There Has To Be Some Logic In All Of This!

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Subtitled:

Don’t Do Something Stupid
First a Quiz
What is this?

A unit of American Electric Power
Serving Oklahoma for over 95 years
Service area: 30,000 square miles of eastern and southwestern Oklahoma
Customers: approx. 531,000
Population of service area: approx. 1.8 million
Employees: 1,690
PSO-owned generating capacity: 4,408 megawatts
Purchase 590 megawatts wind by end 2009
Will be 690 megawatts by the end of 2010
Operating revenue year-end 2008: $1.12 billion
www.psoklahoma.com
PSO Generation Resources

- Gas: 45%
- Coal: 43%
- Nuclear: 12%
- Wind: 0%
- Hydro: 0%
Growth in Oklahoma

Population growth rate – 1.1% to 3,591,516

Department of Commerce attributes growth rate to Economic Diversification

Population Projections in 2030 - 13.4% above 2000

U.S. Census Bureau

Power Generation Projected Growth – 1.5% per year
Power Generation Growth

- Water usage will be dependent on technology and DSM implementation

- DSM and energy efficiency hope to reduce growth to 1.0% per year
Utilities Plan for the Long Term. We Expect to Operate a Power Plant for 50 Years or More.
We Must Use Logic In Determining What Type Generation is Built and Where
We Must Provide Safe, Reliable, Low Energy for Oklahoma’s Economy to Grow
Case Study: Use of Treated Sewage Effluent
Have to remember that: industry and utilities purchase a large amount of water from public water supply systems,
Beneficially reuse wastewater in some cases and Return a large amount of the water back into the same water body.
Conducted a Study on Site-Specific Criteria for Agriculture and Warm Water Aquatic Life Beneficial Uses
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There Are New Technologies Being Developed to Reduce Water Usage in Power Generation
Air to Air System
Dry Cooling Technology

Air-Cooled Condenser

Exhaust steam from turbine

Fans

Ambient air

Condensed steam to boiler

Ambient air
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Hybrid Wet – Dry System
As a general rule, closed cycle cooling systems are more costly and less efficient than once through cooling systems.

Additionally, closed-cycle wet systems are less expensive and more efficient than dry or hybrid systems.
In Closing:

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