# 2015 ENVIRONMENTAL SYMPOSIUM

## "City of Jacksonville 50 Years of Environmental Stewardship"


**Jay Worley,**
**JEA –Director Environmental Programs**


**Historical Impact of Air Regulations**
**Industry Perspective**

ENVIRONMENTAL PROTECTION BOARD

JEA
Building Community®

# Company Overview

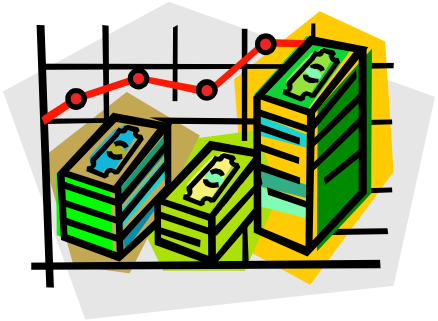
- 7th largest electric public utility in the nation
- 2nd largest water/wastewater utility in Florida
- JEA serves Duval and portions of Clay, Nassau, and St Johns Counties in Northeast Florida
- *Electric System*
  - >400,000 electric customers
- *Water and Sewer Systems*
  - >300,000 water customers
  - >200,000 sewer customers

# DECISION FACTORS FOR ELECTRIC PRODUCTION

Geography

Reliable

Economical



Environmental

JEA®

1. At the famous Saratoga races, Deborah Diane Voss excitedly lit up a cigarette when her prize gelding was coming down the backstretch.

2. Her horse won. She lost.

You've come a long way, baby.

# VIRGINIA SLIMS

With rich Virginia flavor women like.

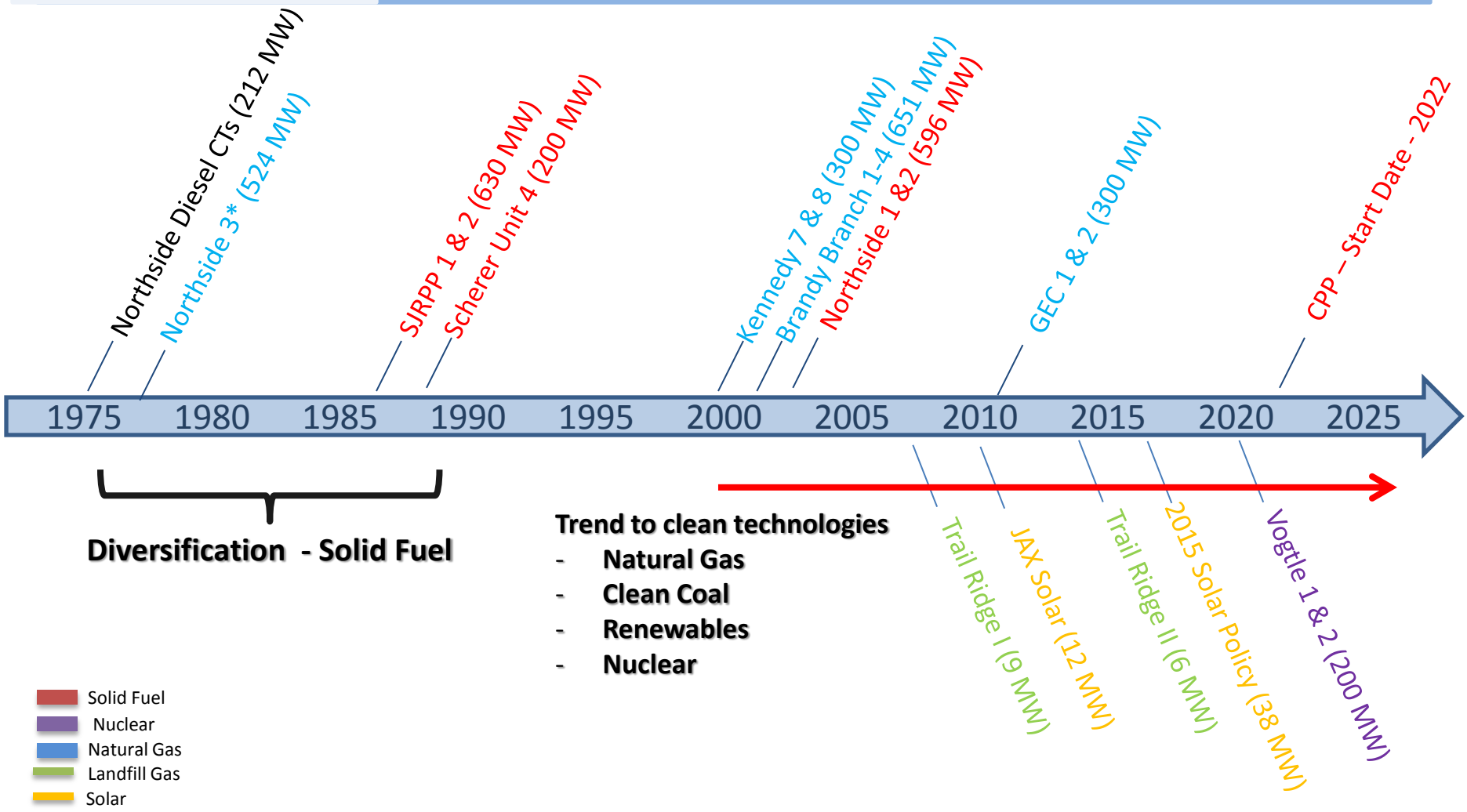

Fashions: Bill and Hazel Haire for Friedricks Sport

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Regular: 16 mg. "tar," 1.1 mg. nicotine-
Menthol: 17 mg. "tar," 1.1 mg. nicotine av
per cigarette, FTC Report Mar.'7

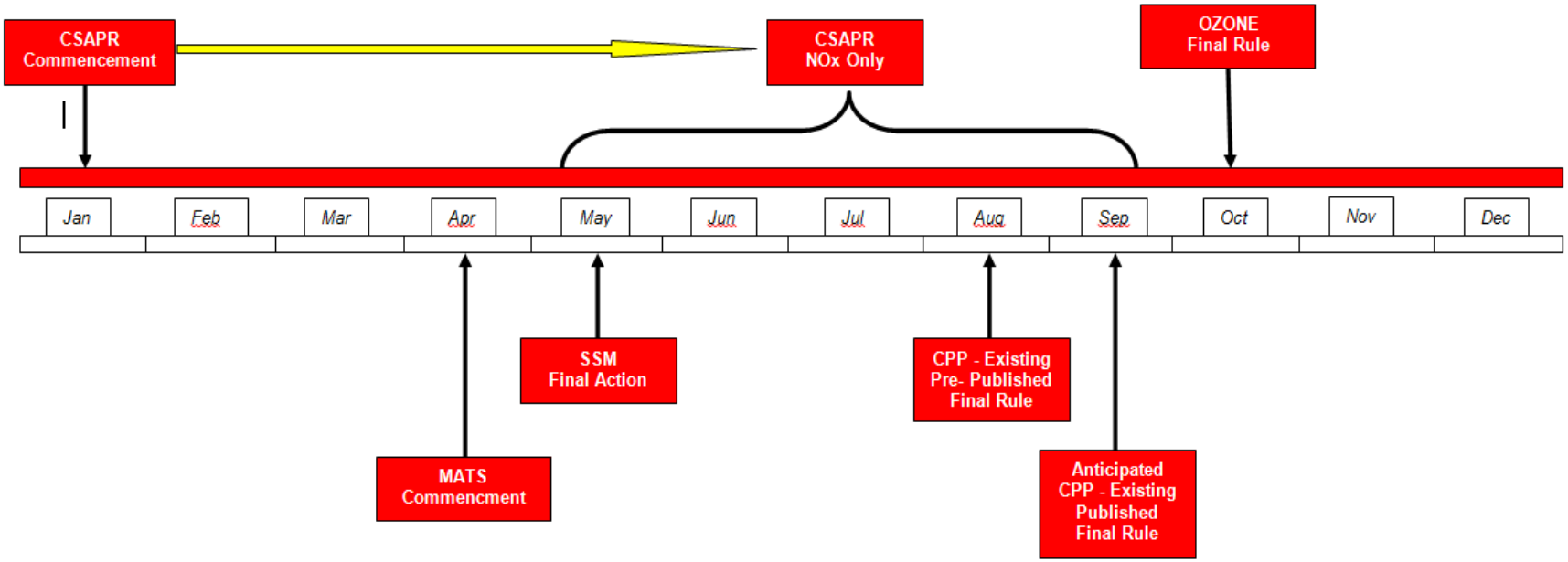
Building Community

# Generation Development




Summer Capacity listed; *NS3 capable of dual fuel – Natural Gas and Residual Oil

# REGULATORY TIMELINE
# CALENDAR YEAR 2015
(Updated 08-10-15)



# Northside Generating Station (NGS) and St. Johns River Power Park (SJRPP)

# Major Air Pollution Controls at NGS/SJRPP

## SJRPP

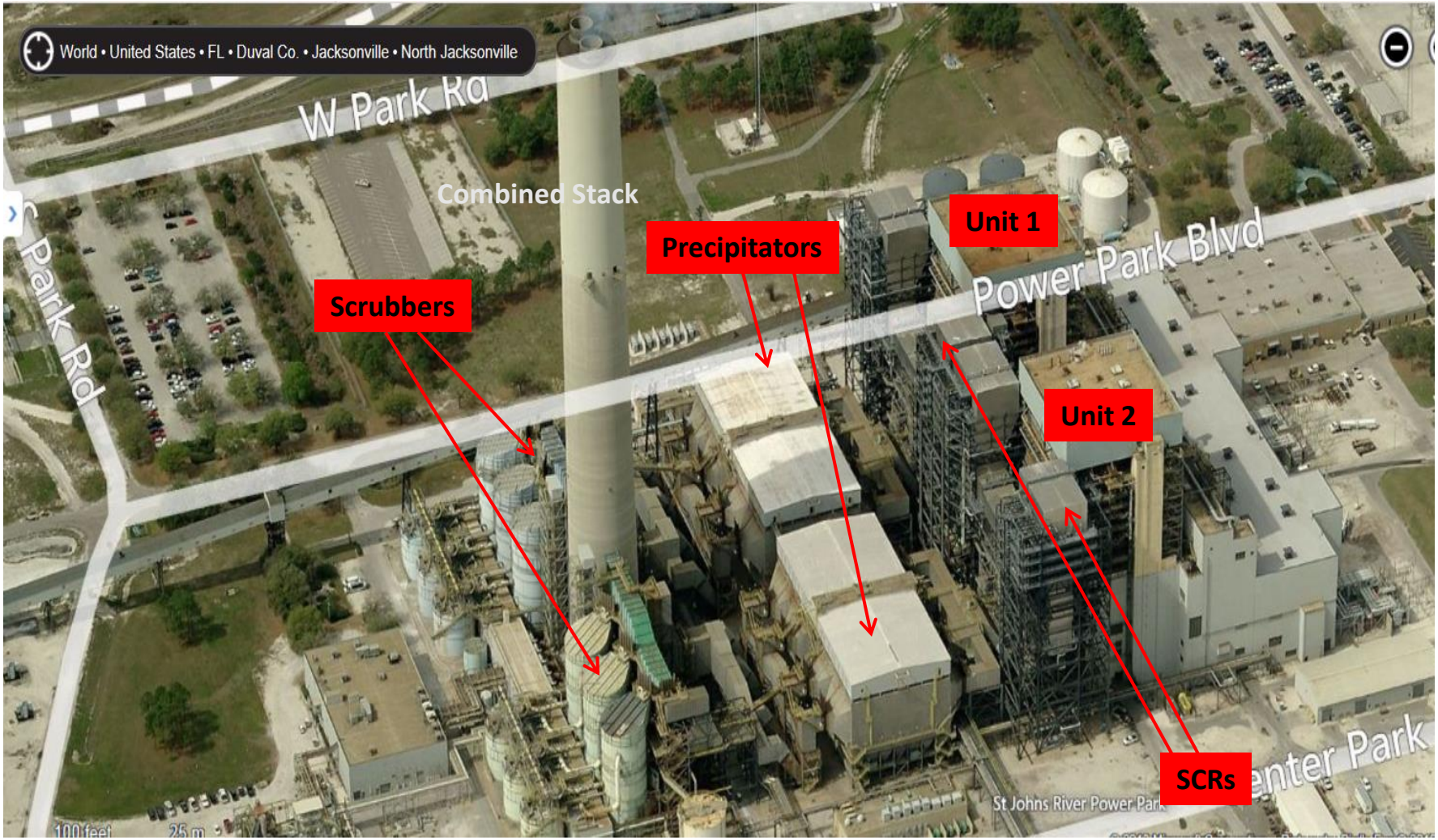
- Electrostatic Precipitators (ESPs), installed in, controls the PM emissions by more than 90%. A co-benefit is Hg reduction.
- Flue Gas Desulfurization (FGD) equipment, operational controls SOx emissions by up to 90%. Co-benefits are reduction of acid gases and Hg.
- Selective Catalytic Reduction (SCR) systems, installed in 2008-2009, can reduce NOx emissions by 80 to 90%. A co-benefit is Hg reduction.

## NGS

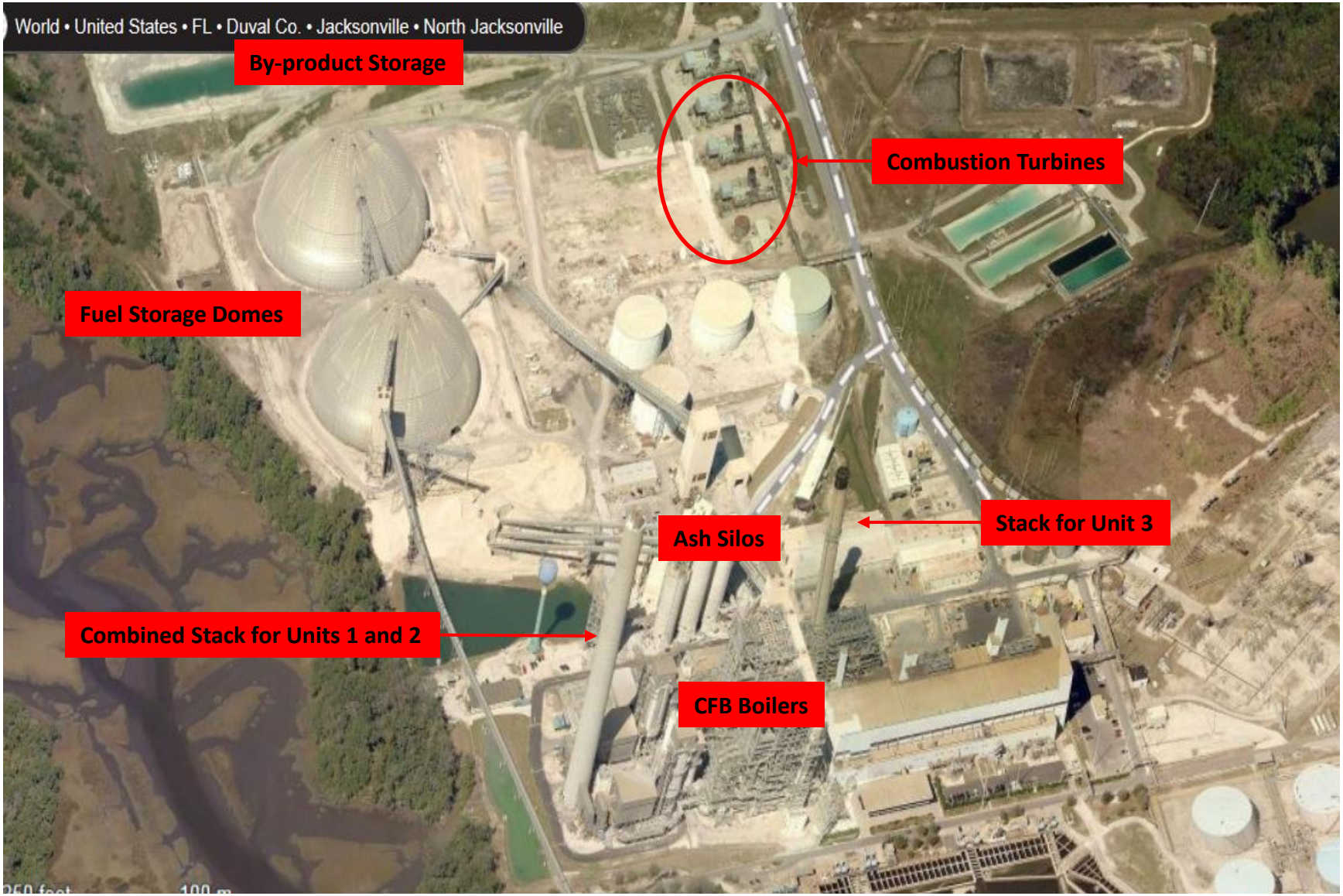
- Circulating Fluidized Bed (CFB) boilers reduce production of SOx, through the use of limestone in the boilers, without any additional control equipment. Spray Dryer Absorbers (SDAs), also control SOx emission.
- Selective Non-catalytic Reduction, installed in 2002, control of NOx emissions.
- Fabric Filters (Baghouses), operational can control PM emissions by more than 99.9%. A co-benefit is Hg reduction.

# Emission Sources at SJRPP

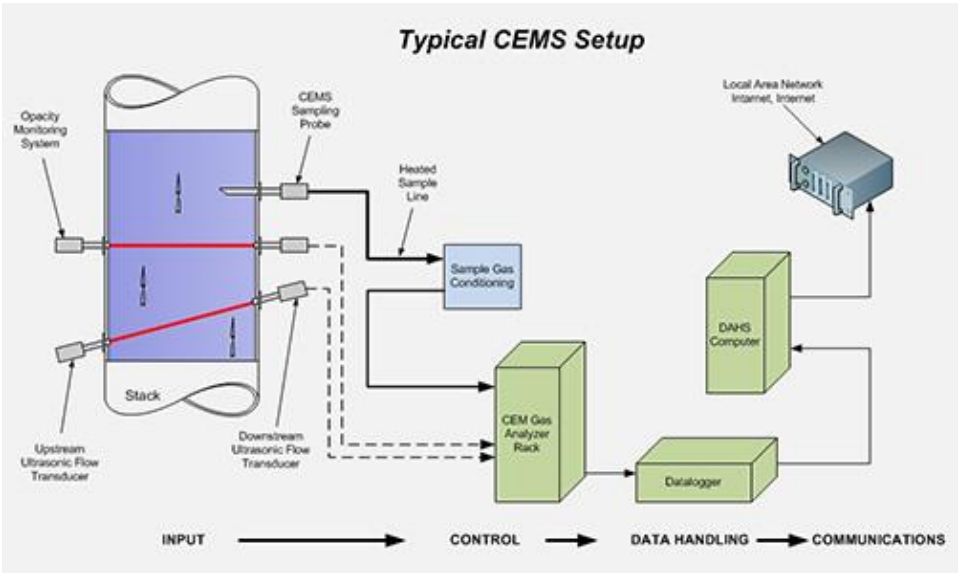
# Air Pollution Control Equipment at SJRPP



# Emission Sources at NGS



# Monitoring Air Emissions




# Air Pollution Controls for Combustion Turbines

## BBGS (Combined Cycle CTs)

- Selective Catalytic Reduction (SCR) systems, using ammonia, can reduce NOx emissions by 80 to 90%.
- Low NOx burners.

## Simple Cycle CTs (Peaking Units)

- Equipped with low NOx burners.

# Brandy Branch Generating Station (BBGS)

# Ammonia Tanks at BBGS

# Greenland Energy Center (GEC)

# JEA RENEWABLE PROGRAM

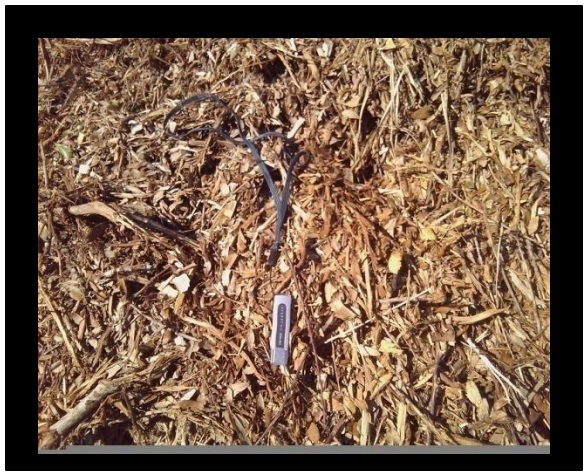

SOLAR

BIOGAS

WIND

LANDFILL GAS


ALT. FUELS

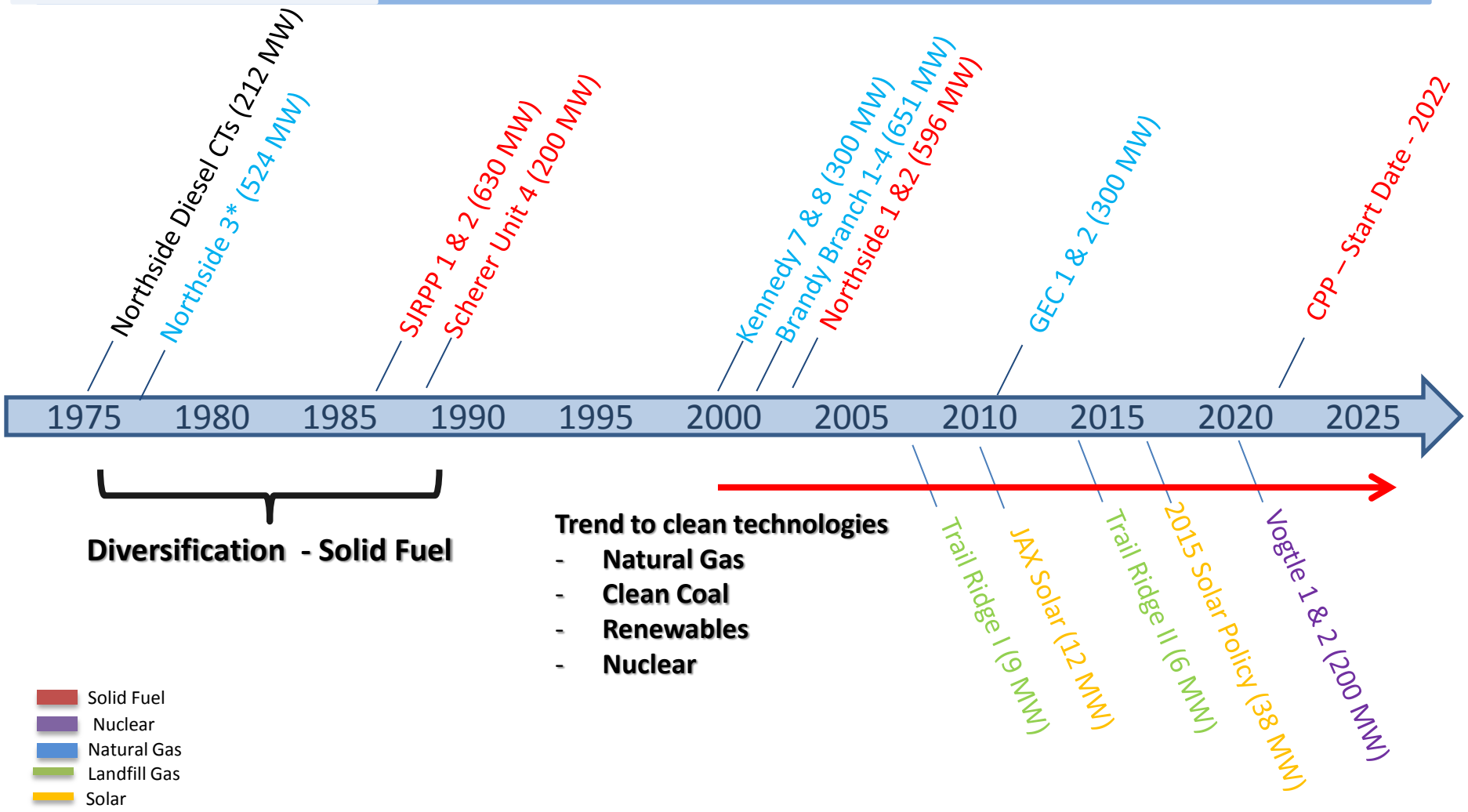


BIOMASS

# Jacksonville Solar

Building Community

# Generation Development

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THE CLEAN POWER PLAN
epa.gov/cleanpowerplan
#ActOnClimate #CleanPowerPlan

2015