Trane U.S. Inc., Lynn Haven Facility
FINAL Permit 0050080-004-AV
Attachment 1, VOC Emission Reduction Program

While Trane has not completed a comprehensive review of VOC control systems for the capture and control VOC emissions from fin stamping processes, we have reviewed and contrasted end of pipe control systems versus Pollution Prevention (P2) methods for reducing the emissions from fin stamping processes. Several points become immediately apparent:

- Capture of all or even most of the VOC emissions from these processes is very difficult
- Significant energy inputs are needed to destroy, desorb or recover the emitted VOCs
- The concentrations of VOC present in the captured air stream are very low, consequently no significant energy recovery is possible
- Destruction or capture controls are expensive to operate, have a secondary impact to the environment and consume additional natural resources
- Improved lubricant application techniques may permit the use of lubricants with lower VOC content
- The use of reduced VOC lubricants will lower the emissions from the facility without increasing energy consumption
- The use of straight oils without an evaporative component adds additional equipment to the process in order to remove excessive lubrication from the coils and shifts some of the environmental impact from the air to water.
- Space is critical at our facilities and adding additional process equipment is very challenging

Based on our review, Trane believes it is ultimately best for the environment and clearly most cost effective for Trane to pursue the P2 option. We have initiated a corporate-wide project to develop a process that uses a reduced VOC lubricant to stamp fins for HVAC coils. The mission statement for this project is reproduced below:

> It is the intention of Trane U.S. Inc. to be an environmentally responsible neighbor in the communities where we operate facilities. One of our Obligations as an environmentally responsible neighbor is to design our products and processes in a manner that while maintaining cost effectiveness, minimizes the impact to the environment by the processes used to produce our products. At our facilities that produce HVAC coils, we have identified air emissions resulting from the use of 'vanishing' lubricants as an environmental impact that we wish to minimize. To this end Trane has established a project to evaluate and implement viable process modifications and/or material changes that will result in a reduction of VOC emissions from coil production.

There is no drop-in solution to this problem and seeking a solution will require a significant expenditure of time and capital, with no guarantee of success. At the present time it is estimated that it will take 18 to 24 months develop and implement an alternate material. We must point out that these coils are critical for our products. Modifications to the processes used to produce them must be developed and tested carefully to assure the integrity of the final product. We further believe that this will be a phased process. Early reductions in VOC emissions will probably be on the order of 10-20%. As we better understand how to control these new lubricants further reductions in VOC emissions should be possible.

The reduced fin stamping lubricants received by the Lynn Haven facility have passed chemical compatibility testing and a production trial of these materials was completed at the facility. Unfortunately these trals demonstrated that these materials cannot be used in the processes at the facility. Trane – Lynn Haven has now determined that the best approach to reduce VOC emissions from the facility is improved material utilization. Currently Trane – Lynn Haven is exploring alternative ways to apply the lubricant such that an appropriate quantity of lubricant is applied where needed and excess material is not used. If appropriate application equipment can be successfully developed, we anticipate that a significant reduction in the quantity of evaporative lubricant usage may be possible.