



## CASE HISTORY

# Dominion-Cove Point LNG Plant Provides Flammable Liquids Fire Protection with F-500 Encapsulator Agent

*F-500 Encapsulator Agent Concentrate Control Supply (CCS) Systems Provide Superior Extinguishment Capabilities for Dominion's New LNG Plant*

**Client:** Dominion

**Location:** Cove Point LNG – Lusby, MD

**F-500 Encapsulator Agent CCS Implementation:** 2017

**Fire Protection Engineers:** Continental Fire Sprinkler Company, Omaha, NE

**Project Type:** Flammable liquid fire protection, utilizing F-500 EA for three-dimensional, Class B fire hazards



## History

Dominion was familiar with the fire suppression capabilities of F-500 Encapsulator Agent after completing extensive testing on Class B fires comparing F-500 EA to plain water. Dominion was faced with an expensive upgrade of their water suppression system and proved that adding 3% F-500 EA to their suppression system increased their effectiveness considerably. They determined, F-500 EA could extinguish a Class B fire three times faster than plain water, at half the sprinkler density. The F-500 EA also used 83% less water to extinguish the same fire.

Since the testing of F-500 EA in 2010, the company has installed many F-500 EA CCS Systems in their power plants to protect turbines, transformers and dust collection systems.

## Overview

The Dominion Point Cove LNG facility is near completion and will connect to the existing Point Cove LNG Terminal, Dominion acquired in 2002. The facility has its own power plant to meet the needs of the liquification process. Natural gas turbines will drive the main refrigerant compressors. It is expected to convert 750 million cubic feet of inlet gas per day.



Hazard Control Technologies' F-500 Encapsulator Agent Concentrate Control Supply (CCS) Systems were chosen to protect multiple steam turbines and gas turbine compressors.

## The F-500 EA Concentrate Control Supply Systems Installed:

### Valve House 563K:

2 - 800 gallon Bladder Tanks

### Valve House 574K:

2 - 1,400 gallon Bladder Tanks

### Valve House 576K:

2 - 2,100 gallon Bladder Tanks

### Valve House 570K:

1 - 1,100 gallon Bladder Tank

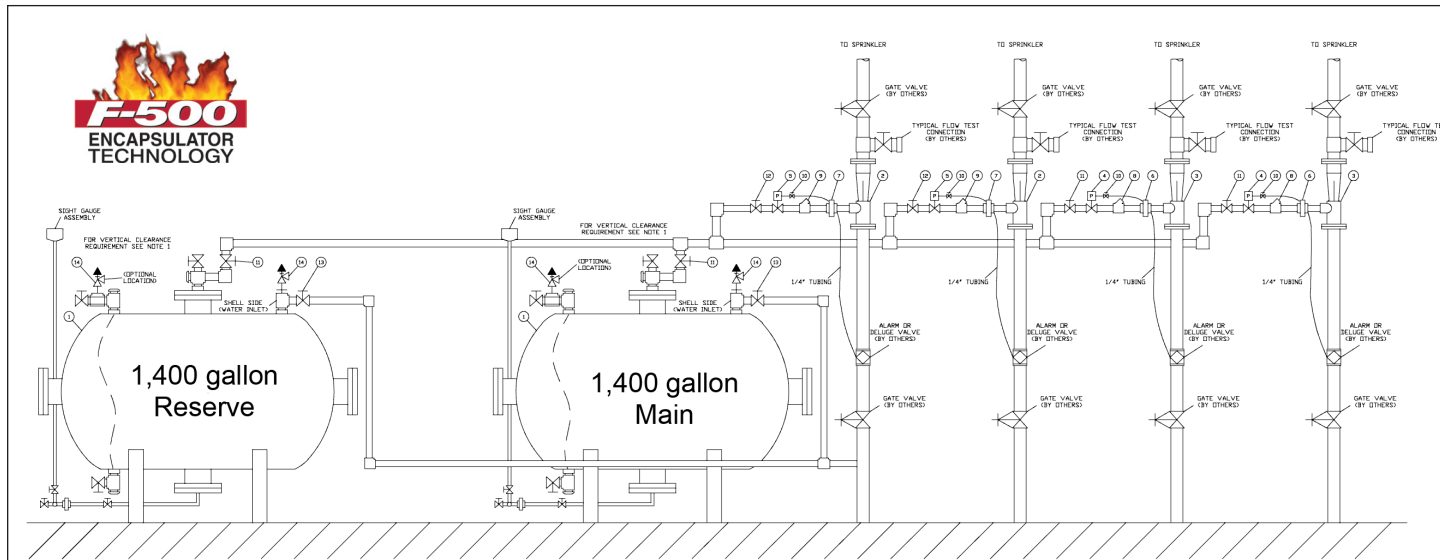
### Valve House 575K:

2 - 1,400 gallon Bladder Tanks

### Valve House 577K:

2 - 2,700 gallon Bladder Tanks

1 - 2,100 gallon Bladder Tank



The F-500 Encapsulator Agent Concentrate Control Supply systems with 3% ratio controllers, were commissioned, tested and approved. 22,500 gallons of F-500 EA were allotted for initial start-up testing and bladder tank operation. The system is based on a 2600 gpm water flow and 30 minutes of enhanced and properly proportioned F-500 EA to protect the under turbine lube oil and transformer areas from fire.

The F-500 EA CCS systems are stationed for quick injection of concentrate into the system risers, and are fully charged and ready to automatically activate on command. There are no electrical parts. The deluge valve activates the entire system when a fire is detected, activating the sprinkler system. As soon as water pressure is sensed across the deluge valve, the F-500 EA CCS Water Actuated Automatic Control Valve is tripped, injecting the agent into the water stream. The resulting 3% solution of F-500 EA is instantly dispensed throughout the sprinkler array to attack the fire.

Since the F-500 EA solution rapidly cools and extinguishes the fire, damage and runoff are minimized. F-500 EA instantly penetrates, encapsulates and cools to extinguish a fire, making it ideal for three-dimensional fires. Compare F-500 EA to foam, which extinguishes a fire by creating a blanket to separate the fuel from the oxygen. Forming a blanket on a three-dimensional fire further complicates the use of foam. If you can form a blanket, the foam blanket can trap in the heat, above autoignition temperatures. Any break in the blanket will result in reignition of the fuel.

*NFPA 11, Annex A.1.1 - "Foam is not suitable for three-dimensional liquid flowing fuel fires or for gas fires."*

Dominion realized the advantages of the F-500 Encapsulator Technology for fire suppression and made it their choice to enhance their turbine lube oil and transformer fire suppression systems at their Mount Storm facility.



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