yes **other:** No

flammable: No

description:

About 500 kg of nitrous gases were released into the atmosphere in about 2.5 minutes.

This is actually the maximum permissible emission before the safety device is triggered.

Immediate Sources of Accident:

storage: No **transfer:** No

process: Yes **other:** No

description:

- not applicable -

Suspected Causes:

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

human: No **other:** No

description:

It was found that the accident was due to faulty operation of a safety equipment (safety valve). Built in safety was triggered too soon due to defective auxiliary control. 100% fail-safe operation cannot be achieved

in practice.

Immediate Effects:

material loss: No

human deaths: No

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

other: Yes

ecological harm: No

national heritage loss: No

description:

No mention was made of any damage to persons or properties. The emission of nitrous gases did not endanger the

environment as it was subsequently confirmed by the measurement values. DSM calculated the spreading hazard

for various zones bas... see Appendix Short Report / description of immediate effects

Emergency Measures taken:

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

external services: Yes **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

- Information by DSM to the Regional Alarm Centres: "Gas leaks that may endanger the population"... see

Appendix Short Report / description of emergency measures taken

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

DMG disassembled the auxiliary control system and the plant operates at a lower pressure. A coupled safety

system (interlock) was chosen for the future, because it will automatically trim combustion as soon as the

safety device is triggered... see Appendix Short Report / description of immediate lessons learned

Appendices for the FA / 1990_012_01 report

Appendix Short Report / description of accident types:

On 22 11 90 at about 11.00 the opening of a safety valve at DSM's nitric acid plants caused release of a certain amount of nitrous gases into the atmosphere. This emission did not endanger the environment as was subsequently confirmed by the measured values. Nevertheless, the Limburg Region (Belgium) was greatly alarmed by this accident. BRT and Limburg Broadcasting Stations adviced the population to stay indoor and to keep windows and doors closed until further notice. These instructions are in-line with the regulations in force and are directly resulting from the information provided by DSM to the Regional Alarm Centers: "gas leaks that may endanger the population".

This communication immediately triggered the application of a civil dfence program. DSM should said instead "gas leak without risk for the population. The regional fire brigade in The Netherlands soon became aware that the population on the Dutch side of the frontier was not alarmed. The Limburg Region in Belgium had meanwhile started its civil defence program that could not be interrupted. A crisis-center was organized in Hasselt were they preferred a certainty to an uncertainty. ADSM expert was called in for scentific measurements of the air but no measured value indicated an increased nitrous gass concentration at living level. At about 4.00 p.m. all special warnings for the population were cancelled. DSM received scores of thelephone calls from citizens who had been alarmed by the radio broadcast. No mention was made of any damage to persons or property.

Appendix Short Report / description of immediate effects:

No mention was made of any damage to persons or properties. The emission of nitrous gases did not endanger the environment as it was subsequently confirmed by the measurement values. DSM calculated the spreading hazard for various zones based upon the expected concentration rate. Measurements confirmed these calculated values (0.5-ppm at living level). In the accident about 500 kg was released into the atmosphere in about 2.5 minutes which is actually the maximum permissible emission before the safety device is triggered.

Appendix Short Report / description of emergency measures taken:

- Information by DSM to the Regional Alarm Centres: "Gas leaks that may endanger the population"

- Triggering of the application of civil defence program

- Dutch defence program did not alarm Dutch population

- the near Belgian/Limburg Region started civil defence program that could not be

interrupted

- Crisis center organized in Hasselt

- No indication (measured values) of increased nitrous gases at living level

- at 4.00 p.m all warnings cancellation

Appendix Short Report / description of immediate lessons learned:

DMG disassembled the auxiliary control system and the plant operates at a lower pressure. A coupled safety system (interlock) was chosen for the future, because it will automatically trim combustion as soon as the safety device is triggered; blow-down time is thus shortened to about 30 seconds. It should be determined how to report in writing such events to the Province Authorities. It was agrred that the Belgian Authorities would be as soon as possible informed about any unusual events that might lead to trouble, harmful effects or danger in Belgian border region. Prompter information should also timely be given to the province and nearby municipalities. The Authorities will also timely be informed in an explanatory CCo about the DSM protection program to be implemented in case of accidents.