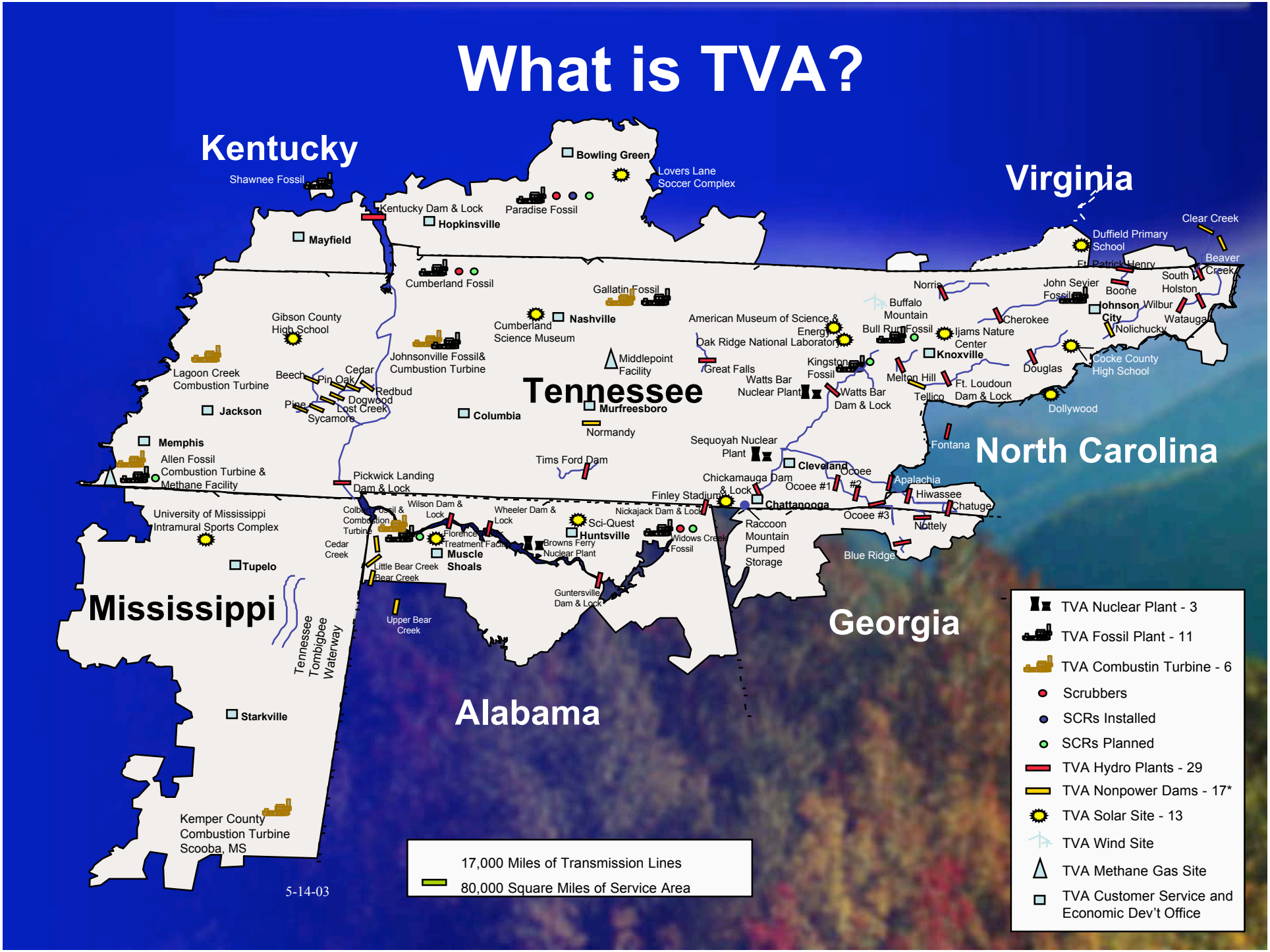
Tennessee Valley Authority
Environmental Management System

Continuous Improvement for Results


What is TVA?
Kentucky
Virginia
Tennessee
North Carolina
Mississippi
Alabama
Georgia
Shawnee Fossil
Bowling Green
Lovers Lane Soccer Complex
Kentucky Dam & Lock
Hopkinsville
Paradise Fossil
Mayfield
Cumberland Fossil
Gallatin Fossil
Nashville
Cumberland Science Museum
Gibson County High School
Johnsonville Fossil& Cumbustion Turbine
Middlepoint Facility
Lagoon Creek Combustion Turbine
Beech
Pin Oak
Cedar
Redbud
Dogwood
Lost Creek
Pine
Sycamore
Jackson
Columbia
Murfreesboro
Normandy
Memphis
Allen Fossil Combustion Turbine & Methane Facility
Pickwick Landing Dam & Lock
Tims Ford Dam
Sequoyah Nuclear Plant
Cleveland
Chickamauga Dam & Lock
Chattanooga
Finley Stadium
Ocoee #1
Ocoee #2
Ocoee #3
Apalachia
Hiwassee
Chatuge
Nottely
Blue Ridge
Fontana
Norris
Buffalo Mountain
American Museum of Science & Energy
Oak Ridge National Laboratory
Great Falls
Watts Bar Nuclear Plant
Watts Bar Dam & Lock
Bull Run Fossil
Kingston Fossil
Melton Hill
Tellico
Ft. Loudoun Dam & Lock
Knoxville
Ijams Nature Center
Cherokee
Douglas
Dollywood
John Sevier Fossil
Duffield Primary School
Ft. Patrick Henry
Boone
Johnson City
Nolichucky
Clear Creek
Beaver Creek
South Holston
Wilbur
Watauga
Cocke County High School
University of Mississippi Intramural Sports Complex
Tupelo
Starkville
Kemper County Combustion Turbine Scooba, MS
Tennessee Tombigbee Waterway
Colbert Fossil & Combustion Turbine
Wilson Dam & Lock
Wheeler Dam & Lock
Nickajack Dam & Lock
Sci-Quest Huntsville
Florence Water Treatment Facility
Muscle Shoals
Browns Ferry Nuclear Plant
Widows Creek Fossil
Raccoon Mountain Pumped Storage
Cedar Creek
Little Bear Creek
Bear Creek
Upper Bear Creek
Guntersville Dam & Lock
17,000 Miles of Transmission Lines
80,000 Square Miles of Service Area
5-14-03
TVA Nuclear Plant - 3
TVA Fossil Plant - 11
TVA Combustin Turbine - 6
Scrubbers
SCRs Installed
SCRs Planned
TVA Hydro Plants - 29
TVA Nonpower Dams - 17*
TVA Solar Site - 13
TVA Wind Site
TVA Methane Gas Site
TVA Customer Service and Economic Dev't Office

What Is an EMS?

- A structured approach that incorporates environmental considerations into day-to-day operations throughout the organization, and is designed to promote continual improvement—OFEE
- A continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals—EPA
- The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy—ISO

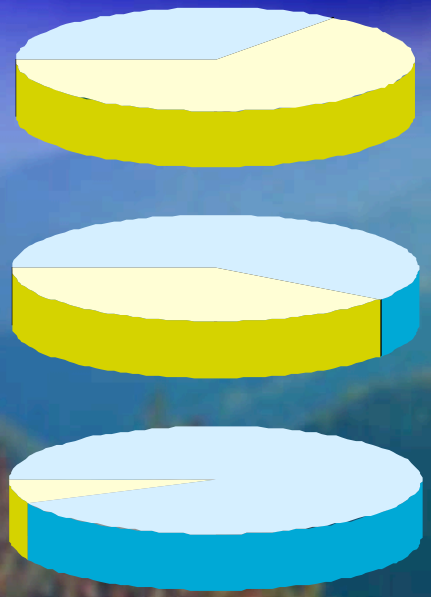
What Is an EMS?

- Combination of components that may function well alone but better as a system

- Think of an EMS as a collection of car parts that, only when assembled and working together as a system, enables you to get to your destination

TVA EMS Evolution

- Pre-1996 –
  compliance processes
- 1996 EMS –
  based on draft ISO 14001
- 2001 EMS –
  based on final ISO 14001



Sustainability /
Performance

TVA's First EMS

- What it did:
  - Policy
  - Processes
  - Environmental training
  - Process indicators and environmental goals
  - Performance reporting
  - Regulatory review and guidance process
  - Environmental compliance audits, self-assessments, and corrective action

TVA's First EMS (cont.)

- What it didn't do:
  - Process to maintain and develop policy
  - Identify roles and responsibilities
  - Method to maintain EMS documents
  - Track the indicators or set goals
  - Report performance
  - Receive management review
  - Standardize environmental review (NEPA)

TVA's First EMS (cont.)

- What it didn't do:
  - Leverage regulatory review and guidance
  - Audit EMS requirements or verify corrective actions
  - Communications and stakeholder involvement
  - Records management
  - Emergency response and notification
  - Recognition

TVA's Current EMS

- What's new:
  - Actionable corporate policy and a process to maintain and develop policies
  - Roles and responsibilities from TVA Board of Directors to technician
  - Standardized environmental processes with biennial review
  - Standardized environmental training and Web application

TVA's Current EMS (cont.)

- What's new:
  - Aspect and impact analysis, objectives and targets
  - Tracking and reporting to management and stakeholders
  - Collaborative teams of experts reviewing regulations and issuing guidance
  - Risk-based compliance and EMS audits with closure verification
  - Emphasis on self-assessments
  - Cause trend analysis

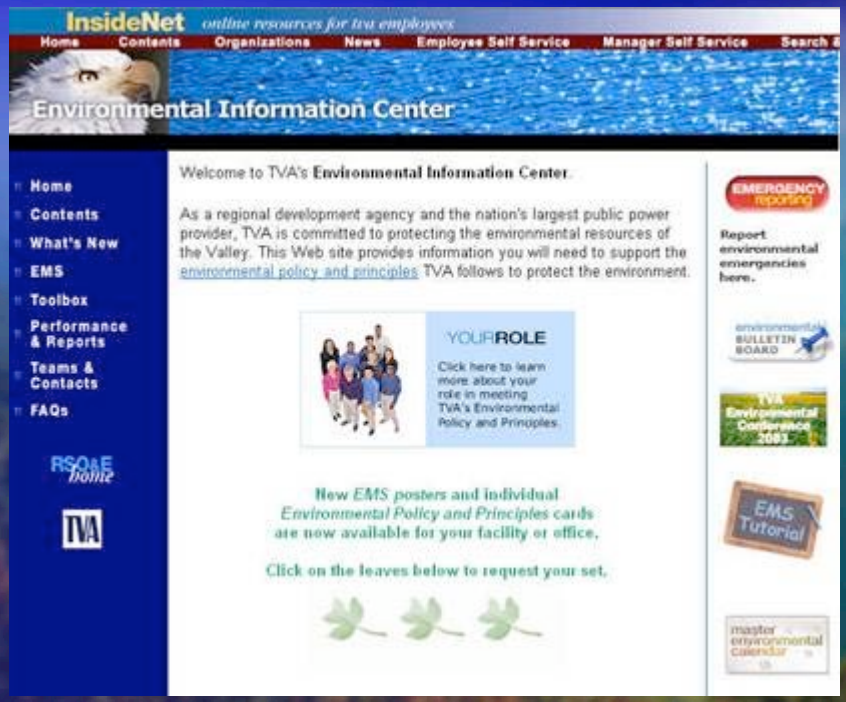
TVA's Current EMS (cont.)

- What's new:
  - Standardized environmental review documents and Web-based record and tracking system

  - Communication and stakeholder involvement process to "speak with one voice" on environmental issues
  - Standardized recordkeeping emphasizing electronic storage
  - Emergency preparedness and Web-based notification system
  - Environmental excellence recognition

TVA's Current EMS (cont.)

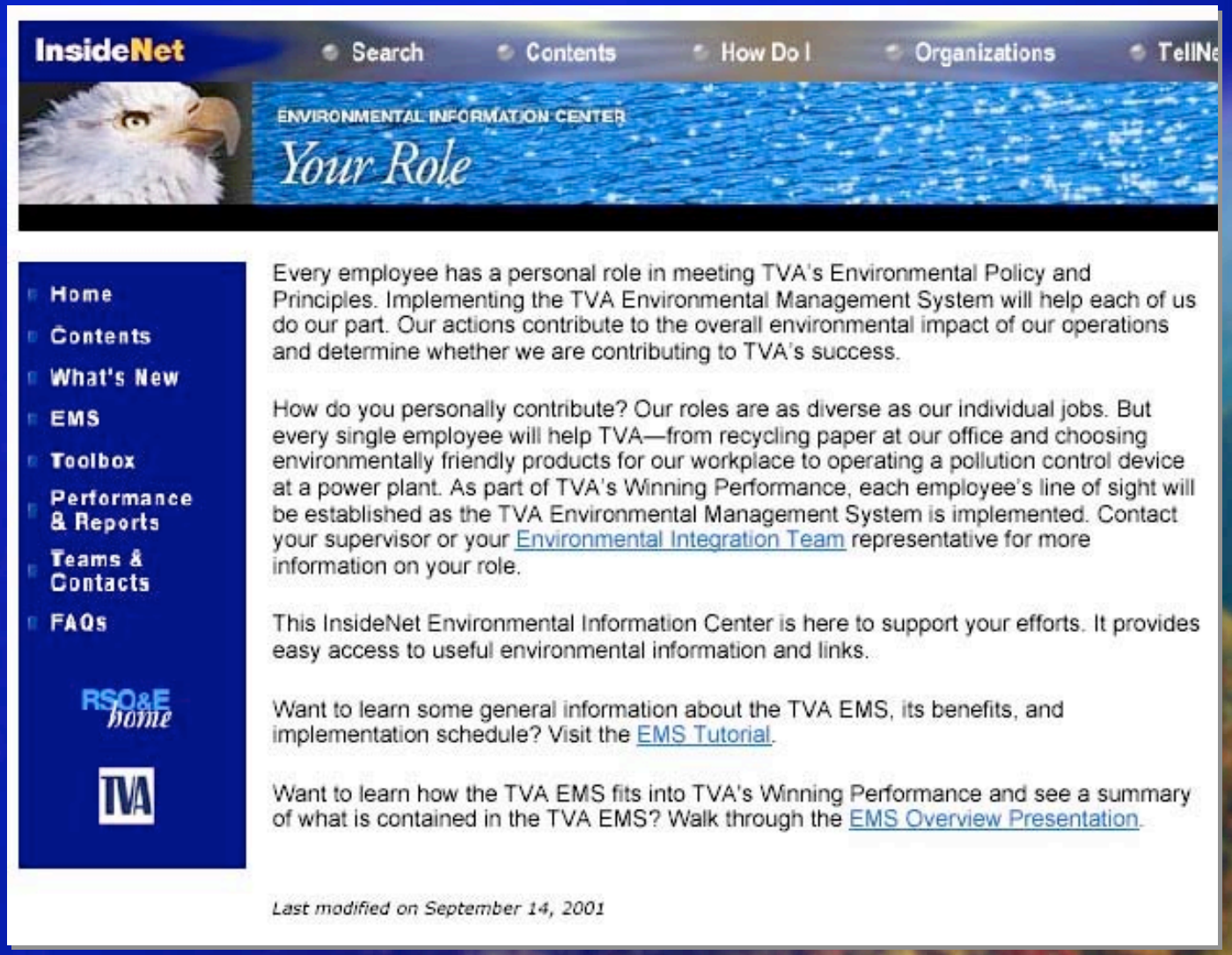
- What's new:
  - Internal Web site devoted to the TVA EMS
    - Available through the TVA InsideNet home page
    - Cornerstone of TVA's internal environmental communications



Environmental Information Center - Home Page

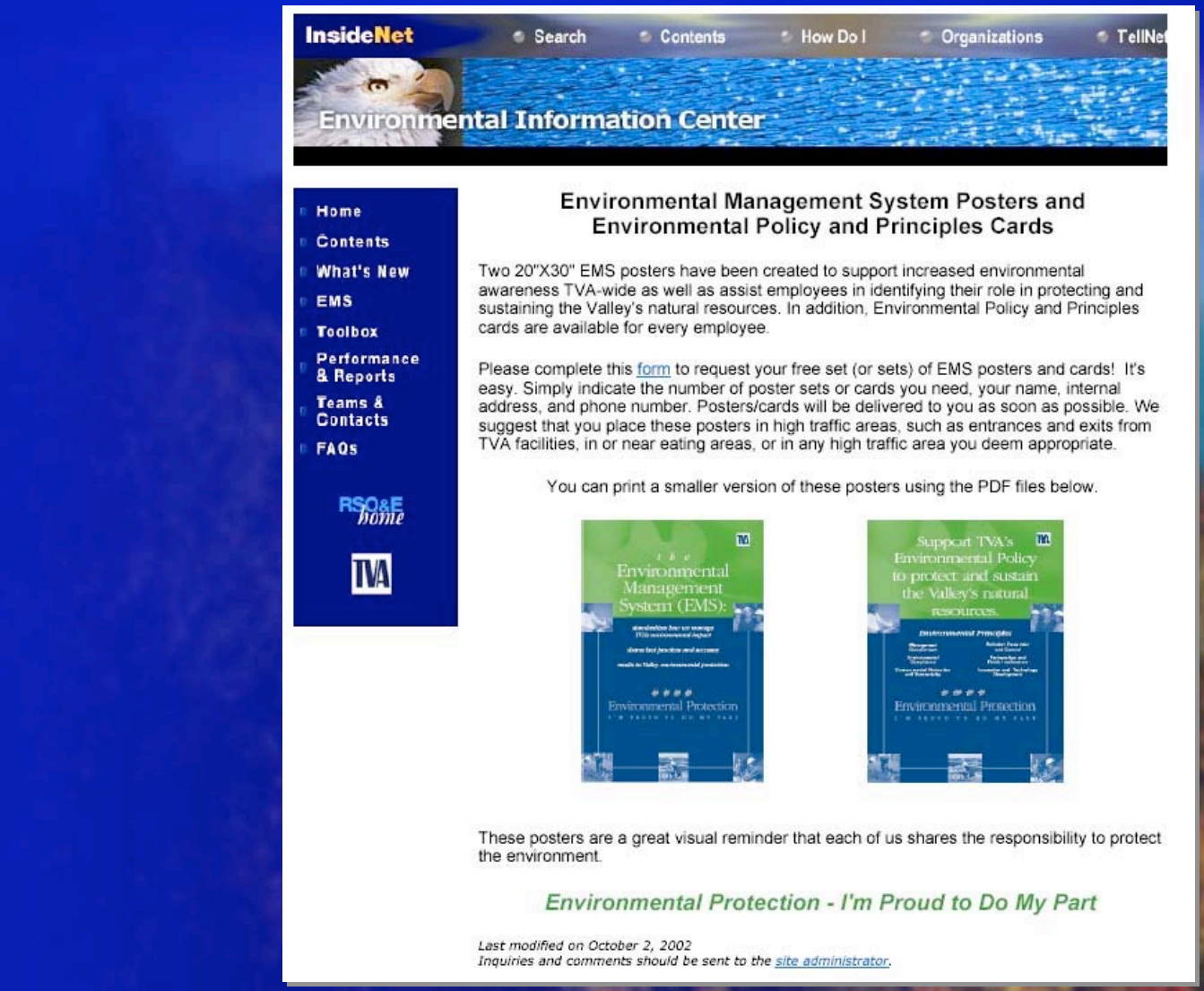
TVA

Environmental Information Center – Your Role



TVA

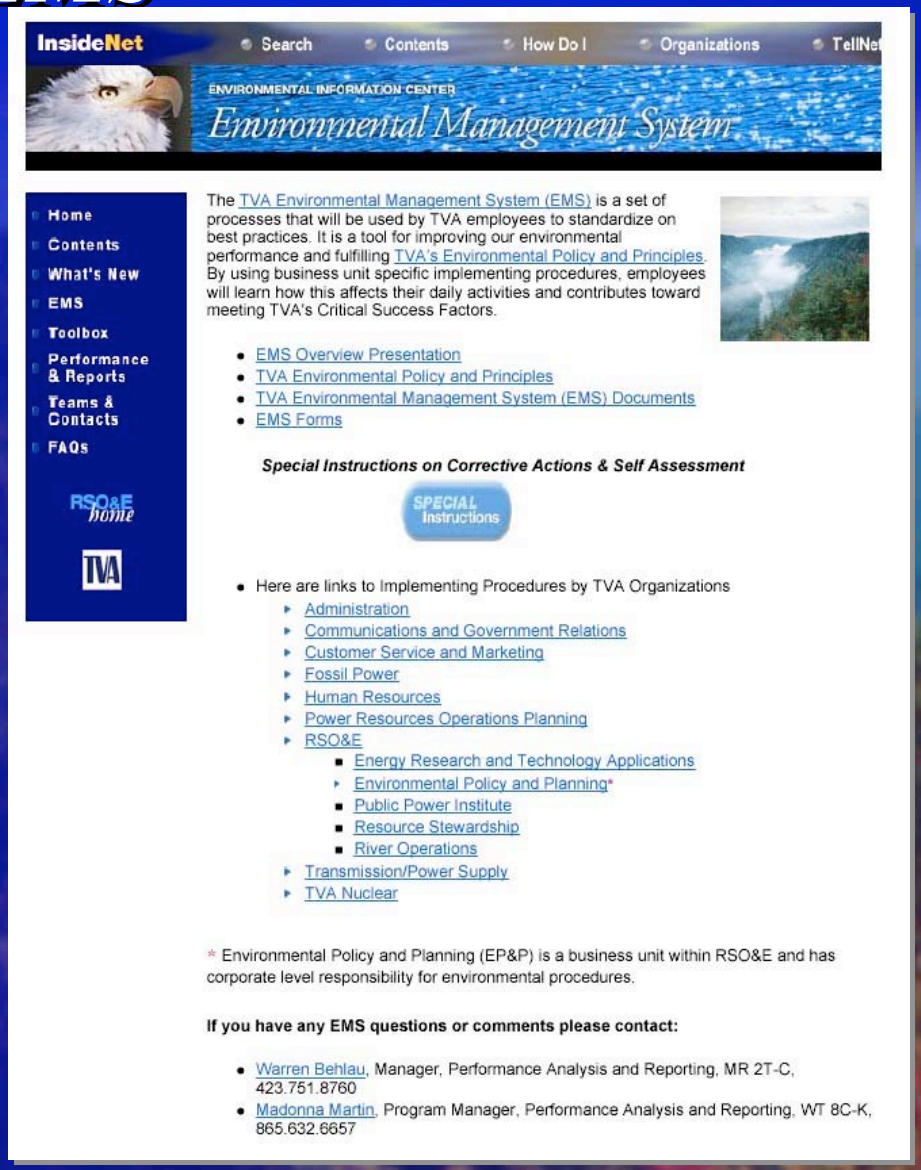
Environmental Information Center – Posters and Cards



TVA

Environmental Information Center – What's New

Environmental Information Center - EMS



InsideNet | Search | Contents | How Do I | Organizations | TellNet

ENVIRONMENTAL INFORMATION CENTER

Environmental Management System

- Home
- Contents
- What's New
- EMS
- Toolbox
- Performance & Reports
- Teams & Contacts
- FAQs

RSO&E home

TVA

The TVA Environmental Management System (EMS) is a set of processes that will be used by TVA employees to standardize on best practices. It is a tool for improving our environmental performance and fulfilling TVA's Environmental Policy and Principles. By using business unit specific implementing procedures, employees will learn how this affects their daily activities and contributes toward meeting TVA's Critical Success Factors.

- EMS Overview Presentation
- TVA Environmental Policy and Principles
- TVA Environmental Management System (EMS) Documents
- EMS Forms

Special Instructions on Corrective Actions & Self Assessment

SPECIAL Instructions

- Here are links to Implementing Procedures by TVA Organizations
  - Administration
  - Communications and Government Relations
  - Customer Service and Marketing
  - Fossil Power
  - Human Resources
  - Power Resources Operations Planning
  - RSO&E
    - Energy Research and Technology Applications
    - Environmental Policy and Planning*
    - Public Power Institute
    - Resource Stewardship
    - River Operations
  - Transmission/Power Supply
  - TVA Nuclear

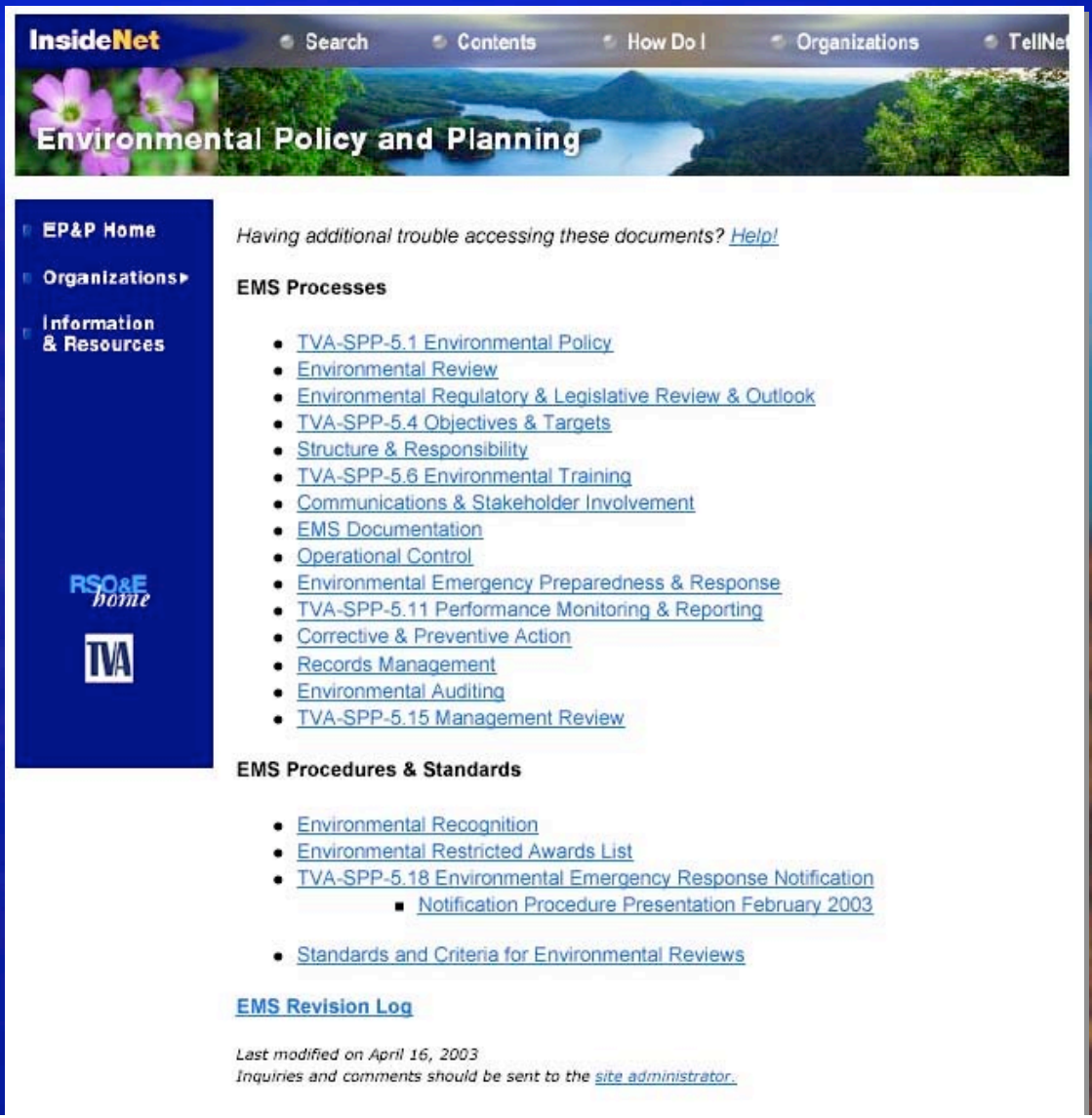
* Environmental Policy and Planning (EP&P) is a business unit within RSO&E and has corporate level responsibility for environmental procedures.

If you have any EMS questions or comments please contact:

- Warren Behlau, Manager, Performance Analysis and Reporting, MR 2T-C, 423.751.8760
- Madonna Martin, Program Manager, Performance Analysis and Reporting, WT 8C-K, 865.632.6657

TVA

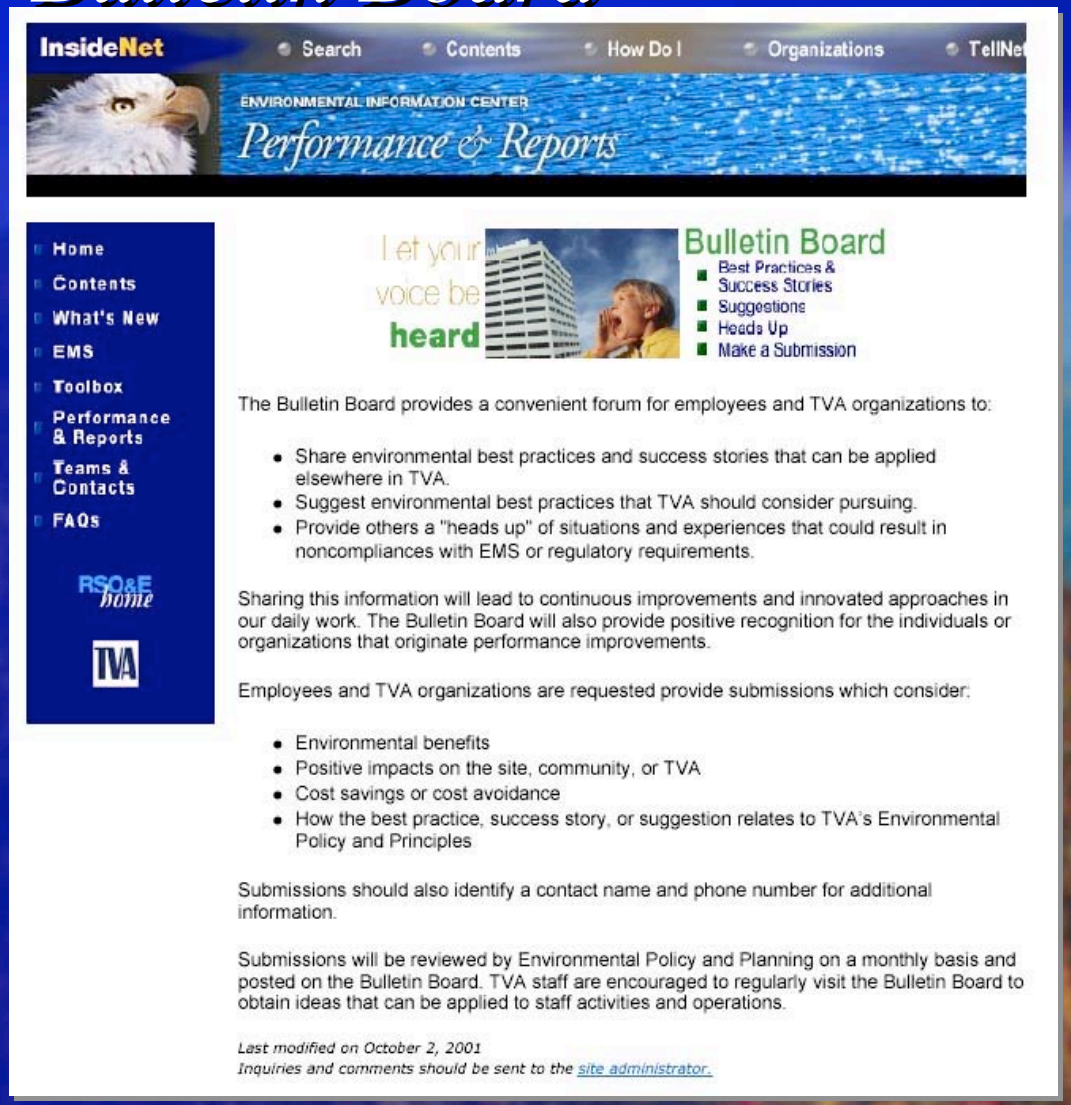
Environmental Information Center – TVA EMS



Environmental Information Center - Toolbox

TVA

Environmental Information Center – Bulletin Board



Environmental Information Center – Teams & Contacts

InsideNet | Search | Contents | How Do I | Organizations | TellNet

ENVIRONMENTAL INFORMATION CENTER

Teams & Contacts

- Home
- Contents
- What's New
- EMS
- Toolbox
- Performance & Reports
- Teams & Contacts
- FAQs

RSO&E home

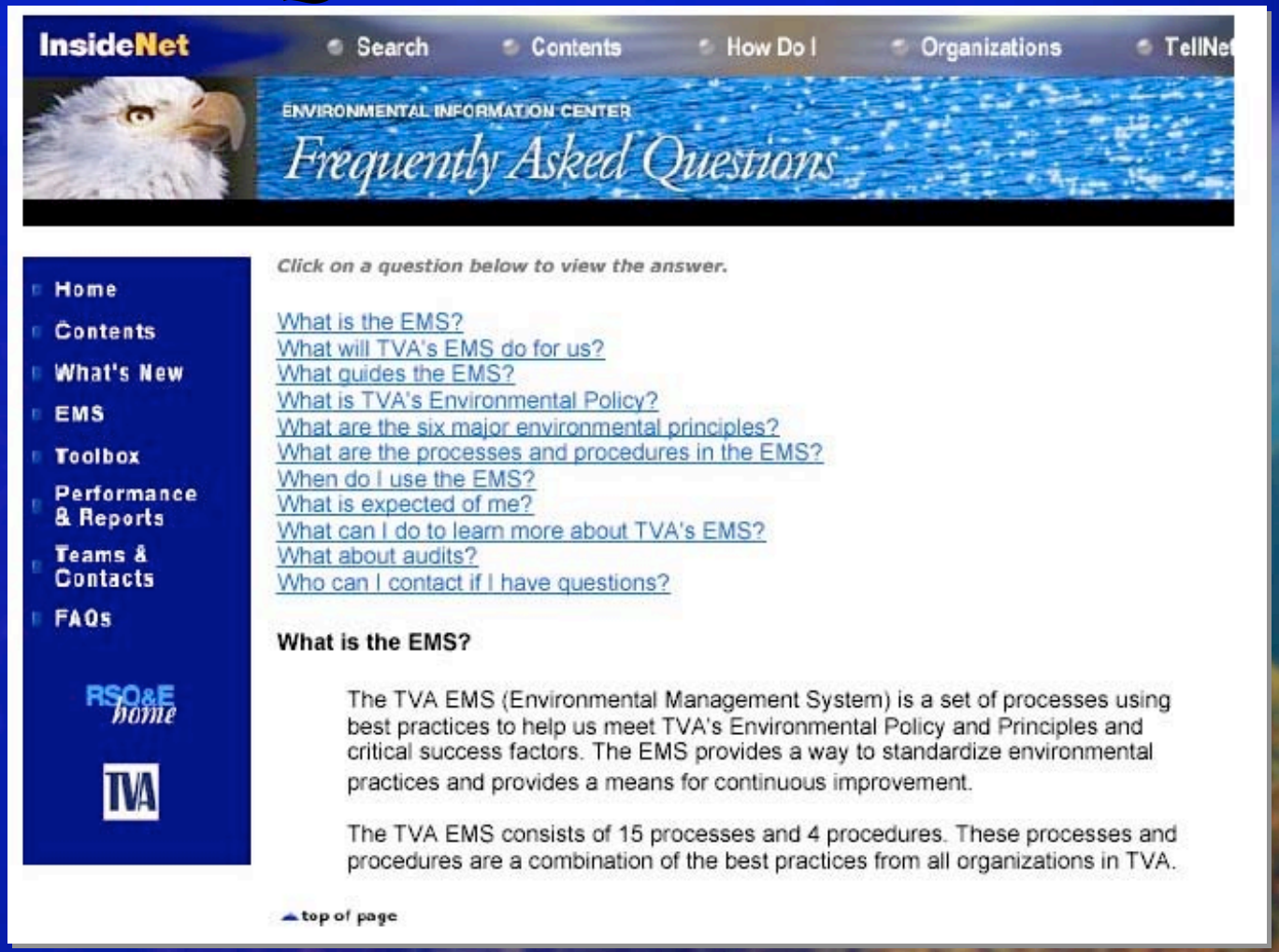
TVA

- Environmental Audit Steering Team
- EMS Steering Team
- Environmental Advisory Team (EAT)
- Environmental Integration Team (EIT)
- Environmental Training Sub-Peer Team
- Lead Managers and Site Contacts
- Regulatory and Policy Teams (RPTs)
  - Air
  - Solid and Hazardous Waste/Integration
  - Water
- External U-Groups

Last modified on April 15, 2003
Inquiries and comments should be sent to the site administrator.

TVA

Environmental Information Center - FAQs



TVA

TVA's Current EMS (cont.)

- Results:
  - Reduced 457 environmental training courses to 84 through standardization, saving $6.8 million in 2003

  - Reduced average internal audit findings per audit an additional 67% since 2000
  - Reduced internal repeat audit findings an additional average 84% since 2000
  - Reduced Reportable Environmental Events and additional average 17% per year since 2000
  - Lowest S02 and NOX emissions in 28 years
  - 49% RCRA designated commodities were purchased with recycled content in 2003
  - Reduced solid waste generation an additional 31% since 2000

Lessons Learned

- Keys to improved performance and sustainability:
  - Management commitment
  - Ownership and accountability
  - EMS auditing, self-assessments, corrective action
  - Emphasis on prevention
  - Measure and report
  - ISO 14001
  - Start with structure and responsibility
  - Integrate the EMS everywhere you can
  - Faster results with a corporate-wide approach
  - Persistence and promotion
  - Communication, communication, communication

Make a system, not a notebook

Questions and Discussion