



NEMS ENVIRONMENTAL MANAGEMENT PROGRAM

PROGRAM NAME:	Management of Air Emissions from Stationary Sources		
SIGNIFICANT ENVIRONMENTAL ASPECT(S): Air Emissions	DOCUMENT NUMBER:	TBD	
	DATE REVISED:	9/27/07	
	REVISION NUMBER:	1	
	SUNSET DATE:	11/20/07	
	PROGRAM LEAD:	Mr. Mark Miller	

SECTION 1 – PROGRAM DESCRIPTION

The NIH Air Emissions-Stationary Sources team is composed of members of the Division of Property Management and the Division of Environmental Protection with the Office of Research Facilities. The team has identified several sources of existing and potential air emissions resulting from the operations of boilers, generators and other industrial equipment on campus. The purpose of this program is to quantify emissions by source and develop and implement plans to employ the best available technologies and management practices to reduce emissions. Of particular concern are emissions of NO_x and CO (ozone precursors), ozone depleting substances, and ethylene oxide, which presents significant health hazards and some environmental effects. The program will focus on study the technological and financial feasibility of employing technologies to reduce emissions of these chemicals.

SECTION 2 – GOALS AND OBJECTIVES

FIVE-YEAR GOAL: Decrease NO _x emissions by 20%	Performance Indicator(s): Policy written		Resource requirements: No additional resources required
<i>Justification:</i> This number provides adequate margin to accommodate any increased emissions that will result from the commissioning of additional boilers. Natural gas generates approximately 40% less NO _x emissions than fuel oil.			
A. Objective: Conduct a feasibility study of the potential to retrograde boilers with ultra-low NO _x technology.	Performance Indicator(s): study completed	Responsibility: Mark Miller	Timeframe: Dec. 2007
1. Target/Milestone: Develop contract	Performance Indicator(s): contract developed	Responsibility: Mark Miller	Timeframe: Oct. 2007
2. Target/Milestone: Award contract	Performance Indicator(s): contract awarded	Responsibility: Mark Miller	Timeframe: Nov. 2007
3. Target/Milestone: Complete study	Performance Indicator(s): study completed	Responsibility: Mark Miller	Timeframe: Dec. 2007
B. Objective: Determine if policy is appropriate control for the use of natural gas during Ozone Depleting Season to eliminate use of fuel oil #2.	Performance Indicator(s): appropriateness determined	Responsibility: Energy Stewardship Advisory Group	Timeframe: Feb. 2007

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<p>FIVE-YEAR GOAL: Controlling Ethylene Oxide Emissions throughout the NIH campus</p> <p><i>Justification:</i> Ethylene oxides represent the single largest process source of hazardous air emissions on the campus. Because it is single source, it can be controlled without excessive resource requirements.</p>	<p>Performance Indicator(s): Identification completed</p>		<p>Resource requirements: No additional resources required</p>
<p>A. Objective: Identify which ethylene oxide (EO) sterilizers are appropriate for replacement.</p>	<p>Performance Indicator(s): Identification completed</p>	<p>Responsibility: Mark Miller</p>	<p>Timeframe: July 2007</p>
<p>FIVE-YEAR GOAL: Reducing NOx Emissions from Emergency Generators</p> <p><i>Justification:</i> Emergency generators represent the second largest source of NOx emissions on campus. The purpose of this goal is to study the financial and technical feasibility of reducing NOx emissions of existing and/or new generators.</p>	<p>Performance Indicator(s): Study completed</p>		<p>Resource requirements: No additional resources required</p>
<p>A. Objective: Conduct and report on study of the potential use of natural gas for emergency generators (conversion and new units) and Fuel Cells – potential application on the CIT project.</p>	<p>Performance Indicator(s): Study completed</p>	<p>Responsibility: Mark Miller</p>	<p>Timeframe: Dec. 2007</p>
<p>1. Target/Milestone: Develop contract</p>	<p>Performance Indicator(s): contract developed</p>	<p>Responsibility: Mark Miller</p>	<p>Timeframe: Oct. 2007</p>
<p>2. Target/Milestone: Award contract</p>	<p>Performance Indicator(s): contract awarded</p>	<p>Responsibility: Mark Miller</p>	<p>Timeframe: Nov. 2007</p>
<p>3. Target/Milestone: Complete study</p>	<p>Performance Indicator(s): study completed</p>	<p>Responsibility: Mark Miller</p>	<p>Timeframe: Dec. 2007</p>
<p>FIVE-YEAR GOAL: Reducing CO emissions</p> <p><i>Justification:</i> NIH is in a non-attainment areas for CO. Lower NOx burners will also achieve reductions in CO emissions without additional costs. This will contribute to overall reduction in air emissions from campus.</p>	<p>Performance Indicator(s): Study completed</p>		<p>Resource requirements: No additional resources required</p>

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A. Objective: Conduct and report on study of potential reductions in CO and identify appropriate % reduction goal.	Performance Indicator(s): study completed	Responsibility: Mark Miller	Timeframe: Dec. 2007
FIVE-YEAR GOAL: Reduce Ozone Depleting Substances Emissions <i>Justification:</i> ODS's contribute to the potential depletion of the stratospheric ozone layer and contribution to global warming. ODS phase-out is also a federal statutory requirement.	Performance Indicator(s): Inventory completed		Resource requirements: No additional resources required
A. Objective: Develop plan to remove identified CFC sources.	Performance Indicator(s): Plan developed	Responsibility: Mark Miller	Timeframe: Dec. 2007

SECTION 3 – PROGRAM DESCRIPTION, SIGNIFICANCE, IMPACTS AND REQUIREMENTS

REASON(S) FOR SIGNIFICANCE:	<ul style="list-style-type: none"> a. NIH campus lies within a Severe Ozone Non-attainment Area within Maryland. This is the worst level rating for pollution. The state's compliance with the Clean Air Act is influenced by emissions from the NIH campus. It is highly likely that more stringent standards are forthcoming. Both compliance and the health of residents are being directly affected by NIH emissions and are of concern to NIH. b. This aspect is governed by Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management c. This aspect has the potential to significantly impact the environment through air emissions d. This aspect is important to NIH's relationship to the local community and the public at large
POTENTIAL ENVIRONMENTAL/ ORGANIZATIONAL IMPACTS:	<ul style="list-style-type: none"> a. Health of NIH and surrounding community (respiratory illness) due to air pollution (ground level ozone). b. Non-compliance with State Implementation Plans (Clear Air Act) c. Potential for NIH meet addition heating/cooling requirements as the campus continues to expand.
LEGAL AND OTHER REQUIREMENTS:	<ul style="list-style-type: none"> a. NIH Mission Statement b. Title 5 Part 70 permit (for NIH Bethesda campus) c. 40 CFR 82 (ODS phase out) d. CAA-COMAR 26.11.03 e. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management f. Energy Policy Act (EPACT)

SECTION 4 – OPERATIONAL CONTROLS

ACTIVITY(IES) THAT GIVES RISE TO ASPECT	CONTROL(S)	RESPONSIBLE PERSON	MONITORING	RECORDS	ACTION TAKEN IF CONTROL FAILS
Operation of Central	▪ Biannual air	▪ Utilities Ops Branch	▪ Report must be	▪ Test report to	▪ Retest (regulatory violation)

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Utility Plant (chillers, boilers, cooling towers)	emissions test (Title 5 mandated)	(implementation) jointly with DEP (developer of application, filer)	generated and submitted to MD	MD	potential without testing)
Use of Emergency Generators	<ul style="list-style-type: none"> Routine operational testing of generators O&M Manual for each generator and training for operators 	<ul style="list-style-type: none"> Technical Support Team, Div. of Property Maintenance DEP develops and files the Title 5 	<ul style="list-style-type: none"> Emissions certification report to MD Compliance report to MD 	<ul style="list-style-type: none"> Emissions certification report to MD Compliance report to MD 	<ul style="list-style-type: none"> Maintenance and retesting
Operation of ethylene oxide sterilizers	<ul style="list-style-type: none"> Installation of catalytic converters Converter operating manual 	<ul style="list-style-type: none"> Sterilizer operators 	<ul style="list-style-type: none"> Routine checking of good functioning of converters 	<ul style="list-style-type: none"> Sterilizer cycle recorded through data log 	<ul style="list-style-type: none"> Stop operation of sterilizer until converter is fixed

SECTION 5 – RELEVANT DOCUMENT(S)

DOCUMENT NAME	LOCATION	RESPONSIBLE PERSON
40 CFR Part 63, Subpart O	Bldg 13, Room 2W64	Mark Miller, Division of Environmental Protection (DEP)
Annual Emission Certification Report	Bldg 13, Room 2W64	Mark Miller, DEP
Bi-Annual Boiler Emission Test Rates	Bldg 13, Room 2W64	Mark Miller, DEP
Facility file information on boilers	Bldg 13, Room G903	Al Parrish, Technical Support Center
Facility file information on generator	Bldg 13, Room G903	Al Parrish, Technical Support Center
Literature Search of Available NOx Control Technologies	Bldg 13, Room 2W64	Mark Miller, DEP
Manufacturer’s operating emissions rates	Bldg 13, Room G903	Al Parrish, Technical Support Center
NIH Master Plan (Future Power Plant Requirements)	Bldg 31, Room 3B44	Ron Wilson, Division of Facilities Planning (DFP)
NIH Master Utilities Plan	Bldg 31, Room 3B44	Ron Wilson, DFP
Operational data on emergency generators (spreadsheets)	Bldg 13, Room G903	Al Parrish, Technical Support Center

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SECTION 6 – COMPETENCY OF RESPONSIBLE PERSONS

NAME/TITLE	BASIS FOR COMPETENCE
Mark Miller, Environmental Compliance Officer	Knowledge and experience as Environmental Compliance Officer
Albert Parrish, Maintenance Program Specialist	Knowledge and experience as Program Manager for NIH Generator Program
Jim Powers, Chief Power Plant Section	Knowledge and experience as Program Manager and Operation of Power Plant Boilers and Chillers
Adam Wolfe, Chief of Central Utility Branch	Knowledge and experience as Program Manager of Power Plant Operations
Chief of Central Utility Plant	Power plant experience, training, knowledge

SECTION 7 – AUTHORIZATION

NAME:	
SIGNATURE:	
DATE:	

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