

European Conference on Plant & Process Safety

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Introduction to the Tata Group

One of the world's fastest-growing and most reputable corporations



Tata Group

- Founded in 1868
- Operations in more than 100 countries and 695,000 employees
- Total revenues of more than \$100 billion (68% from outside India)
- Ranked world's 11th most reputable and 17th most innovative company
- Promoter company Tata Sons 66% owned by philanthropic trusts
- £100 million invested in community projects every year

Introduction to the Tata Steel Group

One of the world's most geographically-diversified steel producers



Tata Steel Group

- 11th largest global steel producer
- Annual crude steel capacity of more than 27.5 million tonnes
- Around 74,000 employees
- Manufacturing operations in 26 countries across five continents
- Present in both mature and developing markets
- Revenue in 2017 \$18.1 billion (€15.5 billion)
- Fortune 500 company

History of Process Safety events

World Industry

Bophal (20.000+ †) 1984



Piper Alpha (167†) 1988



Texas City (15†) 2005



Macondo Well (11†) 2010



Steel Industry

Furnace explosion (4†)



Ternium Steel 2013 (11†)



CSN, Brazil 2006



China steel ladle 2007 (32†)



Tata Steel

Port Talbot BF5 (3†) 2001



Jamshedpur GH (1†) 2013



Port Talbot Torpedo 2019



Port Talbot ladle drop 2013



Tata Steel local

BF bleeder valve IJmuiden



Pickling line fire



Coke Gas heating alley



TATA steel in the news

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Steel plant explosion: Two burned at Tata in Port Talbot



[Link to news website](#)

March 2019

BUSINESS

EXPLOSION AT TATA STEEL FACTORY INJURES WORKERS

By Zack Newmark on March 20, 2019 - 16:10

Explosion at TATA Steel

Four people were injured when an explosion took place at a Tata Steel facility. All four of the victims are employees who were transported to area hospitals, the company said. Their injuries were not specified, but were not believed to be life threatening, a Tata Steel spokesperson told several news outlets.

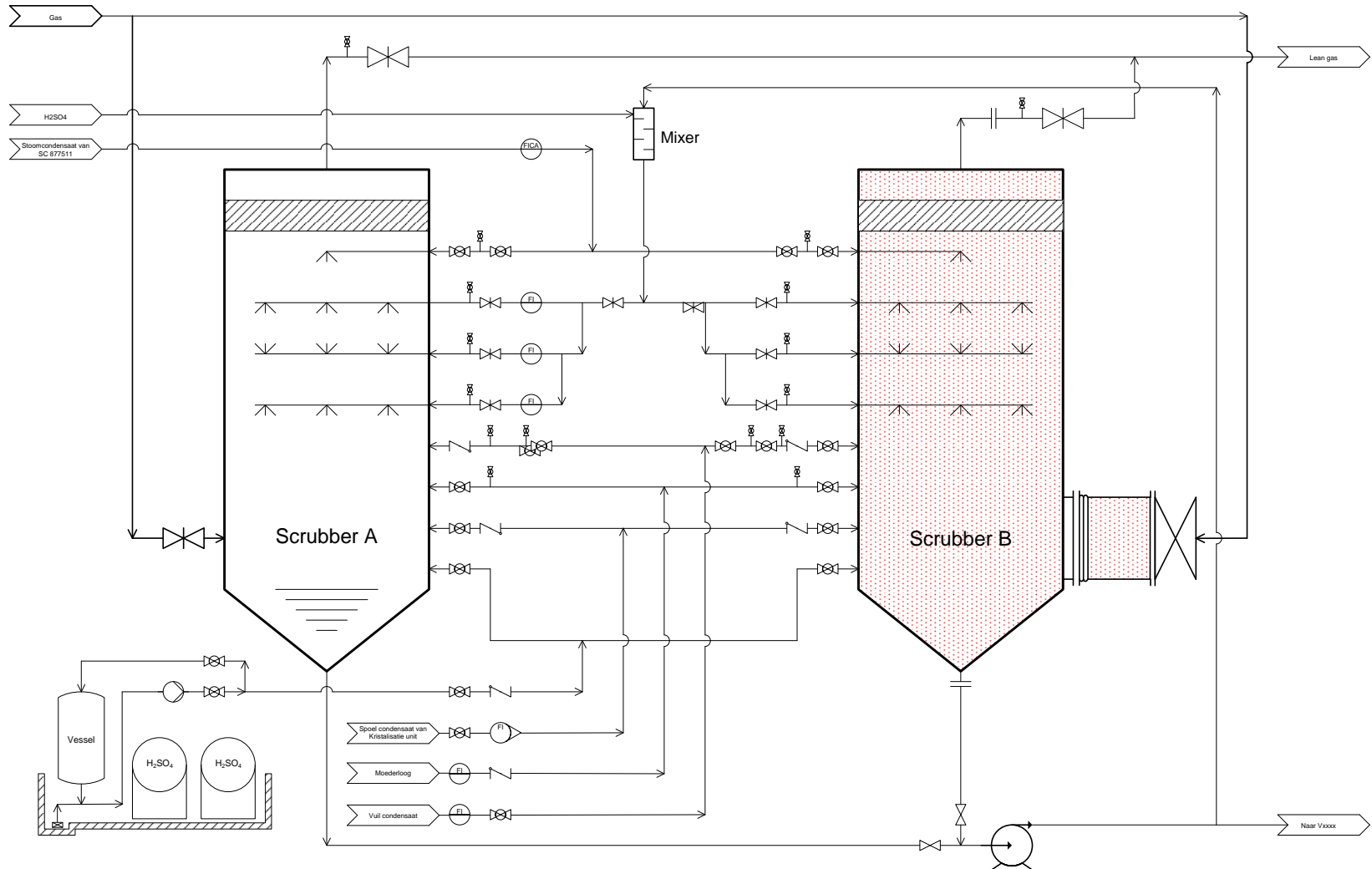
One resident told that they heard a loud dull boom, and could feel the ground rumbling below his home.

The situation was reportedly under control by noon, and no toxic emissions were released.



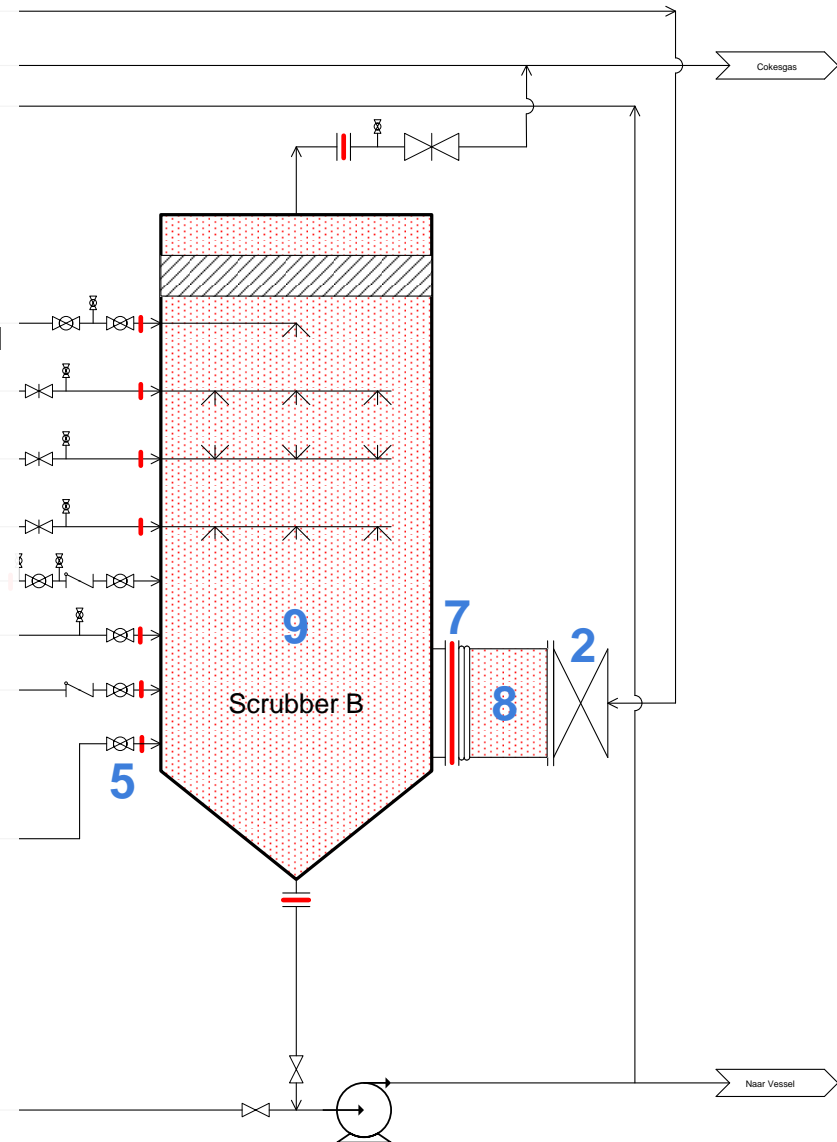
General information

The explosion happened in Scrubber B. The purpose of the scrubbers is to remove ammonia from a gas stream containing light HC's. This is done by countercurrent washing the gas with acid water.

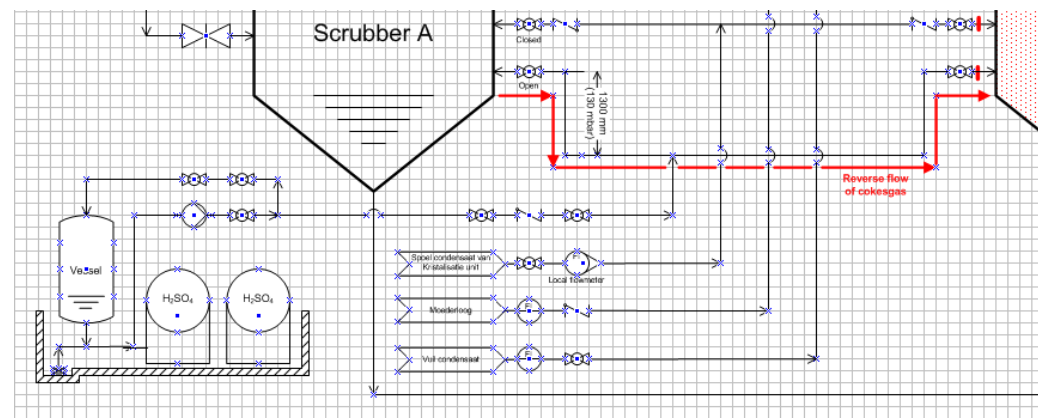
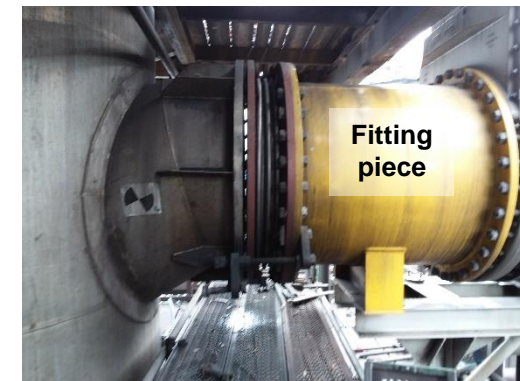
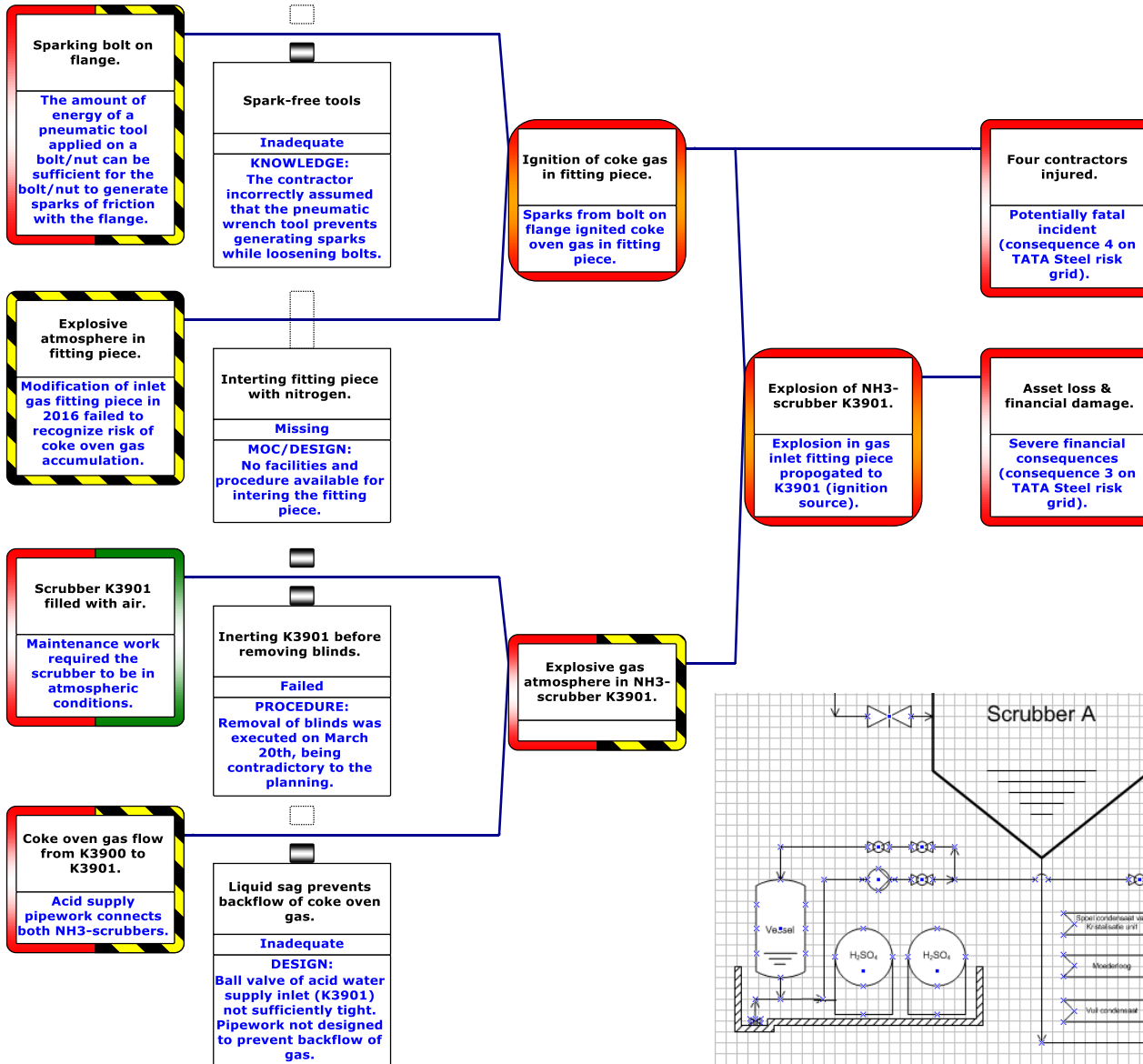


Incident timeline

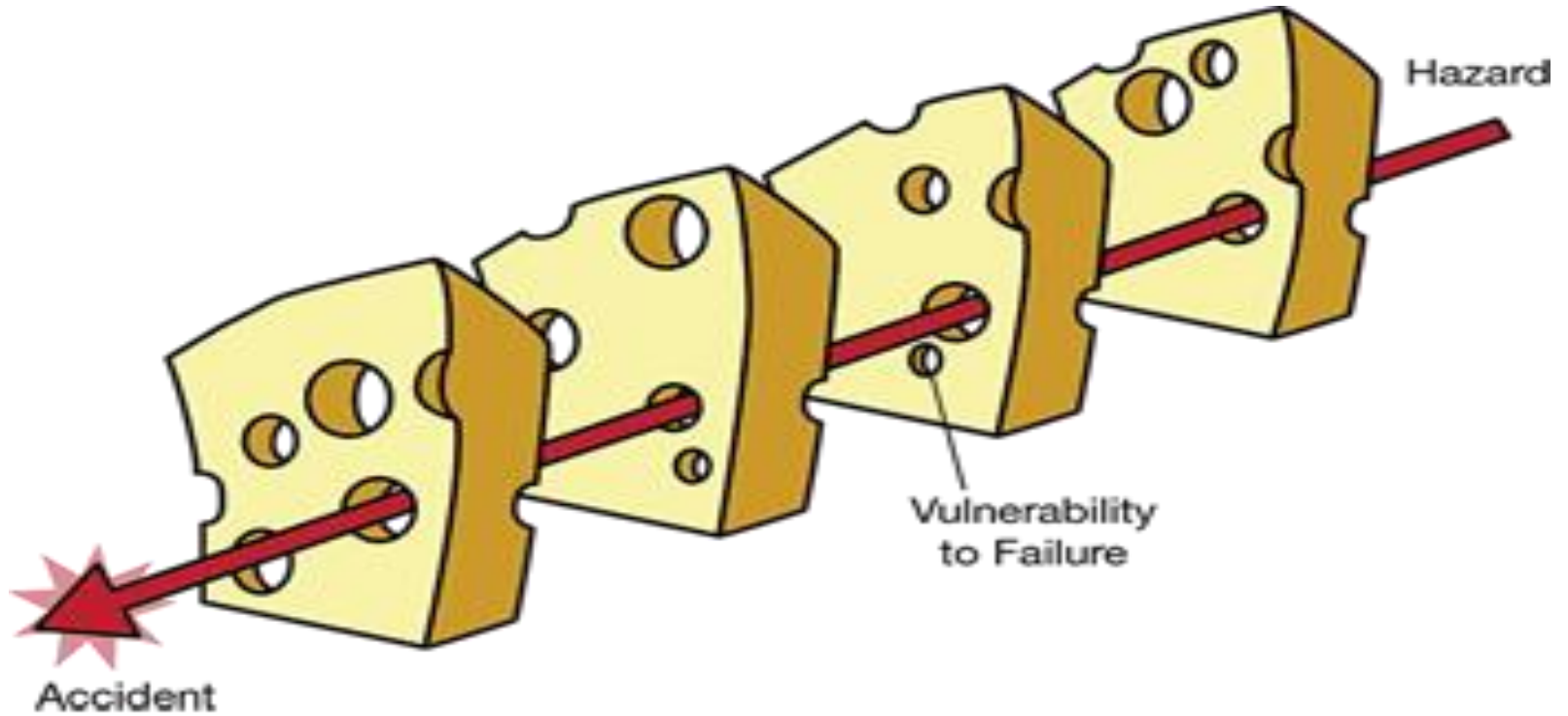
- 1 Scrubber was out of service and positive isolated.
- 2 Flammable gas entered space between inlet gas valve and blind through passing gas inlet valve over a period of > 1 week.
- 3 Column internal work was completed. Contractor closed scrubber manholes.
- 4 Blinds of connecting small fluid supply lines were removed.
- 5 Gas entered the scrubber through acid water supply line from other scrubber.
- 6 Lunch break
- 7 Contractor starts removing blind in gas inlet line with pneumatic wrench.
- 8 Ignition of explosive atmosphere between inlet gas valve and blind (A).
- 9 Explosion inside scrubber column.



Incident Causes



General key learnings



General key learnings

Do we understand what can go wrong?

Do we know what barriers we have to ensure that it doesn't go wrong?

Do we know that our barriers are effective and working properly?

1. Plant

- Plant design hold invisible risks: Why did they do it? What more did we miss?
- Valves can pass.

2. Process

- Do you have an unambiguous and structured MOC and PtW process?
- PHA process is not applied thoroughly enough to identify all hazards and scenarios.

3. People

- Normalisation
- Discipline
- Communication:
 - Contractor didn't feel comfortable
 - Visible supervision missing



■ Do you have any questions?

■ Together we make the difference