

A photograph of a sunset or sunrise sky, with a white banner at the bottom containing text. The sky transitions from a pale blue at the top to a bright yellow and orange near the horizon, with scattered clouds catching the low light.

# **JEA and the Mercury TMDL**

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# JEA General

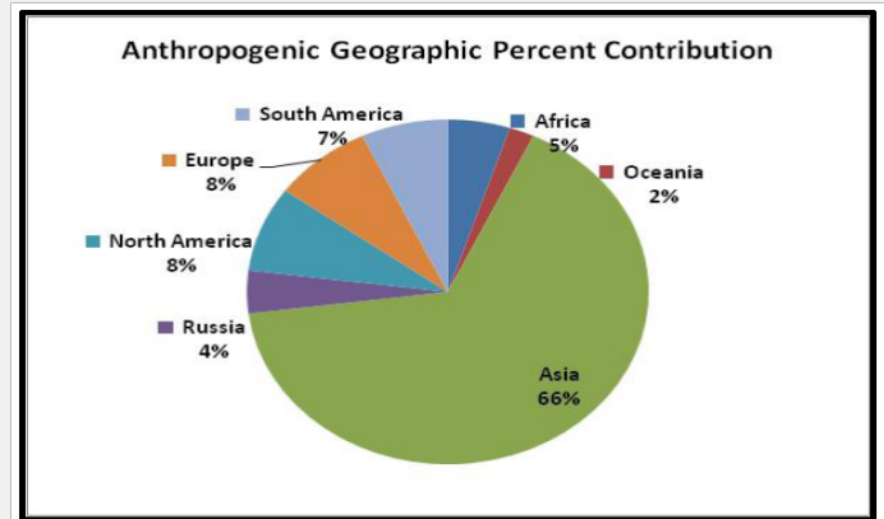
- JEA largest municipally owned utility in Florida
  - 7<sup>th</sup> largest in US
  - Water, sewer and electric
  - One of a few municipal utilities with our own power generation
- 14 Domestic Wastewater Treatment Plants
- 5 Electric Power Plants, Plus SJRPP



# Mercury TMDL Challenges: Utility Perspective

## Challenges for development of mercury TMDL

- The EPA, Third Party & Consent Decree dynamic
- Fl. sources small fraction of total
  - Impossible to achieve compliance with local measures only
- Minimal usable data for water
  - Minimal DW effluent sampling
  - Inadequate detection limits
  - Clean sampling required



# Mercury TMDL Development – DW

- Minimal / De minimis Source of Mercury
  - ~ 8 Lbs/yr Hg from DW sources
  - ~ 0.08% of total Hg load to Florida
- Minimal industrial sources
  - Industry minimizing Hg use
- Remaining Sources diffuse
  - Dentists, hospitals, schools
  - Best controlled through BMP approach



# Mercury TMDL Development – DW

- DEP/Utilities in agreement – DW related loading minimal
  - Original WLA problematic due to lack of data
- FDEP and FWEA UC cooperation
  - Independent surveys of Hg in DW effluent
- WLA revised to current, more accurate, total
- TMDL Requirements for DW plants
  - Conduct Clean Sampling
  - If Hg present, larger facilities will implement waste minimization plans
    - Promulgate BMPs
    - Dentists, Hospitals, Schools





# JEA Electrical Overview

## Sources of generating power

- Steam electric/solid fuel
  - Northside Generating Station
  - St. Johns River Power Park
- Combustion turbines/Natural Gas
  - Brandy Branch
  - Greenland Energy Station
- Conventional Gas/Oil Fueled Boiler
  - Northside #3
- Solar/renewable
- Nuclear in the works



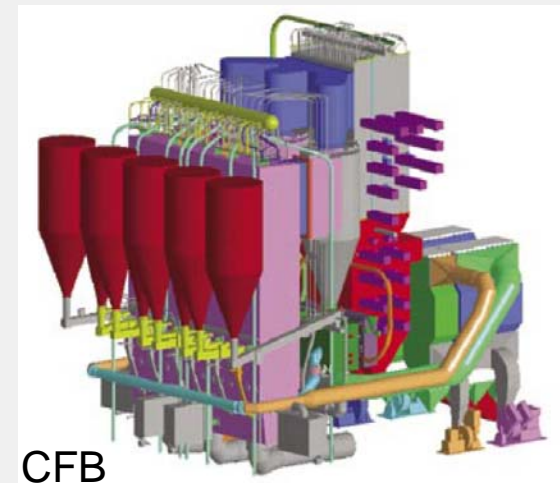
# Northside Generating Station

- 2001 Units 1 and 2 Repowering
  - \$307MM Project
- CFB units – Circulating Fluidized Bed
- Innovative Technology
  - Fuel Mixed w/limestone
  - Air bed “fluidizes” mix
  - Lower combustion temps
- First utility scale CFB units ever constructed



# NGS - Continued

- Inherent emissions advantages from CFBs
- CFB technology: low NOX, CO2, SO2, etc.
- Allows use of Pet Coke as fuel
  - petroleum refining byproduct
  - low in mercury
- Minimal emissions controls
- ~90% reduction in mercury airborne emissions





# St. Johns River Power Park

- Constructed with scrubber (\$191MM) and precipitator (\$84MM), primarily for SO<sub>2</sub> and particulate control
- \$300MM Selective Catalytic Reduction (SCR) for NO<sub>x</sub> control completed in 2009
- Emissions controls primarily designed for other pollutants, but effective for Hg control
  - Together ~90% Hg removal achievable
- Coal source matters
  - S. American coal has low Hg content



# SJRPP - Continued

- Scrubbers and SCRs are “wet” systems
  - Generates a liquid waste
- Treated by a Chemical Waste Treatment System (CWTS)
  - Designed and constructed prior before current emissions systems
  - Not adequately optimized for heavy metal removal



# SJRPP - Continued

- EPA acknowledged impacts of emissions control systems need to be addressed
  - Moving forward with updated effluent guidelines for coal fired power plants
  - Upgrades or replacement of CWTS may be required



# Hg TMDL and Solid Fueled Plants

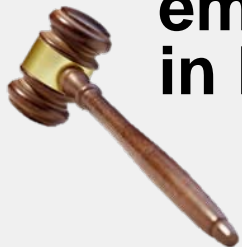
- EPA Mercury Rules (MACT) Coming
  - Will require use of best available technologies
  - Precipitator/Scrubber/SCR
  - Powdered Activated Carbon
- Will require ~ 90% Hg removal
  - Uncontrolled coal plants are an endangered species
- JEA is currently reviewing MACT implications



# OK, Where does all that leave JEA?

Proposed FDEP mercury TMDL acknowledges impacts of upcoming EPA MACT rule

“EPA estimates that its utility MACT rule would result in approximately a 90% reduction in mercury emissions from coal-fired electric utilities based on pre-controlled emissions. **Based upon the progress in reducing mercury emissions from coal-fired electric utilities in Florida and the fact that EPA has established a maximum achievable technology standard for mercury from such utilities that is reasonably anticipated to take effect by 2015, this TMDL will not require additional reductions of mercury air emissions from existing coal-fired electric utilities in Florida.**”





# Takeaways

- Impending EPA rules will have significant impact (reductions) on mercury discharged from coal plants
- JEA is well positioned for Mercury TMDL
  - Some of most extensively controlled plants in the US
  - Over \$600MM in emissions controls in place
- Regulatory and regulated parties can work together!
  - Acknowledge and incorporate regulatory efforts already underway
  - Together we have achieved a common sense solution that both sides are satisfied with:
    - Provides appropriate level of environmental protection
    - No more intrusive than necessary



# Questions?

