



PROJECT
UPM Caledonian

LOCATION
Irvine, Ayrshire

INDUSTRY SECTOR
Industrial

PARTNERS
Client

SOLUTIONS
Foam Deluge, Water
Deluge with Triple IR Flame
Detection

BENEFITS
• Comprehensive automatic
fire protection and reduced
consequential losses

PRODUCTS
Foam Enhanced Water
deluge, Triple IR flame
detection

THE CHALLENGE

“a
comprehensive
fire safety
solution to
the industrial
process”

UPM Caledonian is located in Irvine, Ayrshire, The mill has been in production since April 1989 and produces high quality light weight coated paper (LWC) for use in magazine publishing and catalogues and it is the only manufacturer of this product in the UK. The paper making process extends to approximately 1 km long

Recent developments at UPM Caledonian included a modern, fully integrated biomass CHP plant to replace the existing fossil fuel fired boiler. The new boiler will allow annual CO₂ emissions to be reduced by approximately 75,000 tonnes making a significant contribution to the Scottish Government’s target to have 50% of all energy consumed to be from renewable sources by 2020

The paper making machine is extremely long and in 2014, the paper jammed within the process causing a fire. This was tackled by the emergency response team and, although the local ERT prevented complete disaster, it was felt that an automatic active fire protection system would be advantageous in terms of speed and effectiveness of response and provide a comprehensive fire safety solution to the industrial process. Consultative discussions were held with the client to establish the exact areas of fire risk. In addition to the location where the fire occurred the following areas were also identified by the client as being areas of concern:

- Coater Pulper Hydraulics
- Coater Station 2 Hydraulic room
- Lubrication Centre
- Wet End Hydraulics
- Lubrication Tank



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COMPANY PROFILE

Vipond Fire Protection Ltd has its roots going back to 1969, when it was started as a small family owned business. In 1998 it was acquired by Vipond Inc of Canada. The company has since expanded and grown and now has 5 offices covering the whole of the UK and Ireland. Vipond Fire Protection Ltd is ultimately owned by API Group Inc.

APi Group Inc. is a multi-billion-dollar parent company for 38 independently managed construction companies in more than 200 locations worldwide. APi Group combines the personal attention of small-to-medium sized construction companies with the strength of a global industry leader to build a safer environment, develop leaders and bring innovation to the construction and fire protection and suppression industry. Since 1926, APi Group has grown by acquisition to become the stellar multi-billion-dollar company it is today.

The secret? Our subsidiaries maintain who they are. They keep the identity, reputation, customer relationships and culture they've worked hard to establish.

APi Group's subsidiaries have collectively served customers on all continents, including Antarctica.

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THE SOLUTION

It was agreed that a comprehensive detection and suppression system would be installed appropriate to the risks.

Localised detection sprinkler heads were positioned in the five areas of concern. If a fire occurs in any of these areas, the deluge valve will trip allowing water to flow into the deluge nozzles which are positioned to provide best coverage and upon system operation the installation will discharge foam enhanced water onto the risk.

The flow of water draws foam into the system, through a pickup tube using the Venturi effect and an alarm signal will be sent to a remote indicating location on system operation.

The area where the fire broke out was protected with water deluge, operated via two strategically positioned Triple IR Flame Detectors positioned near the source of the fire. The devices have a heated window over the sensing compartment and are particularly suitable for harsh conditions such as high humidity which is found in the paper mill. The detector senses fires very efficiently and has the highest immunity to false alarms. It can detect a 1 square foot liquid fire at 65 metres and because of its durability carries an extended five year warranty.

THE OUTCOME

A level of protection is now provided that was previously unavailable to automatically protect the print machine line. The emergency response team are now backed up by a bespoke fire suppression system which addresses comprehensive fire risks along the length of the paper production process.

Vipond's experienced design and consultation teams listened to the client to establish exactly what conditions led to the fire and what inherent fire risks prevailed on the production line. By working closely with other stakeholders a fire suppression solution that utilises approved equipment and is in keeping with best fire engineering practice was achieved.

If another fire should occur, the client can be assured that his valuable machinery and business continuity is protected by a system fit for purpose.

“suitable
for harsh
conditions
such as high
humidity”

