Energy for a New Era

RIETLANDEN TERMINALS BV

Monday April 11, 2016

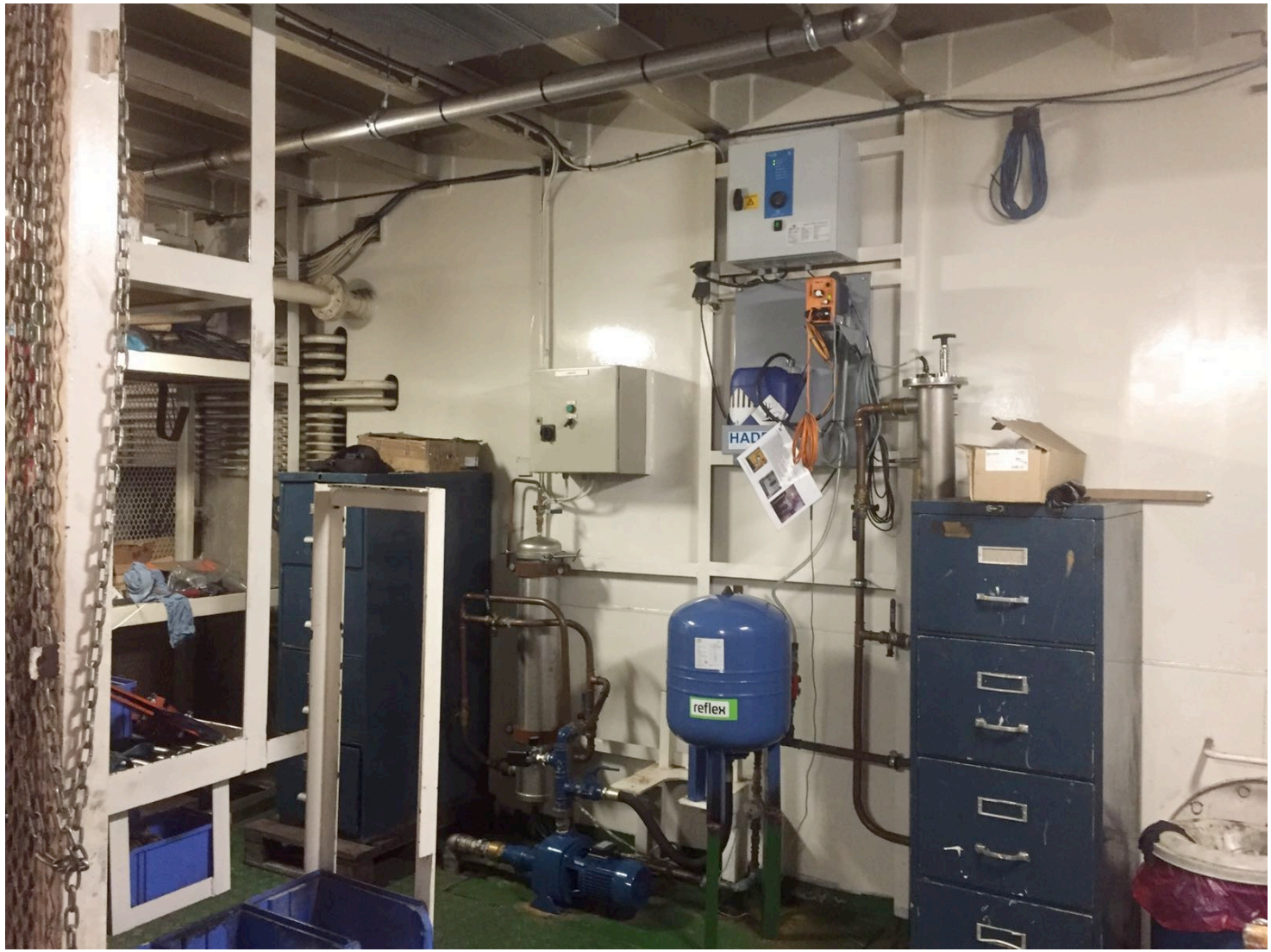
Safety incident / fatality

November, 2017

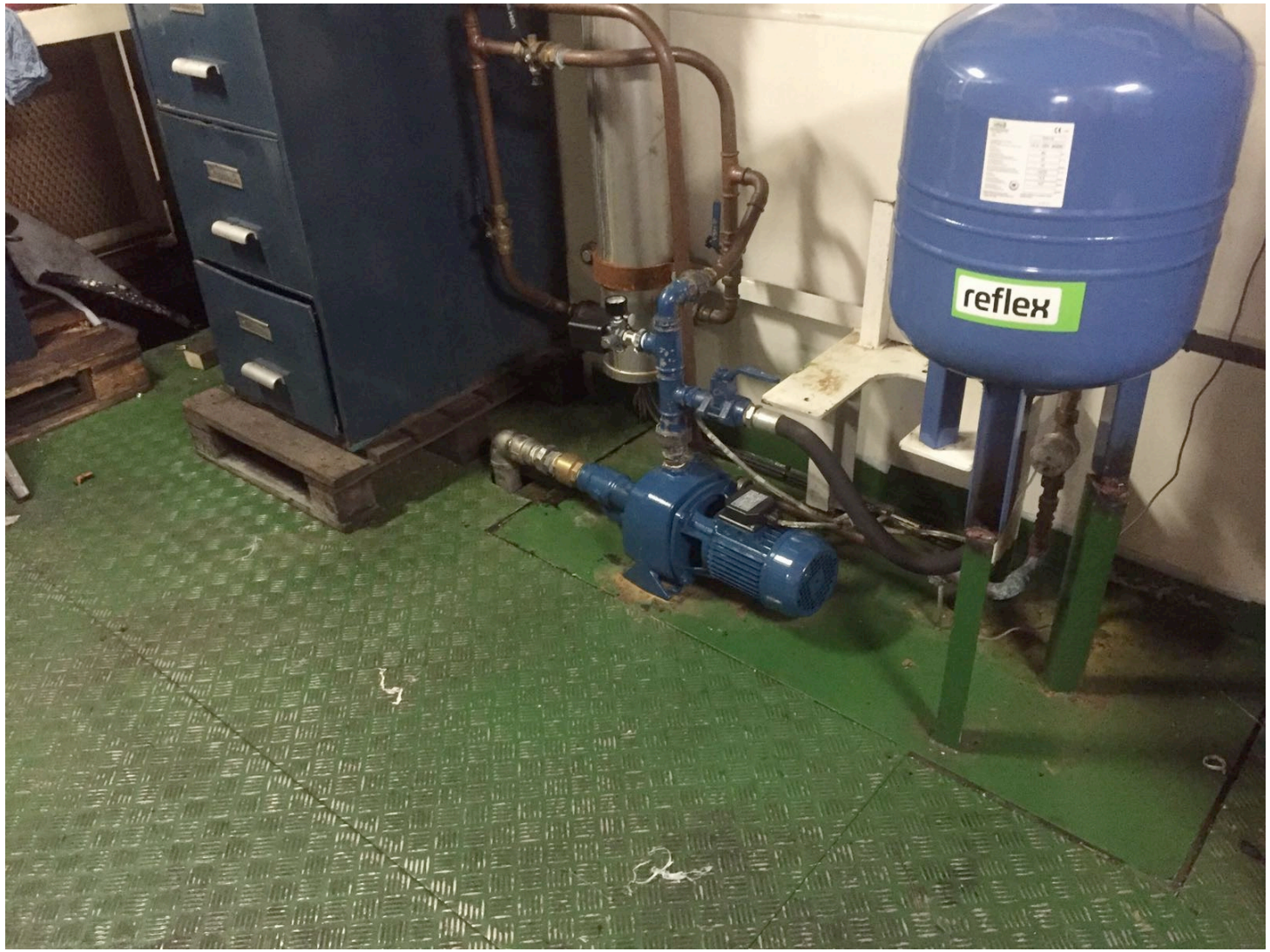
Facts of the accident

- The employee was in his first week working for the company. (introduction period), before that he was working 4 years for a contractor at Rietlanden and very experienced;
- Command for the employee was to change the hydro pump on floating crane Adelaar.;
- Employee had also changed the same pomp a few days before. Together with other colleagues;
- The faulty pump was electric secured. Fuses were pulled and the switch was out;
- On the way to the lighter location, employee started his work alone (normal situation) in department of the engine room;
- Before starting his work he has reported to operational personnel that he went to work. He was seen several times by other colleagues;
- As the employee did not appear for the coffee break, although it was agreed with the operational colleagues, they went looking for him;
- Employee was found unconscious in the engine room nearby the pump. He could not revived and passed away.
- On the moment he was found the pump was changed, fuses were in, electrical wiring partially connected and the switch was on

Overview **pressurized** water system compartment



Hydropump pressurized water system



Facts of investigation

- Labour inspectorate started an investigation to determine the cause of death.
  - ✓ The cause of death was electrocution. The area was being closed and sealed for further investigation;
- Labour inspectorate visited several times the accident location for inspection, interviewed the staff who were in charge and collected all documents requested;
- The same time independent H&S Consultancy started their investigation;
- During the investigation it was proven by an independent expert that the hydro pump installation showed no defects, the electrical installation of the floating crane was approved and without interference or defects. After that closing of the area has been lifted;
- Investigation learned that – after changing the pump – the employee himself switched the power of the hydro pump installation on and also placed the fuses themselves in the control cabinet (in another room). During this:
  - ➢ there were still “open” electrical wires, not capped or mounted, the hydro installation was not safe at that moment;
- Autopsy revealed that the victim had a mark in his hand, where the electricity has entered his body and led to the electrocution. So there was direct contact with electricity.
- The prosecutor decided to conduct a criminal investigation, because of suspicion of violation article 32 working conditions act.

How could it happen?

- Company has a well and comprehensive regulated safety system.
  (stated by the independent H&S consultancy and the Labour Inspectorate)

- For instance
  - HSE rules.
  - NEN-3140 Safety regulations for working with or on electrical equipment.
  - Procedure for appointment of qualified persons (only qualified employees are allowed to perform electrical operations).
  - Special work risk assessment (including electrical hazards, working alone etc.).
  - Last Moment Risk Analyses (LMRA).
  - Safety Certificate Contractors (SCC).
  - Personal Protective Equipment and special tools.
  - Supervision.
  - Toolbox e-learning program on all possible hazards during work.

- The employee was a very reliable, experienced and well trained mechanic.

Conclusions and measures after investigation

- Human failure
  - The factor “human failure” is a decisive factor.
  - Ignoring or breaching the regulations is a behavioural component.

- But, also the fact that it could happen is a sign that the procedures and regulations might still have not been adequate enough to avoid this accident.

- To avoid accidents in future, we took measures like:
  - Toolboxes and safety trainings **before** – and not during – the introduction period
  - All new mechanic employees have the certification of “**sufficient electric education person”** before he starts the introduction period.
  - Introduced lockout/tagout procedure to be more specific on personal safety.
  - Renewed LMRA card with question about involving a trained specialist like Electrician
  - Special work analysis form was adjusted and provided with extra checklist electrical work.
  - Dedicated workplace inspection form for Technical Dept. and more supervision
  - Competence matrix of all employees for supervisors.
  - Introduction GPS man down tool (testing now)

Judgement prosecutor

- From the beginning MD was directly in contact with the relatives. Taking good care for the relatives. (on the human side and on the financial side)
- The company had very much regulated in terms of safety, took clear additional safety measures and that we were transparent and open throughout the investigation!
- Company investigated herself and took measures.
- The prosecutor offered an out of court settlement.
  - accept the following transaction proposal for violation of article 32 working conditions act. without guilt for the fatality.
  - Rietlanden was sentenced to pay a fine and expenses requested by the relatives.
- The case is closed.

Summery

- Fatality has a big impact in the organisation.
- Long process of handling a fatality.
- Biggest concern is how we manage people's behaviour.
- As an employer you are in the most cases responsible.

Questions?

RIETLANDEN TERMINALS BV

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