October 26th, 2022

Mr. Trace McDonald
Department of Environment, Great Lakes and Energy
Air Quality Division
McdonaldT@Michigan.gov

Re: Public Comments on the Michigan's Department of Environment, Great Lakes and Energy (EGLE)Changes to R 336.1601 – R 336.1662 and "Reasonably Available Control Technologies" (RACT).

Dear Mr. McDonald:

RadTech International is the trade association for the Ultraviolet/ Electron Beam/Light Emitting Diode (UV/EB/LED) industry. The organization represents over 800 members nationwide involved in a myriad of markets ranging from solar panel manufacturing to finger nail polish. We are pleased to comment on EGLE's proposed changes to Rules 336.1601 – R 336.1662 which, according to your agency, are necessary to satisfy requirements of the federal Clean Air Act (CAA) 42 USC 7401 et seq., requirements referred to as "Reasonably Available Control Technologies" (RACT).

Unlike conventional inks and coatings, UV/EB/LED products do not evaporate. Instead, they are specifically formulated to react to an energy source. The nature of the process is such that virtually no Volatile Organic Compounds (VOCs) are generated. Additionally, UV/EB/LED processes are electric and thus do not produce combustion contaminants such as Nitrogen Oxides (NOx), Sulfur Oxides (Sox) and Greenhouse Gases. With UV/EB/LED technology, facilities can achieve emission reductions above and beyond those required by even the most stringent of regulations. Thus, our technology can help EGLE achieve requirements of the "Reasonable Available Control Technology" (RACT) provisions in the Clean Air Act.

The South Coast Air Quality Management District (SCAQMD) has some of the most stringent air quality regulations in the nation. In many of its rulemakings, the agency has recognized the sustainability advantages, including energy efficiency, of energy curable technology. SCAQMD provides incentives to companies who convert to UV/EB/LED through exemptions from permitting and recordkeeping. The agency recognized UV/EB/LED as Best Available Control

Technology (BACT) for many industry sectors and the technology has recently been included in the Statewide BACT Clearinghouse for the California Air Resources Board.

UV/EB/LED technology is considered "super-compliant" in the SCAQMD which applies to coatings with a Volatile Organic Compound (VOC) content of less than 50 grams per liter. RadTech holds a seat on the South Coast Air Quality Management Plan Advisory Committee. Our Association provides input to the agency on how to achieve clean air goals and implementation of UV/EB/LED is one strategy which has been included in the most recent documents of the Air Quality Management Plan (AQMP). According to SCAQMD findings:

> *"These programs may also provide manufacturers with incentives to accelerate the deployment of cleaner technologies. Such an example is the use of energy-curing technologies which includes ultraviolet light (UV), electron beam (EB), heat and light emitting diode (LED) cured coatings".*

The California State Senate has adopted a resolution recognizing the many benefits of ultraviolet (UV) and electron beam (EB) technologies and the contributions of RadTech. The proclamation acknowledges the "invaluable" contributions made by RadTech to the State of California and beyond, and cites the Association's ideals of community service. It commends RadTech for its "outstanding commitment to improving the environment and economy through its programs."

The Environmental Protection Agency (EPA) has classified UV/EB technology as Lowest Achievable Emission Rate. The EPA Control Techniques Guidelines documents state: "This technology is gaining greater acceptance and, where applicable, achieves a near 100 percent reduction of VOC emissions".

According to the public notice, the state must revise existing RACT rules to align with the most recent recommendations contained in the United States Environmental Protection Agency's (USEPA) Control Technique Guidelines (CTGs) and promulgate new more stringent rules setting or revising emission standards and operational requirements for certain types of existing emission sources.

UV/EB/LED can play a role in the following EGLE rules:

- Rule 336.1610-- Emission of volatile organic compounds from existing automobile, light-duty truck, and other product and material coating lines.

- Rule 336.1620-- Emission of volatile organic compounds from existing flat wood paneling coating lines.

- Rule 336.1621-- Emission of volatile organic compounds from existing metallic surface
- coating lines.

- Rule 336.1632-- Emission of volatile organic compounds from existing automobile, truck, and business machine plastic part coating lines.

We are concerned that some of the Environmental Protection Agency's (EPA) Control Technique Guidelines (CTG) have not been updated since 1978 and thus the information is not accurate by current application methods and standards in 2020. Basing the RACT demonstration on the EPA CTGs may not capture the current state of our technology which has greatly advanced since the promulgation of the CTGs. As an example, the CTG for Wood Furniture Manufacturing Operations, promulgated in 1996, assumes that energy curable materials have a Volatile Organic Compound (VOC) content of 458 grams per liter but, currently our materials are typically less than 50 grams per liter in VOC content and in many cases exceed current EGLE rule limits. Throughout the years, ink and coating makers have continued work to formulate alternative materials which, may not have been readily available when the CTGs were promulgated. In many cases, there is no consideration of energy curable inks which can be equivalent to control devices and analogous to other low VOC ink systems.

We note that competing technologies such as conventional solvent systems with add-on controls and waterborne coating processes, have been included in most of the relevant EPA CTGs. One of EPA's recommendations is that "inks which contain 60 percent or more non-volatile material be exempt from emission limitations in order to encourage development of high solids inks." We very much support this incentive type approach and urge EGLE to implement it.

We request that UV/EB/LED processes be considered as an alternative equivalent option in the RACT Demonstration. UV/EB/LED technology is available in the following CTG categories:

- Offset Lithographic Printing and Letterpress Printing
- Graphic Arts-Rotogravure and Flexography
- Flexible Package Printing
- Wood Furniture Manufacturing Operations
- Factory Surface Coating of Flat Wood Paneling
- Flat Wood Paneling Coatings
- Flat Wood, Interior Paneling
- Large Appliance Coatings
- Metal Furniture Coatings
- Surface Coating of Miscellaneous Metal Parts and Plastics Products
- Paper, Film and Coil Coatings
- Miscellaneous Industrial Adhesives
- Automobile and Light-Duty Truck Assembly Coatings
- Surface Coating of Cans

The following are examples (not an exhaustive list) of permitted operations in the SCAQMD using UV/EB/LED technology:

Spray Booth, Wood

Company Name	Application #	Date Issued
Excel Cabinets, Inc.	450588	11/26/05
Head West Inc.	F80114	01/12/06

Lithographic Printing

Company Name	AQMD Permit #	Date Issued
Holiday Printing & Lithograph Inc.	F32751	07/25/00
Westminster Press	F15320	08/11/98
K & D Graphics, A California Corp.	F24307	02/09/00
Jaco Printing Corp, Business Forms Press	D53533	05/21/92
Jaco Printing Corp, Business Forms Press	F15651	11/24/98
Jaco Printing Corp, Business Forms Press	F15651	11/24/98
Royal Paper Box Co.	D92649	08/10/95
Creative Mailings Inc.	F31957	06/21/00

Request to Include Incentives in Rulemaking

Our materials are typically well below 50 grams/liter in VOC content which is minimal compared to existing and proposed limits. We respectfully request that UV/EB/LED materials be exempted from the rule requirements. An exemption would be an incentive for businesses to voluntarily choose UV/EB/LED technology resulting in additional emission reductions for the South Coast Basin.

Recordkeeping requirements are burdensome on businesses and in the case of UV/EB/LED operations, are not crucial because the materials are well below the rule limits. Exempting energy curable materials from overly prescriptive recordkeeping requirements will alleviate regulatory burdens on EGLE's business community and benefit air quality.

Definition

We would very much appreciate the inclusion of a definition for energy curable materials in the rule. We propose a definition like the one in other SCAQMD rules (R1130, R1168):

ENERGY CURABLE MATERIALS are single component reactive products that cure upon exposure to visible-light, ultraviolet light, or to an electron beam.

Test Method

The Environmental Protection Agency and the SCAQMD have long recognized that EPA Method 24 is not suitable for thin film UV/EB/LED Materials. RadTech urges the inclusion of

ASTM D7767-11 as suitable test method for thin film UV/EB/LED products. We propose the following language:

The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Test Method 7767 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.

Request for Additional Time to Submit Comments

As requested via the Q & A box in the meeting today, we request a one week extension to the public comment period to allow our members to submit comments on this rulemaking.

We look forward to a continued collaboration with EGLE. Please let me know of any additional assistance our association can provide.

Sincerely,

Rita M. Loof
Director, Environmental Affairs