



LEARNING FROM INCIDENTS NEWSFLASH

UP-NF-201809

Upstream Operated Netherlands - NAM

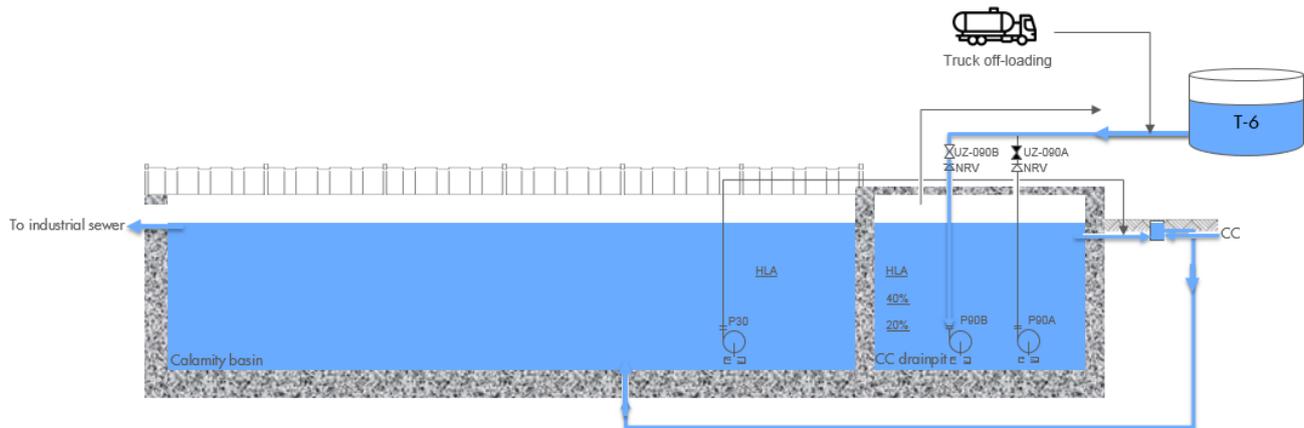
November 2018

Only for distribution to Shell employees, Shell contractors, Shell operated joint ventures and, with the consent of the Shell Shareholder Representative, to non-Shell operated joint ventures. Refer to the LFI Legal Guidance* if you wish to send this Alert to other parties.

Hydrocarbon condensate spill to surface water Farmsum

Target audience for this newsflash

- Process Safety, Process Control and Process Engineers
- Mechanical Engineers
- Production Operations
- Civil Engineers



What happened

On October 3rd 2018, two concrete drain pits in series on NAM's tank farm DZLTP flooded and some 30 m³ hydrocarbon condensate was spilled via an industrial sewer system onto surface water outside the facility in an inhabited area.

Due to a series of events, backflow occurred from a filling line of a large storage tank towards a concrete drain pit, from there it flowed into a calamity basin which flooded to the industrial sewer..

*LFI Legal Guidance- <http://sw.shell.com/hse/incident/index.html>

This document is made available for information only and on the condition that (i) it may not be relied upon by anyone, in the conduct of their own operations or otherwise; (ii) neither the Shell company issuing this document nor any other person or company concerned with furnishing information or data used herein (A) is liable for its accuracy or completeness, or for any recommendations or advice given in or any omission from this document, or for any consequences whatsoever resulting directly or indirectly from any use made of this document by any person, even if there was a failure to exercise reasonable care on the part of the Shell company or any other person or company as aforesaid; or (B) make any claim, representation or warranty, express or implied, that acting in accordance with this document will produce any particular results with regard to the subject matter contained herein, or satisfy the requirements of any applicable federal, state or local laws and regulations; and (iii) nothing in this document constitutes technical advice. If such advice is required it should be sought from a qualified professional adviser.

The content of this document may (i) be based on, but not identical to facts relating to a third party incident about which Shell has become aware; (ii) contain Recommendations that are one, but not necessarily the only way, of addressing incident learnings.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate entities. In this Learning From Incident Alert, the expression "Shell" is sometimes used for convenience where references are made to companies within the Shell group or to the group in general. Likewise, the words "we", "us" and "our" are also used to refer to Shell companies in general or those who work for them. These expressions are also used where no useful purpose is served by identifying specific companies.

Why it happened

The investigation is not yet complete however items have been identified through the investigation to date that require attention. An LFI containing the outcome of the investigation will be issued after the investigation is completed.

Immediate actions taken to prevent reoccurrence

- The connection with the sewer system was blocked off
- The priority of the high liquid level alarms was increased
- Implementation of additional independent level alarms
- Modification of pump logics
- Replacement of failed check valve

Recommendations

- Identify situations where storage tanks can flow (back) to connected civil drain systems which are also connected to sewer systems/surface water.
- Review the possible flow path from storage tank to surface water and the health of the protecting barriers. Include a detailed check on the as-built situation (also inside covered pits), instrument settings and control logics and a cross check between HAZOP, SIL and maintenance and operational procedures.

Suggested toolbox/safety meeting questions

- Do you have situations where storage tanks can flow back via connected civil drain systems to surface water?
- How do you make sure your barriers to prevent surface water pollution are strong?

Further information

- Incident ID: 2180260
- Contact: T NAM-UPO/T/GEO

*LFI Legal Guidance- <http://swm.shell.com/hse/incident/index.html>

This document is made available for information only and on the condition that (i) it may not be relied upon by anyone, in the conduct of their own operations or otherwise; (ii) neither the Shell company issuing this document nor any other person or company concerned with furnishing information or data used herein (A) is liable for its accuracy or completeness, or for any recommendations or advice given in or any omission from this document, or for any consequences whatsoever resulting directly or indirectly from any use made of this document by any person, even if there was a failure to exercise reasonable care on the part of the Shell company or any other person or company as aforesaid; or (B) make any claim, representation or warranty, express or implied, that acting in accordance with this document will produce any particular results with regard to the subject matter contained herein, or satisfy the requirements of any applicable federal, state or local laws and regulations; and (iii) nothing in this document constitutes technical advice. If such advice is required it should be sought from a qualified professional adviser.

The content of this document may (i) be based on, but not identical to facts relating to a third party incident about which Shell has become aware; (ii) contain Recommendations that are one, but not necessarily the only way, of addressing incident learnings.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate entities. In this Learning From Incident Alert, the expression "Shell" is sometimes used for convenience where references are made to companies within the Shell group or to the group in general. Likewise, the words "we", "us" and "our" are also used to refer to Shell companies in general or those who work for them. These expressions are also used where no useful purpose is served by identifying specific companies.