



LIGHTNING STORM RISK PREVENTION IN THE PETROCHEMICAL INDUSTRY

ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Oil & Gas installations, due to their characteristics and danger of the products handled, are exposed to a **high risk of direct lightning strike** as they are located in **big, open and flat areas**, in which they become the structures with the **most probability of being struck**.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Chicago Tribune

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News

Lightning hits refinery in Texas



A fire is burning at a refinery in Texas City, Texas Thursday. The blaze is being blamed on a lightning strike. Aug. 20, 2015. (Weather Channel)

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Lightning strike sparks fire at Venezuela oil refinery

A lightning strike has caused a fire at Venezuela's El Palito refinery.

The bolt hit two storage tanks late on Wednesday, less than a month after an explosion at Venezuela's largest refinery left more than 40 people dead.

No deaths or injuries have been reported so far.

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The Indian EXPRESS

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Butcher Island fire put out after four days

The fire broke out in the BPCL tank containing 30,000 metric tonnes of diesel on October 6 in what the authorities suspect was a lightning strike as the city experienced heavy thunderstorms that day.

By: Express News Service | Mumbai | Published: October 11, 2017 3:13:31 am



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Local

Lightning catches oil tank on fire near Salina

FINANCIAL TRIBUNE

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Oil Storage Unit South of Tehran Hit by Lightning

Energy

Monday, January 30, 2017

A fire broke out at an oil storage facility in south Tehran in the early hours of Sunday. It was put out within hours.

The fire started after lightning struck an oil storage unit at the site of Iranian Oil Pipelines and Telecommunications Company (IOPTC) at 00:15 a.m. local time.

Fire units from local oil companies rushed to the scene and managed to put out the blaze at around 4:20 a.m., Shana reported.

STOMP

HOME SINGAPORE SEEN FEATURED GET INSPIRED

Fire breaks out at Pulau Busing, lightning believed to have struck tank

Posted on 30 March 2007 (597) views (8 comments)



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

In addition to its location, the risk taken in the development of petrochemical activities increases because of:

- Large infrastructures in **open big areas**
- Storage of **flammable** or **explosive** materials.
- Operations that generate **flammable** or explosive **emissions**.
- Presence of a **high number of employees in open areas** with limited possibilities of permanent lightning protection.
- Development of maintenance activities.

Accidents from lightning strikes have, in all sectors, **economic and environmental implications** and **responsibilities** derived from injuries of employees.

In the case of the petrochemical sector, what stands out is the **negative impact** that this type of event has at an environmental level and the **safety perception** of the installation from the stakeholders.

Petrochemical activities pose a particular challenge for protection in such a high lightning risk area.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Lightning warning systems are directly associated with the staged activation and cease of preventive actions in order to reduce or eliminate the risks lightning storms pose.

In the petrochemical environment, the **early evacuation of work teams** and **postponing potential risk activities** are the main actions to carry out.

Therefore, the main objective of the system must be the identification of lightning strike risk with the **maximum anticipation** possible.

Equally as important is the capacity for the system to monitor local conditions and forward “all clear” notifications based on real time analysis and not preset safety times.



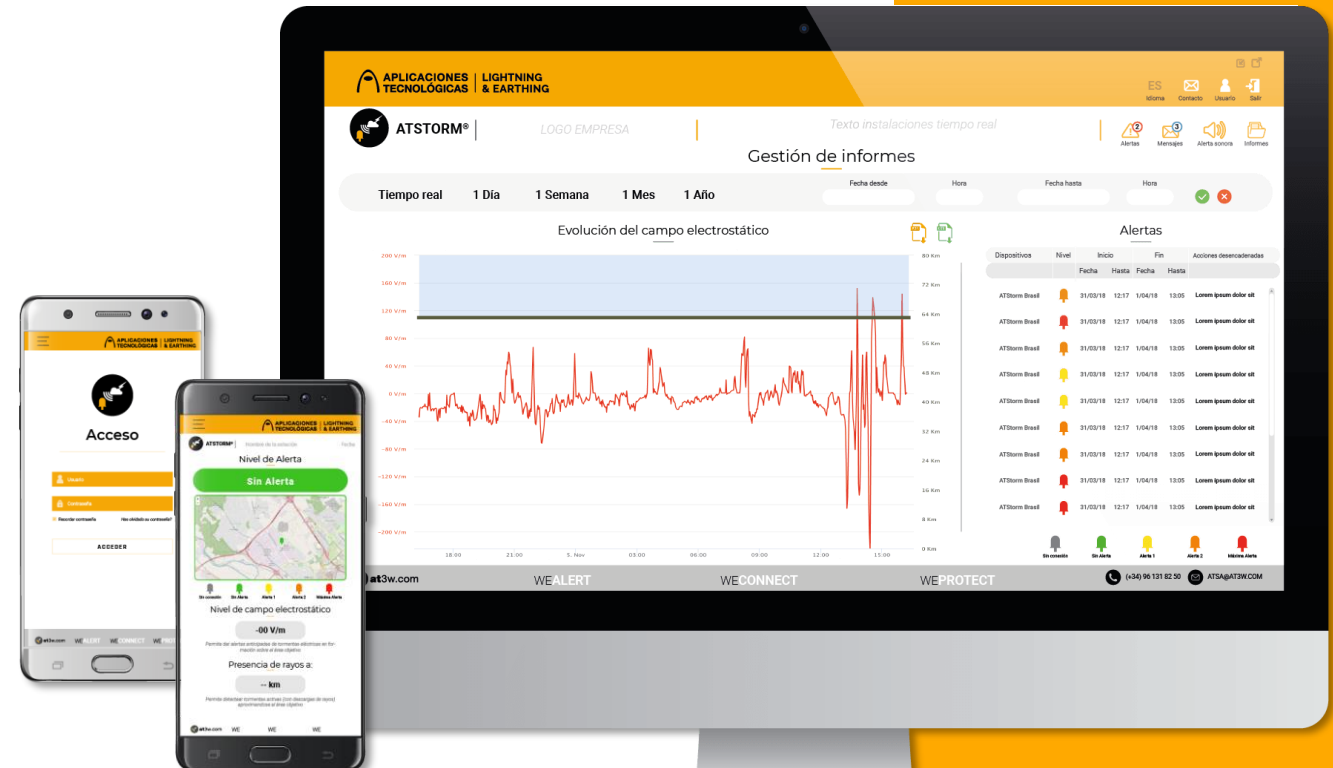
ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

ATSTORM® Local early warning system for lightning storm risk prevention

- ✔ **Detection during all phases of the thunderstorm**
We enable the maximum anticipation in the risk of a lightning event and a safe All-clear signal.

- ✔ **Risk alerts via multiple channels**
Our customers receive the risk alerts through multiple means: smartphone, tablet, private web portal, emails and remote activation of alert devices and systems.

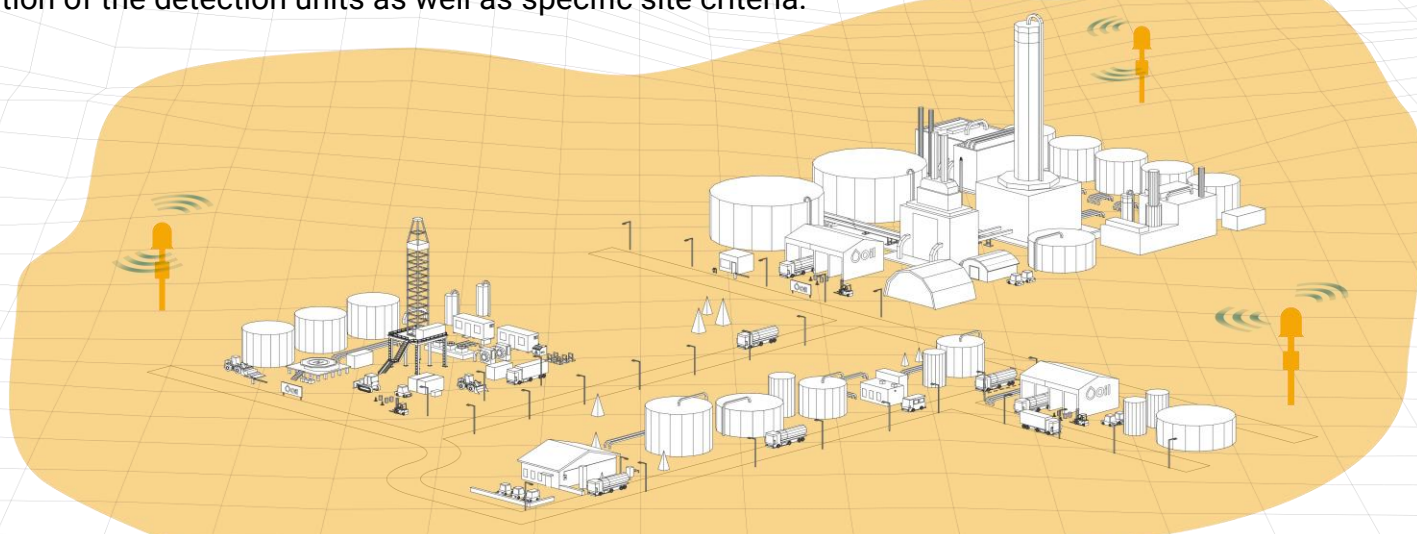
- ✔ **Fully electronic, with no moving parts**
Our equipment does not use moving mechanical parts, preventing blockages, wear and failures.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

ATSTORM® Local early warning system for lightning storm risk prevention

- ✓ Operated by specialists through Internet of Things (IoT)
The system is remotely operated, ensuring its correct and continued functioning at all times.
- ✓ Expert self-learning system
Continuous improvement of its algorithms, increasing its adaptation to the monitored local characteristics.
- ✓ Ad-hoc projects
We study each location and determine the best system configuration in terms of number and position of the detection units as well as specific site criteria.





LOCAL STORM
DETECTION



AIR TERMINALS
AND ACCESSORIES



EARTHING



EXOTHERMIC
WELDING



TRANSIENT
OVERVOLTAGES



PERMANENT
OVERVOLTAGES



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