

### Incident description: gas leak 2017

The leak occurred in a fuel gas filter as a result of corrosion under thermal insulation. Damage to the paint coating and surface rusting on the uninsulated sections of the piping at the fuel gas filter were discovered, and a job was planned to remove the insulation and paint pipes in this area. That job was postponed because the risk of doing so was regarded as acceptable.

A notification was established to convert the relevant fuel gas filter on the basis that the equipment was placed in a utility area. An exemption was established in relation to location, where a number of compensatory measures were entered – installation of gas detection in the area, ignition source disconnection, pressure blowdown, leak point reduction (flanges) and increasing filter robustness (in other words, inspection and improvement of surfaces). This conversion would mean replacing pipes with damaged painting. The original notification for insulation removal and painting was thereby cancelled. Conversion of the fuel gas filter was postponed because the risk of doing this was considered acceptable. Four of six similar fuel gas filters were converted, while two were left – including the one where the leak occurred.

The initial leak rate has been calculated as 0.12kg/s. The leak lasted for 30 minutes.

The photograph below shows the leak point.



### Causes

#### Direct causes

- Corrosion under insulation – degradation over time.
- Corrosion under insulation was not detected and repaired before a leak occurred.

#### Underlying causes

- Defects in the paint – the coating was not maintained.
- The fuel gas system was not included in the programme to address corrosion under insulation.
- Moisture in the insulation because of the outdoor location.
- A planned job to remove insulation and paint was postponed because the risk was considered acceptable.
- The risk of corrosion under insulation was considered low, and dealing with corrosion on the fuel gas filter was given low priority.
- A planned job to convert the fuel gas filter was postponed because the risk was considered acceptable.

### **Lessons and recommendations**

- Updates/changes to internal company systems for planning and following up maintenance activities, including risk assessments related to approval and prioritisation meetings and information about and training on the changes introduced.
- Review of the programme for dealing with corrosion under insulation.