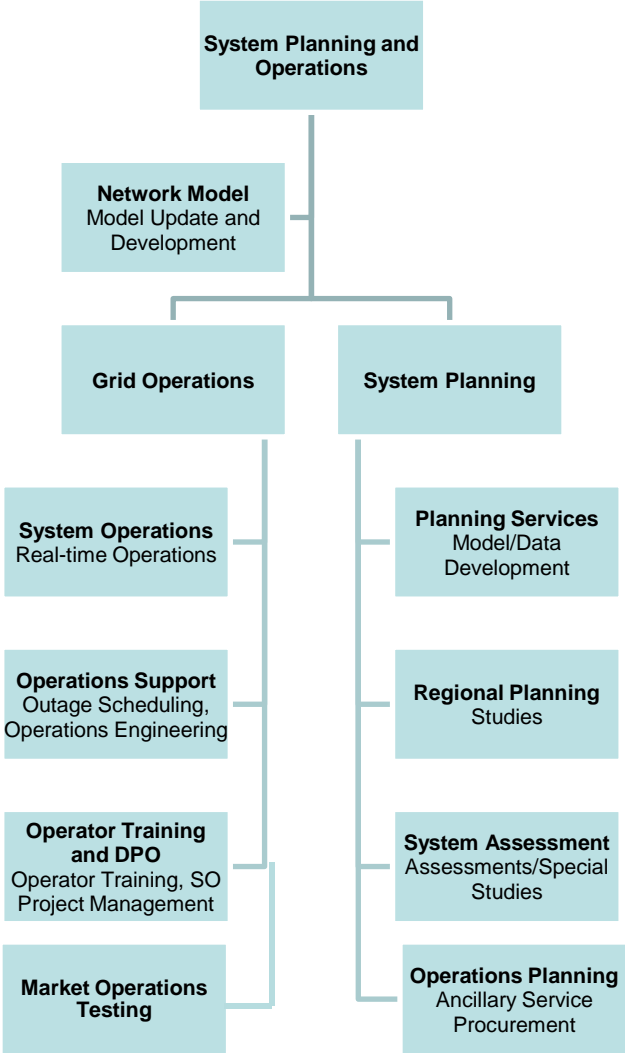




# **ERCOT System Planning and Operations Functional Overview**

# Organization



# Network Modeling

- **Keep network model updated**
- **Network Model Management System development and implementation**

# Grid Operations – System Operations

- **Day Ahead**
  - Post day ahead system conditions and A/S requirements
  - Review QSE Day Ahead Schedules
  - Run Day Ahead A/S and Replacement Markets
- **Transmission Security**
  - Input transmission limits
  - Run Real-time Contingency Analysis
  - OOM units to manage local congestions
- **Frequency Control**
  - Monitor QSE SCE
  - Monitor System Frequency, Regulation deployment
  - Deploy OOME to maintain regulation and 60 Hz
- **Operating Period**
  - Run 15 minute Balancing Energy Market

- **Outage Coordination**
  - Approve transmission facility outage requests
  - Develop mitigation plans if needed
- **Operations Engineering**
  - Provide real-time 24/7 technical operational support to System Operators
  - Conduct special studies to mitigate real-time events

- **Operator Training**
  - Develop and deliver training for System Operators
  - Maintain and administer NERC CEH program for ERCOT
- **Operator Training Simulator**
  - Maintain and update OTS
  - Develop and implement OTS training scenarios
- **SO Department Project Organization**
  - Manage SO Capital Projects

# Grid Operations – Market Operations Testing

- **Business testing of new software applications**
- **Identify and communicate defects**
- **Assess and communicate quality of new applications prior to deployment into production**

# System Planning – Planning Services

- **Maps**
- **Topology Processing and Model On Demand (Nodal)**
- **Transmission Project Information Tracking (TPIT)**
- **Planning Web Site**
- **Steady State Working Group (SSWG)/System Protection Working Group Support (SPWG)**



# System Planning – Regional Planning

- **Actual congestion analysis and near-term planning**
- **Projected Assessment of System Adequacy (PASA) congestion forecast**
- **Actual vs modeled congestion analysis**
- **Special Protection System (SPS) and Reliability Must Run (RMR) Reviews**
- **5 Year Plan Development**
- **Regional Planning Group (RPG) Project Reviews**
- **Generation Interconnection Studies**
- **Dynamic Analyses**
- **Dynamics Working Group (DWG) Support**
- **NERC planning compliance studies**

# System Planning – System Assessment

- **Long Term System Analysis (LTSA)**
- **Special and Interregional Studies**
- **Competitive Renewable Energy Zone (CREZ) implementation**
- **Load Forecasting**
- **CDR and related data and filings**
- **Prepare seasonal and Long Term NERC assessments**
- **Prepare annual planning reports (“Constraints and Needs”, etc.)**
- **Emerging Issues (e.g. carbon legislation, smart grid)**

# System Planning - Operations Planning

- **Operational Load forecasting**
- **Develop future operations business requirements**
- **Presentations/studies for market participants**
- **Qualify A/S providers, Annual Black Start procurement and plan**
- **Advanced Network Applications**
  - Maintain and tune State Estimator, TSA/VSA
  - Develop business requirements for enhancements