ILLINOIS POLLUTION CONTROL BOARD
December 7, 1995

IN THE MATTER OF:	)	
	)	
JOINT PETITION OF OUTBOARD MARINE CORPORATION AND THE ENVIRONMENTAL PROTECTION AGENCY FOR AN ADJUSTED STANDARD FROM 35 ILL. ADM. CODE PART 218 SUBPART TT	)	AS 94-3 (Adjusted Standard - Air)

MARYBETH FLOWERS APPEARED ON BEHALF OF OUTBOARD MARINE CORPORATION;

KYLE NASH DAVIS, ASSISTANT COUNSEL, APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by M. McFawn):

This matter is before the Board on a joint petition for adjusted standard filed by Outboard Marine Corporation (OMC) and the Illinois Environmental Protection Agency (Agency). The co-petitioners seek an adjusted standard from the requirements of 35 Ill. Adm. Code Part 218 Subpart TT as they apply to OMC's aluminum die casting operations at its facility in Waukegan, Illinois.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 *et seq.*). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois" (Section 5(b) of the Act) and to "grant . . . an adjusted standard for persons who can justify such an adjustment" (Section 28.1(a) of the Act). More generally, the Board's responsibility in this matter is based on the system of checks and balances integral to Illinois environmental governance: the Board is charged with the rulemaking and principal adjudicatory functions, and the Agency is responsible for carrying out the principal administrative duties.

Based upon the record before it and upon review of the factors involved in the consideration of adjusted standards, the Board finds that petitioners have demonstrated that grant of an adjusted standard is warranted. The adjusted standard accordingly will be granted.

PROCEDURAL HISTORY

OMC filed its initial adjusted standard petition on February 14, 1994. After additional negotiations between the parties, OMC filed an amended petition on February 14, 1995. On March 16, 1995, the Agency filed a motion to join the amended petition subject to certain conditions, together with proposed language

for a Board order. The Agency's joining as a co-petitioner was based on OMC's agreement to delete certain language from the amended petition exempting die cast emissions from the calculation of MTE and PTE determinations as specified in 35 Ill. Adm. Code 218.980(a) and 218.980(b). The Board granted the Agency's motion for co-petitioner status and amended the petition to include the Agency's proposed adjusted standard language on April 6, 1995.

A hearing was held in this matter before Board Hearing Officer Allen E. Schoenberger on April 18, 1995, which was continued on the record to June 1, 1995. At hearing, OMC presented the testimony of Lawrence E. Keller, the Technical Services Manager and Associate Director of Corporate Environmental Affairs for OMC. At the June 1, 1995 hearing, Mr. Keller expressed OMC's agreement with the Agency's proposed changes to the adjusted standard. (June 1, 1995 Tr. at 8.) The parties did not file post-hearing briefs.

ADJUSTED STANDARD PROCEDURE

Section 28.1 of the Act provides that a petitioner may request, and the Board may adopt, an environmental standard that is: (a) applicable solely to the petitioner, and (b) different from the standard that would otherwise apply to petitioner pursuant to a rule of general applicability. Such a standard is called an adjusted standard. The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and within the Board's procedural rules at 35 Ill. Adm. Code Part 106.

Where, as here, the regulation of general applicability does not specify a level of justification required for a petitioner to qualify for an adjusted standard, the Act at Section 28.1(c) specifies four demonstrations that must be made by a successful petitioner:

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.

BACKGROUND

OMC is seeking an adjusted standard for its facility in Waukegan, Lake County, Illinois. This facility manufactures component parts for OMC's Marine Power Products Group (MPPG). The largest operation at this facility is aluminum die casting of component parts. The manufactured parts are then assembled at the Waukegan facility and other locations.

The die cast facility was constructed in 1975, with a design capacity of 129 die cast machines. The facility is approximately 375 feet wide, 600 feet long, and 40 feet high, with a total volume of approximately 9 million cubic feet. The facility currently contains 68 die cast machines, which are permitted under Agency Operating Permit No. 75090033. Adjacent to the die casting facility is a smelter building, which contains four gas-fired reverberatory aluminum melting furnaces. The smelter building is approximately 380 feet long and 170 feet wide.

OMC's Die Casting Process.

OMC receives aluminum alloys from outside suppliers in both solid and molten form. The aluminum is stored in molten form in the four reverberatory furnaces. The molten aluminum is transferred in ladles to smaller, gas-fired "holding furnaces" in the die cast building, each of which is adjacent to a die casting machine. (Am. Pet. at 4.)

In the die casting process, the molten aluminum is forced into a die mold under high pressure. A die mold consists of two halves, with additional inserts and cores. The mold is locked in a horizontal press, and the two die faces are brought together and properly aligned under high pressure. Molten aluminum is then injected into the die mold at high speed under high pressure. The molten aluminum completely fills the complex die cavity, and the metal is held in the die mold until it solidifies into a single integrated structure. The die is then opened and the casting is removed. Excess metal is trimmed from the casting, and the castings are machined and finished in other parts of the facility. Scrap parts and the metal trimmed from castings are recycled.

OMC produces more than 50 different parts at the facility. It currently operates sixty-eight (68) die cast machines, including fifty-two (52) small machines (600-900 tons), seven (7) medium machines (1,200 tons), and nine (9) large machines (1,600 tons). (Am. Pet. at 4.) Generally, twenty to thirty (20-30) of these machines are operated at a time, depending on the production schedule, and the number of machines undergoing maintenance or die changeouts. OMC typically operates its facility 24 hours per day, 6 days per week, 50 weeks per year.

The maximum practical capacity of the facility is 56 million pounds of metal delivered to the die cast floor each year.

Each part OMC produces at its facility requires its own unique die mold. OMC operates its die casting operations on a "just-in-time" basis to supply parts to other OMC facilities on an as-needed basis. This operational strategy requires a greater number of die changes than is found at facilities which produce fewer types of parts. (Am. Pet. at 5.)

The finished castings must be completely water impermeable, corrosion resistant, and paintable. Co-petitioners state that these requirements place significant constraints on the types of mold release agents and other raw materials used in its process. Any raw material changes must be thoroughly tested for impacts to the downstream manufacturing process and the products end use. (Am. Pet. at 5.)

Ventilation System.

The die cast building is ventilated using 6 natural gas-fired duplex air make up units and 15 centrifugal roof mounted exhaust blowers. The ventilation system was designed to achieve approximately 24 air changes per hour. Each air make up unit has a maximum firing rate of 19.3 MMBtu/hour. OMC states that, in typical cold weather, three or four of these units would be fired at any one time.

Each exhaust blower has a rated capacity of 165,000 cubic feet per minute (cfm), for a total exhaust capacity of approximately 2.3 million cfm. Typically, eight or nine of these blowers are operating at one time. Die casting process emissions and combustion exhaust from the air supply units and holding furnaces are emitted internally to the building and exhausted therefrom by the roof mounted blowers. (Am. Pet. at 10.)

OMC states that it did not design the die cast building to include individual machine exhaust hoods based on its prior experience with these hoods in other facilities. OMC states that individual machine hoods would interfere with the die casting process, since they would obstruct the dies from being vertically hoisted from the die cast machines, and would have to be physically moved for each die changeout. OMC states that, because it conducts an average of 40 die changes per week, and since each die changeout currently takes approximately 7.5 hours, this would be a major cost factor for its operation.

VOM Emissions Sources.

There are several potential sources of volatile organic material (VOM) emissions in OMC's die-casting process. These include die lubricants, anti-solder pastes, and plunger

lubricants. Furthermore, there are several additional potential sources of VOM in OMC's process which co-petitioners assert do not contribute significantly to VOM emissions, and which are therefore not covered by the proposed adjusted standard.

a) Die Lubricants

OMC states that die lubricants are essential to the die casting process. These lubricants are applied to the die mold in order to allow the finished part to be released from the mold after the molten metal has solidified. Die lubricants are applied to the open surface of each half of the die mold prior to the casting cycle. The lubricants create a thin oil film between the die mold and the casting, which functions as the mold release agent. The lubricant also provides surficial cooling of the die mold. (Am. Pet. at 6.) OMC applies die lubricants both manually and through the use of robot-controlled spraying systems.

OMC states that die lubricants have traditionally been considered the main potential source of VOM emissions from the die casting process, due to the potential for evaporation and/or decomposition of die spray components upon contact with the hot die surface. OMC uses both solvent-dispersed and water soluble die lubricants.

Solvent-dispersed die lubricants consist of heavy oils that must be thinned with a solvent, such as mineral spirits, prior to application. (Am. Pet. at 6.) Approximately 5 gallons of mineral spirits must be used for every gallon of "neat" die lubricant. (Am. Pet. at 6-7.) The solvent decreases the viscosity of the lubricant so that the heavy oil can be evenly applied to the die through spraying. The solvents volatilize from the hot die surface and leave the less volatile lubricating oils behind. OMC must then apply solvent degreasers to the finished castings to remove residual oils prior to painting or applying other surface coatings. For purposes of the order granting the adjusted standard in this matter, a "solvent-dispersed die lubricant" is any die lubricant that contains more than 24 percent organic content, by weight as applied, or contains more than 1.8 pounds of organics per gallon as applied.

Water soluble die lubricants consist of water-in-oil emulsions that require no solvent thinning. (Am. Pet. at 7.) Additional water is added to the neat solution in a ratio which varies from 30:1 to 100:1, depending on the particular part being cast. Thus, the co-petitioners have agreed that a "water soluble die lubricant" is that lubricant applied in an aqueous emulsion and contains less than 24 percent organic content, by weight, as applied. Any die lubricant that contains more than 24 percent organic content by weight, as applied, is not a water soluble die lubricant even if the die lubricant is soluble in water. Upon application to the hot die surface, the water evaporates and

leaves the less volatile lubricating oils behind. (Am. Pet. at 7.) OMC has found it unnecessary to use solvent degreasers when cleaning castings produced by using water soluble lubricants. Since 1990, OMC has used water soluble lubricants when producing most parts. However, OMC still maintains a small stock of solvent-dispersed lubricants for emergency situations.

OMC states that emissions from the die lubricants occur when the die lubricant is applied to the hot die surface, which is approximately 500° F. (Am. Pet. at 11.) While the die lubricant is designed to stay on the die, a certain amount of the die lubricant will be volatilized or will undergo organic decomposition. Some of the lubricant will also end up on the finished casting.

Additionally, a portion of the die lubricant will not contact the die when sprayed, and will be captured as overspray. The overspray is captured in a sump surrounding each die cast machine. The sumps are maintained at ambient temperature, and therefore emissions from overspray are expected to be small. (Am. Pet. at 11.)

b) Plunger Lubricants

Plunger lubricants are applied to the plunger or "piston" that forces the molten aluminum into the die mold. (Am. Pet. at 8.) Depending on the machine size, approximately 5-10 grams of lubricant are applied to the plunger tip before each die cast shot cycle begins. Typically, more than 50 percent of this material drips off the plunger and is captured in drip pans or the sump surrounding each machine for recycling or disposal. The remainder ends up on the trimmed portion of the casting, is burned as it contacts the hot aluminum in the shot sleeve, or is volatilized.

OMC's plunger lubricants are viscous, low volatility materials that contain severely hydrotreated petroleum naphtha and petroleum sulfonates. (Am. Pet. at 8.) The vapor pressure of the plunger lubricants is less than 0.1 psia at 70° F.

c) Anti-Solder Pastes

Soldering or sticking is a condition where a casting will not release from the die mold. This generally occurs with small, detailed castings. In order to prevent this problem, OMC applies anti-solder pastes to problem areas of die molds where soldering can occur. The anti-solder past is applied manually with a small brush by the machine operator, and acts as a supplemental mold release agent. Because anti-solder pastes are applied manually, there is no overspray. (Am. Pet. at 12.) Anti-solder pastes have the same potential fate as die lubricants, including

decomposition or combustion, transfer to the finished casting, or volatilization.

OMC's anti-solder pastes are gray or black semi-solids that contain low volatility hydrocarbons, petroleum sulfonates, graphite, and sulfuric acid. (Am. Pet. at 8.) These anti-solder pastes have a vapor pressure of less than 0.1 psia at 70° F. OMC has historically not considered anti-solder paste consumption when estimating die casting process emissions, due to the small amount of anti-solder pastes used in the process. (Am. Pet. at 12.) However, for purposes of the adjusted standard petition, OMC has assumed a worst case scenario of 80 percent emissions of the anti-solder paste as VOM. (Am. Pet. at 12.)

d) Other Potential VOM Sources

There are several other sources of potential VOM emissions at OMC's Waukegan facility, which are not covered by OMC's proposed adjusted standard. For the reasons set forth below, co-petitioners do not believe that these constitute significant sources of regulated VOM emissions.

First, several pieces of equipment used in the die-casting process are fired by natural gas. These include the small aluminum holding furnaces associated with each die-casting machine, the air make-up units which are used to supply thermally conditioned air to the factory floor, and a die cleaning tank. However, the co-petitioners state that the natural gas combustion product emissions are exempt from the control requirements of Subpart TT. (Am. Pet. at 10.)

Second, because hydrogen gas readily dissolves in molten aluminum at temperatures above 1350° F and may cause porosity in finished parts, OMC adds inert degassing agents, such as nitrogen, to the molten aluminum, which reduce the amount of hydrogen absorption in the holding furnaces. However, OMC's degassing agents do not contain organic materials, and co-petitioners assert that they therefore do not contribute to VOM emissions.

Third, during the casting process, OMC uses hydraulic pressure to clamp the two halves of a die mold together, to inject the molten aluminum into the die molds, and to control the insertions of moveable cores into the die molds. OMC's hydraulic system uses a low vapor pressure, fire resistant organic hydraulic fluid that recirculates within each die cast machine's hydraulic system. (Am. Pet. at 9.) The hydraulic system generally operates as a closed system; however, due to the high pressures exerted within the hydraulic system, hydraulic fluid can at times be exuded. The co-petitioners assert that these

fluids do not contribute significantly to the total VOM emissions from OMC's die casting process. (Am. Pet. at 9.)

Fourth, in order to maintain proper die temperatures during and between operational cycles, OMC circulates heat transfer fluids in a closed loop system. This system contains a low vapor pressure organic heat transfer fluid. Due to the closed nature of this system, co-petitioners assert that these fluids do not contribute to VOM emissions from the die casting process.

RULE OF GENERAL APPLICABILITY

OMC seeks an adjusted standard from the requirements of 35 Ill. Adm. Code Part 218 Subpart TT. The applicable portions of Section 218.986, Control Requirements, of this Subpart requires compliance through the use of one of the following methods:

a) Emission capture and control equipment which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or . . .

b) For coating lines, the daily-weighted average VOM content shall not exceed 0.42 kg VOM/l (3.5 lbs. VOM/gal.) of coating (minus water and any compounds which are specifically exempted from the definitions of VOM) as applied during any day . . . or

c) An equivalent alternative control plan which has been approved by the Agency and USEPA in a federally enforceable permit or as a SIP revision.

(35 Ill. Adm. Code 218.986.)

COMPLIANCE ALTERNATIVES

OMC states that, after researching practices in the industry, including review of USEPA's BACT/LAER Clearinghouse database, it is not aware of any operating die cast facilities with VOM emission control systems that achieve an 81 percent overall reduction in VOM emissions. OMC states that the only end-of-stack control technology it identified in the industry is multi-stage physical filtration, which is being operated at several relatively new facilities. (Am. Pet. at 16.) This treatment technology filters out oil mist generated by the die casting process. However, this process is not intended to reduce VOM emissions, since vapor-phase emissions pass through the filtration media. (Am. Pet. at 16.)

Add-On Control Technologies.

OMC asserts that the feasibility of installing add-on control technology at the Waukegan facility is severely limited by the large number of die cast machines, large volumes of air, and low emissions concentrations associated with its die casting process. These factors limit the effectiveness of any add-on controls which OMC could conceivably install. However, OMC performed cost evaluations for the following control technologies:

1) multi-stage filtration;

2) carbon adsorption;

3) catalytic incineration; and

4) thermal incineration.

Assuming that these technologies could achieve the required 81 percent overall reduction, co-petitioners assert that their use would still not be economically reasonable. Co-petitioners assert that the capital investment for the simplest of these technologies, multi-stage filtration, would be approximately $4 million. The total annualized cost for any of these technologies would be in excess of $2 million. (Am. Pet. at 17.)

In analyzing the cost-effectiveness of these add-on technologies, co-petitioners assert that application of multi-stage filtration, the simplest control technology, would cost in excess of $74,000 per ton of VOM reduced. The cost of the other technologies would be even greater. Petitioners assert that these values are clearly beyond the cost-effectiveness range associated with RACT. (Am. Pet. at 17.)

Use of Low Vapor-Pressure Coatings.

OMC has also investigated the option of complying with the requirements of 35 Ill. Adm. Code 218.986(b). This regulation allows the use of "coatings" which do not exceed 3.5 lbs. VOM/gal., minus water. Coatings are defined at 35 Ill. Adm. Code 211.1190(b), which provides:

> A coating includes a material applied onto or impregnated into a substrate for decorative, protective, or functional purposes. Such materials shall include, but are not limited to paints, varnishes, adhesives, diluents, and thinners.

The co-petitioners do not believe that the lubricants used by OMC in its die-casting process meet the definition of "coatings", since the lubricants provide only a temporary barrier

between surfaces, and do not necessarily contain solids. (Am. Pet. at 18.) However, OMC investigated the use of die lubricants, plunger lubricants, and anti-solder pastes which meet the 3.5 lbs. VOM/gal., minus water, requirement. Co-petitioners assert that there are no technically acceptable substitute materials available which meet this requirement. (Am. Pet. at 18.)

OMC currently uses water soluble die lubricants in its production processes. These lubricants, as-applied, typically contain less than 0.1 lb. VOM/gal. However, when the water is removed, only liquid organics remain, which have a density of 7.5 lbs. VOM/gal. These lubricants therefore fail to satisfy the 3.5 lbs. VOM/gal. criterion.

OMC further asserts that it is not aware of any commercially available die lubricants technically suitable for use at its Waukegan facility which satisfy the 3.5 VOM/gal., minus water, criteria. OMC investigated the use of a water/graphite emulsion which would satisfy these criteria, but found that it was not suitable for its process, due to the generation of dust and the effect of graphite residues on downstream surface finishing. (Am. Pet. at 19.) OMC also investigated alternative die lubricants, including inorganic powder die lubricants and silicone-based die lubricants, but found them to be commercially unavailable and unacceptable for its process, respectively.

OMC currently uses plunger lubricants that are 100 percent organic, and anti-solder pastes with a high organic content. OMC states that it is not aware of acceptable, commercially available alternatives which meet the 3.5 lbs. VOM/gal. criteria for either of these materials. (Am. Pet. at 20.)

JUSTIFICATION OF ADJUSTED STANDARD

The co-petitioners assert that an adjusted standard is justified in this matter because there is no technology available for satisfying the 81 percent overall reductions in VOM emissions. Co-petitioners assert that emissions control of this type have not been demonstrated within the die casting industry. Furthermore, co-petitioners assert that, given the low concentrations of VOM generated by the die casting process, it is uncertain whether an 81 percent reduction is technologically achievable. Finally, co-petitioners assert that even if available control technologies could achieve an 81 percent overall reduction in VOM emissions, they would not be economically reasonable for OMC's facility.

Co-petitioners further state that, even if applicable to its processes, the use of lubricants which meet the 3.5 lbs. VOM/gal. criteria set forth in 35 Ill. Adm. Code 218.986(b) does not represent a viable compliance option. Co-petitioners assert that

the "minus water" language excludes the use of materials such as water soluble die lubricants. Furthermore, co-petitioners are not aware of any alternative materials which are acceptable for OMC's process, and which meet the 3.5 lbs. VOM/gal. criteria.

PROPOSED ADJUSTED STANDARD

The Agency submitted proposed language for the requested adjusted standard on March 16, 1995. OMC expressed its agreement to the proposed language at the June 1, 1995 hearing. (June 1, 1995 Tr. at 8.) The proposed language would allow OMC two alternative control strategies: 1) use of water soluble die lubricants and low vapor pressure plunger lubricants and anti-solder pastes; or 2) installation of emission capture and control equipment which achieves at least an 81 percent overall reduction in uncontrolled VOM emissions from each emission unit. The proposed adjusted standard also includes definitions of the terms "anti-solder paste", "marine engine die casting operation", "plunger lubricant", "solvent-dispersed die lubricant", and "water soluble die lubricant". However, we believe that these terms have been adequately defined within this opinion, and that it is unnecessary to include the proposed definitions within the terms of the order.

Under the first alternative, OMC would be required to use water soluble die lubricants and low vapor plunger lubricants and anti-solder pastes. OMC would be allowed to use a *de minimis* amount of solvent-dispersed die lubricants in emergency situations, and in order to meet short-term needs. However, OMC would not be permitted to exceed 119 gallons of solvent-dispersed die lubricants per year. OMC would also be required to use plunger lubricants and anti-solder pastes with organic materials that have a vapor pressure less than 0.1 psia at 21° C. This alternative would allow OMC to continue its current practices in its die casting operations.

The second alternative, installation of emission capture and control equipment, is identical to the capture and control requirements under 35 Ill. Adm. Code 218.986(a). However, the co-petitioners have demonstrated that such equipment is not reasonably available at this time. Therefore, this alternative is not included in the adjusted standard. Should such technology become available and feasible at a future date, OMC may, of course, choose to comply with 35 Ill. Adm. Code 218.986(a) and attendant regulations. Nothing in this opinion and order precludes it from doing so at a future date.

Furthermore, the adjusted standard appears to have been drafted so as to be allow it to be transferred to other potential, future owners of the facility. However, Section 28.1 of the Act provides that an adjusted standard is applicable

solely to the petitioner. (Section 28.1 of the Act.) Therefore, the adjusted standard language has been modified in the attached order to clarify that it is applicable solely to OMC.

HEALTH AND ENVIRONMENTAL EFFECTS

OMC's Waukegan facility is located in the Chicago severe ozone non-attainment area. OMC states that the maximum VOM emissions under the proposed adjusted standard are approximately 34 TPY, or 0.1 TPD. OMC states that this represents approximately 0.03 percent of the Chicago Area Ozone Season Weekday Point Source Inventory emissions, and less than 0.01 percent of the total VOM inventory emissions. (Am. Pet. at 25.) Furthermore, OMC points out that, over the last several years, its actual emissions have been only 40-50 percent of the maximum emissions. OMC therefore asserts that it is a minor contributor to the Chicago non-attainment area's emission inventory. (Am. Pet. at 25.)

OMC asserts that the proposed adjusted standard would limit the maximum emissions from solvent-dispersed lubricants, the largest contributor of VOM emissions from its die-casting process, to less than 1.3 TPY or .0036 TPD. (Am. Pet. at 25.) OMC also asserts that the operating flexibility created by allowing it to use a small amount of solvent-dispersed die lubricants provides a necessary degree of operating flexibility to address short-term production or quality concerns without compromising the objectives of Subpart TT. (Am. Pet. at 25.)

OMC also asserts that requiring it to use add-on controls t comply with the 81 percent capture efficiency requirement would generate a new solid waste stream. OMC asserts that the die lubricant overspray which is now collected as a liquid in sumps beneath each die cast machine, would be collected by an air pre-filtration unit associated with capture hooding at each machine. OMC asserts that this would generate a solid waste stream of spent filters which would significantly increase the volume and weight of its waste stream. (Am. Pet. at 26.)

CONSISTENCY WITH FEDERAL LAW

Petitioners assert that the proposed adjusted standard is consistent with applicable federal law. Petitioners assert that the petition demonstrates that the use of water soluble die lubricants, low vapor pressure plunger lubricants, and low vapor pressure anti-solder pastes are the only technically feasible, economically reasonable control technology, and constitute RACT for OMC's Waukegan facility. (Am. Pet. at 26.)

CONCLUSION

The Board finds that co-petitioners have demonstrated that an adjusted standard is appropriate for OMC's aluminum die casting operations at its facility in Waukegan, Illinois. Co-petitioners have demonstrated that there is no other technologically and economically feasible add-on control technology which it can employ to achieve the 81 percent overall reductions required by the regulation of general applicability. Co-petitioners have also demonstrated that there are no acceptable low VOM lubricants available for its process. Furthermore, co-petitioners have demonstrated that the proposed adjusted standard will not contribute significantly to VOM emissions in the Chicago non-attainment area, and will therefore not significantly impact human health or the environment, and that it can be granted consistent with federal law.

We find that the lack of available control technologies for OMC's process and the unavailability of acceptable low VOM solvents constitute factors which makes petitioner's situation substantially and significantly different from the factors relied upon by the Board in adopting the regulation of general applicability. The proposed adjusted standard is therefore granted.

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

ORDER

Petitioner Outboard Marine Company (OMC) is hereby granted an adjusted standard from the requirements of 35 Ill. Adm. Code Part 218, Subpart TT: Other Emission Sources, most specifically Sections 218.980(b), 218.986, 218.987, 218.988, and Subpart UU, Recordkeeping and Reporting for Non-CTG Sources, as they apply to emissions of volatile organic material (VOM) from its marine engine die casting operation at its facility located at 200 Sea Horse Drive, Waukegan, Lake County, Illinois, subject to the following requirements:

A. Control Requirements

OMC shall use die lubricants, plunger lubricants, and anti-solder pastes which meet the following requirements:

1) Die lubricants shall be water soluble; however, a *de minimis* amount of solvent-dispersed die lubricants shall be allowed if total annual usage of the solvent-dispersed die lubricant does not exceed 119 gal./yr.; and

2) Plunger lubricants and anti-solder pastes with organic materials shall have vapor pressures less than 0.1 psia at 21° C (70° F).

B. Performance Testing

1) Upon request by the Agency, OMC, at its own expense, shall conduct sampling and analysis to demonstrate compliance with Section (A).

2) Sampling and analysis to demonstrate compliance with Section (A) shall:

a) For water soluble die lubricants, be conducted in accordance with the applicable test methods and procedures specified in test method ASTM D4017-81 (1987), as incorporated by reference in 35 Ill. Adm. Code 218.112(a)(13). Organic material content shall be considered to be all material not identified as water pursuant to this test method.

b) For plunger lubricants and anti-solder pastes, be conducted in accordance with the applicable vapor pressure test methods and procedures specified in 35 Ill. Adm. Code 218.110.

3) Nothing in this order shall limit the authority of U.S. EPA pursuant to the Clean Air Act, as amended,to require testing or shall affect the authority of U.S. EPA under Section 114 of the Clean Air Act. 42 U.S.C. 7414 (1990).

C. Recordkeeping and Reporting

OMC shall collect and record all of the following information and shall retain such records at the source for the most recent consecutive three-year period. These records shall be made available immediately to the Agency upon request. OMC shall:

1) By a date consistent with Section D, submit to the Agency a certification that the emission unit will be in compliance with the requirements of Section (A) of this order. Such certification shall include all calculations and other supporting data, including the results of any sampling or analysis conducted pursuant to Section (B) to demonstrate that the emission unit would be in compliance with the requirements of this order.

2) On and after a date consistent with Section D, collect and record all of the following information:

a) For water soluble die lubricants, daily records shall be maintained evidencing the following:

i) The name and manufacturer of each water soluble die lubricant use at the source;

ii) The organic content of each water soluble die lubricant by weight, as applied, and the volume of each water soluble die lubricant used; and

iii) A copy of the Material Safety Data Sheets for each water soluble die lubricant used in the marine engine die casting operation.

b) For plunger lubricants and anti-solder paste, monthly records shall be maintained evidencing the following:

i) The name and manufacturer of each plunger lubricant and anti-solder paste used at the source on a monthly basis;

ii) Vapor pressure of each plunger lubricant and anti-solder paste used at the source; and

iii) Material Safety Data Sheets for each plunger lubricant and anti-solder paste used at the source. The Material Safety Data Sheets shall include the vapor pressure of each material.

c) For solvent-dispersed die lubricants, daily records shall be maintained evidencing the following:

i) The name and manufacturer of each solvent-dispersed die lubricant used at the source; and

ii) Total volume of all solvent-dispersed die lubricants and associated solvent thinner used each day with the date, time, and amount of solvent thinner added to the solvent-dispersed die lubricant; and

iii) Annual usage of all solvent-dispersed die lubricants and associated solvent thinner,

determined as a running total of usage data; and

iv) Material Safety Data Sheets for each solvent-dispersed lubricant used at the source.

3) On and after a date consistent with Section D, OMC shall:

a) Notify the Agency within 30 days after a violation of the requirements of this order. Such notification shall include a copy of any records of such violation; and

b) Notify the Agency at least 30 calendar days before changing the method of compliance with this Order.

4) OMC shall notify the Agency in writing within 30 days whenever the usage of solvent-dispersed die lubricants exceeds 55 gallons within a calendar year. The notification shall include all applicable records required to be maintained pursuant to subsections (1) of this Section, and shall include a plan to ensure future compliance with the requirements of Section A.

D. Compliance Date

OMC shall comply with the requirements of this order within 30 days of its effective date, or upon initial start-up, whichever is later.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1994)) provides for the appeal of final Board orders within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (*See also* 35 Ill. Adm. Code 101.246, "Motions for Reconsideration".)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 7th day of December, 1995, by a vote of 6-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board