

VA Retrofits & IPM Predictions

MARAMA WOE Workshop 2/7

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VA NOx Retrofits

- James River Cogeneration (ORIS 10377)
 - Originally fitted with FF
 - Retrofitted all 6 units LNB/FGR
- Cogentrix Portsmouth (ORIS 10071)
 - Originally fitted with FF
 - Retrofitted all 6 units with LNB/FGR
- Chesterfield Power Station (ORIS 3797)
 - Units 3-6 currently fitted with ESPc
 - Retrofitted 3 with staged combustion for NOx control
 - Retrofitted 4,5, & 6 with SCR for NOx control

VA NOx Retrofits, Continued

- Yorktown Power Station (ORIS 3809)
 - Units 1 & 2 originally fitted with ESPc
 - Retrofitted with SNCR for NOx control
- Chesapeake Power Station (ORIS 3803)
 - Units 1-4 originally fitted with ESPc for PM control
 - Units 1 & 2 retrofitted with ROFA
 - Units 3 & 4 retrofitted with SCR for NOx control
- Possum Point Power Station (ORIS 3804)
 - Units 3 & 4 were coal fired units.
 - Fuel switch to natural gas in 2004
 - Added 500 MW combined cycle unit with SCR

VA SO₂ and FF Retrofits

- James River Cogeneration (ORIS 10377)
 - Retrofitting all 6 units with SDA (98% Hg control)
 - In place 2008-2009
- Cogentrix Portsmouth (ORIS 10071)
 - Retrofitting all 6 units with SDA (98% Hg control)
 - In place 2008-2009
- Chesterfield Power Station (ORIS 3797)
 - Will retrofit 3-6 with FGD for SO₂ control (80-90% Hg control)
 - Will retrofit #6 with polishing FF (98+% Hg control)
 - #6 in place 2008; #3, #4, and #5 in place 2010

VA SO₂ and FF Retrofits, Continued

- Yorktown Power Station (ORIS 3809)
 - Will retrofit 1 & 2 with FGD for SO₂ control (80-90% Hg control)
 - #1 in place 2010, #2 in place 2015
- Chesapeake Power Station (ORIS 3803)
 - Switching to lower S and lower Hg coal in Jan, 2007 for units 1-4 (~50% reduction in Hg and SO₂)
 - May install FGD on Units 1-4
- Possum Point Power Station (ORIS 3804)
 - Units 3 & 4 were coal fired units.
 - Fuel switch to natural gas in 2004 (~99.9+% Hg control)

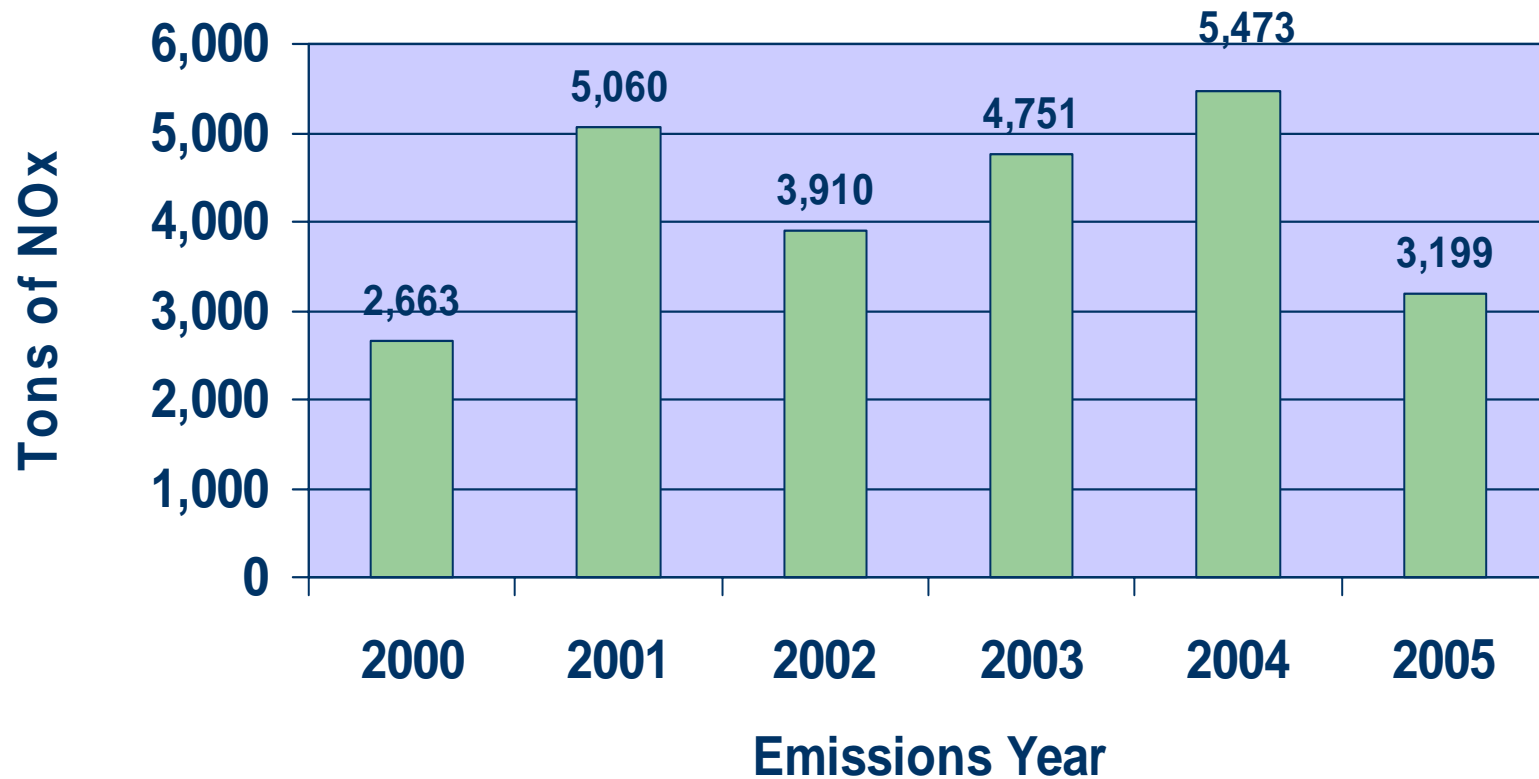
EPA 2006 IPM Predictions for VA

Facility, Unit, ORIS	2010	2015	2020
Chesapeake #3 (3803)	SCR	SCR	SCR
Chesapeake #4 (3803)	--	SCR	SCR/Scrubber
Chesterfield #4 (3797)	--	SCR	SCR
Chesterfield #5 (3797)	--	SCR/Scrubber	SCR/Scrubber
Chesterfield #6 (3797)	Scrubber	SCR/Scrubber	SCR/Scrubber
Po River #3 (3788)	SCR	SCR	SCR
Po River #4 (3788)	SCR	SCR	SCR
Po River #5 (3788)	SCR	SCR	SCR
Clinch River #1 (3775)	---	SCR	SCR
Clinch River #2 (3775)	---	SCR	SCR
Clinch River #3 (3775)	---	SCR	SCR
Glen Lyn #6 (3776)	---	SCR	SCR
Yorktown #1 (3809)	---	---	SCR
Yorktown #2 (3809)	---	---	SCR

Other IPM Oddities-Oil Fired Units

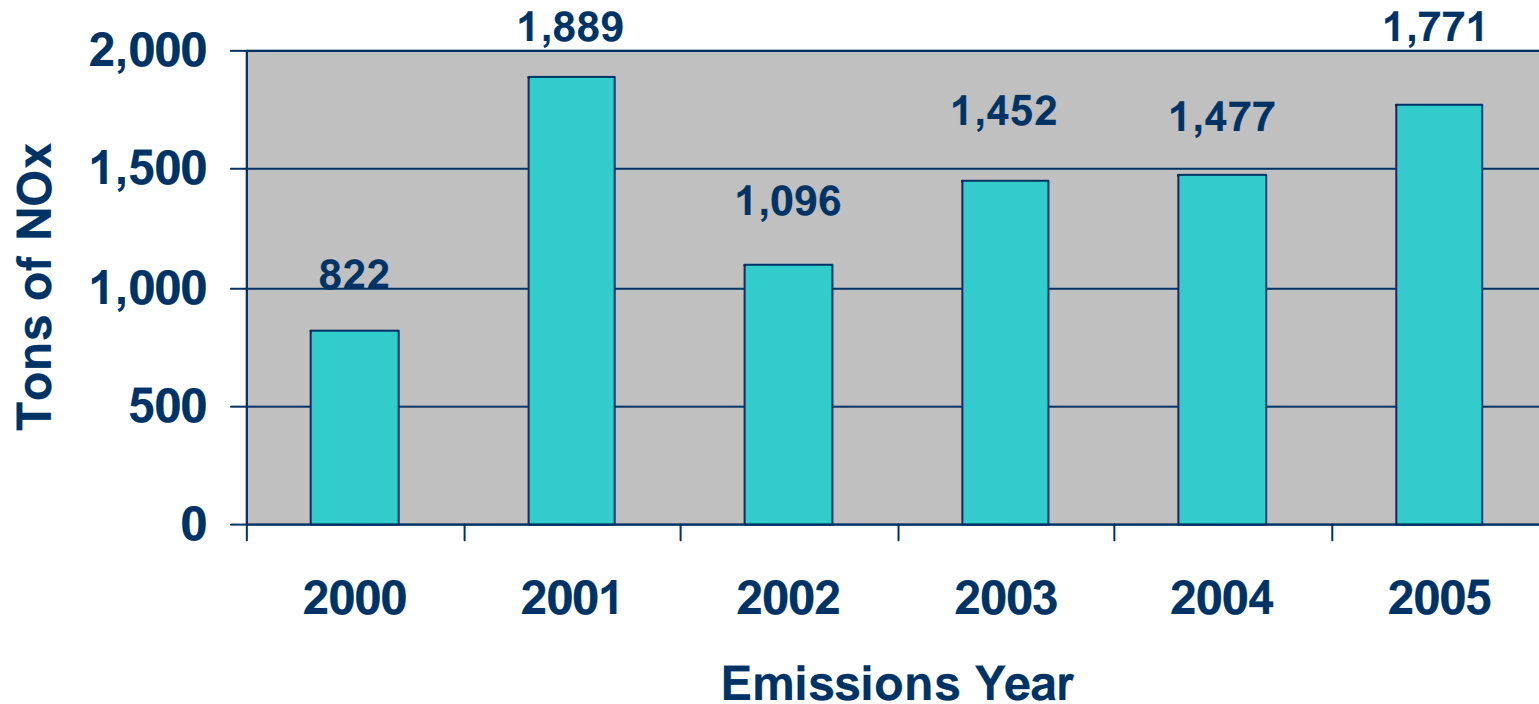
- In 2010, several oil-fired, simple cycle facilities are “zero’d” out.
 - Darbytown (ORIS 7212)
 - Gravel Neck (ORIS 7032)
- In 2010, 2015, & 2020, the two largest utility boilers in VA, both oil fired, are “zero’d” out:
 - Possum Point #5 (ORIS 3804, 786 MW)
 - Yorktown #3 (ORIS 3809, 818 MW)

Yorktown #3 Historical NOx Emissions



Data from CEDS Emissions Inventory

Possum Point #5 Historical NOx Emissions



Data from CEDS Emissions Inventory

VA CAIR Regulation

- Changes from FIP:
 - Emissions caps in nonattainment areas
 - Fuel neutral allocation methodology
 - Change in average period for newer existing units
 - New Source Set Aside/EERE Set Aside
 - Existing source definition changed from 2001 to 2006
- Net Effects - Allocations are ~0.125 lbs NO_x/mmbtu for Phase I