Statement of Basis - Narrative
NSR Permit

Type of Permit Action: Technical Revision

Facility: Sterigenics - Santa Teresa Facility
Company: Sterigenics US LLC
Permit No(s).: 0733M15R1
Tempo/IDEA ID No.: 127 - PRN20140001
Permit Writer: Rhonda Trujillo

Fee Tracking (not required for Title V)

Tracking	
	NSR tracking entries completed: [X] Yes [] No
	NSR tracking page attached to front cover of permit folder: [X] Yes [] No
	Paid Invoice Attached: [] Yes [X] No
	Balance Due Invoice Attached: [X] Yes [] No
	Invoice Comments: Balance of 1,445 due.

Permit Review		
	Date to Enforcement: TBD	**Inspector Reviewing:** Sondra Sage
	Date Enf. Review Completed:	**Date of Reply:** (if necessary)
	Date to Applicant: TBD	**Date of Reply:**
	Date of Comments from EPA: TBD or N/A	**Date to EPA:** TBD or N/A
	Date to Supervisor: TBD	

1.0 **Plant Process Description:**
This facility uses ethylene oxide and propylene oxide to sterilize medical equipment and other food equipment.

2.0 **Description of this Modification:**
(1) Installation of a new 30-pallet sterilization chamber (Chamber 14), including associated process emissions from a new vacuum pump and chamber back vent. The vacuum pump is rated at 550 cfm and will exhaust process emissions from the new chamber directly to the facility's existing Ceilcote scrubber system. The Ceilcote system control efficiency for the new vacuum pump will be ≥ 99.3%. The chamber back vent consists of residual Ethylene Oxide (EO) or Propylene Oxide (PO) process emissions produced at the conclusion of each chamber sterilization cycle. The new Chamber 14 back vent will exhaust to the facility's existing Donaldson catalytic oxidizer system via an existing inlet duct. The Donaldson system control efficiency for the Chamber 14 back vent will be ≥ 99%.

(2) Increasing the facility's cap on the usage of EO or PO by 20% to accommodate the new chamber mentioned above. The 20% increase will revise the EO/PO usage caps to:

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1,692,000 pounds /year; 5880 pounds /day; and 1,790 pounds/hour.

(3) Rerouting the facility's remaining nine (9) back vent emissions which currently are uncontrolled, to the existing Donaldson catalytic oxidizer for emissions treatment. (Note: The back vents for Chambers 8, 9, 10 and 13 were re-routed to the Donaldson system in 2013. This request entails rerouting back vents for Chambers 1, 2, 3, 4, 5, 6, 7, 11 and 12.) This change will result in all chamber back vents receiving emissions treatment to a minimum control efficiency of 99%.

(4) Updating equipment descriptions in the current permit (shown in Table 104) for several listed emission sources. These revisions pertain only to "like-for-like" equipment replacements made in recent years. The new equipment has the same capacity and/or level of emissions as the replaced equipment.

3.0 Source Determination:

1. The emission sources evaluated include S-1 – S-14, AR-8-AR-9, BV1 – BV14, CD1, CD2, CD3, and Bx.

2. Single Source Analysis:

A. SIC Code: Do the facilities belong to the same industrial grouping (i.e., same two-digit SIC code grouping, or support activity)? Yes

B. Common Ownership or Control: Are the facilities under common ownership or control? Yes

C. Contiguous or Adjacent: Are the facilities located on one or more contiguous or adjacent properties? Yes

3. Is the source, as described in the application, the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes? Yes

4.0 **PSD Applicability:**

A. The source, as determined in 3.0 above, is a minor source before and after this modification.

5.0 **History (In descending chronological order, showing NSR and TV):** *The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
0733M15R1	12/24/2014	Technical Revision	(1) Installation of a new 30-pallet sterilization chamber (Chamber 14), including associated process emissions from a new vacuum pump and chamber back vent. The vacuum pump is rated at 550 cfm and will exhaust process emissions from the new chamber directly to the facility's existing Ceilcote scrubber system. The Ceilcote system control efficiency for the new vacuum pump will be ≥ 99.3%. The chamber back vent consists of residual Ethylene Oxide (EO) or Propylene Oxide (PO) process emissions produced at the conclusion of each chamber sterilization cycle. The new Chamber 14 back vent will exhaust to the facility's existing Donaldson catalytic oxidizer system via an existing inlet duct. The Donaldson system control efficiency for the Chamber 14 back vent will be ≥ 99%. (2) Increasing the facility's cap on the usage of EO or PO by 20% to accommodate the new chamber mentioned above. The 20% increase will revise the EO/PO usage caps to: 1,692,000 pounds /year; 5880 pounds /day; and 1,790 pounds/hour. (3) Rerouting the facility's remaining nine (9) back vent emissions which currently are uncontrolled, to the existing Donaldson catalytic oxidizer for emissions treatment. (Note: The back vents for Chambers 8, 9, 10 and 13 were re-routed to the Donaldson system in 2013. This request entails rerouting back vents for Chambers 1, 2, 3, 4, 5, 6, 7, 11 and 12.) This change will result in all chamber back vents receiving emissions treatment to a minimum control efficiency of 99%. (4) Updating equipment descriptions in the current permit (shown in Table 104) for several listed emission sources. These revisions pertain only to "like-for-like" equipment replacements made in recent years. The new equipment has the same capacity and/or level of emissions as the replaced equipment.

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Permit Number	Issue Date	Action Type	Description of Action (Changes)
0733M15*	6/13/2013	Tech & reinstatement of old Permit	This application is submitted to request several things. • Reinstatement of the former NSP Permit (NSR Permit # 0733-M12-R1) issued to the facility on May 16, 2007. • Withdrawal of the No Permit Required determination (NPR # 0733M13) issued to the facility on January 28, 2010. • Deactivation of the Notice of Intent letter (NOI # 0733-M14) issued to the facility on February 5, 2013 regarding installation of a replacement 9 MM Btu/hr natural gas boiler. • Technical Permit revisions to the reinstated NSR permit as allowed under 20.2.72.219.B.1.b NMAC to reflect modifications that occurred to the facility since the previous NSR permit was issued in May 2007. These modifications include: ▪ 1) establishing new backvent emission sources for Chambers 8, 9, and 10; ▪ 2) consolidating and expanding several of the facility's aeration cells/rooms to create a new aeration room designated as AR-2; and ▪ 3) imposing a facility-wide total cap on natural gas-fired boiler capacity equal to 18 MM Btu/hr. Incorporating technical permit revisions in the reinstated NSR permit to: • 1) accommodate the planned re-routing of four (4) chamber backvent emission sources to the facility's existing catalytic oxidizer emission control system • 2) accommodate the planned consolidation and expansion of three existing aeration cells (AC 13-15, AC 16-18, AC 19-21) and one aeration room (AR-1) into one large aeration room and expanding the footprint of the consolidated area. Both projects are scheduled to occur in the spring of 2013, and • 3) imposing a higher control efficiency of 99.3% on the facility's wet scrubber system (CD-1 or CD-2).
0733M14	2013	NOI	Add a boiler and change from an NPR to an NOI because VOC emissions are greater than 10 tpy, but less than 100 tpy.
0733M13		NPR	

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Permit Number	Issue Date	Action Type	Description of Action (Changes)
0733-M12-R1		Technical Revision	Sterigenics is proposing to modify the existing footprint of the aeration room to accommodate additional product. Although the aeration room will be able to aerate more product for a given cycle, the facility is still limited to the amount of ethylene oxide used on an hourly, daily, and monthly rolling 12-month total, and is still required to meet the standards of 40 CFR 63 Subpart O. The standard for an aeration room vent is 1 ppm max outlet concentration or 99% emission reduction. The exhaust flow from the modified aeration room will increase from 6000 cfm to 10,000 cfm. The combined exhaust from the aeration cells (AC 1 – 21) and the aeration room will be 17,000 cfm. The capacity of the catalytic oxidizer controlling these sources is 20,000 cfm, so its capacity will not be exceeded. Other than the exhaust rate of the aeration room, no other changes are required in the permit.
0733-M12	03/05/07	Significant Revision	Add sterilization chamber S13 and associated back vent.
0733-M11	08/28/06	Significant Revision	The intent of this modification is to correct the specification data for existing boilers B1 – B3. There will be a change in permitted emissions as a result of this modification resulting in total increases of 1.0 ton NO_X/yr and 1.3 tons CO/yr.
733M10R1	12/21/06	Technical Revision	This modification consists of replacing Monitoring requirements for Unit CD-2 and the addition of one (1) aeration room (Unit AR 01). Ceilcote Air Pollution Control is the manufacturer of acid scrubber the facility uses to control EO and was contacted by Sterigenics to obtain the manufacturers specifications for operating the unit. Sterigenics wanted to update these parameters in order to obtain the optimal performance and efficiency of the Ceilcote unit. Specifically, Sterigenics wanted to make corrections to the monitoring of the maximum gas inlet temperature, the minimum liquid flow rate to tower, and the maximum liquid pH. All three of the corrections to the above parameters were supported by Ceilcote and have been modified by this Technical Revision. The addition of the aeration room will not cause an increase in allowable emissions as there is not an increase in the throughput of loads to be sterilized or charge rate of the EO. The addition of the unit was necessary to provide increased aeration capacity at the facility.
733M10	12/5/05	Significant Revision	Increase the EO charge rate, add S-11, S-12, and back vent 12

Permit Number	Issue Date	Action Type	Description of Action (Changes)
733M9	11/30/04	Significant Revision	Replacement of Acid-Water Scrubber
733M8	7/2/04	Significant Revision	Addition of Chamber 10
733M7	12/10/02	Significant Revision	Addition of Chamber 8 & 9
733M6	1/29/97	Significant Revision	Addition of Chamber 7, Aeration 20 & 21
733M5	4/15/94	Significant Revision	Addition of Chamber 19
733M4	3/8/92	Significant Revision	Revised EtO charge rate
733M3	8/13/90	Significant Revision	Catalytic Oxidizer Required
733M2	6/21/90	Significant Revision	Revised Safe Cell Requirements
733M1	4/4/90	Significant Revision	Safe Cell Installation
733	4/11/89	Regular - New	None

6.0 **Public Response/Concerns:** As of December 10, 2014 this permit writer is not aware of any public comment or concern.

7.0 **Compliance Testing:** No compliance tests required for this permit revision.

8.0 Startup and Shutdown:

A. If applicable, did the applicant indicate that a startup, shutdown, and emergency operational plan was developed in accordance with 20.2.70.300.D(5)(g) NMAC? Yes
B. If applicable, did the applicant indicate that a malfunction, startup, or shutdown operational plan was developed in accordance with 20.2.72.203.A.5 NMAC?
C. Did the applicant indicate that a startup, shutdown, and scheduled maintenance plan was developed and implemented in accordance with 20.2.7.14.A and B NMAC?
D. Were emissions from startup, shutdown, and scheduled maintenance operations calculated and included in the emission tables?

9.0 **Compliance and Enforcement Status [Title V only]: N/A**

10.0 **Modeling:** Not required for this revision.

11.0 **State Regulatory Analysis(NMAC/AQCR):**

20 NMAC	Title	Applies (Y/N)	Comments
2.1	GENERAL PROVISIONS	Yes	The facility is subject to Title 20 Environmental Protection Chapter 2 Air Quality of the New Mexico Administrative Code so is subject to Part 1 General Provisions, Update to Section 116 of regulation for Significant figures & rounding. Applicable with no permitting requirements.
2.3	Ambient Air Quality Standards	Yes	20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. 20.2.3.9 NMAC, LIMITATION OF APPLICABILITY TO 20.2.70 NMAC. The requirements of this part are not applicable requirements under 20.2.70 NMAC, as defined by that part. This section does not limit the applicability of this part to sources required to obtain a permit under 20.2.72 NMAC, nor does it limit which terms and conditions of permits issued pursuant to 20.2.72 NMAC are applicable requirements for permits issued pursuant to 20.2.70 NMAC.
2.7	Excess Emissions	Yes	Applies to all facilities' sources
2.61	Smoke and Visible Emissions	Yes	The heater(s) and CD3 are Stationary Combustion Equipment.
2.70	Operating Permits	No	PTE < 100 tpy and not a major source of HAPs
2.72	Construction Permits	No &Yes	The PER emissions are less than 25 tpy of any single regulated pollutant and VOC, however the company requested that the permit be reinstated.
2.73	NOI & Emissions Inventory Requirements	Yes	Applicable to all facilities that require a permit. PER ≥ 10 tpy for a criteria pollutant
2.75	Construction Permit Fees	Yes	This facility is subject to 20.2.72 NMAC
2.77	New Source Performance	No	
2.79	Permits Nonattainment Areas	No	This facility is not located in a non-attainment area. [HYPERLINK "http://www.nmenv.state.nm.us/aqb/modeling/na_map.html"]
2.82	MACT Standards for Source Categories of HAPs	YES	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63, as amended through January 31, 2009 and 40 CFR 63 Subpart A and O apply. This facility emits 8.8 tpy total HAPS.

12.0 Federal Regulatory Analysis:

Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Applies (Y/N)	Comments

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C	Federal Ambient Air Quality Standards	Y	Independent of permit applicability; applies to all sources of emissions for which there is a Federal Ambient Air Quality Standard.

NSPS Subpart (40 CFR 60)	Title	Applies (Y/N)	Comments
A	General Provisions	No	Applies if any other subpart applies and none apply.

NESHAP Subpart (40 CFR 61)	Title	Applies (Y/N)	Comments
A	General Provisions	No	Applies if any other subpart applies and none apply.

MACT Subpart (40 CFR 63)	Title	Applies (Y/N)	Comments
A	General Provisions	Yes	Applies if any other subpart applies and Subparts A and O apply.
40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial,	No	Not a Major source of HAPs
40 CFR 63, Subpart O	Ethylene Oxide Emissions Standards for Sterilization Facilities	Yes	This facility uses more than 1 ton of EO.

13.0 **Permit specialist's notes to other NSR or Title V permitting staff concerning changes and updates to permit conditions.**

A.

B.

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