Air Quality:
How are we doing?
Where are we going?
Air Quality Regulation

Air & Waste Management Association Conference
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Division of Air Quality
NJ Department of Environmental Protection

Bureau of Stationary Sources Highlights

- Landfills
  - Hydrogen Sulfide
  - Landfill Gas engine NOx, PM, CO and other products of incomplete combustion (PICs)
- Backlog Elimination (not just reduction!)
- Electrical Generation – Clean, Reliable Power
- General Permits/General Operating Permits

Hydrogen Sulfide (H_2S) Emissions from Landfills

- Primary cause – Wallboard fines in construction debris
  - Gypsum wallboard is 17-19% Sulfur by weight
- Anaerobic microbes convert the sulfate in wallboard to hydrogen sulfide
  - Occurs more rapidly in the presence of moisture
  - Fines have more surface area to breakdown than whole pieces of wallboard

Hydrogen Sulfide (H_2S) Emissions from Landfills

- Hydrogen sulfide off-site impacts significant at low concentrations
  - Very low odor threshold (1 – 8 parts per billion by volume-ppbv)
  - Legacy Landfill Legislation - 30ppb
  - Acute health impacts occur at 30 ppbv (vomiting)
- Methods to Address H_2S emissions from landfills
  - Fence line Monitoring (pro-active)
  - Odor Minimization Plan
  - Waste Segregation
- Possible Remedies
  - Increase number of wells/maintain wells
  - Operate blowers at a sufficient extraction rate

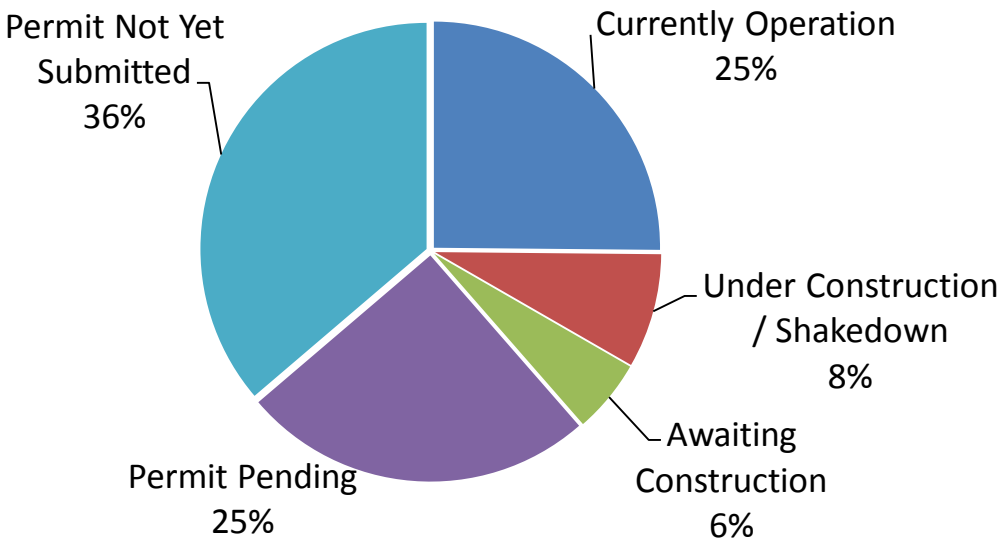
Backlogs

- Non-existent in Preconstruction
- Major Facility Program
  - Non-existent for Modifications
  - Renewals nearly in single digits
- Goal is zero backlog
- Focus on Backlog Prevention
  - Need your help
  - Complete Applications = Shorter Review Times
    - enables focus on significant applications
    - Better customer service
    - Better public outreach

NEW ELECTRIC GENERATORS (PERMITTED SINCE 2009)

Status of New Generation Project	Project Name	Permit Approval Date (or Status)	Expected Operation Start	Total MW
Operating	Cumberland Energy Center (103 MW)	1/13/2009	6/1/2009	2042
	VMEU - Down Station (64 MW)	9/16/2010	6/1/2012	
	Kearny (308 MW)	12/16/2010	6/1/2012	
	LS Power Phase I (770 MW)	5/6/2009	7/1/2014	
	Newark Energy Center (705)	11/1/2012	10/1/2015	
	VMEU - Clayville Station (64 MW)	3/18/2014	11/1/2015	
	Eagle Point Power Generation (28 MW)	3/10/2015	11/1/2015	
Under Construction / Shakedown	Woodbridge Energy Center (663 MW)	9/13/2012	1/1/2016	663
Permit Approved, Construction Not Begun	LS Power Phase II (427 MW)	7/18/2014	Summer 2018 ?	427
Permit Pending	Gateway Energy Center (450 MW)	Pending	Summer 2018 ?	2045
	Sewaren (585 MW)	Pending	Summer 2018 ?	
	Middlesex Energy Center (560 MW)	Pending	Summer 2018 ?	
	BL England (450MW)	Pending	Summer 2018 ?	
Pre - Application Meeting Held	Deepwater (445 MW)	Not Submitted	Summer 2020 ?	2943
	Amwell Energy Center (1280 MW)	Not Submitted	Summer 2020 ?	
	Melrose Power (150 MW)	Not Submitted	Summer 2020 ?	
	Liberty Energy Center (940 MW)	Not Submitted	Summer 2020 ?	
	Bayonne Energy Center (128 MW)	Not Submitted	Summer 2020 ?	

Power Generation



Replacement Generation Currently Operating:	2,042 MW
Generation Under Construction:	663 MW
Generation Awaiting Construction:	427 MW
Generation Under Permitting:	2,045 MW
Generation Permit Not Yet Submitted:	2,943 MW
Total:	**8,120 MW**

Active General Permits (GPs)

NO.	General Permits	NO.	General Permits
GP-001A	Solid Material Storage Equipment	GP-012A	Perchloroethylene Drycleaning Equipment
GP-002	Confined Abrasive Blasting Equipment	GP-013	Non-HAP Drycleaning
GP-003	Woodworking Equipment	GP-015	Non-MACT Plating Operations
GP-004A	Fuel Dispensing Facilities	GP-016	Small Emitter General Air Permit (SEGAP)
GP-005A	Emergency Generator(s) Burning Distillate Fuels	GP-017	Boiler(s) and/or Heater(s) Each Less Than 5 MMBTU/hr
GP-005B	Emergency Generator(s) Burning Gaseous Fuels	GP-018	Boiler(s) and/or Heater(s) Each Less Than 10 MMBTU/hr
GP-007	Stationary Non-Floating Roof Storage Tank(s)Storing Volatile Organic Compounds	GP-019	Portable Equipment
GP-008	Site Remediation Activities for Gasoline Contamination at Vehicle Fueling Stations (SVE)	GP-020	Research & Development
GP-009A	Boiler(s) and Indirect Fired Process Heater(s) Each Greater Than or Equal to 10 MMBTU/hr and Less Than 50 MMBTU/hr Combusting Gaseous Fuel	GP-021	Combined Heat and Power Combustion Turbine(s) less than or equal to 65 MMBTU per hour
GP-010	NON-HAP Degreaser	GP-022	Combined Heat and Power Stationary Spark Ignition Reciprocating Engine(s) less than or equal to 65 MMBTU per hour
GP-011	Degreasing Operations Using Only Methylene Chloride or 1,1,1 Trichloroethane Solvents		

Currently Over 21,000 Approved General Permits

General Permits – Work In Progress

NO.	General Permits	Comments	Update
GOP-004	Emergency Generator Burning Gaseous Fuels	Online submittal and attachment upload option for EPA certifications	Since May 4, 2015, the application is available to submit on paper form. Testing for Online Implementation Approximate Available Date: December, 2015
GOP-007	Boiler or Heater, greater than or equal to 1 MMBTU/hr and less than 5 MMBTU/hr	To implement MACT JJJJJJ for Industrial, Commercial and Institutional Boilers	30-day public comment period ended up on August 6th 2015. EPA comment period ended on September 20, 2015 Next: Online development Approximate Available Date: Beginning/Mid of 2016
GOP-008	Boiler or Heater, greater than or equal to 5 MMBTU/hr and less than 10 MMBTU/hr	To implement MACT JJJJJJ for Industrial, Commercial and Institutional Boilers	Developing Permit Text and Compliance Plan Plan to Public Notice 1st Quarter 2016

Active General Operating Permits (GOPs)

NO.	General Operating Permits
GOP-002	Small Emitter General Air Permit (SEGAP)
GOP-003	Emergency Generator (Burning Distillate Fuel)
GOP-004	Emergency Generator Burning Gaseous Fuels
GOP-005	Combined Heat and Power Combustion Turbine(s) less than or equal to 65 MMBTU per hour
GOP-006	Combined Heat and Power Stationary Spark Ignition Reciprocating Engine(s) less than or equal to 65 MMBTU per hour

28 Approved General Operating Permits

General Operating Permits – Work in Progress

NO.	General Permits	Comments	Update
GOP-004	Emergency Generator Burning Gaseous Fuels	Online submittal and attachment upload option for EPA certifications	Since May 4, 2015, the application is available to submit on paper form. Testing for Online Implementation Approximate Available Date: December, 2015
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Re-evaluation of Small Emitter General Air Permit (SEGAP)

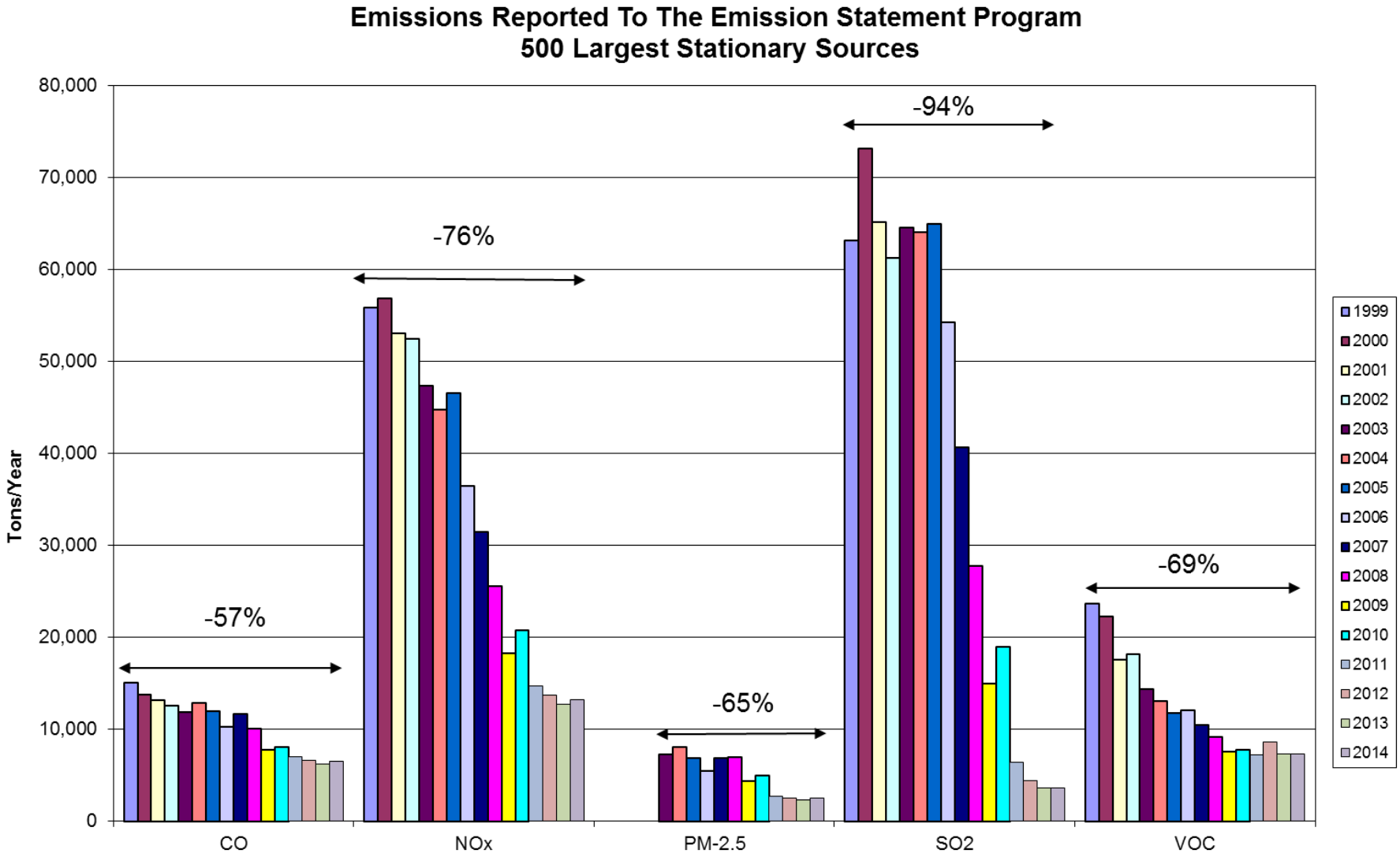
- GP-016 and GOP-002
- Items for Discussion
  - Threshold applying to all sources, not just one source?
  - Source being below reporting threshold prior to control, not after?
  - Source having a single emission point?

Bureau of Evaluation and Planning Highlights

- Emission Statement
- Updated Risk Screening Tools
- Challenging Source Categories
  - Landfills
  - Fumigation
- Modeling Requirements – EPA Appendix W
- Ozone Transport

Emission Statement Data

- Submissions via
  - Portal - 386 (80%)
  - Disk – 100
  - Require Portal Submittals in Near Future?
- Facility Profiles
  - Major - 242
  - Non Major - 244



Bureau of Evaluation and Planning 10/26/2015

Updated Risk Screening Tools

- Two Risk Screening Tools Available
  - Risk Screening Worksheet for Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects
  - Cancer Risk Screening Worksheet for Nonroad Diesel Engines
- Both can be found at
  - http://www.nj.gov/dep/aqpp/risk.html

Challenging Source Categories

- Landfills
  - Challenging Modeling
  - Increased Monitoring
  - Odor Analysis
- Fumigation
  - Comparative Sources
  - Scalability of Controls
  - Very Short-Term Considerations

VOC and NO_x Rule Proposal

- Required under Clean Air Act to address ozone non-attainment
- Control Techniques Guidelines for VOC emissions
  - Fiberglass Boat Manufacturing
  - Industrial Cleaning Solvents
  - Paper, Film, and Foil Coatings
  - Miscellaneous Metal and Plastic Parts Coatings
- Natural Gas Compressors (NGC) for NO_x emissions
  - NGC Engines and turbines which compress gases for transport and storage
  - Should result in emissions reductions for three turbines and two engines
- Scheduled for public comment by February, 2016

Revision to the 40 CFR 51 Appendix W Guideline on Air Quality Models

- Signed 7/14/15. Public comment period ended on 10/27/15. Expected promulgation Spring 2016.

- Enhancements to the AERMOD Dispersion Modeling System

- Incorporation of Approaches to Address Ozone and Secondary PM2.5 from Single Source Precursor Emissions

Key Points of the Revision

- To correct AERMOD over predicting under stable, low wind speed conditions
- NO2 modeling: ARM2 approach
- Single source impact on secondarily formed O3 & PM2.5
  - MERP (Model Emissions Rates for Precursors)
  - 2-Tiered Approach

Key Points of the Revision

- Updates to Modeling Procedures for Multisource Impact Analysis:
  - Allow the use of actual operation data of nearby sources when developing multisource emission inventory.
- CALPUFF removed from preferred model
- Allow 1-yr transition from the effective date of the Guideline.
- DEP Point of Contact – Yiling Zhang