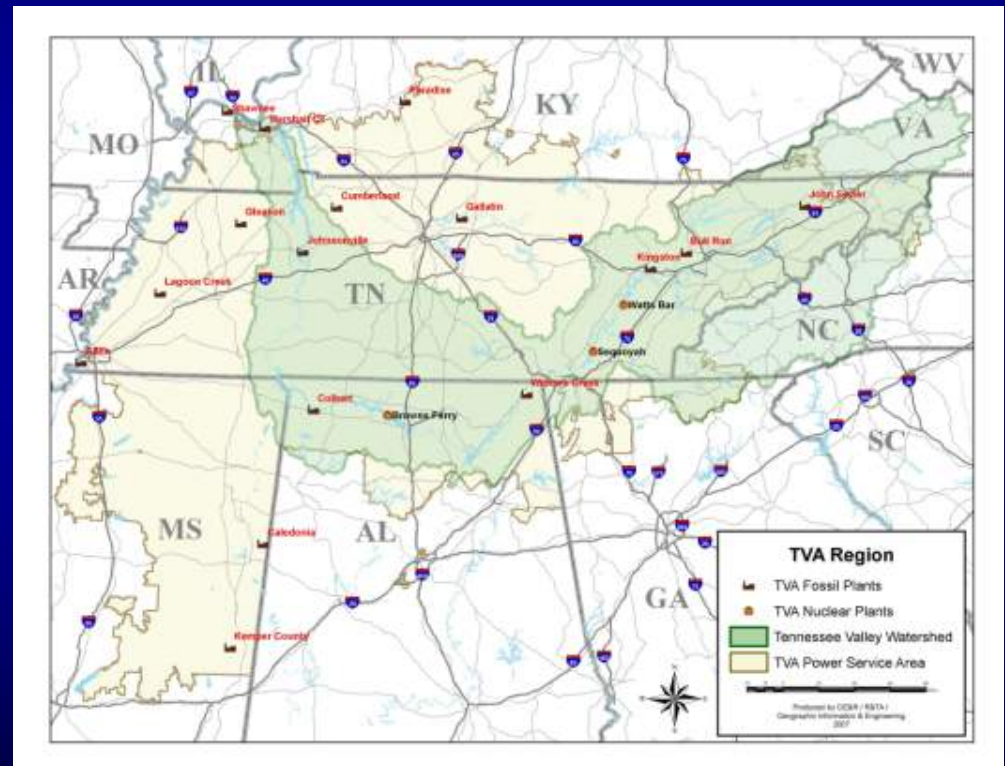# Tennessee Valley Authority

RiverWare User Group Meeting
August 13-14, 2008

Update on TVA Applications

TVA and RiverWare

- ➤ TVA's Use of RiverWare
- ➤ Spreading Organizational Knowledge of RiverWare
- ➤ Next Year

TVA Region
- TVA Fossil Plants
- TVA Nuclear Plants
- Tennessee Valley Watershed
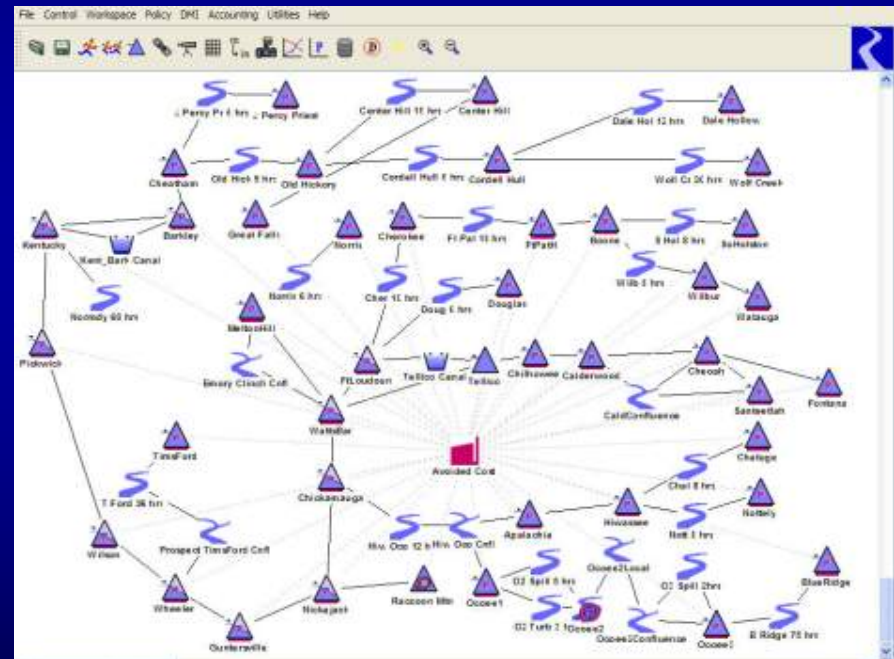- TVA Power Service Area

TVA's Use of RiverWare

- ➢ Sim & Opt
  - Lately: Drought = Sim
  - Several times a day
    - 24 / 7 scheduling
  - 6-Hour and Hourly time steps
  - Water & Power obj
- ➢ Rules
  - River Operations Study

Spreading Organizational Knowledge

➢ **Previously: Heavy reliance on experts**

- Morgan Goranflo and Suzanne Biddle
- Efficient solution of problems
- Good Project Management

➢ **Also Problems**

- Experts eventually leave
- Experts can inadvertently filter or mask user needs
- Can reduce the participation of others, "ownership"

Spreading Organizational Knowledge continued

- ➢ Abandon the idea of a single expert
- ➢ Broaden the number of knowledgeable users
  - New Training
  - Increased ability to debug modeling problems
- ➢ Increased "Ownership" of the model
  - The policy in the model
  - How the model is used
  - RiverWare enhancements

During the Next Year

➢ New optimization

- Training and then Production Scheduling

➢ Integer Programming for Unit Hydropower

- Testing
- Training and then Production Scheduling

➢ Increase Optimization User Friendliness

- Consistency in the solution
- Ease in using only part of an optimization solution
- Explaining the solution