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PROJECT DESCRIPTION

NH_3 , IPA and EtOH Abatement System
HITCHINER MANUFACTURING CO., INC.
Milford, NH

PROJECT SCOPE

The project consisted in treatment of exhaust gas emissions coming from an investment casting foundry to comply with EPA regulations on ammonia and alcohols emissions.

Mesar / Environair was mandated to provide engineering of a scrubbing / incineration system to the Hitchiner plant at Milford in New Hampshire.

At Milford plant, the waste stream to be treated comes from the ethyl silicate shell manufacture. The major gaseous contaminants were the ammonia, the isopropyl alcohol and ethanol.

The treatment system consists in a series of two packed tower scrubbers for contaminant absorption, followed by a steam stripper which converted the contaminants after absorption and sent them to a thermal oxidizer. The incinerator is followed by a waste heat boiler, which produce the steam needed for the steam stripper operation.

Other equipment like recirculation pump, metering pump, mist eliminator and fan were supplied to insure a safe system design.

RESULTS

The system was installed in March 1997 as scheduled. Performance trials in the following months showed that the scrubbing and incineration systems consistently operate, and the plant was then in compliance with Federal regulations.

The system efficiencies were 99% on NH_3 and alcohols, and the system turndown allowed the plant to work with a wide range of different operating conditions.