

F-500 Encapsulator Agent Supression System Extinguishes Burning Transformer in Minutes!

Southern Company Generation

Alabama Power – Parrish, AL

575v Station Service Transformer

F-500 Encapsulator Agent CCS Implementation: 2011



Overview

On March 7, 2017, Alabama Power experienced a transformer fire at Plant Gorgas in Parrish, Alabama. Details of the incident were captured by a closed-circuit camera mounted above the transformer. At 9:52 pm, a current transformer above a 575v station service transformer failed, burning through the feet that mounted the current transformer to the structure. The current transformer fell onto the bushings of the 575v station service transformer, causing it to fail. The transformer arced for about 40 seconds.



Current Transformer

**Station Service
Transformer**

Extinguishment

The plant has no fire brigade, but this station service transformer was protected by a fire suppression system, enhanced with F-500 Encapsulator Agent. Water fire suppression systems are designed to control the fire and keep it from spreading. The automatic deluge sprinkler system activated within seconds.

Remarkably, the addition of F-500 EA not only controlled the fire, but extinguished it in 3 minutes and ten seconds, as seen on the video.

Burn damage was completely limited to the 575v transformer. Even though a generator step-up transformer was just 8 feet away, it was not damaged.

Local volunteer firefighters were not endangered. Clean up was minimal, since very little water was required to extinguish the fire. The level of F-500 EA and water never got high enough to breach the containment around the transformer.



Damaged Station Service Transformer

F-500 Encapsulator Agent Suppression System

Transformer fires are a three-dimensional, Class B fire. Experience with power plant fires has shown NFPA 850's recommended application density for plain water of 0.30 gpm/ft² is not adequate to contain these three-dimensional fires. These real world fire scenarios led to testing by Dominion, NFPA and others. NFPA now recommends an application density of 0.40 gpm/ft², but this still is not adequate to extinguish a three-dimensional, Class B fire.

Dominion testing showed a 3% solution of F-500 Encapsulator Agent extinguished a Class B fire at 0.20 gpm/ft² three times faster than plain water applied at 0.40 gpm/ft². Dominion began supplementing their existing 0.30 gpm/ft² systems with F-500 EA, confident that they were exceeding the new NFPA recommendation of 0.40 gpm/ft². These F-500 EA Concentrate Control Supply (CCS) systems are currently being used by power plants to protect transformers, storage battery facilities, under turbine lube oil and fuel storage racks.



F-500 Encapsulator Agent Suppression System

900-gallon Bladder Tank with Concentrated F-500 EA

Proportioned at 3%



HAZARD CONTROL TECHNOLOGIES, INC.

150 Walter Way
Fayetteville, GA

Tel: 770-719-5112
Fax: 770-719-5117

www.hct-world.com
info@hct-world.com