



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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December 3, 2014

Paul C. Watson
OFS Fitel, Inc
50 Hall Road
Sturbridge, MA

RE: **Sturbridge**
Transmittal No.: X263826
Original Transmittal No.: X224158
Class: SM25
FMF No.: 363689
SSEIS No. 118 0199
Administrative Amendment

Dear Mr. Watson,

The Department of Environmental Protection (“MassDEP”) has received Transmittal No. 263826, an Administrative Amendment of a previously issued Non-Major Comprehensive Plan Approval. It requests to change the requirement in Item VI.B.2 of Plan Approval Tr. No. X224158 that the ionizing wet scrubber must be shut down if there is insufficient flow to the scrubber to instead require that equipment discharging to the scrubber be shutdown if there is insufficient flow to the scrubber.

MassDEP **APPROVES** your request for an Administrative Amendment. Attached please find Plan Approval Tr. No. 263826, which amends Plan Approval Tr. No. X224158 to incorporate the Administrative Amendment. Plan Approval Tr. No. 263826 also makes typographical corrections to the previously issued Plan Approval and other changes to accommodate the Administrative Amendment.

Plan Approval Tr. No. 263826 supersedes the previous Plan Approval Tr. No. 224158 issued to OFS Fitel, Inc.

Sincerely,

Roseanna E. Stanley
Section Chief
Bureau of Waste Prevention

Air Pollution Control Plan Approval for Optical Fiber Manufacturing

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I. HISTORY

- A. MassDEP has issued several Air Quality approvals for this facility (which was named Spectran at first) since 1983. The initial approvals were for the use of various glass fiber manufacturing equipment and scrubbers to control emissions. The use of manufacturing chemicals resulted in emissions of particulate matter, HCl and Cl₂. The use of various cleaning solvents, which resulted in VOC emissions was also approved. The most recent approval was issued under Transmittal Number X224158.
- B. On June 30, 2008 Consent Order #ACOP-CE-08-9003-27AB was issued. This order required the Permittee to submit a non-major comprehensive plan application for this facility. As a result Tr. No. X224158 was submitted to MassDEP.

II. PROJECT DESCRIPTION

The approved project for Tr. No. X224158 consisted of the installation of a new germanium reclamation process that was previously not approved; the installation of a new PCVD lathe; and restating the requirements and emission limits for all of the facility manufacturing operations. Plan Approval Tr. No. X224158 consolidated all equipment both previously approved and unapproved.

This amended Plan Approval responds to the OFS Fitel's application for an Administrative Amendment to change the requirement in Item VI.B.2 that the ionizing wet scrubber must be shut down if there is insufficient flow to the scrubber. New Item VI.B.3 now requires that equipment discharging to the scrubber be shutdown if there is insufficient flow to the scrubber. This amended Plan Approval also corrects typographical errors and makes other changes to accommodate the Administrative Amendment. There are no changes to the emission limits.

This Plan Approval Tr. No. X263826 supersedes Plan Approval Tr. No. X224158 in its entirety.

III. EMISSION UNIT IDENTIFICATION

Emission units at the facility are listed in Table I.

Table I - Emission Units				
Emission Unit #	Description of Emission unit	Manufacturer and Model Number	Design Capacity	Pollution Control Device(s)
EU #1	38 MCVD lathes	Ceilcote Model #350/600	5,000 to 24,000 cfm	Ionizing wet scrubber (IWS)
EU #2	1 PCVD lathe	Ceilcote Model #350/600	5,000 to 24,000 cfm	Ionizing wet scrubber
EU #3	Germanium Recycling process	Ceilcote Model #HRP-46-48	5,000 to 24,000 cfm	SX-2 scrubber
EU #4	Glass cleaning (3 GEM)	Misonix MHS-3030	7,500 cfm	GEM scrubber
EU #5	Misc. VOC usage	n/a	n/a	None
EU #6	2 CB boilers	Cleaver Brooks #FLX-600	6.8 MMBtu/hr	None
EU #7	2 CB boilers	Cleaver Brooks #700-400-125HW	15.77 MMBtu/hr	None

IV. EMISSIONS

- A. The MCVD and PCVD lathes (EUs 1 and 2) use various gaseous raw materials that react at high temperature to deposit layers of glass on the ingots. Byproducts of the reactions include HCl, Cl₂, and particulate matter (PM). The exhaust from all of these lathes is vented to the ionizing wet scrubber ("IWS") for control. This is a Ceilcote Model #350/600 three stage IWS which has a capacity between 5,000 and 24,000 cfm. The control efficiency is 99% for gases and 97% for particulate matter.
- B. The germanium recycling (EU 3) generates chlorine in the exhaust gas and vents to a Ceilcote Model #HRP-46-48 packed bed scrubber, which has a capacity between 5,000 and 24,000 cfm. The control efficiency is 99% for chlorine.
- C. The three Glass Etching Machines (GEM) (EU 4) use hydrogen fluoride to clean glass before assembly. The exhaust, which contains HF vapors, is vented to the GEM scrubber for control. This scrubber is a Misonix MHS-3030 packed bed scrubber with a capacity of 7,500 cfm. The control efficiency is 99% for HF.
- D. Miscellaneous solvent/VOC usage (EU 5) includes the Draw Coating process and the miscellaneous use of solvent cleaners (isopropyl alcohol and methanol). The VOC emissions from these usages are uncontrolled.

E. The four Cleaver Brooks boilers (EUs 6 and 7) fire propane as the only fuel of use. In the future, the Permittee may switch to natural gas. Combustion of propane or natural gas results in products of combustion (nitrogen oxides and carbon monoxide), which are exhausted to the atmosphere.

V. EMISSION LIMITS AND RESTRICTIONS

The Permittee shall comply with the emission limits and restrictions presented in Table II below.

Table II - Emission Limits and Restrictions			
Emission Unit	Fuel/Raw Material	Pollutant	Emission Limit/Standard
EU 1	Glass Forming Chemicals	PM-10	1.0 TPY after control
		Cl ₂	1.0 TPY after control
		HCl	0.10 TPY after control
EU 2	Glass Forming Chemicals	PM-10	0.10 TPY after control
		Cl ₂	0.10 TPY after control
EU 3	Chlorine	Cl ₂	0.25 TPY after control
EU 4	HF	HF	0.10 TPY after control
EU 5	VOC coatings/solvents	VOC	2.50 TPY
EU 6	Propane/natural gas	NO _x	10.0 TPY
EU 7		CO	4.0 TPY

VI. SPECIAL CONDITIONS

A. This Plan Approval replaces and supersedes all previous Air Pollution Control plan approvals issued by MassDEP.

B. The Ceilcote IWS scrubber shall be operated according to the following conditions:

1. The IWS scrubber shall be properly operating in accordance with the approved standard operating procedures whenever the glass manufacturing machines are operating.

- a. The pH of the scrubber solution shall be maintained at a minimum of 9.
- b. The scrubber solution recirculation rate shall be maintained at no less than 330 gallons per minute to each stage of the scrubber.
- c. The ionizers in each of the scrubber stages shall be energized at all times except for the periods when the ionizers are washed each day. The ionizers will be washed one state at a time, and the ionizer in the stage that is not being washed will be kept energized while the other ionizer is deenergized for washing.

2. The following parameters of the IWS scrubber shall be monitored: scrubber water pH; total scrubber water flow rate; and makeup water rate to the scrubber.

3. In the event scrubber solution recirculation rate to any stage of the scrubber falls below 330 gallons per minute, the Permittee shall shut down any equipment discharging to the scrubber.
4. Additional machines beyond those listed in Table I above may be installed and connected to the IWS exhaust system, provided that:
 - a. The Permittee shall notify MassDEP in writing 30 days prior to installation of the machines, describing the machines, the air contaminants emitted by the machines, and the emission rates from the machines.
 - b. Operation of the additional machines shall not cause exceedances of the emission rates listed in Table II above.

C. The SX-2 scrubber shall be operated according to the following conditions:

1. The pH of the scrubber solution shall be maintained at a set point of 10 and the pH shall be monitored.
2. The scrubber liquid flow to the scrubber shall be monitored.

D. The GEM scrubber shall be operated according to the following conditions:

1. The pH of the scrubber solution shall be maintained at a set point of 9.4 and the pH shall be monitored.
2. The scrubber liquid flow to the scrubber shall be monitored.

VII. MONITORING & TESTING REQUIREMENTS

- A. Monitoring equipment or emission monitoring systems installed for the purpose of documenting compliance with this approval shall be installed, calibrated, maintained and operated by the Permittee in sufficient manner to ensure continuous and accurate operations at all times.
- B. Compliance with the allowable opacity limits shall be determined in accordance with EPA Method 9, as specified in 40 CFR 60, Appendix A.
- C. In accordance with 310 CMR 7.13, MassDEP may require testing for any pollutants if deemed necessary to ascertain the mass emission rates and relationship to equipment design and operation. The Permittee shall conduct stack testing when MassDEP has determined that such stack testing is necessary to ascertain compliance with MassDEP regulations or design approval provisions. Such stack testing shall be:
 1. conducted by a person knowledgeable in stack testing, and
 2. conducted in accordance with procedures contained in a test protocol which has been approved by MassDEP, and
 3. in the presence of a representative of MassDEP when such is deemed necessary in accordance with 310 CMR 7.13.

4. Emission testing to demonstrate compliance with emission limits specified in Table 3 shall be in accordance with EPA approved reference test methods unless otherwise approved by EPA and MassDEP or unless otherwise specified.
- D. The Permittee shall monitor the operations of the entire facility such that necessary information is available for the preparation of the Source Registration/Emission Statement forms as required by 310 CMR 7.12.

VIII. RECORD KEEPING REQUIREMENTS

1. A record-keeping system shall be established and continued on site by the Permittee. All records shall be maintained up-to-date such that twelve-month rolling period information is readily available for MassDEP examination. The Permittee shall maintain the following records on site for a period of five (5) years. Record keeping shall, at a minimum, include:
 - a. Compliance records sufficient to demonstrate that emissions have not exceeded what is allowed by this approval. Such records may include daily production records, raw material usage rates, fuel purchase receipts, emissions test results, monitoring equipment data and reports.
 - b. Maintenance: A record of routine maintenance activities performed on emission unit, control equipment and monitoring equipment including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
 - c. Malfunctions: A record of all malfunctions on emission unit, control equipment and monitoring equipment including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the emission unit returned to compliance.
2. Records of emissions testing conducted to demonstrate compliance with the applicable requirements in Table 2 shall be in accordance with 310 CMR 7.13.
3. The Permittee shall maintain sufficient records of its operations and monitoring information for the preparation of a Source Registration/Emission Statement Form as required by 310 CMR 7.12.
4. The Permittee shall keep copies of the Source Registration/Emission Statement Forms submitted to MassDEP for five (5) years as required per 310 CMR 7.12.
5. *APPROVAL LETTER* - Pursuant to the authority granted to MassDEP at 310 CMR 7.02, the facility shall maintain a copy of this approval, and any subsequent modifications of this approval, on-site for as long as the approval is valid. In accordance with 310 CMR 7.02, the approval is valid until one of the following conditions occur: the equipment is dismantled or removed from the facility, the facility notifies MassDEP that the approval is no longer valid, the equipment is substantially reconstructed or altered and subject to 310 CMR 7.02, the approval is superseded by another approval, or MassDEP revokes the approval in accordance with 310 CMR 7.02.
6. *OPERATING AND MAINTENANCE PROCEDURES* - The facility shall maintain a copy of the approved Standard Operating Procedure (SOP) and Standard Maintenance Procedure (SMP) on-site

for as long as this approval is valid. Updates or revisions to the SOP and SMP shall be submitted for MassDEP approval prior to initiating the modification(s).

IX. REPORTING REQUIREMENTS

A. The Permittee shall notify MassDEP as soon as reasonably practical by telephone or fax after the occurrence of any upsets or malfunctions (i.e., any piece of equipment or device breakdown that causes an excess emission) and in writing within two (2) business days of such event.

B. The Permittee shall summarize and submit to MassDEP the results of stack testing as prescribed in MassDEP's approved pretest protocol, stack testing that was determined by MassDEP to be necessary to ascertain compliance with MassDEP's regulations or design approval provisions in accordance with 310 CMR 7.13.

C. Upon MassDEP's request, any records required by the applicable requirements identified in this permit, or the emissions of any air contaminant from the facility, shall be submitted to MassDEP within 30 days of the request by MassDEP, or within a longer time period if approved in writing by MassDEP. Said response shall be transmitted on paper, on computer disk, or electronically at the discretion of MassDEP.

D. All required reports must be certified by a responsible official of the Permittee as provided in 310 CMR 7.01.

E. The Permittee shall submit a Source Registration/Emission Statement form to MassDEP on an annual or tri-annual basis as required by 310 CMR 7.12.

F. In accordance with 310 CMR 7.12, the facility shall register on a form obtained from MassDEP such information as MassDEP may specify including:

1. A description of the facility, including a description of process and combustion equipment, a description of facility operating hours and operating schedule, a description of all raw materials and fuels used at the facility.
2. Detailed emissions estimates for all criteria and hazardous air pollutants emitted from the facility.
3. An emission statement summarizing and certifying actual annual emissions and peak ozone season day emissions of VOC and oxides of nitrogen.
4. A description of air pollution control equipment, including control efficiencies.
5. Calculations and assumptions used to support emissions such as annual fuel process rate and peak ozone season daily process rate.
6. Information required by 310 CMR 7.12 shall be submitted pursuant to the schedule noted in 310 CMR 7.12.

X. GENERAL CONDITIONS

A. OPERATION - No person shall operate this facility except in conformance with the requirements established in this Approval.

B. **SUSPENSION, MODIFICATION, AMENDMENT OR REVOCATION** – This approval may be suspended, modified, amended or revoked by MassDEP if, at any time, MassDEP determines that the facility is violating any condition or part of this approval. This approval may be modified or amended when in the opinion of MassDEP a modification or amendment is necessary or appropriate to clarify the approval conditions or after consideration of a written request by the Permittee to amend the approval conditions. Any relaxation of an emission limit or a specific condition noted in this approval that would result in an increase in emission rates as established in this approval must be made in accordance with 310 CMR 7.02.

C. **OTHER REGULATIONS** - This approval does not negate the responsibility of the owner/operator to comply with this or any other applicable federal, state, or local regulations now or in the future. Nor does this approval imply compliance with any other applicable federal, state or local regulation now or in the future.

D. **EXISTING APPROVALS** - All plan approvals issued under 310 CMR 7.02 prior to the date of this Approval shall continue to be in effect unless specifically changed by this approval. The facility shall meet the emission rates and approved conditions specified in the applicable plan approval(s) unless specifically altered by this Approval.

E. **VISIBLE EMISSIONS** - The facility shall be operated in a manner to prevent the occurrence of visible emissions that cause or contribute to a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.06.

F. **DUST AND ODOR** - The facility shall be operated in a manner to prevent the occurrence of dust or odor conditions which cause or contribute to a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.09.

G. **NOISE** - The Permittee shall ensure that noise levels during routine operations, including start ups and shut downs, shall not exceed MassDEP Noise Policy 90-001 and in no case shall cause a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.10.

H. **ASBESTOS** – Should asbestos remediation/removal be required as a result of this Approval, such asbestos remediation/removal shall be done in accordance with Regulation 310 CMR 7.15.

I. **REMOVAL OF AIR POLLUTION CONTROL EQUIPMENT** - Notwithstanding 310 CMR 7.02., no person shall cause, suffer, allow, or permit the removal, alteration or shall otherwise render inoperative any air pollution control equipment or equipment used to monitor emissions which has been installed as a requirement of 310 CMR 7.00, other than for reasonable maintenance periods or unexpected and unavoidable failure of the equipment, provided that MassDEP has been notified of such failure, or in accordance with specific written approval of MassDEP.

J. **COMPLIANCE ASSURANCE FEE** – Pursuant to 310 CMR 4.03, an annual fee, based on the Commonwealth's fiscal year, will be charged to your facility to cover the cost of compliance activities performed by MassDEP, including registrations, report reviews, inspections, source registration reviews, etc. No fee shall be charged in the fiscal year that the permit is issued. If multiple air quality permits exist for a facility, the facility shall pay the single highest applicable fee. This fee does not include stack test fees.

XI. LIST OF PERTINENT INFORMATION

- Non-Major Comprehensive Plan Application, dated August 2008
- BWP AQ CPA-3 (four) for MVC/PCVD/IWS Process, Ge Recycling, GEM Scrubber, & Misc. Solvent/VOC Use
- BWP AQ SFC-3 (three) for MCVD/PCVD/IWS Process, Ge Recycling, & GEM Scrubber
- Administrative Amendment Tr. No. X263826

XII. APPEAL

MassDEP 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 MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.04, 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 Decision is an action of MassDEP. 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 Decision. 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 Decision 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, MassDEP 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. MassDEP 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.

Sincerely,

Roseanna E. Stanley
Section Chief
Bureau of Waste Prevention

ecc: Yi Tian, Boston/BWP