

Proposed Approach to the Analysis of  
Cumulative Potential Reliability Impacts of  
the Multitude of Environmental Initiatives  
During the Planning Horizon

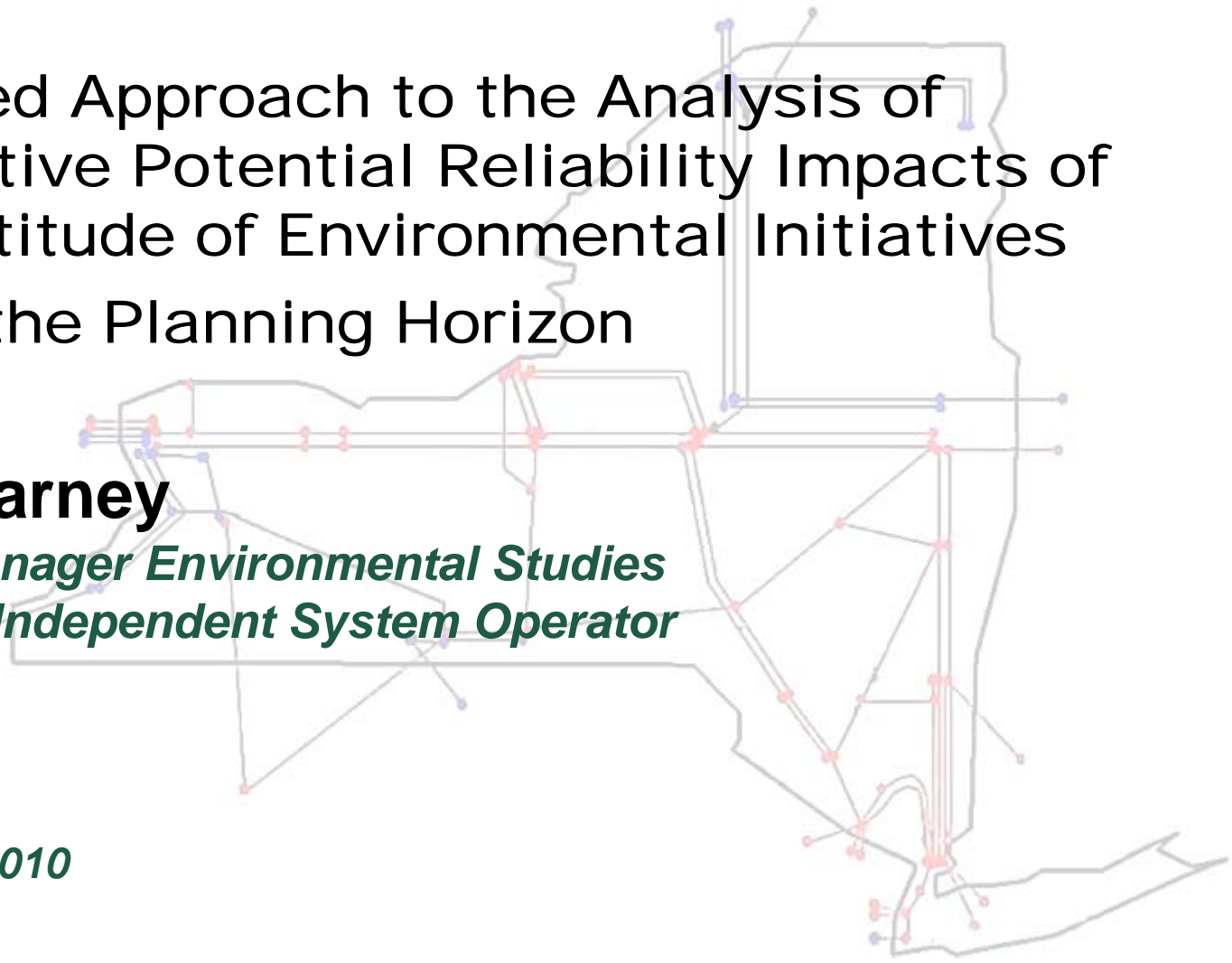
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**ESPWG**

*KCC*

*March 16, 2010*



# Environmental Initiatives

- ◆ Scheduled to arrive by 2015:
  - ***BART - Best Available Retrofit Technology***
  - ***NO<sub>x</sub> RACT – Reasonably Available Control Technology for NO<sub>x</sub>***
  - ***MACT – Maximum Achievable Control Technology for Hazardous Air Pollutants Hg***
  - ***BTA - Best Technology Available for water intakes***
  - ***reCAIR – Redesigned Clear Air Interstate Rule***
  - ***NSPS CO<sub>2</sub> - New Source Performance Standard for CO<sub>2</sub>***
  - ***LCFS - Low Carbon Fuel Standard***
  - ***NAAQS - National Ambient Air Quality Standards for NO<sub>2</sub>, SO<sub>2</sub>, and Ozone***
  - ***New Carbon Caps***
  - ***RCRA- C Classification for Coal Combustion Byproducts***

# BART

- ◆ BART affects plants built between 1968 and 1977
- ◆ 8,200 MW of Capacity
- ◆ Will require visibility impact analysis on National Parks
- ◆ May result in reductions in emissions of SO<sub>2</sub>, NO<sub>x</sub>, and PM through fuel switching and emission control technology retrofits
- ◆ Compliance Date: July 1, 2013



# NYSDEC NO<sub>x</sub>RACT

- ◆ Part 227-2
  - *Establishes Presumptive Limits for NO<sub>x</sub> emissions*
  - *Provides for System Averaging for emission rates*
  - *Economic reasonableness test \$5,500/ton of potential emissions reduced*
  - *Compliance Date: July 1, 2012*
- ◆ NYISO Study
  - *Used CARIS Database in GE MAPS Simulation 2010-2015*
  - *Compliance period must be lengthened to maintain system reliability*
  - *System average emission rate limit must not increase when lower emitting units are on outage*
  - *Units retirements must not be required prior to completion of retrofits.*

# MACT

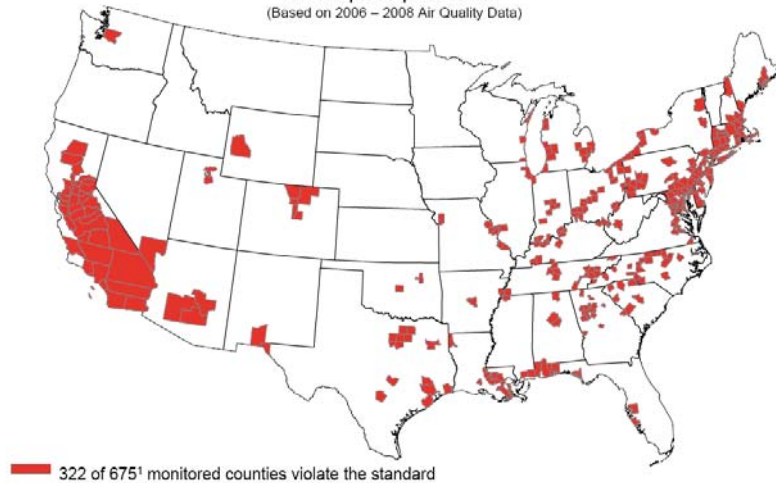
- ◆ USEPA regulation to reduce emissions of Hazardous Air Pollutants
- ◆ Existing plants must control emissions to a level currently achieved by the 88<sup>th</sup> percentile
- ◆ New units must achieve the best level ever achieved elsewhere
- ◆ Main concerns are Hg from coal, and Hg, Ni, and Vd from heavy oil
- ◆ Compliance: 2015

# BTA

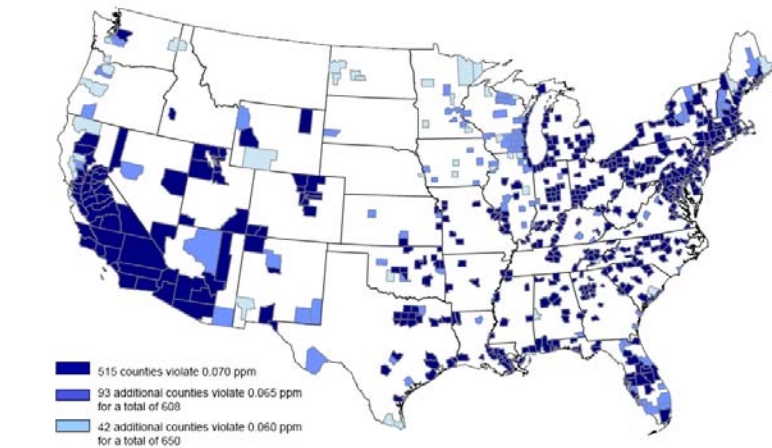
- ◆ Clean Water Act sections 316 a & b
- ◆ Applies to plants that use public waters for cooling systems and is reviewed when SPDES permits are renewed
  - *Study current levels of fish entrainment and impingement*
  - *Propose “Best Technology Available”*
  - *This may mean conversion to closed cycle cooling systems*
  - *Such conversions may lead to premature retirements*

# EPA Lowers the Ozone Standard

Counties With Monitors Violating the March 2008 Ground-Level Ozone Standards  
0.075 parts per million  
(Based on 2006 – 2008 Air Quality Data)



Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standards  
0.060 - 0.070 parts per million  
(Based on 2006 – 2008 Air Quality Data)  
EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.



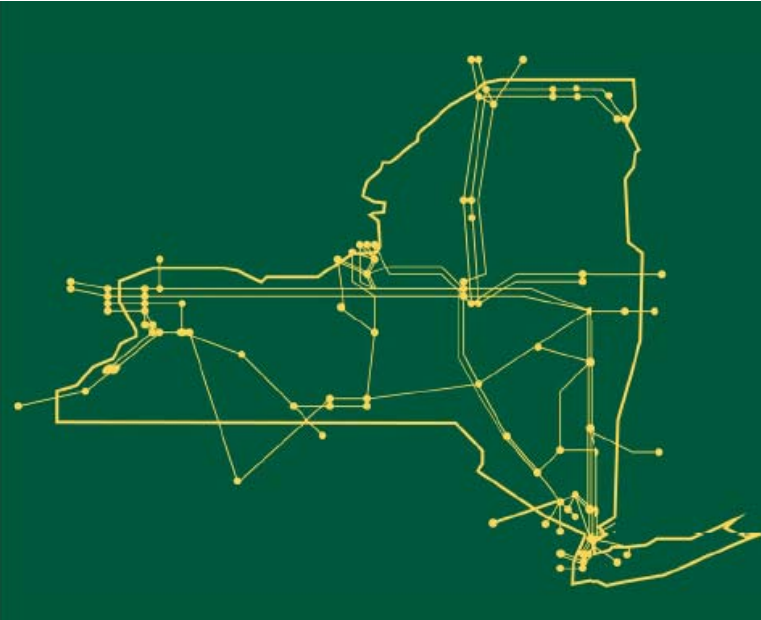
# More to Come

- ◆ Federal or Evolving State Carbon Caps
- ◆ Re CAIR
- ◆ NSPS CO<sub>2</sub>
- ◆ LCFS
- ◆ NAAQS SO<sub>2</sub>, NO<sub>2</sub>
- ◆ Coal Ash Classification

# Proposed Approach

- ◆ What, When, Who, How Much
  - *Determine State Priorities among the programs*
  - *Determine Effective Dates for each regulatory initiative*
  - *Identify placeholders for technology based limits*
  - *Estimate emission reductions that could be necessary to achieve new compliance with new NAAQS*
  - *Identify target units for each program*
  - *Compare current unit performance to expected future performance necessary to comply*
- ◆ What is the Cumulative Impact?
  - *Units with large gaps will be tabulated for each program*
  - *Units with multiple challenges will be identified as more likely to retire.*
  - *The population of more likely to retire units will be removed from service for the purpose of a RNA scenario analysis.*

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and conducts comprehensive planning for the state's bulk electricity system.



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