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 SO$_2$ 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 SO$_2$)
  - 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

<table>
<thead>
<tr>
<th>Facility, Unit, ORIS</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
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<tr>
<td>Chesapeake #3 (3803)</td>
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<td>Chesapeake #4 (3803)</td>
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<td>SCR</td>
<td>SCR/Scrubber</td>
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<td>Chesterfield #4 (3797)</td>
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<td>Chesterfield #5 (3797)</td>
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<td>Chesterfield #6 (3797)</td>
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<td>Po River #3 (3788)</td>
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<td>Yorktown #1 (3809)</td>
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<td>SCR</td>
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<tr>
<td>Yorktown #2 (3809)</td>
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<td>SCR</td>
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</tbody>
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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

- 2000: 822 tons
- 2001: 1,889 tons
- 2002: 1,096 tons
- 2003: 1,452 tons
- 2004: 1,477 tons
- 2005: 1,771 tons
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 NOx/mmbtu for Phase I