

A multitude of new cellulosic bio-fuel processing facilities across the country are now faced with having to meet new National Emission Standards for Miscellaneous Organic Chemical Manufacturing. One specific NESHAP is 40 CFR part 63, subpart FFFF. The applicability of meeting this NESHAP is:

A facility must be a major source of HAP emissions process units that:

- Produce organic chemicals that are not subject to other MACT standards
- Process, use, or produce organic HAP or hydrogen halide and halogen HAP
- Batch process vents from HON process units

Once qualifying in the NESHAP, a facility must group the emission. If it is determined that the emission is a group 1 status, the emission must be vented to an appropriate Air Pollution Control Device. Following this, performance testing and establishment of operating limits and monitoring will be made part of the process.

One cellulosic bio-fuel processing facility worked with Catalytic Products International to integrate a custom solution into their evaporator, digester, storage tank, and transfer operations. This particular application required a special design that would meet a constant +99% destruction of the VOC's and HAP's across a wide range of hydrocarbon loadings (from low to high)

Catalytic Products International was called on to analyze the application and make recommendations that addressed economical capital costs, space limitations, operating and maintenance costs, and assurance to meet stated MON Standards. Catalytic Products International is a 45 year old designer, manufacturer, and installer of customized Thermal Incineration Systems including; Catalytic Oxidizer's, Regenerative Thermal Oxidizer's, and Thermal (recuperative) Oxidizer's. When compared to other vendors in the industry, Catalytic Products International was chosen because of their complete line of products and their un-biased ability to examine the application and make recommendations based on the merits of the application and the goals of the customer. Not based on the offered product line.

To meet the rigorous needs of the Processing Facility and the goals of this application, Catalytic Products International installed our TRITON-15.95 Regenerative Thermal Oxidizer. The emissions are generated from process reactors, evaporators, digesters, storage tanks and transfer operations. In some instances high amounts of hydrocarbon emissions will be vented from these operations. The RTO has to be designed to operate economically during a majority of the times when the VOC loads are very low.

Complicating this application are the emissions generated when tank cars are loaded with the biofuel products and when the cars are cleaned with a mixture of solvents cleaning agents. The air volumes under normal operations are typically about 7,000 scfm. The system has a dual redundancy via dilution air and a Hot Gas Bypass.





The TRITON-15.95 RTO takes advantage of these unique features:

- Posi-Seal Valves provide high VOC destruction in a compact package
- TSS Control Logic optimizes thermal efficiency by adjusting valve cycle times automatically
- Hot Gas Bypass and Dilution Air System work intelligently to keep the TRITON System operating in a safe – economical manner
- Pressure Control Logic interfaces with the process and the TRITON System to minimize pressure pulses commonly associated with RTO technology
- An innovative heat exchange matrix is used to maximize the thermal efficiency and lower the pressure drop
- Modular construction allows for faster installations

The TRITON-15.95 the system exceeded the NESHAP requirements by providing 99.5% destruction of all VOC's. The systems hot gas bypass and dilution air system allows solvent loadings of over 20% LEL to be safely processed. The TSS Control logic automatically works to lower shut off the natural gas when hydrocarbon loading is sufficient.

Catalytic Products International is a worldwide leader in the design and manufacture of custom air pollution control systems. Other products include; Catalytic Oxidizer's, Concentrator's, Particulate Control, Energy Conservation System's, and special services to meet a multitude of needs.

Thermal Oxidizers, Regenerative Thermal Oxidizer's, Catalytic Oxidizer's, Heat Recovery Systems, Energy Conservation, Repair and Retrofit Services, Maintenance Services, Engineering

