

## State Regulatory Agencies that have Accepted the CFA Emission Models/UEF for Estimating Emissions from the Open Molding of Composites

### Introduction

Several state regulatory agencies, which are directly responsible for major fiberglass reinforced plastic (FRP) manufacturing activities within their jurisdictions, have recommended the early adoption of the CFA Emission Model (or by extension the UEF) for estimating the emissions from the open molding of composites. These agencies were apparently motivated by the need to proceed with the permitting of facilities that had been delayed by the EPA's withdrawal of the AP-42 factors for composites. Some of the recent actions and policy decisions by these state agencies are discussed in the following sections. These discussions include:

Indiana	Tennessee
Iowa	Texas
Ohio	Washington
Michigan	

These states were identified, because their recent activities regarding emission factors for composites had come to the attention of the CFA. Other state and local agencies may have taken actions or made policy decisions that are not yet generally available, although it is believed that most agencies have taken no action or position. Contacting all of the state and local agencies across the USA to determine their status would be a major undertaking beyond the scope of this report. However, the CFA is not presently aware of any state or local regulatory agency that has rejected the use of the CFA Emission Model or the UEF.

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### *Indiana*

The Indiana Department of Environmental Management (IDEM) recommends the CFA Emission Model (and by extension, the UEF) for estimating styrene emissions from the large number of fiberglass reinforced plastics facilities located in Indiana.

According to a June 8, 1998 letter prepared by Eugene C. Paik of the IDEM Office of Air Management that was sent to Steve McNally of the CFA:

*“After reviewing the available information, we have accepted the CFA emissions model [UEF] as the best available information currently available. We are now using the emission factors derived from the model for making decisions on new applications in construction and Title V permitting. We intend to use the CFA emission factors until a new revised AP-42 section becomes available.”*

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## ***Iowa***

The Iowa Department of Natural Resources (IDNR) has directed a fiberglass reinforced plastic manufacturing facility to use the CFA UEF for estimating styrene emissions in Iowa. This facility produces FRP underground storage tanks for petroleum liquids, and has applied for a Title V permit as a major source under the Michigan Title V program.

According to a April 1999 letter prepared by John Wessel of the IDNR, this facility must recalculate the potential-to-emit styrene estimate based on the CFA UEF, and resubmit the revised permit application. As stated in this letter:

*“In calculating potential and actual emissions, the worst-case emission factors from the CFA Emission Models [UEF] should be used”*

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## ***Michigan***

The Michigan Department of Environmental Quality (MDEQ) accepted the CFA UEF for estimating styrene emissions from a fiberglass reinforced plastics facility located in Michigan. This facility produces FRP parts for recreational vehicles, and has applied for an operating permit as a major source under the Michigan Title V program.

In February 1999, the MDEQ reviewed and accepted the facility’s potential-to-emit styrene estimate based on the CFA UEF.

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## ***Ohio***

The Ohio Environmental Protection Agency (OEPA) recommends the CFA Emission Model (and by extension, the UEF) for estimating styrene emissions from the large number of fiberglass reinforced plastics facilities located in Ohio.

According to a July 29, 1998 letter prepared by John Curtin with the OEPA Division of Air Pollution Control regarding a fiberglass plant in Ohio:

*“In March of this year [1998], we were informed that the U. S. EPA no longer considered the AP-42 emission factors to represent the “best available emissions data” and that they were withdrawing the AP-42 section from their web site. Until AP-42 is revised, [the facility] should use the equations developed in the CFA report entitled “CFA Emission Models for Reinforced Plastics Industries” or should use valid emissions test data in order to estimate OC [organic compound] emissions.”*

Furthermore, source testing performed in December 1998, which was required by the OEPA for a fiberglass facility in Ohio, verified the accuracy of the UEF for mechanical non-atomized application.

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## ***Tennessee***

The Tennessee Department of Air Pollution Control (TDAPC) recommends the CFA UEF for estimating styrene emissions from the large number of fiberglass reinforced plastics facilities and fiberglass boat manufacturing facilities located in Tennessee.

According to a February 10, 1999 memorandum prepared by Jeryl Stewart of the TDAPC Compliance Validation Program, and then sent to the TDAPC New Source Review and Operating Permits Programs:

*“From a review of available literature, it appears that the CFA Unified Emissions Model [UEF] represents a technically valid methodology of calculating styrene emissions. It draws from available emissions testing data and presents results in the form of linear equations that have measurable input values. It is the last factor that gives this writer [Stewart] great concern over the use of the EPA developed ORD emission model. This writer considers that the EPA ORD model is too complex to be a useful compliance method.”*

When using the CFA UEF, the TDAPC requires precise definitions for “controlled spray” and “vapor-suppressed resin.” Furthermore, if EPA Region 4 objects to the use of the CFA UEF, then it will be the responsibility of the facility to defend the use of these factors before Region 4.

After this recommendation by the Compliance Validation Program, the CFA UEF were then used in the preparation of Title V and Operating permits for at least two fiberglass boat manufacturing facilities and a fiberglass bathware facility in Tennessee.

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## ***Texas***

The Texas Natural Resource Conservation Commission (TNRCC) recommends the CFA Emission Models (and by extension, the UEF) for estimating styrene emissions from the large number of fiberglass reinforced plastics facilities located in Texas.

According to a August 6, 1998 interoffice memorandum prepared by James Randall, P.E., Manager, Coatings & Combustion Section of the TNRCC, and posted on the TNRCC web site for all interested parties:

*“EPA has removed Section 4.4 of AP-42 from its Web site effective March 18, 1998 because the emission factors presented in that section appear to under predict styrene emissions from some polyester resin operations. In the meantime, EPA has posted two reports entitled "CFA Emission Models for the Reinforced Plastics Industries" and "Baseline Characterization of Emissions from Fiberglass Boat Manufacturing".*

*EPA is currently requesting comments on the two reports while it begins drafting a replacement AP-42 section. For more information regarding the above subject, please refer to the following [www.epa.gov/ttn/chief/ap42/chap4\\_4.html](http://www.epa.gov/ttn/chief/ap42/chap4_4.html).*

*The TNRCC Fiberglass Reinforced Plastic/Cultured Marble Technical Guidance Package refers to Section 4.4 of AP-42 for emission calculations. In lieu of the AP-42 factors, the emission factors presented on Table 2.16 on page 24 of the "CFA Emission Models for the Reinforced Plastics Industries" (copy attached) should be used for filament winding, gelcoat, spray layup and hand layup applications. For other application methods (e.g., continuous lamination, pultrusion, and closed molding operations), please continue to use the factors included in the technical guidance package (old Section 4.4 of AP-42). Please begin using the new emission factors as appropriate for all permit applications received by TNRCC after September 30, 1998.”*

Since this posting, the CFA factors have been used in the preparation of permit applications for several reinforced plastics facilities in Texas.

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## **Washington**

The Yakima Regional Clean Air Authority (YRCAA) accepted the CFA UEF for estimating styrene emissions from a fiberglass reinforced plastics facility located in Washington State. This facility produces FRP parts for recreational vehicles, and is operating as a synthetic minor under a strict YRCAA order not to exceed 9.5 tons of styrene emitted per year (which is the major source threshold trigger to ensure that the annual styrene emissions do not exceed 10 tons per year).

In March 1999, the YRCAA reviewed and accepted the facility’s 1998 emissions estimate based on the CFA UEF.