

# IWMA BARCELONA 2012.

Industrial applications.

# INTRODUCTION.

Three cases where water mist protection serve as "first line" of defense.

A waste treatment plant.

A bio fuelled power plant.

An advanced production cell.

In all the cases insurance companies have been the main driver for the need for fire protection.

# WASTE TREATMENT PLANT.



Spray cans, waste oil, paint cans, solvents, paint residues, etc.

# WASTE TREATMENT PLANT.

**Mist protection of a shredder** for waste spray cans, solvents cans, paint cans with residues etc.

The shredder is a 410 KW shredder and sparks often occurs during shredding which can ignite solvents, paints etc.

A fire occurs frequently, often more than one time per week.

The idea is to use as little water as possible due to the heat loss when later burning the waste.

The shredder boundary is equipped with NFF nozzles to establish a water shield to prevent the fire to spread. Often it will also extinguish the fire. The nozzles are either released by a spark detection system or manual.

If no fire occur in one week the system will be tested.

# WASTE TREATMENT PLANT.

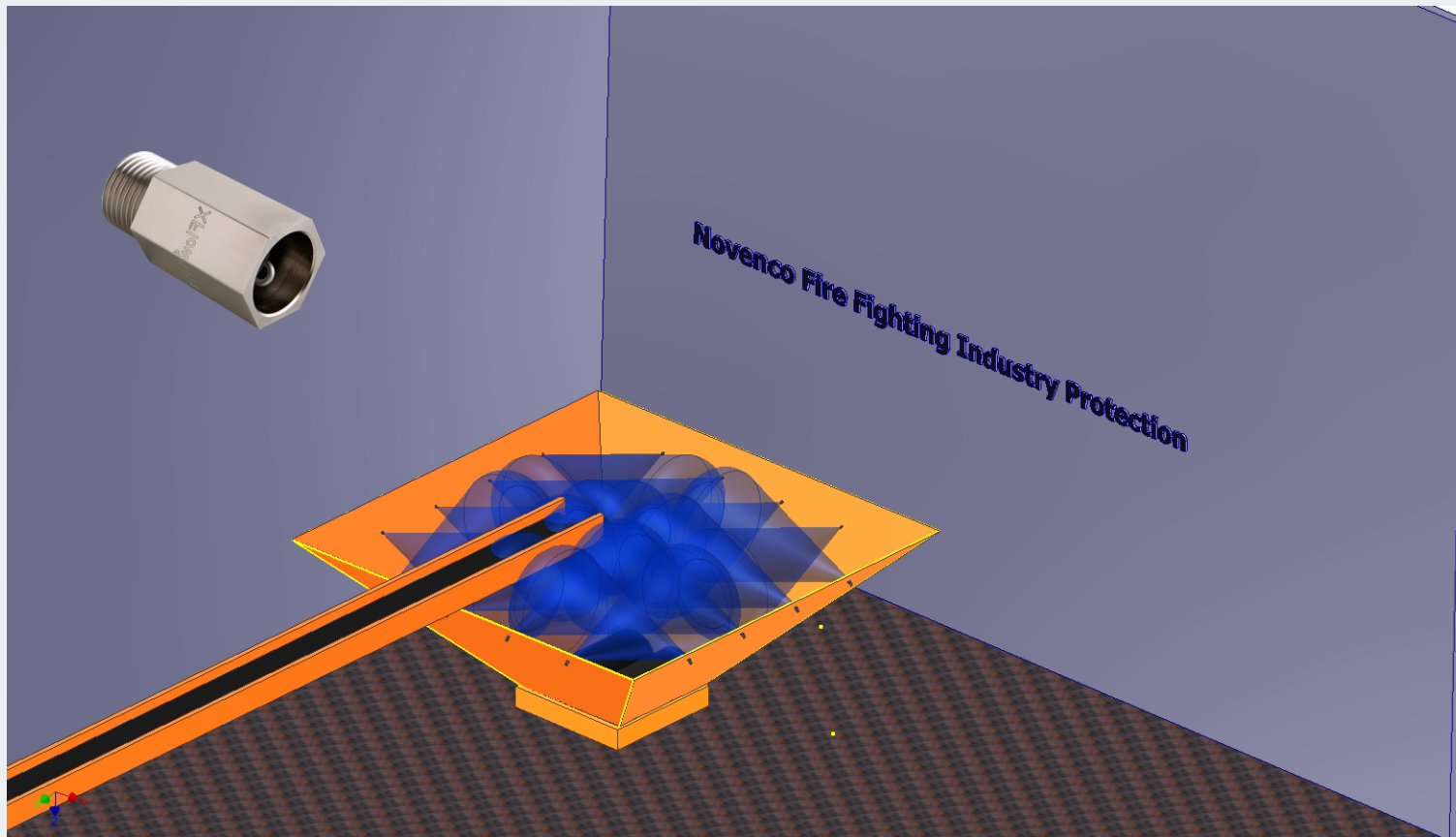
## **Mist protection of burner loading funnel.**

A water curtain established to suppress a possible fire to flare up ignite to the loading facilities.

## **Back up fire protection:**

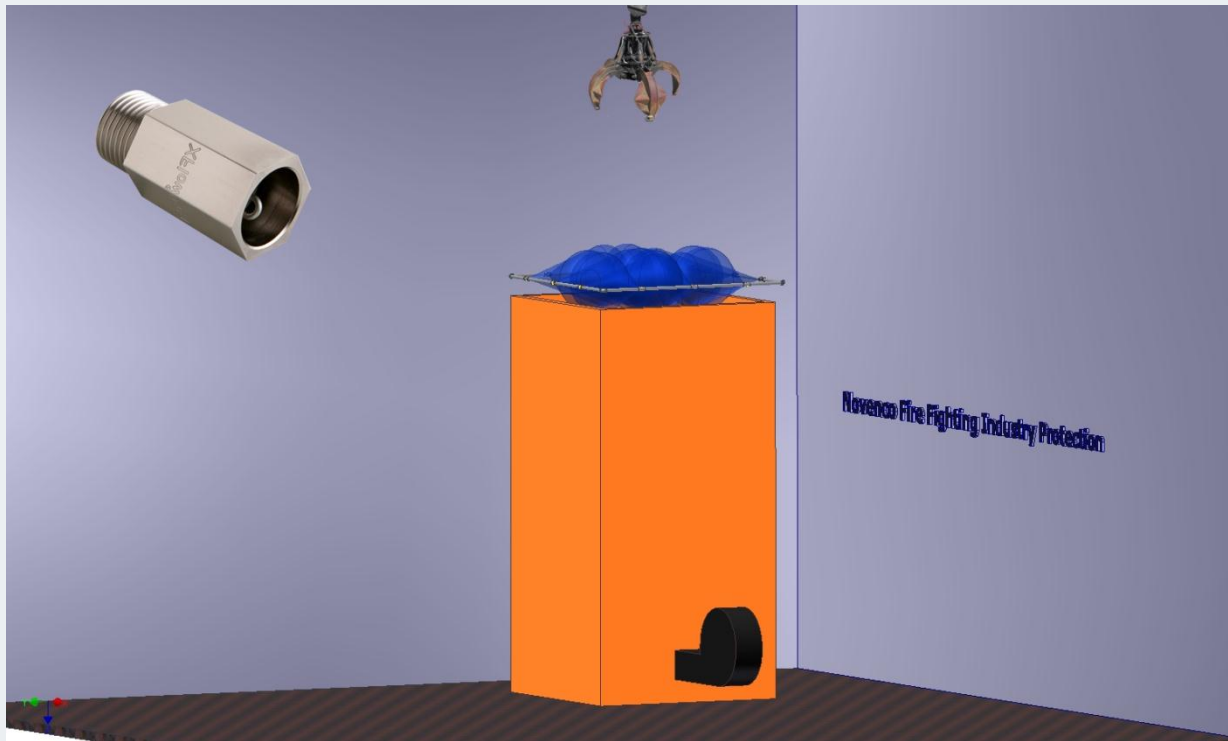
In both cases a foam system.

# WASTE TREATMENT PLANT.



# WASTE TREATMENT PLANT.

Mist protection for a Burner inlet to prevent flash back.

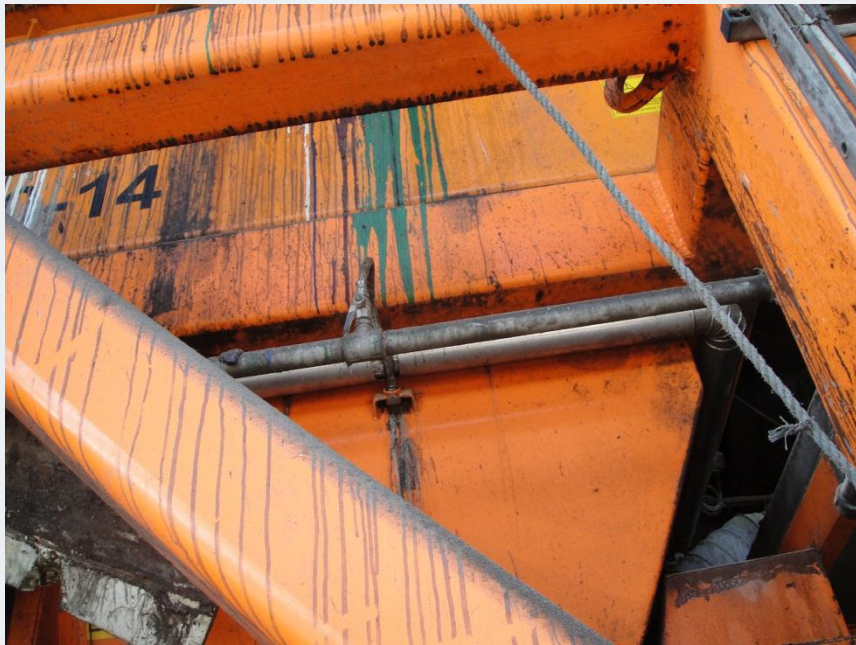






# WASTE TREATMENT PLANT.

Nozzle installed with flexible hose.



Nozzle seen from inside the shredder



# WASTE TREATMENT PLANT.

Pump room with sections and pump.

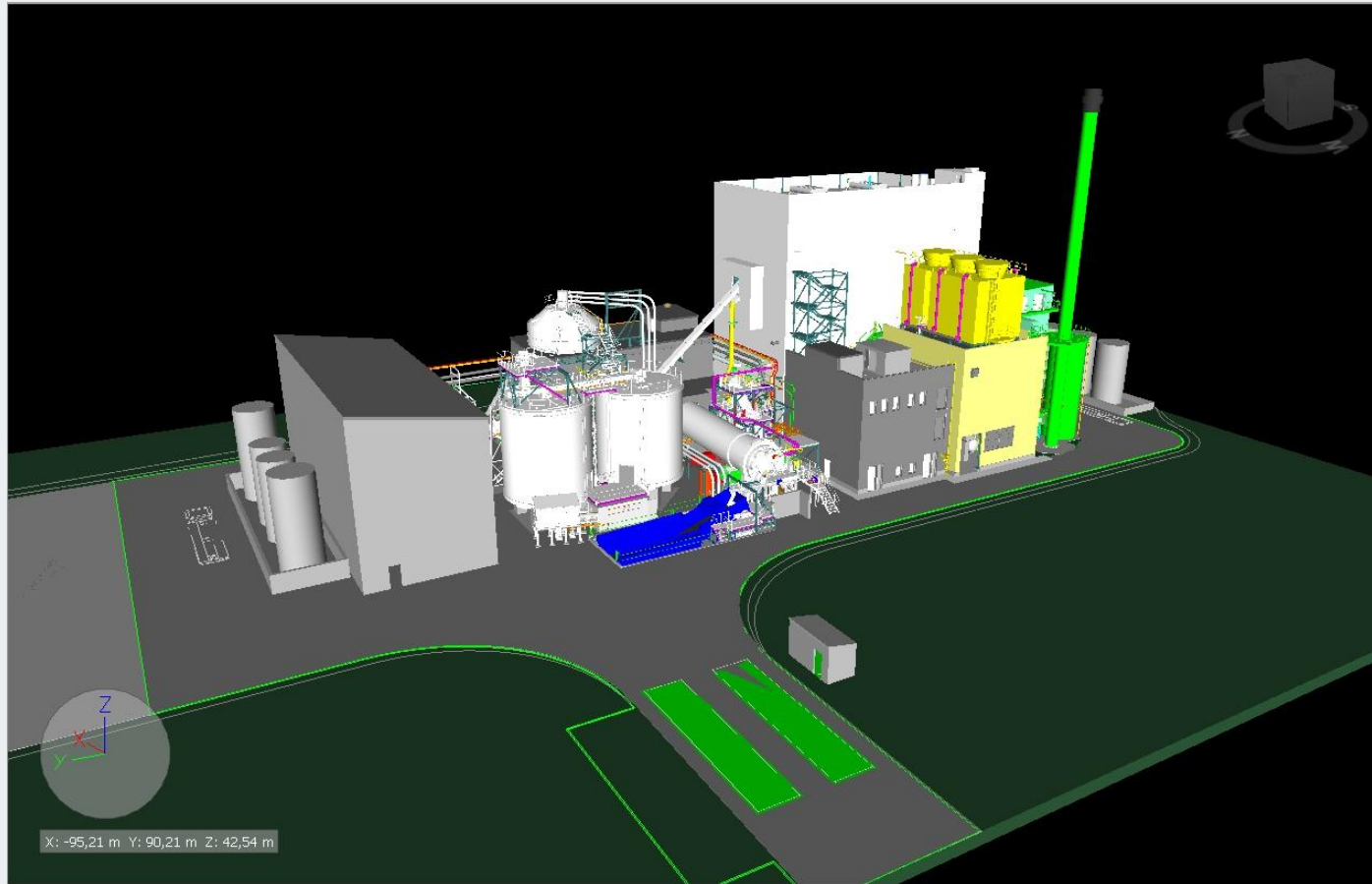


# BIO FUELLED POWER PLANT.

A bio fuelled **C**ombined **H**eat and **P**ower plant in Scotland.  
Total 34 MW of which 7,2 MW is power.



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*The fire protection was defined by an insurance company based on a fire strategy report which were made by a consulting company.*

## **Power Plant "Fuel lines":**

### **Wood Chip:**

UV flame detector at reception unit.

Spark detectors in conveyor belts, disc screen and dosing bin.

Gas combustion detectors in silos.

Nozzles in conveyor belts, disc screen, dosing bin and silos.

### **Draff:**

Spark detection in conveyor belts.

Fire suppression system in draff dosing bin. (Inergen)

Nozzles in conveyor belts and draff dryer.

## **Boiler House:**

2-level aspiration system.

Flame detector.

Gas detector for gas burner.

Heat detector for gas burner and transformer station.

Extinguishers. (CO<sup>2</sup>, Foam and Powder)

Hose Reels.

Dry riser equipment.

Section control valves.

Fire Signage.

## **Turbine Hall:**

Optical smoke detectors.

Nozzles for turbine generator, in turbine oil room and below turbine table.

Extinguishers. (CO<sup>2</sup>, Foam and Powder)

Fire Signage.

## **Service Building:**

Optical Smoke detectors.

Heat detectors for kitchen.

Extinguishers. (CO<sup>2</sup>, Foam and Powder)

Fire Signage.

Inergen system for electrical rooms.

Main Fire Control Console.

# BIO FUELLED POWER PLANT.

The dryer and the subsequently transport of the dried DRAFF is considered to possess a risk of dust explosion.

Consequently, it was required to have spark detection and a mitigation system. In the dryer itself Inergen was chosen. In the conveyor water mist was chosen.

Nozzles as shown below:

20 l/min @ 4 bar

# BIO FUELLED POWER PLANT.



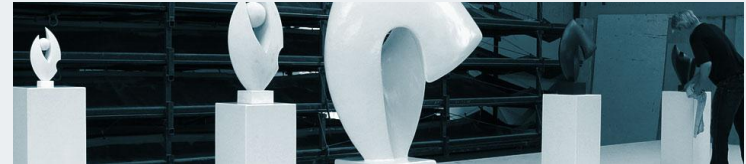


# BIO FUELLED POWER PLANT.



GreCon  
www.grecon.com

# MODEL FABRICATION FACILITY.



Our tools and services include:

## CNC machining

- Five axis CNC machines of up to 20 meters in length:
- 20.0 m x 6.0 m x 2.50 mm
- 19.5 m x 6.2 m x 2.50 mm
- 18.0 m x 4.1 m x 1.30 mm (cuts 250 mm sandwich panels in five axis)
- 3.5 m x 3.0 m x 1.25 mm
- 3.6 m x 1.8 m x 1.20 mm

# MODEL FABRICATION FACILITY.

The insurance company asked for fire protection for the NC units because of a recent fire.

The material were checked and it was found that the highest risk of a fire in the material is when the finishing cuts are made.

The request from the insurance company was, after consideration of speed, material and practical issues, a water mist of 60 l over 4 minutes as close as possible to the cutting head.

A quick detection is paramount to minimize the water amount, therefore a aspiration system was chosen.

# MODEL FABRICATION FACILITY.

A self contained unit was designed to be placed at the traverse gantry following the cutting head.

The self contained unit consists of a N2 cylinder and a water cylinder of 80 litres released by a solenoid valve.

The nozzles used is the NHP 4 type.

In addition a total protection system was required for the fabrication hall.

# MODEL FABRICATION FACILITY.

