

N.J.A.C. 7:27-21

Emission Statements

Program Update

March 16, 2009

Topics

- Overview of the Emission Statement Program
- Summary of the 2007 Data
- 2008 Season Expectations
- Q & A

What is an Emission Statement

- Annual report required for facilities with Potential-To-Emit (PTE) that meet the reporting threshold under N.J.A.C. 7:27-21 (revised in 2003).
- Air contaminants required include CO, NO_x, VOC, Pb, SO₂, PM₁₀, PM_{2.5}, TSP, ammonia, greenhouse gases (CO₂ and methane), and 36 toxic air pollutants (TAP's) as listed in the Rule.
- Data is submitted using the RADIUS software.

Air Contaminant Applicability Thresholds

- Emission Statement reporting applies if a facility has a Potential To Emit (PTE) of:
 - 5 tons or greater Pb
 - 10 tons or greater VOC
 - 25 tons or greater NO_x
 - 100 tons or greater of CO, SO₂, PM₁₀, PM_{2.5}, TSP, or ammonia

36 Toxic Air Pollutants

- Acetaldehyde
- Acrolein
- Acrylonitrile
- Arsenic and compounds
- Benzene
- Beryllium and compounds
- 1,3-Butadiene
- Cadmium and compounds
- Carbon tetrachloride
- Chloroform
- Chromium and compounds
- 1,3-Dichloropropene
- 1,4-Dioxane
- Dioxins
- Ethylene dibromide
- Ethylene dichloride
- Ethyleneimine
- Ethylene oxide
- Formaldehyde
- Hexachlorobenzene
- Hydrazine
- Hydrochloric acid
- Manganese and compounds
- Mercury and compounds
- Methylene chloride
- Nickel and compounds
- Polychlorinated biphenyls (PCBs)
- Polycyclic organic matter
- Propylene dichloride
- Quinoline
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethylene
- 1,1,1-Trichloroethane (Methyl chloroform)
- 1,1,2-Trichloroethane
- Trichloroethylene
- Vinyl chloride

The reporting thresholds for these chemicals are in N.J.A.C. 7:27-8, Appendix 1, Table B.

Potential To Emit

- The maximum aggregate capacity of a source operation or of a facility to emit an air contaminant under its physical or operation design
- Permit conditions can limit the design or maximum capacity if the limitation is “federally enforceable”
- Permitted Sources have a PTE equal to their permit allowable emissions and unpermitted (grandfathered, insignificant, fugitive, etc.) sources are assumed to operate at their maximum capacity for 8,760 hours per year

What is Defined as a VOC?

- A Volatile Organic Compound (VOC) is defined (in 40CFR 51.100(s)(1)) as all organic compounds “which participate in atmospheric photochemical reactions or which are measured by a reference method (40 CFR, Part 60.2).”
- Excluded are a list of compounds that do not participate in photochemical reactions.

List of Excluded VOC

- Ethane
- Acetone
- Methyl Acetate
- Methylene Chloride
- Methyl Chloroform
- Perchloroethylene
- Many other compounds including CFC's and HCFC's (See the list in 40 CFR 51.100 (s)(1))
- TBAC – not VOC for Emission Statement but required to be separately reported per website (<http://www.nj.gov/dep/baqp/tbac.html>)

Which Pollutants Do I Have to Report?

- PTE for VOC is 10 tpy or above
 - CO, NO_x, and VOC
 - TAPs starting with the 2005 Emission Statement
- PTE for VOC is 25 tpy or above
 - CO, NO_x, VOC, SO₂, Pb, PM_{2.5}, PM₁₀, TSP, and ammonia
 - Greenhouse gases (CO₂ and methane)
 - TAPs
- PTE for any of the other pollutant(s) is at or above the Applicability Threshold
 - CO, NO_x, VOC, SO₂, Pb, PM_{2.5}, PM₁₀, TSP, and ammonia
 - Greenhouse gases (CO₂ and methane)
 - TAPs

Terminology Used

- Significant piece of Equipment (E)
- Equipment Set (ES)

- Emission Point (PT)
- Emission Point Set (PS)

- Control Device (CD)
- Control Device Set (CS)

Terminology Used

- **Emission Unit (U):** A permitting method that describes one or more significant component operations. Stand-alone pieces of equipment will make up an emission unit. Pieces of equipment with physical commonalities (such as common exhaust systems) making collective data presentation easier to understand also may constitute an emission unit.
- **Operating Scenario (OS):** Describes a particular manufacturing operation or process. The description identifies the relationship of a piece of equipment, a control device(s) (optional), and an emission point(s). An operating scenario may describe only one piece of equipment.

Terminology Used

- **Batch Process (BP):** A method of permitting that describes manufacturing operations (normally related to the chemical or pharmaceutical industries) that involve multiple components (sets) and multiple manufacturing operations (steps).
- **Operating Scenario (OS):** Describes a process line in a batch process. We refer to the unit operations within the process line as steps. Therefore, naming the operating scenario within a batch process and the step identifies a unit operation.
- **Step (ST):** An unit operation within the process line.

Terminology Used

- Insignificant Source (IS): permit not required
- Non-Source Fugitive (FG): classic definition of “fugitive”
- Subject Item Group (GR): Grouping of emission units, batch processes, insignificant sources, non-source fugitives, and/or pieces of significant equipment
- Facility (FC)

Terminology Used

- SCC: Standard Classification Code (source level)
- SIC: Standard Industrial Classification (facility level)
- NAICS: North American Industrial Classification System (facility level)
 - use 2002

Emission Unit : U100 - Boiler

Operating Scenario:

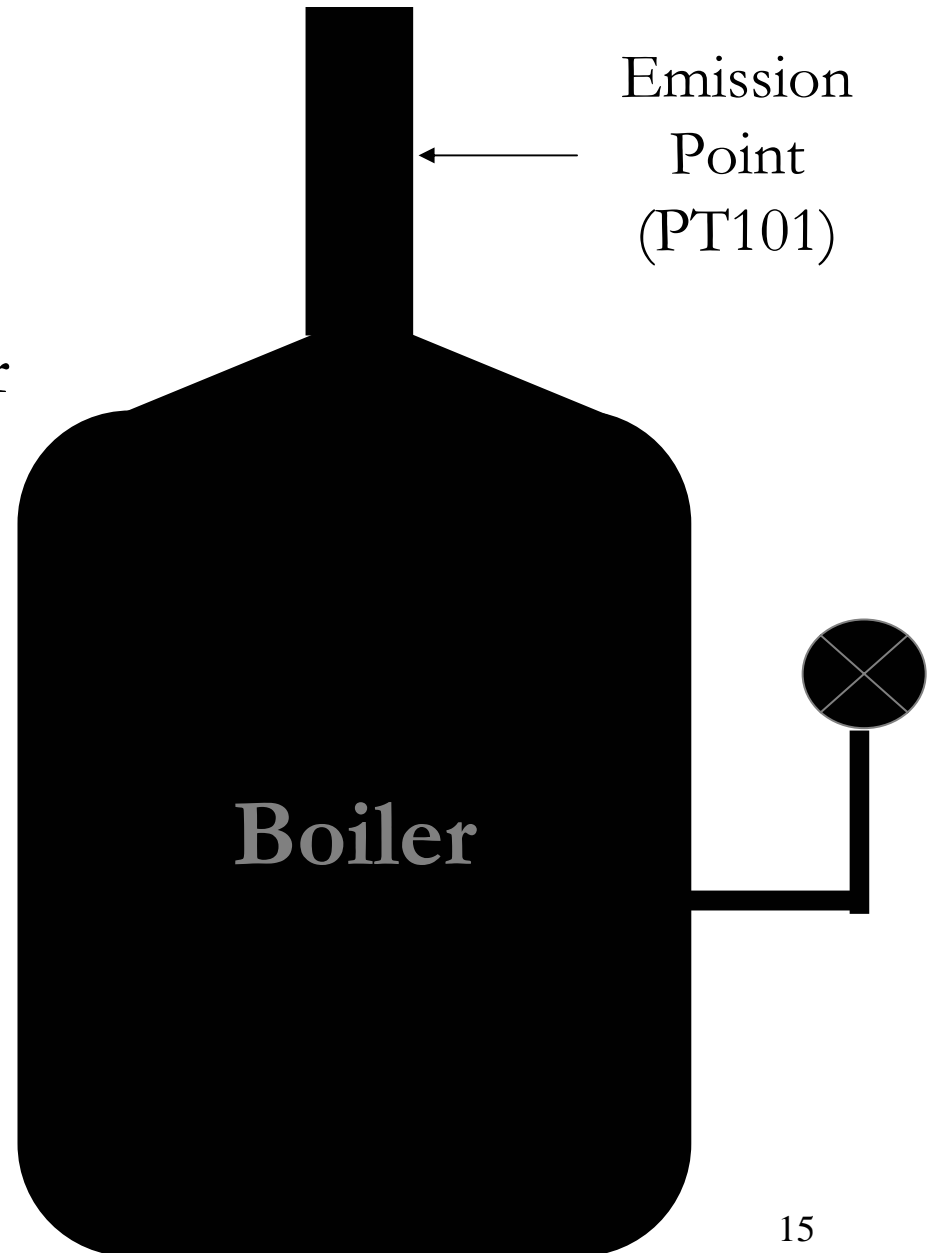
OS101 - Natural Gas

OS102 - #2 Fuel Oil

OS103 - #6 Fuel Oil

Equipment

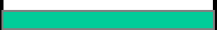
E101 - Boiler



Emission Unit : U200 - Coater
Operating Scenarios:

OS201 - VOC Coating
(E201, CD201, PT201)

Coater (E201)



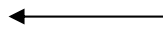
Oxidizer (CD201)



Emission Point
(PT201)
(T.O.stack)

OS202 - Water-based Coating
(E201, PT202)

Coater (E201)



Emission Point
(PT202)
(Bypass stack)

TRUCK LOADING TO UST

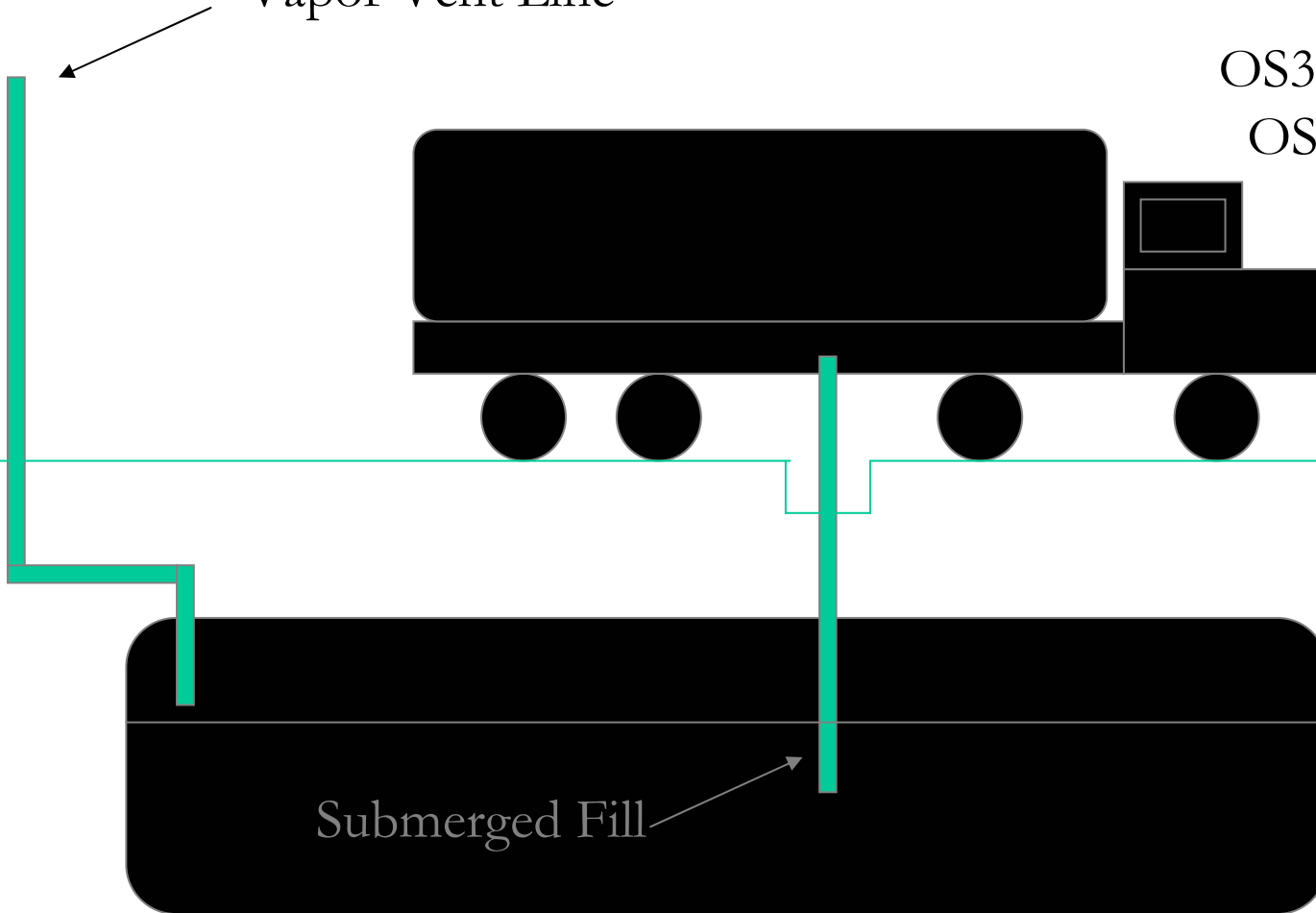
Emission Unit: U300

E301

OS301 = Gasoline

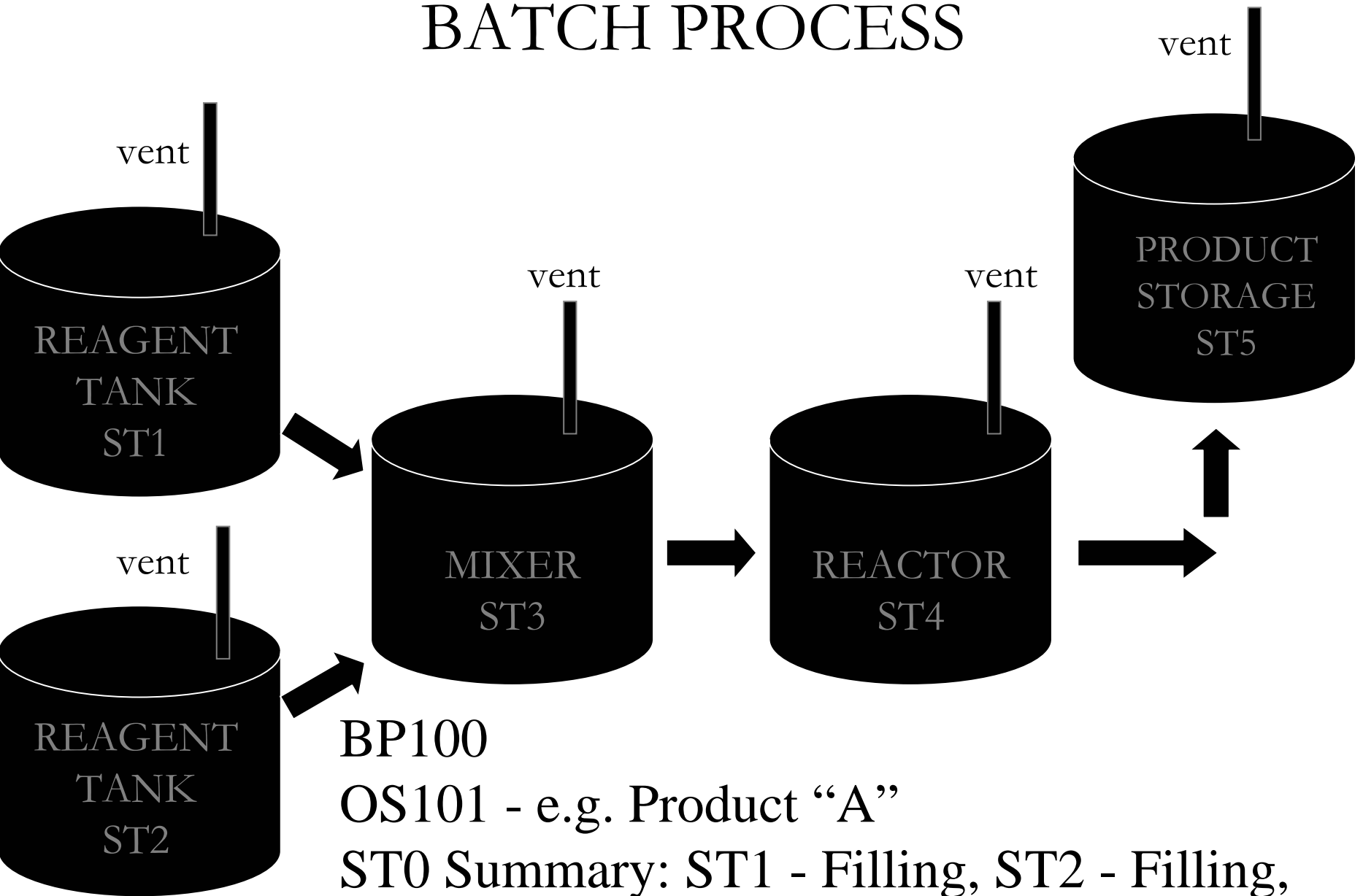
OS302 = Diesel

Vapor Vent Line



Submerged Fill

BATCH PROCESS



BP100

OS101 - e.g. Product "A"

ST0 Summary: ST1 - Filling, ST2 - Filling,
ST3 - Mixing, ST4 - Reacting, ST5 - Receiver

What is in an Emission Statement - Administrative Information

- Facility Profile (General)
 - Facility information
 - Contact information
- Facility Profile (Planning)
 - Facility type
 - # of employees
 - Estimates of future emissions

What is in an Emission Statement - Inventories

- Non-Source Fugitive Emissions
- Insignificant Source Emissions
- Equipment Inventory
- Control Device Inventory
- Emission Point Inventory
- Emission Unit/Batch Process Inventory
- Subject Item Group

What is in an Emission Statement - Emissions Information

- Emission Statement
 - General
 - Quarterly throughputs
 - Source Status
 - Process
 - Process amounts
 - Operating time
 - Emissions
 - Emission factors
 - Control operations
 - Source details

Consistency With Numbers

- Emission Statement reporting must be consistent with permits
- How you structure your permits decides if you can report in an easier fashion
- The nature and variability of your operation decides if easier reporting can occur
- There are a few instances where the Emission Statement structure may be different from those in the permits such as a thermal oxidizer must be reported as a piece of equipment

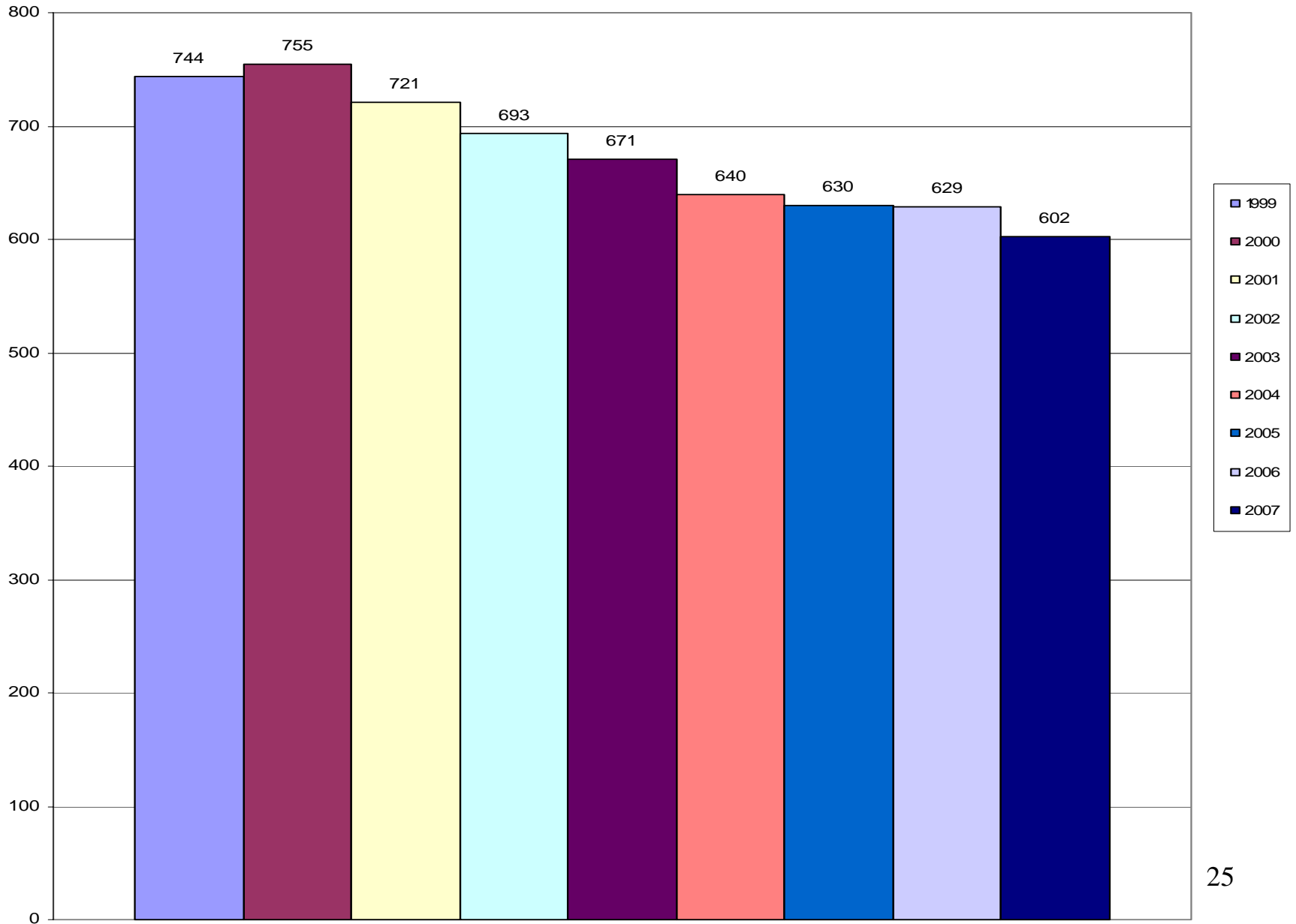
Control Device Efficiency

- Operating Time (OT)
- Capture Efficiency (CE)
- Removal Efficiency (RE)
- Overall Efficiency = $OT \times CE \times RE$
- Use of Design Efficiency
- Rule Effectiveness

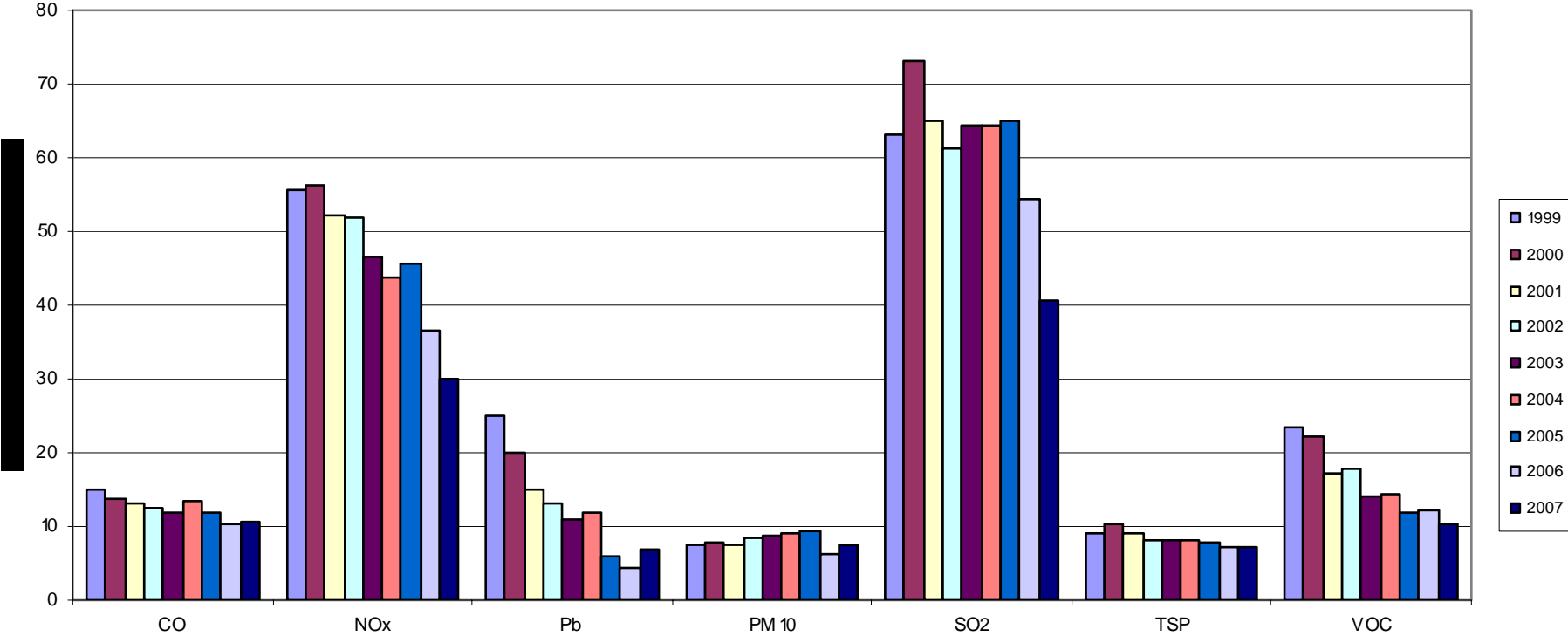
ES 2007

- Title V facilities had to report PM2.5, ammonia, greenhouse gases
- Everyone had to report
 - TAP's
 - NOx tons/season for 5/1-9/30
 - NAICS
- Mandatory electronic submittal via RADIUS (except for “hardship” waiver)
- *** Emission Statements submitted (100% electronic)

Number of Facilities Reporting in the Emission Statement Program



Emissions Trend for New Jersey



Common Issues for Reasonableness Letter in ES 2007

- Structure of the Emission Statement
 - Mirror permit(s)
 - Correctly link the equipment, emission point, and control device in the Emission Unit/Batch Process Inventory
 - Correctly identifying the Equipment Type
 - Create new equipment/operating scenario for control devices that burn fuel
 - Delete sources that are no longer at the facility

Cont.

- Process & Emissions Screens:
 - Report fuel usage for combustion sources
 - Report amount of coating/ink/solution for coating/printing operations
 - CO₂ in 1000 tons/yr and TAP's in lbs/yr
 - NO_x for 5/1-9/30 in tons/season
 - PM_{2.5} at source level for sources of particulates
 - Ammonia at source level
 - Emission factors except for CEM and material balance
 - Source Details and Control Operations

Cont.

- Things to remember about RADIUS:
 - Correctly use the check boxes on the General screen
 - Select pollutants from drop-down list
 - “Sum Facility Emissions” before creating file
 - Use the Submit function in RADIUS
 - Use Save As Different Year under the Tools drop-down menu, not under the File drop-down menu
 - RADIUS only calculates emissions for boilers and coating/printing processes
 - Autocalculate does not calculate emissions for the NO_x tons/season (5/1-9/30) nor emissions for PM_{2.5}, ammonia, CO₂, methane, and TAP’s

Cont.

- Other Miscellaneous Issues:
 - Missing NAICS
 - Use of proper SCC (4 levels)
 - Use of proper AP-42 emission factors
 - Include condensable as part of PM
 - Checklist for reviewing the emission statements

ES 2008

- Reporting requirements same as ES 2007
- Use the “Save As Different Year” function to create file for 2007
- Use latest version of RADIUS (3.02)
 - <http://www.nj.gov/dep/aqpp/radius.html>
- Submit function does not send file to DEP
- Original and revisions must be electronically certified or accompanied with paper certification

Where to Start

- Start with Emission Statement from previous year
 - Include any permit modifications
- Title V Facilities that never submitted an Emission Statement using RADIUS
 - Convert the Title V permit/application in an Emission Statement
- Non-Title V Facilities that never submitted an Emission Statement using RADIUS
 - Request the Department to create a file from all permits
 - Or, merge all existing permit and convert the resulting file into an Emission Statement

Certification of Emission Statement

- Email electronically certified Emission Statements to `Emis_Statement@dep.state.nj.us`.
 - When certifying with PINs, please enter all letters in CAPs
- If you used a paper certification form, you must mail the certification form with your diskette to DEP
- If you prepared your Emission Statement using paper forms, you must mail the forms to DEP

Important Dates

- Non-Applicability requests due February 1, 2009
- Hardship waiver request for paper submittal due March 1, 2009
- Paper submittals due April 15, 2009
- RADIUS submittals due May 15, 2009
- Post-marked
- Next business day if due date falls on a weekend or holiday

Emission Statement Web Page

- www.nj.gov/dep/baqp (Bureau of Air Quality Planning)
- Important Dates
- Guidance Document, Addendum, and other forms
- General ES Info
- Listserv Instructions
- Contact Information
- FAQ's
- Useful Links (USEPA, NAICS, etc.)

What's on the Horizon?

- Air Emissions Reporting Requirement
 - Final Dec. 4, 2008
 - Impact on NJ's Emission Statement Program
 - PM10 and PM2.5 must include reporting of filterable and condensable separately
 - Starting with the 2009 emission data, states must submit data to USEPA within 12 months, i.e., 2009 due by December 31, 2010
 - New USEPA data system, Emission Inventory System (EIS), requires SCC to the fourth level

What's on the Horizon?

- NJ's Greenhouse Gas Reporting Rule
 - Required by the Global Warming Response Act
 - Close of Comment: March 21, 2009
 - List of GHG's from IPCC report
 - Impact on NJ's Emission Statement Program
 - Same as before + GHG with reporting threshold (except CO₂)
 - Will pull in new facilities that only have to report GHG (not applicable for criteria pollutants)
 - Reporting threshold based on 100 tons/yr methane
 - Ammonia, PM_{2.5}, and Air Toxics at source level

Questions???