



*The Commonwealth of Massachusetts*  
*Executive Office of Environmental Affairs*  
*Department of Environmental Protection*  
*Southeast Region*

Daniel S. Greenbaum  
Commissioner

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Regional Director

*Lakeville Hospital, Lakeville, Massachusetts 02347*

DEQE  
NOW IS  
THE DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

June 1, 1990

Acushnet Company (Plant A)  
Titleist Golf Division  
P.O. Box B-965  
New Bedford, Massachusetts 02741

RE: SMAPCD-ACUSHNET-310 CMR 7.18(17)  
Reasonably Available Control  
Technology, Acushnet Company,  
Titleist Golf Division (Plant A),  
4 Slocum Street, Source No. 0038,  
Action Code V9  
4P90104, Amended Plan Approval

ATTENTION: John Ludes, President  
Joseph Bains, Division Compliance Engineer

Gentlemen:

The Department of Environmental Protection, Division of Air Quality Control ("the Department"), hereby revises Plan Approval SM-85-151-IF, originally issued November 25, 1985, with subsequent revisions as noted in Attachment IA of this Amended Plan Approval, in accordance with the United States Environmental Protection Agency's ("EPA") August 14, 1989 Proposed Rule (54 Fed. Reg. 33245) to approve the proposed Massachusetts State Implementation Plan revision for the Acushnet Company, Titleist Golf Division (Plant A) ("Acushnet Company") facility.

The Acushnet Company submittals described in Attachment I pertain to the methods by which Acushnet Company (Plant A) intends to comply with Section 7.18(17) of the "Regulations for the Control of Air Pollution in the Southeastern Massachusetts Air Pollution Control District". This regulation requires that facilities having the potential to emit 100 tons or more of volatile organic compounds (VOC) per year to the ambient air implement and operate in compliance with Reasonably Available Control Technology ("RACT"). RACT as defined in the "Regulations" means the lowest emission limitation that a particular facility is capable of meeting by application of control technology that is reasonably available considering technological and economic feasibility.

This Amended Plan Approval supersedes the Department's November 25, 1985 Conditional Plan Approval (SM-85-151-IF) of Acushnet Company's RACT Plan and supersedes subsequent, Department approved revisions contained in Department letters as set forth in Attachment IA.

This Amended Plan Approval is effective immediately and is fully enforceable by the Department upon issuance.



All operations at this facility which utilize(d) volatile organic compounds are segregated into the following six process categories (with minor amounts in category 7 described below):

Balata (Rubber Cover) White Golf Ball Production

1. (a) Washing of golf ball centers.  
(b) Patching of golf ball centers.
2. (a) Annealing of golf ball covers.  
(b) Paint stripping of Balata golf balls.
3. Acetone rinsing of golf ball covers.
4. Painting of golf ball covers.

Surlyn (Plastic Cover) White and "Bright" Golf Ball Production

5. Painting of golf ball covers.

Balata and Surlyn Production

6. Miscellaneous and Clean-up Operations: includes MEK cleaning of paint mixing containers and utensils, MEK spray-gun cleaning operations, golf ball "custom" and "random" printing operations, MEK printing plate clean-up operations, mineral spirits cleaning of tools and parts, "Texo" cleaning of ink wells and other accessory parts from the random pad printing operation, and the "Globrite" paint gun cleaning operation.

As specified in the Department letter of June 5, 1986, the revised effective date for complying with the emission factors (expressed in Table II, herein, in terms of tons VOC/million golf balls processed) approved by the Department for each of the six process categories is June 1, 1986, with the exception of category 1(a), "Washing of (Balata) golf ball centers", for which the revised compliance date is August 1, 1986, and with the exception of subcategories 2(a) and 2(b), for which the compliance date is January 1, 1987.

The major sources of VOC emissions at this facility are the golf ball painting operations, categories 4 and 5 above. Painting equipment specifications, used to define existing production capacity, are summarized in Table I, herein. Other processing equipment in VOC service includes: six (6) patching compound applicators; two (2) 100 gallon capacity balata paint stripping vats; forty one (41) annealing vats (no longer in VOC service); seven (7) custom ("logo") pad print machines; four (4) Random Pad print machines (currently approved for eight (8) machines); one (1) MEK closed-top cleaning tank; a MEK distillation unit; three (3) Safety-Kleen mineral spirits degreasing units; one (1) "Texo" cleaning tank; one (1) "Globrite" cleaning tank; and some VOC in two materials used for mold release and cleaning.

The specific VOC-containing materials used in these six categories are described in Attachment II of this Amended Plan Approval.



In addition to the six VOC process categories described above, Acushnet Company has a seventh category, designated as "mold release and cleaning", where mostly halogenated organic compounds (1,1,1-trichloroethane, trichlorotrifluoroethane, other chlorofluorocarbons, methylene chloride, perchloroethylene, and small amounts of non-chlorinated VOC) are used as releasing and cleaning agents for ball molding operations (See Acushnet letter of April 19, 1990). The annual potential emission rate (worst-case) from this seventh category is 20.561 tons per year, no more than 0.0820 tons of which shall be from material which the U.S. EPA designates as photochemically reactive ("VOC"). This category was not targeted for any emission reduction strategies. Emissions from the Freon Dryer are not included in this seventh category, required Best Available Control Technology, and are described in Plan Approval SM-86-095-IF. The specific raw materials used in the seventh category are also itemized in Attachment II, herein.

Acushnet Company's proposed VOC emission reduction strategies include eliminating naphtha/isopropanol from the balata center washing operation (replaced with water wash and Freon Dryer), eliminating acetone from the rinsing of balata ball covers, eliminating cellosolve from the balata cover annealing process, reducing the number of paint coats applied to surlyn golf balls, using lower VOC content paints for surlyn production, improving the paint transfer efficiency for both balata and surlyn balls (i.e. reducing the amount of paint sprayed on a per unit of production basis), and reducing the usage of cleaning solvent on a unit of production basis.

Implementation of these VOC emission reduction measures shall result in a plant-wide VOC emission reduction for the six categories named above of approximately 66.8% for balata golf ball production and approximately 75.6% for surlyn golf ball production, when baseline (1982) actual emission rates are compared with potential emission rates after implementation of RACT strategies, on a "weight of VOC emitted per number of golf balls produced" basis. Percent reductions for individual process categories are further described in Attachment III of this Amended Plan Approval.

In the opinion of the Department, the restrictions and provisions contained herein to achieve enforceable emission reductions, constitute a reasonable level of control. In accordance with 310 CMR 7.02, the Department hereby issues this Amended Plan Approval for Acushnet Company, Titleist Golf Division (Plant A), 4 Slocum Street, Acushnet, Massachusetts, and requires Acushnet Company to comply with the following provisos:

1. As noted, the reduction in VOC emissions is due in part to a reduction in the number of required paint coats. Reducing the number of paint coats could potentially increase plant production capacity. To prevent a potential increase in production capacity from negating the emission reduction, Acushnet Company's production capacity (expressed as "number of golf balls processed/12-month reporting period") shall not exceed the baseline level identified in Table I. The total production capacity is the sum of the balata and surlyn balls processed, as defined in Tables I and II of this Amended Plan Approval.



2. Automatic golf ball counters shall be installed and operated on all paint spray booths. The type of golf ball coated (balata or surlyn) and number of golf ball coats (for each type) shall be recorded no less frequently than every week.
3. The number of surlyn golf balls processed shall be equal to the total number of surlyn ball coats divided by two (2). The number of balata golf ball processed shall be equal to the total number of balata ball coats divided by three (3). Acushnet Company shall not change the design of the painting system (not including recoating due to defects) to require more than 2 paint coats for surlyn production or more than 3 paint coats for balata production without obtaining written EPA approval for such revision.
4. The VOC content of each balata and surlyn coating shall not at any time exceed the maximum "as-applied" VOC content specified in Table III of this Amended Plan Approval. Golf ball painting operations shall meet or exceed the paint transfer efficiencies specified in Table III over the monthly time frame defined in proviso 5, herein.
5. Effective August 1, 1986 for balata center washing, effective January 1, 1987 for annealing and balata paint stripping, and effective June 1, 1986 for all other categories, Acushnet Company shall demonstrate compliance with each of the VOC emission limitations contained in Table II of this Plan Approval on a "monthly" basis. A month shall be defined as the 4 or 5 week production period encompassing all weeks where the Saturday of the week falls in the same calendar month. Emissions shall be derived from issuance and other records as described in proviso 8(a) through 8(h), herein). The VOC content may be determined by manufacturer's formulation data or by test methods as specified in proviso 10, herein.
6. Based on the maximum production capacity stated in Table I, the maximum emission limits for each of the six process categories as stated in Table II, and the VOC content and transfer efficiency limitations for golf ball coatings specified in Table III of this Amended Plan Approval, the total VOC emissions from these six process categories shall not exceed 154.92 tons per 12-month reporting period. (See proviso 9 for emissions from the seventh category and from the Freon Dryer.)
7. Except as noted below, Acushnet Company shall use only those "as-applied" balata and surlyn coatings specified in Table III and only those VOC-containing raw materials and non-VOC halogenated materials identified in Attachment II and proviso 9 of this Amended Plan Approval. Acushnet Company is responsible for the completeness and accuracy of Table III and Attachment II and for VOC content information as specified to the Department. Prior to receipt and use of new VOC-containing materials, or new coating formulations, Acushnet Company shall:



- a. For new coating formulations: When the following two (2) constraints are met, submit to the Department, Department Form DDS-6 (with calculations and MSDS sheet attached, including VOC test data if available), and update and sign Table III and Attachment II; to be entitled, "4P90104 Amended Plan Approval - Table III (or Attachment II) Update, date: \_\_\_\_\_."
    - i. use of said coating must not cause or contribute to an exceedance of any emission limitation contained in Table II, and
    - ii. the VOC content of the coating must not at any time exceed the maximum VOC content specified in Table III of this Amended Plan Approval for the coating it is replacing.
  - b. For VOC-containing materials or halogenated material other than coating formulations: When the following four (4) constraints are met, submit a written notification to the Department which explains the intended use of the material and the emission factor (MSDS or other documentation), and update and sign Attachment II; to be entitled, "4P90104 -IF Attachment II - Update, date \_\_\_\_\_."
    - i. use of said material must not cause or contribute to an exceedance of the emission limits contained in Table II or proviso no. 9 of this Amended Plan Approval, and
    - ii. use of said material must only be for one of the seven process categories described herein, and
    - iii. use of VOC-containing materials for the random pad printing operation must conform to the requirements of Department Plan Approval 4P88310 dated June 12, 1989 and any subsequent amendments approved by the Department.
    - iv. use of the material must comply with 310 CMR 7.00 et seq.
  - c. Written Department approval is required prior to initiation of materials or operations which do not conform to the constraints of provisos 7(a) or 7(b), herein, or which are not described herein. Written U.S. EPA approval of a proposed State Implementation Plan ("SIP") revision is required for use of coatings with "as-applied" VOC contents which exceed the maximum values specified in Table III, herein.
8. Recordkeeping/Reporting: Acushnet Company is required to keep records of the usage of, and emissions from, each material containing VOC and to report to the Department as noted below. Records must be kept at the facility for a minimum of 3 years and be made readily available to the Department upon request.
- a. For each coating, Acushnet Company shall record, on a daily basis: (i) the coating identification (including batch number); (ii) the gallons of coating issued; (iii) the weight (lbs./gal.) and volume (gal./gal.) of VOC, non-VOC liquids (i.e. photochemically nonreactive solvents), water, and solids; (iv) the densities (lbs./gal.) of the coatings, VOC and non-VOC liquids; and (v) the lbs./gal. solids "as-applied".



- b. On a daily basis, the issuance of VOC, from materials other than coating formulations, shall be recorded. VOC emissions from these materials shall be calculated monthly.
- c. The information required by provisos 2, 8a and 8b herein, shall be maintained on the following (attached) recordkeeping forms, entitled:
  - i. (Weekly) Paint Usage Report
  - ii. (Weekly) Paint Usage Log
  - iii. Daily Record-Keeping Form For Ball Coatings
  - iv. MEK log
  - v. Patching Paint Log
  - vi. Pad Print Ink Mixing Log (for tracking of "custom" inks)
  - vii. Random Pad Print Ink and Thinner Usage
  - viii. Balata Paint Stripper Log

Copies of the above forms are presented in Attachment IV.

Acushnet Company shall calculate monthly VOC emissions from "Safety-Kleen", "Texo" and "Globrite" in accordance with Department Plan Approvals 4P90073, 4P90074, and 4P90095.

- d. Monthly reports, for demonstrating compliance with the emission limitations contained in Table II herein, shall be submitted within 10 days of each calendar month's end until further notice. (The Department letter to you of July 12, 1989, allowing the forms to to be completed and retained on-site, constitutes "further notice" under this proviso.) An example of the monthly reporting forms, entitled "VOC Emission Summary" and "VOC Compliance Summary", are attached hereto as Attachment V.
- e. Effective immediately, Acushnet Company must report, within 10 days of the end of the calendar month, any exceedances of the maximum VOC contents (expressed as "lbs. VOC/gallon of coating minus water") for coatings listed in Table III, or any exceedances of the monthly limits contained in Table II.
- f. Beginning and end-of-year inventory records, material transfer records, hazardous waste reclamation and disposal records, as well as purchase records for all VOC-containing materials and halogenated materials, shall be maintained up-to-date, such that the Department may readily and easily check these records against usage logs.
- g. VOC-containing material records and halogenated organic compound ("HOC") records (such as those specified in proviso 8(f)) shall be checked against usage logs and VOC or HOC emissions shall be deemed the greater of amounts derived from these separate accounting systems. For purposes of VOC accounting, Acushnet Company has proposed a procedure, as described in Attachment VII herein, for the tracking, analysis and deduction of VOC and HOC, contained in certain hazardous waste streams and in on-floor



inventory, from air emissions (patching compound waste, water-based paint waste, VOC-based clear paint waste, VOC-based pigmented paint waste, waste MEK, waste halogenated materials, waste parts cleaning solvent, waste or on-floor stripping solution, and waste pad printing inks). The Department hereby allows the deduction of this VOC or HOC from air emissions, provided the proposed procedures are followed and provided the VOC and HOC is not emitted to the ambient air. Should Acushnet Company desire to deduct VOC or HOC in any other waste (or other) stream from air emissions, or to change the tracking and analysis procedures approved herein, prior written Department approval of a proposed accounting system is required.

- h. Upon request of the Department, Acushnet Company shall obtain and submit a statement from any and all suppliers of VOC-containing or halogenated materials, specifying the amounts purchased by, and amounts delivered to, Acushnet Company, Titleist Golf Division (Plant A), in any given calendar year.
9. The annual emission of EPA-exempt halogenated materials (including 1,1,1-trichloroethane and trichlorotrifluoroethane) as described on page 3, paragraph 1, herein, from the mold release and mold cleaning operations (category "7"), shall not exceed 20.4790 tons per year. The VOC from these same operations shall not exceed 0.0820 tons per year. There shall be no VOC or halogenated material used at, or air emissions from, this facility other than that described in this Amended Plan Approval or approved in accordance with proviso no. 7, herein, or approved for the Freon Dryer in Plan Approval SM-86-095-IF.
10. Testing: Acushnet Company shall, upon request of the Department or EPA, provide test samples to the Department or EPA, or conduct VOC emission testing in accordance with the applicable test method contained in 40 CFR 60, to determine compliance with this Plan Approval. Testing for compliance with the maximum VOC content (expressed as "lbs. VOC/gal. coating minus water and nonphoto-chemically reactive solvent"), specified in Table III, shall be done in accordance with the modified, Reference Test Method 24 (40 CFR 60) described in Attachment VI.
11. Acushnet Company must, upon request, provide Department representatives with immediate, escorted access to any area within the plant for purposes of taking coating samples, or checking operating records.

This is an Amended Plan Approval. Please be advised that this RACT determination under 310 CMR 7.18(17) is a revision to the Massachusetts State Implementation Plan and as such must be submitted for approval to the United States Environmental Protection Agency, and does not become final until EPA approves it through Federal Rulemaking.

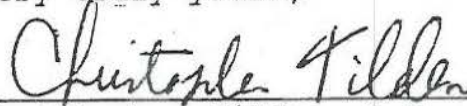
An Environmental Notification Form for air quality control purposes was not required for this action since it is categorically exempt pursuant to the Regulations Governing the Preparation of Environmental Impact Reports adopted by the Secretary of Environmental Affairs.

The Department presumes that the information contained, attached, or required herein, is public record. The Department understands that Acushnet Company may wish that some submitted information be held confidential and that you have requested that Table I, coating identifications in Table III and Attachment III, and material identifications in Attachment II of this Amended Plan Approval be held confidential. Acushnet Company may make a claim, in accordance with 310 CMR 3.00, within 21 days of receipt of this letter, that said information is a trade secret, or otherwise exempt from disclosure. After that period, or after and subject to a confidentiality determination in accordance with 310 CMR 3.00, this information may become public record.

Confidentiality requests are to be made to DEP-Office of the General Counsel, 3rd Floor, 1 Winter Street, Boston, Massachusetts, 02108, with a copy to this office.

This approval pertains only to the air quality aspects of the processes described herein and does not relieve Acushnet Company of the responsibility of complying with other applicable local, State, and Federal laws, regulations, or requirements.

Very truly yours,



Christopher Tilden, P.E.,  
Regional Engineer for Waste Prevention

T/S/JAW/sh

cc: Board of Health  
122 Main Street  
Acushnet, MA 02743

DEP/DAQC - Program Implementation  
ATTN: Donald Squires