

ILLINOIS POLLUTION CONTROL BOARD

February 18, 2010

IN THE MATTER OF: )  
 )  
PETITION OF ROYAL FIBERGLASS ) AS 09-4  
POOLS, INC. FOR AN ADJUSTED ) (Adjusted Standard)  
STANDARD FROM 35 ILL. ADM. CODE )  
215.301 )

DALE A. GUARIGLIA APPEARED ON BEHALF OF ROYAL FIBERGLASS POOLS, INC.  
and

CHARLES E. MATOESIAN APPEARED ON BEHALF OF THE ILLINOIS  
ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by G.T. Girard):

On April 3, 2009, Royal Fiberglass Pools, Inc. (Royal) filed a petition for an adjusted standard from 35 Ill. Adm. Code 215.301 of the Board's air pollution regulations, commonly known as the "8 lb/hr Rule." Royal filed an amended petition on July 17, 2009. Royal seeks relief from the 8 lb/hr Rule as the rule applies to the emissions of volatile organic material (VOM) from Royal's fiberglass swimming pool manufacturing facility located at 312 Duncan Lane, Dix, Jefferson County. In the petition, Royal requested a hearing, which was held October 28, 2009. The Illinois Environmental Protection Agency (Agency) filed a recommendation that the Board grant Royal's petition on August 20, 2009.

In this opinion, the Board first sets forth the legal framework within which the Board determines whether to issue adjusted standards under Section 28.1 of the Environmental Protection Act (Act) (415 ILCS 5/28.1 (2008)). Next, the Board provides the procedural history, and the factual background of the case. The Board then describes the applicable standard of review, the generally applicable standard, and the petitioners' requested relief. After presenting the applicable standard of review, the Board examines the record regarding the four statutory factors petitioners must demonstrate. This examination is followed by the Board's discussion of the statutory standards before reaching its conclusions on each of them.

Based on the record before it, the Board finds that Royal has provided sufficient justification for each of the Section 28.1 factors. Accordingly, the Board grants Royal an adjusted standard from the 8 lb/hr Rule subject to conditions outlined in this order.

**LEGAL FRAMEWORK FOR ADJUSTED STANDARD**

The Act (415 ILCS 5/1 *et seq.* (2008)) and Board rules provide that a petitioner may request, and the Board may grant, an environmental standard that is different from the generally applicable standard that would otherwise apply to the petitioner. This is called an adjusted

standard. The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and Section 104.Subpart D of the Board's procedural rules. 415 ILCS 5/28.1 (2008); 35 Ill. Adm. Code 104.400 *et seq.*

The Board's procedural rules specify the required contents for the adjusted standard petition. *See* 35 Ill. Adm. Code 104.406, 104.416. Once a petition for an adjusted standard is filed, the Agency must file its recommendation with the Board. *See* 415 ILCS 5/28.1(d)(3) (2008); 35 Ill. Adm. Code 104.416. The adjusted standard proceeding is adjudicatory in nature and therefore is not subject to the rulemaking provisions of the Act or the Illinois Administrative Procedure Act (5 ILCS 100/1-1 *et seq.* (2008)). *See* 415 ILCS 5/28.1(a) (2008); 35 Ill. Adm. Code 101.202 (defining "adjudicatory proceeding").

Section 28.1(d)(1) of the Act (415 ILCS 5/28.1 (2008)) and Section 104.408(a) of the Board's procedural rules (35 Ill. Adm. Code 104.408(a) (quoting the Act)) require the adjusted standard petitioner to publish notice of the petition's filing by advertisement in a newspaper of general circulation in the area likely to be affected by the proposed adjusted standard. Under those provisions, publication must take place within 14 days after the petition is filed. The newspaper notice must indicate that any person may cause a public hearing to be held on the proposed adjusted standard by filing a hearing request with the Board within 21 days after publication. *See* 415 ILCS 5/28.1(d)(1) (2008); 35 Ill. Adm. Code 104.408(b).

The burden of proof in an adjusted standard proceeding is on the petitioner. *See* 415 ILCS 5/28.1(b), (c) (2008); 35 Ill. Adm. Code 104.426. Once granted, the adjusted standard, instead of the rule of general applicability, applies to the petitioner. *See* 415 ILCS 5/28.1(a) (2008); 35 Ill. Adm. Code 101.202, 104.400(a). In granting adjusted standards, the Board may impose conditions as may be necessary to accomplish the purposes of the Act. *See* 415 ILCS 5/28.1(a) (2008); 35 Ill. Adm. Code 104.428(a).

### **PROCEDURAL BACKGROUND**

On April 3, 2009, Royal filed this petition (Pet.) with the Board for an adjusted standard from the 8 lb/hr Rule, accompanied by a Technical Support Document (TSD), a motion for expedited review, and motion to appear *pro hac vice*. On April 24, 2009, Royal filed a "Notice of Publication of Petition for an Adjusted Standard" indicating that notice of the petition was published in the *Mt. Vernon Register News* on April 13, 2009.

On June 4, 2009, the Board issued an order accepting the petition for hearing, denying Royal's motion for expedited review, and granting Mr. Guariglia's motion to appear *pro hac vice*. Also on June 4, 2009, the Board's Hearing Officer issued an order directing Royal and the Agency to address prehearing questions. On July 17, 2009, Royal filed a First Amended Petition (Am. Pet.). On August 6, 2009, the Board issued an order accepting the amended petition for hearing.

On August 20, 2009, the Agency filed its recommendation (Rec.) that the Board grant Royal's requested relief, subject to certain terms and conditions contained in the Agency's recommendation. Royal and the Agency filed separate responses to the Hearing Officer's

prehearing questions, on October 2, 2009 and October 14, 2009, respectively. Pet. Resp. to HOO 6-4-09, Ag. Resp. to HOO 6-4-09.

On October 21, 2009, the Board's Hearing Officer directed Royal and the Agency to address additional prehearing questions based on the amended petition, the Agency's recommendation, and responses to the earlier prehearing questions. On October 27, 2009, the Agency filed a response to the Hearing Officer's additional prehearing questions. Ag. Resp. to HOO 10-21-09.

On October 28, 2009, Hearing Officer Carol Webb conducted a hearing in this matter at the C.E. Brehem Memorial Public Library, 101 South 7th Street, Mt. Vernon, Jefferson County. Three witnesses testified at hearing: Mr. Clifford Hebert, owner of Royal Fiberglass Pools, Inc.; Robert A. Haberlein, Ph.D, consultant for Royal; and Mr. Andrew Russo, Agency's Bureau of Air. Hearing Officer Webb found all three witnesses credible.

On November 16, 2009, the Agency filed comments clarifying the Agency's earlier responses to the additional prehearing questions (Ag. Resp. to Hearing). On December 7, 2009, Royal filed a response to the Agency's comments and a post-hearing brief (Pet. Br.). On December 16, 2009, the Agency filed a post-hearing brief accompanied by a motion for leave to file *instanter* (Ag. Br.). The Board grants the Agency's motion to file *instanter* the post-hearing brief.

## **FACTUAL BACKGROUND**

The Board will begin this section by describing the facility and the manufacturing process of Royal. Next the Board will explain the pollution control equipment in use by Royal and describe the VOM emissions. This section will conclude with a description of the CAAPP permit and a violation notice received by Royal.

### **The Facility**

Royal operates a fiberglass swimming pool manufacturing facility where Royal manufactures 20 different models of fiberglass pools, ranging from 12' wide x 16' long x 3' 10" deep to 17' wide x 40' 6" long x 8' deep. Am. Pet. at 4. Royal began operations at the Dix plant in the early 1990s, and currently employs approximately 20 people during peak season in addition to 5 to 10 contract haulers. *Id.* Royal currently produces about 240 pools per year, however, Royal is anticipating increased production and requested a maximum facility-wide annual production cap of 400 pools per year in its Clean Air Act Permit Program (CAAPP) permit application filed on July 14, 2009. Pet. at 4, Pet. Resp. to HOO 6-4-09 at 3, Am. Pet. at 4.

### **Manufacturing Process**

Royal's composite pool manufacturing process starts with a bare waxed mold of a pool turned upside down. The mold is sprayed with a thin layer of gelcoat, which later becomes the inside layer of the finished pool. Over the gelcoat, various layers of resin and fiberglass are applied to the mold to provide thickness and strength for the pool. Royal's counsel explains that

“it is a hands-on process where you have a person spraying on resin with a gun and then another person rolling it out with a roller to flatten it and to give it strength . . .” Tr. at 10-11, Am. Pet. at 4.

Royal’s swimming pool manufacturing process involves 3 basic steps, all of which produce VOM emissions that would be subject to the requested adjusted standard: (1) gelcoat application; (2) barrier coat resin application; and (3) isophthalic structural resin application. Am. Pet. at 5. Other manufacturing steps that do not produce significant VOM emissions include: (1) parts finishing; (2) gelcoat and resin cleanup; and (3) mold repair and mold prep. Am. Pet. at 5.

This petition revolves mainly around the 3 basic steps of applying of gelcoat, barrier coat resin, and isophthalic structural resin since these processes generate most of Royal’s VOM emissions that are impacted by the 8 lb/hr Rule. The VOM emissions consist primarily of styrene, but also include small amounts of other VOM and volatile organic HAP species, such as methyl methacrylate (MMA) and methy ethyl ketone peroxide (MEKP). Am. Pet. at 4-5; Am. Pet. Exh. B of Exh. 2, Pet. Technical Support Document Section 2, 3; Pet. Resp. at 5.

Royal’s Dix plant houses three self-contained rooms (bays) where the composite pool manufacturing occurs. To control worker exposure to styrene, all three bays are connected to a common exhaust ventilation system that vents to the atmosphere through a 36-foot tall stack. Am. Pet. at 1.

### **Gelcoat Application**

Gelcoat is applied to bare waxed pool molds with high-volume low pressure (HVLV) fluid impingement technology (FIT) applicator gun. This applicator gun is used with an atomizing gelcoat spray applicator. Am. Pet. at 4. Gelcoat is applied either as a single layer of white gelcoat or as two layers of translucent gelcoat and regular production gelcoat. Royal states that the gelcoat used is “the state-of-the-art in low-HAP [hazardous air pollutant] formulations for swimming pool production.” Am. Pet. at 4-5. The white gelcoat contains 27% styrene monomer and 3% MMA by weight. The two layer gelcoats range from 27% - 38% styrene and 3% - 10% MMA. *Id.*

### **Barrier Coat Resin Application**

After the gelcoat has cured, a laminate layer of glass mat and vinyl ester (VE) corrosion-resin is applied to the cured gelcoat layer using the HVLV applicator gun with a non-atomizing applicator. The VE resin contains up to 48% styrene by weight. Am. Pet. at 5.

### **Isophthalic Structural Resin Application**

After the VE resin layer has cured, a series of laminate layers is applied to the cured resin layer. The layers consist of chopped glass strand mat (CSM), woven glass roving (WR), and isophthalic (ISO) corrosion-resistant resin and are applied with a HVLV applicator gun with a non-atomized applicator. Am. Pet. at 5.

### **Pollution Control Equipment in Use**

Royal states that the facility employs the same techniques used by Crownline in Crownline's adjusted standard to control VOM and particulate emissions (*see In the Matter of: Petition of Crownline Boats, Inc. for an Adjusted Standard from 35 Ill. Adm. Code 215.301, AS 04-1 (July 22, 2004)*):

1. booths equipped with dry filter medium to reduce particulate emissions,
2. lower styrene-content gelcoat (24-38% styrene and 3-10% MMA),
3. panel filters built in each side of the laminating area to control particulate emissions,
4. tanks equipped with submerged inlets to reduce splashing and release of VOMs when filling, and
5. flow-coat spray guns for lamination to reduce VOM emissions experienced with previous air atomized guns. Pet. Resp. at 5 referring to Crownline Boats, AS 04-1 Pet. at 5-6.

In the pool manufacturing facility, Royal uses a 35,000 cubic feet per minute (cfm) cross-flow ventilation system to control worker exposure to styrene. The ventilation system exhausts air from the work areas to the outside through a 36-foot tall vertical stack. Am. Pet. at 1.

In the gelcoat application processes, Royal uses the following: (1) high-volume low-pressure (HVLP) fluid impingement technology (FIT) applicator gun that is operated as an atomizing gelcoat spray gun and (2) gelcoat that is "state-of-the-art in low-HAP formulations for swimming pool production." Am. Pet. at 4-5. In the resin application process, Royal uses the same applicator gun operated with a different tip and pressure to allow for non-atomized application. Pet. at 5. The resin applicators were converted to non-atomized applicators as part of MACT compliance since they were low-emitting and reduced the amount of overspray, resulting in less solid and hazardous waste generated. Pet. Resp. to 6-4-09 HOO at 1.

Royal also adopted work practice standards to comply with the Composites Maximum Achievable Control Technology (MACT) standards: (1) requiring all resin containers be closed when not in use, and (2) implementing the use of acetone in resin and gelcoat cleanup, which has no HAP or VOM emissions. Am. Pet. at 5, Pet. at 5. Royal states that the VOM content of the gelcoats and resins is also MACT compliant. Am. Pet. at 6, Pet. Resp. to HOO 6-4-09 at 5. Although not required by MACT, Royal has also eliminated all colored backcoat gelcoats, now using just white, resulting in less flushing of the gelcoat lines and less waste. Pet. Resp. to HOO 6-4-09 at 1.

### **VOM Emissions**

As noted above, Royal's VOM emissions subject to the 8 lb/hr Rules are primarily generated during the application of gelcoat, barrier coat resin, and isophthalic structural resin. Royal characterized the VOM emissions as variable depending on the type and size of each swimming pool manufactured. The VOM emissions from the Dix plant consist mainly of

styrene, but also include smaller amounts of other VOMs and volatile organic HAP such as MMA and MEKP. Am. Pet. at 5, Pet. Resp. at 5. Royal estimates the average VOM emissions per pool as follows: 53.8 lb/pool from gelcoating and 94.4 lb/pool from resin application, with a total average VOM of 148.8 lb/pool. Am. Pet. at 5. The estimates for the resin application include VOM emissions from the both the barrier coat resin and isophthalic structural resin applications.

On an hourly basis for a single pool, Royal estimates a maximum gelcoat VOM emission rate of 78.55 lbs/hr and a maximum resin VOM emission rate of 47.17 lbs/hr. Am. Pet. Section 2. Royal states that the maximum facility-wide hourly VOM emission rate is 156.70 lbs/hr. This corresponds to simultaneous gelcoat applications to Royal's two greatest VOM-emitting pool molds at 78.55 and 78.15 lbs/hr. Am. Pet. at 5, Exh. 2.

Royal's reported annual VOM emissions for 2007 and 2008 were 14.8 tons per year (tpy) and 11.6 tpy, respectively, when maximum pool production was estimated at 250 pools per year. Am. Pet. at 5, Exh. 2; Pet. TSD Section 3 at 5, Pet. Resp. to 6-4-09 HOO at 2. Royal's CAAPP application estimates maximum VOM emissions at 29.76 tpy for a proposed cap of 400 pools per year. Am. Pet. at 5, Exh. 2. With emissions greater than 10 tpy of a single HAP, Royal is a major HAP source. Pet. Resp. to 6-4-09 HOO at 3.

### **CAAPP Permit**

Royal submitted an application for a CAAPP permit in November of 2004 and later submitted a modification to its application on July 14, 2009. Royal notes that a permit has not yet been issued. Am. Pet. at 1. Royal notes that the Agency has rejected the use of averaging to demonstrate compliance with the 8 lb/hr Rule. Since that rule specifies a maximum hourly emission rate, the Agency believes that compliance demonstration must be based on a strict hourly basis and not on an average from a longer time period. *Id.*

### **Violation Notice**

Royal received a Violation Notice issued by the Agency on January 10, 2006 that listed a single violation of 35 Ill. Adm. Code 215.301, which limits the discharge of VOM emissions from an emission source to 8 lb/hr (8 lb/hr Rule). Pet. Attach. 3 at 1. Royal met with the Agency and in turn worked with an environmental consultant to determine the amounts of VOM emitted during the manufacture of various pools that Royal constructs. Royal became aware that the Agency does not allow the use of averaging to demonstrate compliance with the 8 lb/hr Rule. Since that rule specifies a maximum hourly emission rate, the Agency believes that compliance demonstration must be based on a strict hourly basis. By working with the consultant to determine the amounts of VOM emitted during manufacturing, Royal found that the hourly VOM emissions from some of its operations did not appear to comply with the 8 lb/hr Rule. Am. Pet. at 2.

## **CURRENT APPLICABLE STANDARDS**

The Board will begin by discussing the current standards applicable in Illinois and follow with a discussion of applicable federal standards.

### **Illinois**

The generally applicable standard at issue in this adjusted standard proceeding is set forth in 35 Ill. Adm. Code 215.301. Section 215.301 provides:

No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission source, except as provided in Sections 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material. 35 Ill. Adm. Code 215.301.

This rule, which is commonly referred to as the 8 lb/hr Rule, was initially adopted by the Board as Rule 205(f) in In the Matter of Air Pollution Control Regulations - Emission Standards, R71-23 (Apr. 14, 1972). Rule 205 was re-codified as 35 Ill. Adm. Code 215.301 at 7 Ill. Reg. 13601, Corrected at 7 Ill. Reg. 14575. For purposes of complying with the 8 lb/hr Rule, the Agency has indicated that averaging is not acceptable and that compliance must be demonstrated on a strict hourly basis. Am. Pet. at 1-2, Rec. at 2.

### **Federal**

Under separate federal regulation, Royal is already subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for reinforced plastic composite manufacturing facilities. Pet. at 2; citing 40 CFR Part 63 Subpart WWWW, 40 C.F.R. 63.5780-63.5935. Subpart WWWW is the “National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production”, and the compliance date was April 21, 2006. Rec. at 3, see Table 2 to Subpart WWWW of Part 63, 68 FR 19380. Under Section 9.1(a) of the Act, NESHAP rules are applicable in Illinois and enforceable under the Act without additional rulemaking activity by the Board. 415 ILCS 5/9.1(a) (2008).

Subpart WWWW applies to new and existing reinforced plastic composites production facilities and regulates the use of thermoset resins and gelcoats, which emit HAPs such as styrene and MMA. 68 FR 19375. The requirements take the form of HAP emissions limits, operating limits, and work practice standards. 68 FR 19378. Requirements for new and existing sources below the 100 tpy threshold are based on the MACT floor level of control. *Id.* The United States Environmental Protection Agency (USEPA) explains, “[t]he MACT floor is the minimum control level allowed for NESHAP.” For Subpart WWWW, USEPA adds, “[t]he floors for existing sources are mainly based on pollution prevention, not add-on controls.” 68 FR 19377.

Royal's Dix Facility emissions are greater than 10 tpy for a single HAP and the facility is a major HAP source, but emissions are less than the 100 tpy threshold. Am. Pet. at 5, Pet. Resp. to 6-4-09 HOO at 3. USEPA estimated that there are approximately 435 existing major source facilities that will be subject to Subpart WWWW, and predicts that the rule will reduce emissions of HAP nationwide by 43%. 68 FR 19381, 19375.

### **ROYAL'S PROPOSED ADJUSTED STANDARD**

In the petition, Royal proposed the following adjusted standard language for adoption by the Board:

1. Pursuant to Section 28.1 of the Environmental Protection Act ("Act") (415 ILCS 5/28.1), the Board grants Royal Fiberglass Pools ("Royal") an adjusted standard from 35 Ill. Adm. Code. 215.201 ("8 lb/hr Rule"), effective \_\_\_\_\_, 2010. The adjusted standard applies to the emissions of volatile organic material ("VOM") into the atmosphere from Royal's swimming pool manufacturing facility located in Dix, Illinois.
2. 35 Ill. Adm. Code 215.301 does not apply. Royal remains subject to the following:
  - a. Royal must continue to investigate: (a) swimming pool production methods that generate fewer VOM emissions, and (b) materials that have a reduced VOM content and/or are compliant with the Composites MACT HAP content. Where practicable, Royal must substitute current materials with lower VOM content materials as long as such substitution does not result in a net increase in VOM emissions.
  - b. Royal must perform any reasonable test of new technologically or economically reasonable production methods or materials applicable to the open-mold swimming pool manufacturing industry, which may reduce VOM emissions at Royal's facility which the Illinois Environmental Protection Agency (Agency) specifically requests in writing they do. After performance of such tests, Royal must prepare and submit a report summarizing the activities and results of these investigatory efforts. The report must be submitted to the Agency, Bureau of Air, Compliance and Enforcement Section.
  - c. Royal must operate in full compliance with the Clean Air Act, its Clean Air Act Permit Program permit (once issued), the National Emissions Standard for Hazardous Air Pollutants for Reinforced Plastic Composite Manufacturing Facilities, set forth in 40 C.F.R. 63, Subpart WWWW, as required by Section 9.1 (a) of the Act, and any other applicable regulation. Am. Pet. at 9-10.

### **AGENCY RECOMMENDATION**

On August 20, 2009, the Agency filed the recommendation that the Board grant Royal's amended adjusted standard petition subject to the following conditions:

- a. Royal shall operate in full compliance with the National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composite Manufacturing Facilities, set forth at 40 CFR Section 63 Subpart WWWW, as may be amended in the future.
- b. Operation in full compliance with the National Emission Standard for Hazardous Air Pollutants for Reinforced Plastic Composite Manufacturing Facilities, set forth at 40 CFR Section 63 Subpart WWWW, as may be amended in the future, shall be in lieu of compliance with the 8 lb/hr Rule found at 35 Ill. Adm. Code Section 215.301.
- c. Royal shall continue to investigate swimming pool production methods which generate fewer VOM emissions and materials that have a reduced VOM content. Where practicable, Royal must substitute current materials with lower VOM content materials as long as such substitution does not result in a net increase in VOM emissions. Royal shall be required to do any test of new technologically or economically reasonable production methods or materials applicable to the open-mold swimming pool manufacturing industry, which may reduce VOM emissions at Royal's facility which the Illinois EPA specifically requests in writing they do. After performance of such tests, Royal must prepare and submit a report summarizing the activities and results of these investigatory efforts. The report must be submitted to the Illinois EPA, Bureau of Air, Compliance and Enforcement Section.
- d. The relief granted in this proceeding shall be limited to the emission activities at Royal's Dix facility as of the date of this filing.
- e. Royal shall operate in full compliance with the Clean Air Act, its CAAPP, the National Emission Standard for Hazardous Air Pollutants for Reinforced Plastic Composite Manufacturing Facilities, set forth at 40 CFR Section 63 Subpart WWWW, as may be amended in the future, the Illinois Environmental Protection Act and other applicable regulations not otherwise discussed herein. Rec. at 6-7.

The Agency's suggested one additional condition (d) that was not similarly proposed by Royal. Rec. at 7. At hearing, the Board's staff asked the Agency to clarify whether the Agency's proposed condition (d) was intended to limit the types of emissions activities or the level or amount of emissions. Tr. at 47-48. The Agency clarified that the condition was meant only to limit the type of emissions activities, i.e., fiberglass pool manufacturing at the Dix facility. The Agency noted that the level and amount of emissions are to be in compliance with the proposed permit conditions, which include an annual production cap of 400 pools. Ag. Resp.

to Hearing at 1. Royal responded in opposition to proposed condition (d) on the grounds that the condition is unclear on the date and could be read as limiting Royal to “only those activities taking place on the date in question . . .” Pet. Br. at 12. In addition, Royal argues that such language was not included in the adjusted standard granted to Crownline. *Id.* at 12, referring to Crownline Boats, AS 04-1.

After discussion, the Agency and Royal came to agreement on the proposed language of the adjusted standard condition (d) as follows:

- d. The relief granted in this proceeding shall be limited to the swimming pool manufacturing emission units (spray booths) existing as of August 20, 2009, at Royal’s Dix facility. Ag. Br. at 1-2.

### **STANDARD OF REVIEW**

The Board agrees with Royal and the Agency that the regulation of general applicability at 35 Ill. Adm. Code 215.301 does not specify a level of justification for an adjusted standard. Am. Pet. at 4; Rec. at 8. Therefore, pursuant to Section 28.1(c) of the Act, the burden of proof is on the petitioner to demonstrate that:

1. Factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
2. The existence of those factors justifies an adjusted standard;
3. The requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
4. The adjusted standard is consistent with any applicable federal law. 415 ILCS 5/28.1(c) (2008); 35 Ill. Adm. Code 104.426(a).

### **SUBSTANTIALLY DIFFERENT FACTORS**

Royal states that the primary intent of the 8 lb/hr Rule was to prevent ozone formation and odor nuisance. Royal asserts that the Board did not contemplate the methods Royal uses to manufacture swimming pools at the Dix plant when the Board promulgated the 8 lb/hr Rule in 1971. Am. Pet. at 11. Royal explains that manufacturing large parts such as swimming pools is necessarily a batch-type process rather than a typical continuous application used for other products. *Id.* Royal’s investigation of alternatives found inherent limitations in the manufacturing process that precluded the use of alternative manufacturing methods. Am. Pet. at 6, 7-9. As to add-on air pollution controls, as noted above, Royal argues that the ventilation system Royal uses to comply with Occupational Health and Safety Administration’s (OSHA) worker protection regulation at 29 CFR §1910 makes the use of add-on emission controls economically unreasonable. Royal maintains that the Board did not anticipate the batch-type process used for manufacturing large composite parts coupled with the requirement to meet the

OSHA standard for styrene exposure through engineering controls when adopting the 8 lb/hr Rule in 1971. Am. Pet. at 11.

Another significantly different factor Royal notes is that Royal is not aware of any other swimming pool manufacturing operations in Illinois. From a business perspective, Royal concludes that without the adjusted standard, Royal will either be forced out of business because of the high cost of compliance or forced to move to another state which does not have an 8 lb/hr Rule (or similar limitation). Pet. Br. at 13.

Royal states the instant petition does not conflict with the primary intent of the 8 lb/hr Rule to prevent ozone formation and odor nuisance. The Air Quality Impact Analysis indicates that Royal's emissions would not cause a violation of the ozone National Ambient Air Quality Standard (NAAQS). Additionally, Royal has a 36ft. tall stack to exhaust emissions to minimize odor nuisance from Royal's operations. Am. Pet. at 1, 10, 12; TSD Section 6.

### **EFFORTS TO ACHIEVE COMPLIANCE AND ALTERNATIVES**

The compliance alternatives investigated by Royal to comply with the 8 lb/hr Rule on a strict hourly basis include: (1) reducing VOM content in production materials; (2) using alternative operating procedures and methods; and (3) installing add-on emission control technologies. Other than add-on emission controls, Royal stresses that many of the alternatives investigated would not allow Royal to comply with the 8 lb/hr Rule on a strict hourly basis. Am. Pet. at 6.

#### **Reducing VOM in Production Materials**

Royal states that the VOM concentration in the production materials for gelcoat and resin has already been reduced in compliance with the Composites MACT. However, using production materials that comply with the Composites MACT will not be sufficient to reduce emissions levels to meet the 8 lb/hr Rule. Royal worked with suppliers to inquire about the feasibility of using lower VOM-content production materials. Royal found that lowering the styrene content in the resins below the current level used to comply with the Composites MACT is not currently technically feasible while still maintaining acceptable product integrity. Am. Pet. at 6. From suppliers, Royal understands that the lower VOM resin materials do not provide adequate corrosion protection for high quality swimming pool parts. Pet. Resp. to HOO 6-4-09 at 5.

Royal states that the gelcoat used at the facility is already "state-of-the-art and contains the lowest feasible monomer contents of 27% styrene and 3% MMA." Am. Pet. at 7. In addition, Royal ceased using a clear gelcoat which had a higher VOM content than the "state-of-the-art" white gelcoat Royal currently uses. Pet. Resp. to HOO 6-4-09 at 5.

#### **Using Alternative Operating Procedures and Methods**

As a part of Royal's investigation into compliance alternatives, Royal examined the gelcoating process at the Dix plant, and considered ways to reduce the hourly VOM emissions

rate. Royal states that Royal found limitations inherent in the facility's processes that precluded the use of any effective alternatives. Royal explains that the pools are produced with open molding process on a large scale, too large for any closed molding process. The gelcoat cannot be applied in sections, only in a single uniform layer to avoid seams that would sacrifice structural stability and aesthetics. Further, Royal notes that gelcoat must be applied to the mold with an atomizing applicator. While non-atomizing applicator that reduces gelcoat emissions rate is available, Royal states that non-atomizing equipment for the gelcoat would not provide an acceptable surface finish. Royal adds that the non-atomizing applicator for gelcoats has also not reduced emissions, as promised by the manufacturer. Royal states that the gelcoat used at the facility is already "state-of-the-art and contains the lowest feasible monomer contents of 27% styrene and 3% MMA." Am. Pet. at 6-7.

### **Add-On Air Pollution Controls**

Royal states that the Composites MACT does not require installation of add-on air pollution controls. Royal notes that USEPA found that add-on air pollution controls are not cost effective at most existing composite facilities. Royal maintains that USEPA found that add-on controls with 95 % control efficiency would only be cost effective for new facilities that emit more than 100 tpy of HAP or new facilities that produce large parts such as swimming pools with HAP emissions greater than 250 tpy. Royal notes that the Dix plant emits less than 12 tpy of HAPs. Am. Pet. at 7. Nevertheless, Royal summarized add-on air pollution control options detailed in a 2000 study submitted to USEPA as part of the promulgation of the Composites MACT rule entitled, "Feasibility and Cost of the Capture and Control of Hazardous Air Pollutant Emissions from the Open Molding of Reinforced Plastic Composites." Am. Pet. at 7-8. The summary listed commercially available air pollution controls and assessed the feasibility of each at the Dix plant: absorption, adsorption, biodigestion, condensation, flare, oxidation, and preconcentration with regenerative thermal oxidation (RTO). Of the options, only RTO was considered technically feasible for Royal, however, RTO was also considered economically infeasible. Am. Pet. at 8.

Royal commissioned the author of the study, Engineering Environmental Consulting Services (EECS), to prepare an analysis for the cost of a skid-mounted RTO system at the Dix plant. Am. Pet. at 9, Exh. 3. With an estimated capital cost of \$709,500 and annual operating cost of over \$470,000, the cost effectiveness of an RTO system would be \$18,400 per ton of HAP (styrene, MMA) removed. Am. Pet. at 9, Exh. 3. Royal states the annual operating cost alone is several times greater than the Dix plant's annual profit, and add-on controls are not economically feasible for the facility. Am. Pet. at 9.

As stated earlier, Royal uses a high air flow ventilation system to comply with the OSHA's worker protection regulation at 29 CFR §1910 for styrene. At hearing, Royal's witness Dr. Haberlein, testified that OSHA requires the use of engineering controls, such as the high air flow ventilation system, to control exposure to workers. At the Dix plant, Royal is required to use engineering controls rather than rely on personal protective equipment, such as a self-contained breathing apparatus, to control worker exposure. Tr. at 54. Consequently, any add-on air pollution control options that Royal evaluated needed to be able to handle the high air flow. The RTO system in the cost analysis was designed to handle the 35,000 cfm exhaust air flow.

Am. Pet. Exh. 3 at 6. Royal states the high air flow makes the cost of using add-on emissions controls economically infeasible. Am. Pet. at 11.

### **Royal's Compliance with the MACT Standard**

Royal indicates that the facility was in compliance with the Composites MACT by February 2006. Royal meets the MACT emission standards by using the HAP emissions factor averaging option. Am. Pet. at 5-6, citing 40 CFR §63.5810(b). Royal's Dix plant is averaging 72% of the MACT emissions limit. Am. Pet. at 7. To comply with the work practice standards in the Composites MACT, Royal implemented procedures for all resin containers to be closed when not in use and for acetone, which Royal indicates has no HAP or VOM emissions, to be used for resin and gelcoat cleanup. Am. Pet. at 5. Royal also converted the resin spray applicators to low-emitting non-atomized applicators to reduce the amount of overspray and the resulting amount of solid and hazardous waste generated. Pet. Resp. to HOO 6-4-09 at 1.

Royal has submitted all the required initial and periodic NESHAP MACT demonstrations to the USEPA, but has not yet received a response. Pet. Resp. to HOO 6-4-09 at 7.

USEPA estimated that the Composites MACT will reduce HAP emissions by an average of 43% industry-wide. Am. Pet. at 5-6. USEPA also estimates there are approximately 435 existing major source facilities that will be subject to the federal rule 40 CFR Part 63 Subpart WWW. USEPA estimated annual compliance costs for all existing major source facilities of \$21.5 million, which included capital, materials, monitoring, recordkeeping, and reporting costs. 68 FR 19381.

Royal stated that Royal spent approximately \$40,000 to upgrade the resin sprayers to non-atomized applicators to meet the federal rule. Pet. Resp. to HOO 6-4-09 at 6. Royal also spent nearly \$10,000 to establish a system to track, record, and report the facility's emissions under the Composites MACT standard. On an annual basis, Royal spends \$1,500 per year to track and report emissions. Pet. Resp. to HOO 6-4-09 at 6.

### **Summary**

Royal argues that the evaluation of compliance alternatives has shown that the alternatives are neither economically reasonable nor technically feasible due to the substantially different factors relating to Royal's operations. Royal asserts that the existence of these factors coupled with the Agency's concurrence regarding the requested relief justifies the grant of an adjusted standard. Am. Pet. at 13.

### **IMPACT ON THE ENVIRONMENT**

Royal states that the requested adjusted standard seeks only to allow Royal to continue manufacturing in the same manner, and will not result in an increase in emissions on a per unit basis. Am. Pet. at 10. Royal maintains that the Dix plant is already in compliance with the federal requirements for the Composites MACT, and adds that the proposed adjusted standard will not interfere with Royal's federal compliance efforts. Am. Pet. at 10.

The Agency adds that Jefferson County, where the Dix plant is located, is currently in attainment with the Ozone NAAQS, and no change is imminent. Ag. Resp. to HOO 6-4-09.

### **Air Quality Impact Analysis**

Royal commissioned EECS to conduct a “worst-case air quality ozone impact analysis of the maximum VOC emissions from the Royal Pools facility in Dix, Illinois”. TSD Section 6. The air quality impact analysis utilized the Scheffe ozone screening tables (September 1988)<sup>1</sup> for determining the 1-hour ozone increment attributable to Royal’s emissions. *Id.* The analysis was conducted based on a proposed maximum annual styrene emission rate of 25 tpy, reflective of a production cap of 400 pools per year. Based on the Scheffe screening table for rural areas, EECS arrived at a 1-hour ozone increment of 4 parts per billion (ppb). The air quality impact analysis then added the 1-hour ozone increment for the Dix facility to the 1-hour average ozone baseline for the local area of 85 ppb for the years 2003 to 2006. Based on ambient ozone data from the nearest monitoring station in Hamilton County, EECS estimated the worst-case one-hour average ozone impact at 89 ppb. TSD Section 6.

Although the analysis was based on a proposed maximum annual styrene emission rate of 25 tpy, later Royal clarified that the current CAAPP application requests a Potential to Emit (PTE) of 29.76 tpy. Pet. Resp. to HOO 6-4-09 at 7.

Royal characterized the ozone impact as “negligible”. Pet. Resp. to HOO 6-4-09 at 8, Tr. at 25-27. Dr. Haberlein elaborated that Royal’s actual worst-case 1-hour ozone increment is much less than 4 ppb, so the characterization of “negligible” is in the sense that 4 ppb is the lowest value in the Scheffe table. Tr. at 25-27. Dr. Haberlein testified that, in the column of the table representing the ratio of VOM to NO<sub>x</sub> emissions at the Dix plant as greater than 20, “. . . you can be a 100-ton [per year VOM] source and you’ll have the same impact, according to the table.” Tr. at 26.

The Agency characterized the ozone increment of 4 ppb estimated for Royal’s Dix plant as “potentially significant”, as is an increase of as little as 2 ppb (for both the 1-hour and 8-hour averaging period). Ag. Resp. to HOO 10-21-09 at 2. However, the Agency noted that the Scheffe Method is a screening technique and is conservative by design to be protective of the ozone air quality standards. The Agency considers it unrealistic that the maximum predicted ozone increment of 4 ppb would occur at the same time as the 4th highest 8-hour ozone concentration for a given year. The Agency commented that Royal’s maximum daily rate (229 lb/day) based on the PTE of 29.76 tpy is not likely to occur on a continuous basis. The Agency points out, “[t]he 4 ppb ozone increment would not be attained on days when emissions rates

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<sup>1</sup> The Scheffe ozone screening tables are found in “VOC/NO<sub>x</sub> Point Source Screening Tables” by Richard D. Scheffe. USEPA, Office of Air Quality Planning and Standards, Technical Support Division, Source Receptor Analysis Branch. September 1988. Both Royal and the Agency indicated that the Scheffe procedure is the procedure currently used by the Agency to evaluate ozone impacts for single facility assessments. Pet. Resp. to HOO 6-4-09 at 8, Ag. Resp. to HOO 6-4-09 at 2, Ag. Resp. to HOO 10-21-09 at 2.

were less than the maximum daily rate or when meteorological conditions were not conducive to ozone formation.” Ag. Resp. to HOO 10-21-09 at 4.

Nevertheless, the Agency calculated that by adding the ozone increment of 4 ppb to the 4th highest measured 8-hour ozone concentration for the local air monitor in Hamilton County for the years 2005-2007, the ozone concentration would be 81 ppb. More importantly, the Agency points out, is the result if the 4 ppb ozone increment is added to the 2007-2009 8-hour ozone design value of 68 ppb, which yields a concentration of 72 ppb.<sup>2</sup> Ag. Resp. to HOO 10-21-09 at 3, Ag. Resp. to Hearing at 2. The Agency notes that this lower 8-hour ozone design value reflects cleaner ambient air in the more recent years. Ag. Resp. to Hearing at 2.

In conclusion, the Agency states, “[t]he potential air quality impact from the adjusted standard is significant, but it is not expected to cause or contribute to violations of the 8-hour ozone standard.” Ag. Resp. to HOO 10-21-09 at 3.

### **Ozone Action Days**

Both Royal and the Agency were directed to comment on the concept of limiting Royal’s VOM-emitting operations during Ozone Actions Days. See HOOs dated 6-4-2009 and 10-21-2009. Specifically, the parties were asked to address any correlation between ozone exceedences in the local monitoring area and Ozone Action Days in the St. Louis (Metro-east) area. The Agency replied that an exceedance of the 8-hour ozone standard in Hamilton County would likely coincide with exceedances in the Metro-east area. Ag. Resp. to HOO 10-21-09 at 4.

Regarding the question as to whether the adjusted standard should include a condition limiting Royal’s VOM-emitting operations on Ozone Action Days, the Agency replied, “It would be inappropriate to require a single facility amongst a group of potentially contributing facilities to accept a condition limiting ‘VOM emitting operations on ozone action days where ambient conditions are likely to exceed the 75 ppb 8-hour ozone standard.’” Ag. Resp. to HOO 10-21-09 at 3-5. Based on the 2007-2009 Hamilton County ozone data, the Agency states that the area is clearly in attainment with the 75 ppb 8-hour ozone NAAQS. The Agency did not favor mandatory limits on VOM-emitting operations at Royal during Ozone Action Days. Rather, the Agency supports voluntary actions. Ag. Resp. to HOO 10-21-09 at 3-5.

Royal also opposed mandatory limits on VOM-emitting operations based on Ozone Action Days as logistically unworkable. Royal explains that such conditions would require Royal to monitor ambient conditions and contact employees on a daily basis to inform them whether to come into work that day. Royal states that this would impose an unreasonable burden

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<sup>2</sup> Per 40 CFR 51.900(d), the “8-Hour ozone design value is the 8-hour ozone concentration calculated according to 40 CFR part 50, appendix I.” Per 40 CFR Part 50, Appendix I.3, the “Design Values for Primary and Secondary Ambient Air Quality Standards for Ozone” are calculated as follows: “Thus, for the primary and secondary ozone standards, the 3-year average annual fourth-highest daily maximum 8-hour average ozone concentration is also the air quality design value for the site.”

on a facility which often has 10 or fewer employees working. Pet. Resp. to HOO 6-4-09 at 8-9, Pet. Br. at 12-13.

### **CONSISTENCY WITH FEDERAL LAW**

Royal asserts that granting of the proposed adjusted standard is consistent with federal law. Royal states that there is no Clean Air Act equivalent rule or regulation prohibiting swimming pool manufacturers' emissions of VOM in excess of 8 lbs/hr, on a strictly hourly basis. Royal points out that regardless, the facility must comply with the federal Composites MACT. Am. Pet. at 13-14, Pet. Br. at 11. The Agency agrees with Royal that the granting of the adjusted standard is consistent with the federal law. The Agency notes that Section 110 of the Clean Air Act (CAA), 42 U.S.C. Section 7410 grants the individual states the authority to promulgate a plan for implementation, maintenance, and enforcement of air quality standards, subject to USEPA approval. The Agency notes that the CAA also allows the states to revise the implementation plan. The adjusted standard procedure allows the Board to exercise the authority granted to the states by Section 110 of the CAA. Rec. at 9. Finally, the Agency states that, if the Board adopts the proposed adjusted standard, the Agency will submit the adjusted standard to USEPA as a State Implementation Plan revision. *Id.* at 10.

### **DISCUSSION**

Royal seeks relief from the Board's rule limiting VOM emissions to 8 lb/hr (8lb/hr Rule) in the form of an adjusted standard. Royal argues that alternatives aimed at complying with the 8 lb/hr rule are not technically feasible for Royal's batch-type manufacturing and air pollution controls are not economically reasonable due to the high volume air flow. Under separate federal regulation applicable to Royal pursuant to Section 9.1(a) of the Act (415 ILCS 5/9.1(a) (2008)), Royal asserts that the Dix facility is already required to comply with the NESHAP for Reinforced Plastics Composites Production which limits HAP emissions from facilities such as Royal's Dix plant. 40 CFR Part 63 Subpart WWWW, 40 CFR §63.5780-63.5935. Royal was required to comply with MACT emission limits under this standard by April 21, 2006. Rec. at 3, *See* Table 2 to Subpart WWWW of Part 63, 68 FR 19380.

Accordingly, Royal requests that Section 215.301 not apply to their operations. The Agency recommends that the Board grant Royal the requested relief subject to certain conditions. If granted, the adjusted standard would apply only to the swimming pool manufacturing emission units (spray booths) at Royal's Dix plant. In the following sections, the Board discusses each of the Section 28.1 factors that petitioners must demonstrate in order to justify their requested adjusted standard and reaches findings on them.

### **Substantially Different Factors**

The Board adopted the 8 lb/hr Rule for VOM emissions as Rule 205(f) in Emissions Standards, R71-23 on April 14, 1972. As noted by Royal, the primary intent of the 8 lb/hr Rule was to "achieve and maintain compliance with the federal air quality standard for photochemical oxidants (0.08 ppm for one hour not more than once per year, 36 Fed. Reg.22385, Nov. 25, 1971) and to prevent local nuisances." *See Emission Standards*, R71-23 at 4-336. While the

Board found that most sources would be able to comply with 8 lb/hr Rule, the Board recognized that the control cost would be very high for certain industries with the large volumes of exhaust gas or the low value of the product to be recovered. *Id.* at 4-339. As such, the Board exempted certain sources such as fuel combustion emission sources from the 8 lb/hr Rule. However, in adopting the 8 lb/hr Rule, the Board did not contemplate compliance issues associated with an industry such as Royal, which uses a batch-type process coupled with high flow rate ventilation system.

The Board notes that in adopting the 8 lb/hr Rule, the Board also did not contemplate the manufacture of large parts, such as storage tanks and swimming pools that necessitate the batch-type process. In this regard, Dr. Haberlein testified that the 8 lb/hr Rule is actually a deterrent to new large part manufacturers moving into Illinois. *Tr.* at 44. Dr. Haberlein testified that “people want to build wind blades. People want to build underground storage tanks. People want to build large boats, or will hopefully someday want to build large boats again in this state. You can't do any of that in composites in Illinois.” *Id.* Dr. Haberlein states “I've had at least one company come to me that wanted to site a wind blade facility here, and I told them, don't do it because you'll be in front of the Board and it's going to cost you \$50,000, and so they went to North Dakota.” *Id.* He maintains that the 8 lb/hr Rule has “created a barrier for anybody to make large composites parts in the state of Illinois that's impossible to meet.” *Id.*

Royal also questions the Agency's strict hourly interpretation of demonstration of compliance, which requires compliance to be demonstrated on a strict hourly basis and not on an average from any longer period of time. *Am. Pet.* at 1-2. Royal states “After considering the information presented by Royal, Illinois EPA agreed that applying the 8 lb/hr Rule to Royal's operation on a strict hourly basis would indeed impose an unreasonable burden”. *Id.* at 2.

Further, Royal's evaluation of compliance alternatives, which are discussed below, indicate that none of the evaluated alternatives are technically feasible or economically reasonable. In this regard, Royal estimates the cost effectiveness for controlling VOM emissions at the Dix plant to be \$18,400 per ton of HAP (styrene, MMA) removed. *Am. Pet.* at 9, Exh. 3. The Board notes that this is significantly higher than the estimated average cost of the Composites MACT rule of \$2,800 per ton HAP removed for existing sources. 68 FR 19382. The Board further notes prevention of ozone formation and nuisance odor at Royal's Dix plant is now addressed by the federal Composites MACT, which was not in existence when the Board adopted the 8 lb/hr Rule. The record indicates that the Dix plant has been in compliance with the Composites MACT since June 2006.

In light of the above, the Board finds that the issues concerning the control of VOM emissions at Royal's Dix plant were not anticipated when the Board promulgated the 8 lb/hr Rule in 1972. Therefore, the Board finds that factors relating to petitioners are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to petitioner.

### **Efforts to Achieve Compliance and Alternatives**

As noted above, Royal's justification for the requested relief is based on the lack of an economically reasonable or technically feasible alternative. Royal evaluated several options to comply with the 8 lb/hr Rule on a strict hourly basis, including: (1) reducing VOM content in production materials; (2) using alternative operating procedures and methods; and (3) installing add-on emission control technologies. The evaluation found that add-on emissions control utilizing regenerative thermal oxidation (RTO) was the only technically feasible option available for Royal to comply with the 8 lb/hr Rule on a strict hourly basis. Royal has already reduced VOM concentration in Royal's production material in compliance with the Composites MACT and considered alternative operating procedures and methods. Regarding add-on controls, Royal estimates the cost effectiveness of using a skid mounted RTO to be \$18,400 per ton of HAP (styrene and MMA). This high cost, Royal argues, makes the use of RTO at the Dix plant economically unreasonable. Further, Royal maintains that the Composites MACT does not require that require add-on controls for facilities such as the Dix plant. The Agency concurs with Royal's position regarding compliance alternative analysis.

The Board agrees with Royal that requiring Royal to install skid mounted RTO to comply with the 8lb/hr Rule would impose an unreasonable economic burden, especially since such controls are not required by the Composites MACT. In developing the Composites MACT, the USEPA stated, "[t]he floors for existing sources are mainly based on pollution prevention, not add-on controls." 68 FR 19377. USEPA found that facilities producing large parts, such as storage tanks and swimming pools, "presented different technical issues from facilities that have successfully incorporated 95 % capture and control." 68 FR 19387. USEPA "determined that capture and control was not the appropriate floor for large parts manufacturers, the floors for these specific operations are now the same as the floors for existing operation, which are emission limits based on the use of low-HAP materials and nonatomized resin application." *Id.*

Regarding other options, the Board notes that Royal has already reduced VOM content in the production materials and considered alternative operating procedures and methods. Further, Royal has committed to investigate production methods, materials, and technologies that may reduce VOM emissions at Royal's Dix plant. Thus, the Board finds that the efforts beyond those Royal has already implemented to comply with the Composites MACT are not currently technically feasible or economically reasonable.

### **Impact on the Environment**

As noted earlier, the primary impact of VOM emissions from Royal's Dix plant is whether such emissions cause or contribute to violations of the 8-hour ozone standard. Royal relies on an Air Quality Impact Analysis prepared by Royal's consultant. The environmental impact is assessed by adding the ozone increment attributable to operations at the Dix plant to the 4th highest measured 1-hour ozone concentration for the years 2003-2006 in Hamilton County. Royal then compares the resulting 89 ppb to a 1-hour ozone standard of 125 ppb, stating, "[t]he worst-case one-hour average ozone impact is still only 74% of the one-hour ozone standard." Am. Pet. at 10, TSD Section 6. Royal acknowledges that USEPA replaced the 1-hour

average ozone standard with an 8-hour average ozone standard in 2005. However, Royal believes the hourly calculation of 89 ppb is “useful given the obvious concerns about hourly emissions that are reflected in the 8 lb/hr Rule.” Am. Pet. at 10.

### **NAAQS for Ozone**

In July 1997, USEPA revised the ozone NAAQS, “by replacing the existing primary 1-hour average standard with an 8-hour average O<sub>3</sub> [ozone] standard set at a level of 0.08 ppm, which is equivalent to 0.084 ppm using the standard rounding conventions.” 73 FR 16437, March 27, 2008. Effective June 15, 2005, USEPA revoked the 1-hour ozone standard<sup>3</sup> for all areas with effective 8-hour ozone designations, except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas. 70 FR 44471, August 3, 2005. Per 40 CFR §81.314, “[t]he 1-hour ozone standard is revoked effective June 15, 2005 for all areas in Illinois. The Jersey Co. and St. Louis areas are maintenance areas for the 1-hour NAAQS for purposes of 40 CFR Part 51 Subpart X.”<sup>4</sup> In March 2008, the 8-hour ozone standard was strengthened from 0.08 ppm, set in 1997, to a level of 0.075 ppm. 73 FR 16436, March 27, 2008.

The Board notes that Royal’s Air Quality Impact Analysis relied on the 1-hour ozone increment provided by the Scheffe method to assess the impact in terms of the 1-hour ozone standard instead of the 8-hour standard. When questions were posed in the Board’s Hearing Officer Order (6-4-09) whether an 8-hour ozone increment could be determined, Royal replied that the Scheffe method, “is not mathematically compatible with assessments of eight-hour average impacts.” Pet. Resp. to HOO 6-4-09 at 8. The Agency also responded, stating that USEPA has not provided any more recent guidance to address ozone impacts on an 8-hour basis, so the Agency still uses the Scheffe method for single sources. The Agency indicated the Scheffe method “does not specify the estimation of an 8-hour ozone increment from the 1-hour ozone increment.” Ag. Resp. to HOO 10-21-09 at 2.

Regarding the possibility of applying a scaling factor to the 1-hour increment to achieve an 8-hour increment, Dr. Haberlein testified that USEPA has not provided any guidance regarding scaling air quality impacts from a one-hour impact to an eight-hour impact for ozone. Tr. at 30-31. The Agency stated, “[t]he Agency does not endorse the use of scaling factors that are based on steady-state, Gaussian plume-type assumptions for estimating alternative averaging time concentrations of pollutants that are secondarily formed.” HOO 10-21-09 at 2-3, Ag. Resp. to Hearing at 2. The Board notes that Ozone is a secondarily formed pollutant. Ag. Resp. to HOO 10-21-09 at 2. Dr. Haberlein added that ozone formation is not chemically stable, but rather highly reactive, and that photochemical models for ozone are very different from the Gaussian plume dispersion models. Tr. at 29-30.

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<sup>3</sup> The 1-hour ozone standard was 0.12 parts per million (ppm), and the national 8-hour standard was 0.80 ppm. 40 CFR 50.9, 50.10.

<sup>4</sup> Per 40 CFR §51 Subpart X, 51.900(k), “*Maintenance area for the 1-hour NAAQS* means an area that was designated nonattainment for the 1-hour NAAQS on or after November 15, 1990 and was redesignated to attainment for the 1-hour NAAQS subject to a maintenance plan as required by section 175A of the CAA.”

To address the air quality impact of Royal's operations on attainment of the 8-hour ozone standard, the Board notes that the Agency continues to rely on the 4 ppb ozone increment from the Scheffe method. However, instead of adding the ozone increment to the 1-hour average ozone baseline for the local area as Royal does, the Agency adds the 4 ppb to the 8-hour ozone design value of 68 ppb for Hamilton County from the years 2007-2009. With these values, the Agency arrives at a combined ozone increment and ozone design value of 72 ppb. Ag. Resp. to HOO 10-21-09 at 3, and Ag. Resp. to Hearing at 2. Based on this, the Agency concludes that the adjusted standard "is not expected to cause or contribute to violations of the 8-hour ozone standard." Ag. Resp. to Hearing at 3.

### **Ozone Action Days**

As mentioned earlier, Royal was directed to address possible operational controls on production at Royal's Dix plant to reduce VOM emissions during Ozone Action Days in the Metro East area. HOO 6-4-09 at 7, HOO 10-21-09 at 3-6. Although the Agency supports voluntary actions, the Agency states, "It would be inappropriate to require a single facility amongst a group of potentially contributing facilities to accept a condition limiting 'VOM emitting operations on ozone action days where ambient conditions are likely to exceed the 75 ppb 8-hour ozone standard.'" Ag. Resp. to HOO 10-21-09 at 3-5. Based on the 2007-2009 Hamilton County ozone data, the Agency states that the area is clearly in attainment with the 75 ppb 8-hour ozone NAAQS and no change is imminent. Ag. Resp. to HOO 10-21-09 at 3-5, Ag. Resp. to HOO 6-4-09 at 1. The Agency has indicated that if the adjusted standard is granted, the terms will be submitted to USEPA for inclusion in the Illinois State Implementation Plan (SIP). Ag. Resp. to HOO 6-4-09 at 1. The Agency further states, "If monitoring data show a violation of the ozone NAAQS, then a revision to the State Implementation Plan (SIP) that considers all contributing sources to nonattainment would properly address this matter." Ag. Resp. to HOO 10-21-09 at 1.

### **Operational Limits**

Royal states that the potential maximum facility-wide hourly VOM emission rate is 156.70 lbs/hr.. This corresponds to simultaneous gelcoat applications to Royal's two greatest VOM-emitting pool molds at 78.55 and 78.15 lbs/hr. Am. Pet. at 5, Exh. 2. Royal was asked whether it would be willing to initiate an operating procedure that would limit gelcoat application and curing to one pool at a time to comply with 8 lb/hr Rule. HOO 6-4-09. Royal responded that the facility has no such operating procedure in place and would be opposed one like this. Royal explained that hourly emissions would not be significantly reduced because waiting to gelcoat the second pool after the first would simply result in the first pool receiving the resin application (which also generates VOM emissions) while the second pool is being gelcoated. Additionally, Royal points out that such operational limits would make it very difficult to produce 400 pools per year, would increase production costs, and would be impractical for Royal to demonstrate compliance. Pet. Resp. to HOO 6-4-09 at 4.

**Board Finding**

The record indicates that granting the adjusted standard would not result in adverse impact on air quality in terms of exceedance of the ozone NAAQS. Although reliance on the Scheffe method may not be the most appropriate way to determine the impact of Royal's VOM emissions on the 8-hour ozone standard, the Board finds the Agency's reliance on the Scheffe method to be acceptable given the lack of any guidance from the USEPA. As noted above, the Agency's analysis of using the Scheffe method shows that granting of the adjusted standard is not expected to cause or contribute to violations of the 8-hour ozone standard.

Also, the Board notes that the Composites MACT addresses control of VOM emissions from Royal's Dix plant. Additionally, the Board expects Royal to continue efforts to further reduce VOM emissions to achieve compliance with the generally applicable VOM limitation. To this end, as proposed by the Royal, the Board will require Royal to continue efforts to reduce VOM emissions from operations at the Dix plant. Lastly, regarding the issue of potential operational limits or controls on ozone action days, the Board agrees with the Agency that singling out the Royal facility for operational limits would be inappropriate since all contributing sources should be considered under the SIP if there is a violation of the ozone NAAQS. In light of the above, the Board finds that granting the adjusted standard would not result in adverse impact on air quality as it relates to exceedance of the ozone NAAQS.

**Consistency with Federal Law**

As noted by the Agency, the Board has the authority under Section 110 of the CAA to the Board to adopt regulations, which are part of the State's plan for implementation, maintenance, and enforcement of air quality standards (the SIP). Further, the Board notes that following the adjusted standard procedure to revise a Board regulation on site-specific basis is consistent with the authority granted to the states under the Section 110 of the CAA. Also if the Board adopts the proposed adjusted standard, the Agency will submit the adjusted standard as SIP revision to USEPA. Thus, the Board finds that granting petitioners the requested relief from the 8 lb/hr Rule at Section 215.301 is consistent with federal law.

**Section 28.1(c) Summary**

The Board finds that Royal has provided adequate proof in accordance with Section 28.1(c) of the Act that: (1) factors relating to it are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation; (2) the existence of these factors justifies an adjusted standard; (3) the requested standard will not cause substantially or significantly more adverse environmental or health effects than the effects considered by the Board in adopting the rule of general applicability; and (4) the adjusted standard is consistent with applicable federal laws. 415 ILCS 5/28.1(c) (2008).

### **Conditions**

The conditions of the adjusted standard proposed by Royal were substantively the same as those proposed by the Agency, with one exception. The conditions require Royal to operate in compliance with the federal standards for the Clean Air Act, its CAAPP permit, and the NESHAP for Reinforced Plastic Composite Manufacturing facilities in lieu of the Illinois 8 lb/hr standard. In addition, both Royal and the Agency proposed conditions requiring Royal to: (1) continue to investigate swimming pool production methods with a reduced VOM content and, where practicable, substitute current coatings with lower VOM content coatings so long as the substitution does not result in higher VOM emissions; (2) perform any reasonable test of new production methods or materials that the Agency requests in writing that they do; and (3) submit an report summarizing the activities and results of their investigations.

The Agency's recommendation contains one additional condition that Royal did not include. Specifically, the Agency proposed, "[t]he relief granted in this proceeding shall be limited to the emission activities at Royal's Dix facility as of the date of this filing." Rec. at 7. After discussion, the Agency and Royal came to agreement on the proposed language of the adjusted standard conditions as follows:

The relief granted in this proceeding shall be limited to the swimming pool manufacturing emission units (spray booths) existing as of August 20, 2009, at Royal's Dix facility. Ag. Br. at 1-2.

In granting this adjusted standard, the Board is adopting conditions similar, but not identical in wording, to those suggested by the parties. The changes are non-substantive, and are intended to bring this order into conformity with the Board's usual drafting style in adjusted standards.

### **CONCLUSION**

The Board finds that Royal has provided sufficient justification for an adjusted from the 8 lb/hr Rule at Section 215.301 as that rule applies to Royal's facility in Dix, Jefferson County and therefore grants Royal the requested adjusted standard, subject to conditions. Royal remains subject to the NESHAP applicable to its facility. The relief is effective as of the date of this order .

This opinion constitutes the Board's findings of fact and conclusions of law.

### **ORDER**

1. Pursuant to Section 28.1 of the Environmental Protection Act (Act) (415 ILCS 5/28.1 (2008)), the Board grants Royal Fiberglass Pools, Inc. (Royal) an adjusted standard from 35 Ill. Adm. Code 215.301 (8 lb/hr Rule), effective February 18, 2010. The adjusted standard applies to the emissions of volatile organic material (VOM) into the atmosphere from Royal's swimming pool manufacturing facility

at 312 Duncan Lane, Dix, Jefferson County.

2. 35 Ill. Adm. Code 215.301 does not apply. Royal remains subject to the following:
  - a. Royal must continue to investigate swimming pool production methods that generate fewer VOM emissions and materials that have a reduced VOM content. Where practicable, Royal must substitute current materials with lower VOM content materials as long as such substitution does not result in a net increase in VOM emissions.
  - b. Royal must perform any reasonable test of new technologically or economically reasonable production methods or materials applicable to the open-mold swimming pool manufacturing industry, which may reduce VOM emissions at Royal's facility which the Illinois Environmental Protection Agency (Agency) specifically requests in writing that they do.
  - c. After performance of such tests, Royal must prepare and submit an annual report summarizing the activities and results of these investigatory efforts in (a) and (b) above. The report must be submitted to the Agency, Bureau of Air, Compliance and Enforcement Section.
  - d. Royal must operate in full compliance with the Clean Air Act(42 U.S.C. §7401 *et seq.*), Royal's Clean Air Act Permit Program permit, the National Emission Standard for Hazardous Air Pollutants for Reinforced Plastic Composite Manufacturing Facilities, set forth at 40 CFR Part 63 Subpart WWW, as may be amended in the future and as required by Section 9.1(a) of the Act (415 ILCS 5/9.1(a) (2008), the Illinois Environmental Protection Act, and any other applicable regulation.
  - e. The relief granted in this proceeding shall be limited to the swimming pool manufacturing emission units (spray booths) existing as of August 20, 2009, at Royal's Dix facility.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2008); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, John Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on February 18, 2010, by a vote of 4- 0.

A handwritten signature in black ink that reads "John T. Therriault". The signature is written in a cursive style with a long horizontal stroke at the end.

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John Therriault, Assistant Clerk  
Illinois Pollution Control Board