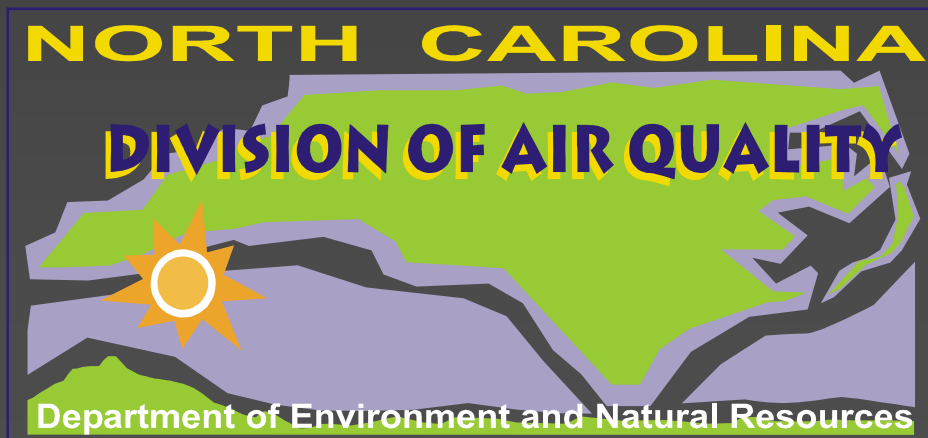


***Permitting Coal-Fired
Power Plants
NACAA Spring Meeting
May 6, 2008***

*Keith Overcash, P.E.
Director*





North Carolina Clean Smokestacks Act (CSA)





North Carolina Clean Smokestacks Act (CSA)

- **CSA Passed and Signed in June 2002**
- **NO_x & SO₂ Caps on Emissions-Tons/Year-Caps per Company – They Decide on Controls**
- **Phased Compliance; 1 Jan. '07, '09, '13**
- **21 SO₂ Scrubbers**
- **36 SCR / SNCR Units**
- **NO_x Controls in Place Starting in 2001**

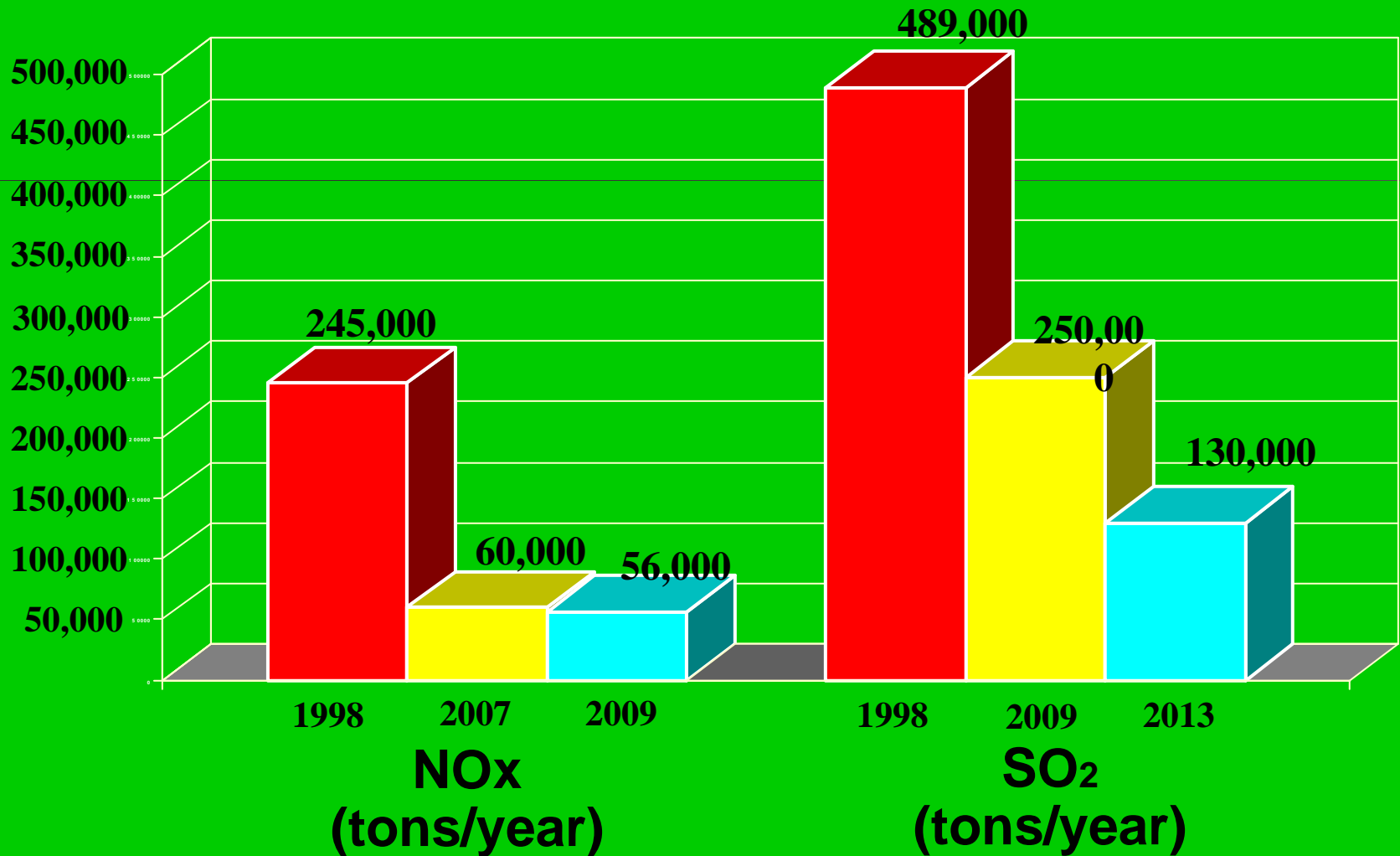


North Carolina Clean Smokestacks Act (CSA)

- **Actual Reductions in NC**
- **Reduction Credits Held by the State**
- **Unique Cost Recovery Feature**
- **Recommendations on Hg & CO₂;
September 2005**
- **Reduction Credits Held by the State**



North Carolina Clean Smokestacks Act (CSA)





CSA Compliance

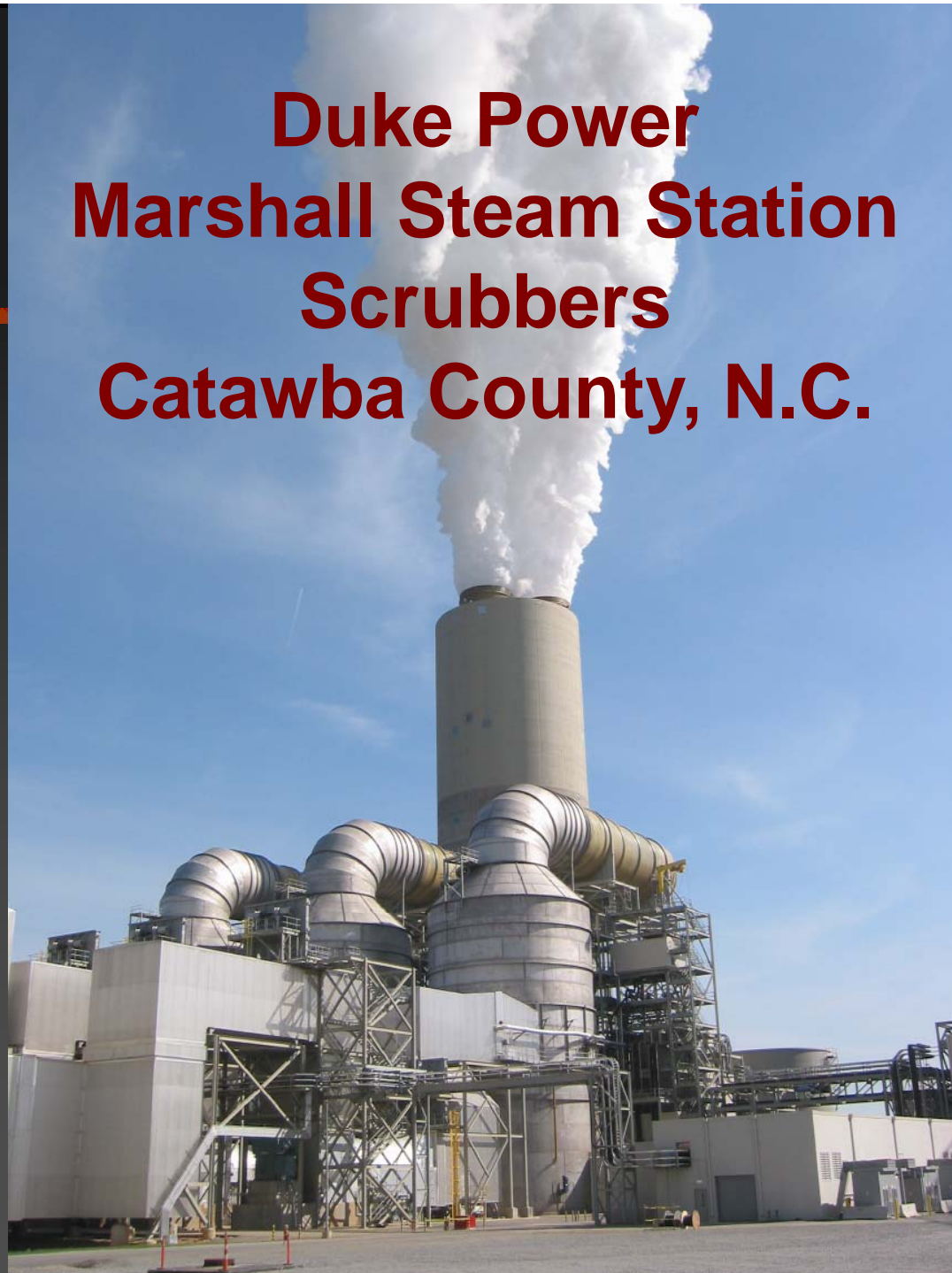
- First Deadline for NO_x December 31, 2007
- Total of 60,000 Tons allowed from Progress Energy (25,000) and Duke Energy (35,000)
- Progress Energy total - 24,384.4
- Duke Energy total - 33,015.8
- Total from both - 57,400.2 tons of NO_x



NC's First Operating Scrubber – Progress Energy – Asheville November 2005



**Duke Power
Marshall Steam Station
Scrubbers
Catawba County, N.C.**





Duke Power Cliffside Permit

- Original application for two 800-Mw electric generating units (EGUS)
- NC Utilities Commission said only one needed
- Application modified to one 800-Mw EGU
- Controls proposed for the EGU included SCR, dry absorbers, bag filters and wet scrubber



Cliffside Permit (cont.)

- Draft permit noticed 8/14/2007
- Public hearing held on 9/18/07
- 300 people attended hearing
- Over 1,900 oral and written comments received
- Some in favor of new unit, more opposed to it



Cliffside Permit (cont.)

Key Issues with Draft Permit Raised by Commenters

- Increased air pollution due to burning coal
- Net-out for NO_x & SO₂ “unlawful”
- Failure to set limits for Mercury based upon MACT
- Effects on global warming of CO₂ emissions
- Failure to treat carbon dioxide emissions as PSD Pollutant



Cliffside Permit (cont.)

- Permit issued on January 29, 2008
- Notable Conditions
 - BACT limits for NO_x & SO₂ on new unit
 - Requirement to continuously operate existing unit's scrubbers
 - Mercury limit tighter than NSPS standards in place at time of issuance – based upon BACT requirement in NC Hg rule



Cliffside Permit (cont.)

- Notable conditions (cont.)
 - CO₂ mitigation for new unit emissions by shutting down 800-Mw of “old” coal units by 2018
 - Requirement to shut down four smaller old units at Cliffside
 - Several re-opener conditions



Cliffside Permit (cont.)

- Resulting emissions from Cliffside
 - 80% less SO₂ emissions
 - 50% less Mercury emissions
 - 50% less NO_x emissions
 - CO₂ emissions neutralized
- Seems like a Win-Win



Cliffside Permit (cont.)

The Carbon Dioxide Condition (aka, The Greenhouse Gas Reduction Plan)

- Duke Power to retire an additional 800 Mw of coal-fired emission units in NC on following schedule:
 - 1) 350 Mw by Dec 31, 2015
 - 2) Additional 200 Mw by Dec 31, 2016
 - 3) Additional 250 Mw by Dec 30, 2018



Cliffside Permit (cont.)

- Undertake Additional actions to render Cliffside 6 carbon neutral by 2018
- Build Cliffside 6 in a manner to accommodate installation and operation of future carbon control technologies



Growth in North Carolina is an Issue!

- *9+ Million Citizens (~13M in 2030)*
- *3.4 million Homes (~ 5 M in 2030)*
- *7 million Cars and Trucks (~10 M in 2030) – Large Growth in Vehicle Mile Traveled (VMT)*
- *Residential, Commercial, Industrial, and Institutional Heated and Cooled Spaces – Large Growth in Energy Demand*



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Visit our web site:

<http://www.ncair.org/>

To review Cliffside Permit:

**[http://www.ncair.org/permits/psd/docs/
cliffside/Final Permit-Final Determ App A. pdf](http://www.ncair.org/permits/psd/docs/cliffside/Final%20Permit-Final%20Determ%20App%20A.pdf)**