



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SOUTHEAST REGIONAL OFFICE

ARGEO PAUL CELLUCCI  
Governor

TRUDY COXE  
Secretary

DAVID B. STRUHS  
Commissioner

COPY

November 24, 1997

Thomas A. Rodgers III, President  
Globe Manufacturing Company  
456 Bedford St.  
Fall River, Massachusetts 02720

RE: **CONDITIONAL APPROVAL**  
Application for: BWPAQ02  
NON-MAJOR COMPREHENSIVE PLAN APPLICATION  
Source No.: 0106  
Action Code: E-V6  
Application for: BWPAQ02  
Application No.: 4P96151  
Transmittal No.: 107800  
Public Copy

AT: Globe Manufacturing Company  
456 Bedford Street  
Fall River, Massachusetts 02720

Dear Mr. Rodgers:

The Department of Environmental Protection, Southeast Region, Bureau of Waste Prevention has reviewed Non-Major Comprehensive Plan Application ("CPA") No. 4P96151, received by the Department on December 9, 1996, with revisions dated May 14, 1997, June 4, 1997 and November 20, 1997. The application requests approval to increase Dimethyl Acetamide ("DMAC") usage in the facility's Dry Spin Spandex Manufacturing process at Globe Manufacturing Company ("Globe"), 456 Bedford Street, Fall River, Massachusetts. The Department issued Interim Air Quality Approval for the increased DMAC throughput on April 23, 1997.

The application was submitted in accordance with Section 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control Regulations" adopted by the Department pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-E, and Chapter 21C, Section 4 and 6.

The Department's review has been limited to air pollution regulation compliance and does not relieve you of the obligation to comply with all other permitting requirements.

The application was submitted by Rodney Gearhart of Globe Manufacturing Company, over the seal and signature of James D. Fitzgerald of ERM - New England, Incorporated, P.E. No. 35664.

The facility also operates two other processes at the facility which are subject to the requirements of 310 CMR 7.18(17) - Reasonably Available Control Technology, reaction spin and rubber fiber.

The Department has issued six (6) approval letters to Globe for the manufacture of spandex fiber by the dry spinning process. The application approvals are as follow:

- Application No. SM-82-004-IF issued on November 15, 1982 (install and operate eight dry spin cells and one small experimental test cell),
- Application No. SM-86-042-IF issued on June 5, 1986 (install and operate eight additional dry spin cells),
- Application No. SM-86-143-IF issued on November 25, 1986 (install and operate forty additional dry spin cells, including the relocation of the experimental test cell. Of those forty cells, twenty cells were installed, but not operated. The remaining twenty cells were not installed. Globe had decided not to install the twenty cells or operate the other twenty new cells because they would not comply with the approval),
- Application No. 4P90158 issued on December 17, 1990 (to operate the thirty six cells that were already installed),
- Application No. 4P91094 issued on February 3, 1992 (addressed the thirty six cells already installed, plus the addition and operation of the twenty new cells that were not installed earlier), and
- Application dated October 13, 1992 was submitted requesting amendments to previously issued Approval No. 4P91094. Final Approval for this application was issued on June 23, 1993 (proposed a higher DMAC throughput than was allowed in the February 3, 1992 approval).



The proposed CPA No. 4P96151 requests a higher throughput of DMAC than was allowed in the most recent June 23, 1993 approval. The proposed activity is not considered a "major modification" under 310 CMR 7.00 Appendix A: Emission Offsets and Nonattainment Review. The proposed increased usage of DMAC is not considered a "physical change or change in the method of operation" of a major stationary source, and therefore is not subject to Nonattainment Review for volatile organic compounds (VOC). There is no increase in potential VOC emissions above the most recent June 23, 1993 approval.

The first sixteen (16) cells and the one (1) experimental test cell that were approved on November 15, 1982 and June 5, 1986, are not subject to New Source Performance Standards (NSPS) regulation for Synthetic Fiber Production Facilities (40 CFR 60 Subpart HHH). The other forty (40) cells that were approved on November 25, 1986 and February 3, 1992 are subject to this regulation.

The approved project is for the operation of the fifty six (56) dry spin cells, one (1) experimental test cell and associated equipment on site, for the manufacture of spandex fiber at the facility. Globe operates the one (1) small experimental test cell solely for experimental purposes to test new operating conditions or parameters, including the testing of new deniers.

To manufacture spandex fiber, di-isocyanate (MDI) and glycol (poly THF) are reacted together to form capped glycol. The capped glycol is diluted with dimethyl acetamide (DMAC) before being mixed with various chain extenders and a chain terminator to produce a polymer solution. A dispersion of other materials in DMAC is added to the polymer to protect the thread. The polymer solution is dispersed to the individual dry spinning cells. As the solution leaves the spinnerets in fine threads it is pulled down the cells. Hot nitrogen gas, also introduced at the top of the cell, evaporates the DMAC from the filaments as they pass through the cell.

The DMAC/nitrogen mixture is collected from the side of the cell near the bottom of the cell. Nitrogen gas (known as recycle gas) is pumped into each cell below the point at which DMAC and nitrogen mixture is removed from the side of the cell. As the filament moves down through the cell past the point where the DMAC/nitrogen is removed, it is flowing countercurrent to the recycle gas which is moving up the cell toward the point where the DMAC/nitrogen is removed. After passing through the cell, the filaments exit from the bottom of the cell, where they are combined to form the required denier thread, and are lubricated.

6. Normal cell door temperature is approximately 120°F. Under standard operating conditions, the temperature will be maintained between 90°F - 150°F. Standard operating conditions means the cell is operating at a steady production rate and not operating on scrap, start-up or shutdown. The cell door temperature shall be measured every hour.
7. The monthly cell door temperature for all operating cells and the outlet temperature from the fishtail condensers shall be monitored and recorded continuously. The data may be stored as hourly data summaries of the highest and lowest temperature for each point.
8. Globe shall limit raw material usage of DMAc and lubricant and associated emissions in this process, to amounts identified in Appendix A and Appendix B of this Conditional Approval.
9. All VOCs shall be stored and disposed of in a manner which will minimize evaporation to the atmosphere. Proper storage shall be in a container with a tight fitting cover. Proper disposal shall include incineration in an incinerator approved by the Department, or any other equivalent method approved by the Department.
10. Globe will implement a quarterly leak detection and repair program for fugitive VOC emissions from all ductwork, using a Type I leak detection survey as defined in 40 CFR 60 Appendix A, Method 21. The survey will follow the procedures established under the NSPS for fugitive emissions from petroleum refineries and chemical plants (40 CFR 60 Subpart VV). A leak will be defined as a concentration of 300 ppmv instead of 10,000 ppmv as described in the test method.
11. Globe shall maintain the following records:
  - DAILY:  
Dimethyl acetamide (DMAc) input
  - MONTHLY:  
All information necessary to demonstrate that the fifty six (56) dry spin cells, including the one (1) experimental test cell, are complying with the requirements of 40 CFR 60 Subpart HHH.
  - QUARTERLY:  
Results of fugitive emission monitoring



CONTINUOUS MONITORING:

Gas exit temperature and inlet coolant temperature for the fishtail condensers (collects gas from bottom of cells).

Cell door temperature

DMAC concentration in the room exhaust from both the new and old spinning rooms.

As used herein, calendar month shall mean the period of time from 8:30 a.m. on the first calendar day of each month to 8:30 a.m. on the first calendar day of the following month. For purposes of determining compliance with daily limitations, day shall mean the period from 8:30 a.m. on one day till 8:30 a.m. the following day.

Globe must submit quarterly reports on January 30, April 30, July 30 and October 30 for the first four quarters after this Conditional Approval is issued. Each report will summarize monthly activity for each of the previous six months (e.g. the January report will summarize July through December activity) for each of these requirements and demonstrate compliance with the requirements of this Conditional Approval. After the submittal of four reports Globe shall only report quarterly excess emissions and excess use of material beyond the limitations contained in this Conditional Approval. The records must be maintained on-site for a minimum of three years and must be made available to the Department for inspection upon request. The first report is due January 30, 1998.

12. All operators shall be trained in the proper operation of the process, and routine maintenance shall be performed to ensure that the system operates as approved at all times.
13. Globe shall operate and maintain the subject facility in strict accordance with the Standard Operating Procedure (SOP) and Standard Maintenance Procedure (SMP).
14. Globe shall implement whatever measures are necessary to abate a condition of air pollution (i.e. odor, noise, dust, etc.), including shutdown if necessary.
15. The facility shall demonstrate the ability of the equipment to maintain an emission rate at or below the levels stated in this Conditional Approval when and if the Department deems it necessary.
16. This Conditional Approval applies only to the fifty six (56) dry spin cells and one (1) experimental cell. Globe must

apply for and receive written approval from the Department before any additional cells are installed.

The Department reserves the right to require changes in the SOP and SMP, including recordkeeping and the right to require additional process monitoring, if it is determined necessary by the Department to ensure continuous compliance with the Air Pollution Control Regulations.

Failure to comply with any of the above-stated provisions will constitute a violation of the "Regulations", and can result in the revocation of the Conditional Approval granted herein to operate the described facility.

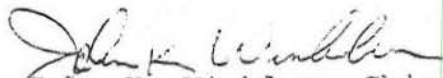
This Conditional Approval pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other applicable state, local or federal laws and regulations.

The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

This Conditional Approval is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "APPEAL RIGHTS".

Enclosed is a stamped approved copy of the application. Should you have any questions concerning the contents of this Conditional Approval, please contact Mark Poudrier at the Regional Office at (508) 946-2783.

Very truly yours,

  
John K. Winkler, Chief  
Permit Section  
Bureau of Waste Prevention

W/MP/re

Enclosure



cc: Globe Manufacturing Company  
456 Bedford Street  
Fall River, MA 02720  
ATTN: Rodney Gearhart

ERM - New England  
399 Boylston Street, 6th Floor  
Boston, MA 02116  
ATTN: James D. Fitzgerald, P.E.

DEP/BWP/BC - Boston  
ATTN: Don Squires  
Yi Tian

DEP - SERO  
ATTN: David Johnston, Deputy Regional Director, BWP  
Gerald Monte, Chief, Compliance & Enforcement, BWP

Fall River Health Department  
City of Fall River  
One Government Center  
Fall River, MA 02722  
ATTN: Daniel T. Harrington, M.D.

City of Fall River  
One Government Center  
Fall River, MA 02722  
ATTN: Edward Lambert, Mayor

Fall River Fire Department  
755 Pine Street  
Fall River, MA 02720  
ATTN: Edward J. Dawson, Chief

APPENDIX A  
MAXIMUM ALLOWABLE RAW MATERIAL USAGE LIMITATIONS

**CONFIDENTIAL**

Dimethyl Acetamide (DMAC)

pounds per month (12 month  
rolling average basis)

Lubricant

pounds per month (12 month  
rolling average basis)

APPENDIX B  
MAXIMUM ALLOWABLE EMISSION LIMITATION

**CONFIDENTIAL**

1. VOC emissions shall not exceed \_\_\_\_\_ kilogram ("kg") VOC per megagram ("Mg") solvent feed (or inlet material quantity) of DMAC on a six (6) month rolling average basis. (This is equivalent to \_\_\_\_\_ DMAC emissions of inlet DMAC feed.)



APPEAL OF APPROVAL

This Approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.