

# ATTACHMENT AA

## RTO WEST IMPLEMENTATION OVERVIEW

### RTO West Implementation Overview

RTO West Implementation formally starts with Commission approval of all elements of the RTO West proposal as filed. This approval initiates formation of an independent board, hiring of RTO West management and leadership, development and staffing of the organization, and the procurement or lease of facilities and systems. The implementation ends with the validation that systems, processes, RTO West personnel and Market Participants perform to the Tariff and Operation standards of the RTO.

#### 1.0 RTO West Implementation Meets the FERC Characteristics:

1. Independence Principle – All transmission facilities under RTO West control will be operated by an independent entity, RTO West. An independent board of directors will govern RTO West, and its independence will be established as defined in the Governance documentation.
2. Scope and Regional Configuration – The RTO West controlled transmission system will consist of a large portion of the Northwest Power Pool, and will be operated as a single control area with the RTO performing all control areas functions. RTO West will schedule the transmission system under its control according to its tariff and applicable reliability practices. RTO West will comply with the WSCC Minimum Operating Reliability Criteria (MORC) and NERC Policies relating to reliable system operation
3. Operational Authority - The RTO will operate the transmission system through direct control by RTO employees, contractual agreements with other entities (e.g., transmission owners and Security Coordinator) and by a hierarchical control structure involving a combination of direct and functional control. Under these arrangements, the personnel of existing control centers either become employees of the RTO or remain employees of the control center owner.
4. Short-Term Reliability - RTO West will manage congestion in both the pre-schedule market and in real-time. RTO West will have full authority to administer all schedules on all paths in the RTO West jurisdiction. RTO West will have exclusive authority for receiving, confirming and implementing all interchange schedules.

RTO West has full responsibility for security of the transmission system under its jurisdiction. It has the responsibility of a Security Coordinator as outlined in NERC security process recommendations, though the function may be initially contracted to the Pacific Northwest Security Coordinator (“PNSC”).

RTO West operates the transmission system to facilitate the maximum safe utilization of the grid, and to allow the competitive generation market transparent and non-discriminatory access. There will be (an) integration agreement(s) between RTO West and each entity

connecting to RTO West facilities. This (these) agreement(s) will specify the terms and conditions for interconnection.

RTO West will be the provider of last resort for ancillary services to comply with Order 2000 for transmission providers. These services will be purchased using a competitive bidding process. The requirements to provide such services and the compensation for these services will be specified in the individual control agreements between RTO West and each party, in FERC tariff(s), or both.

RTO West will acquire services and perform its functions economically and in a non-discriminatory manner.

RTO West will not operate a Power Exchange. It plans to use market mechanisms run by third parties wherever possible to facilitate competition for the provision, purchase or sale of power products and services. However, RTO West may implement market mechanisms to run real-time markets to meet its ancillary service and balancing energy needs.

In an emergency, RTO West will have the authority to require all connected loads and generators to take whatever actions are required to maintain system reliability. The requirements to provide such services and the compensation to be given for these services will be specified in the individual control agreements between RTO West and each party.

RTO West will have the authority to approve and disapprove requests for scheduled outages of transmission facilities operated by RTO West to ensure that the outages can be accommodated within established reliability standards. RTO West will coordinate outages to maximize the overall transfer capability of the grid. RTO West will work together with transmission owners to coordinate performance of all required maintenance and facility upgrades in a timely manner within established State, regional and national reliability standards.

## 2.0 Staffing, Organizational and Facilities Overview

Staffing, organization and facilities needs were generated by analyzing the technology and data requirements and functionality of the RTO to fulfill Order 2000 required characteristics and functions. With the requirements and functionality defined, an assessment of necessary facilities, equipment, systems, staffing and budgets was completed. Interviews with other ISO's were conducted to validate that the scope of the assessment was in-line with comparable implementations and to ensure a comprehensive list of functions, staff and infrastructures was identified. Finally the budget estimates were finalized and presented to the Regional Representatives Group (an open forum representing all regional interests). It is estimated a startup budget of approximately \$120 Million and annual operating budget of approximately \$50 Million will be required to implement RTO West.

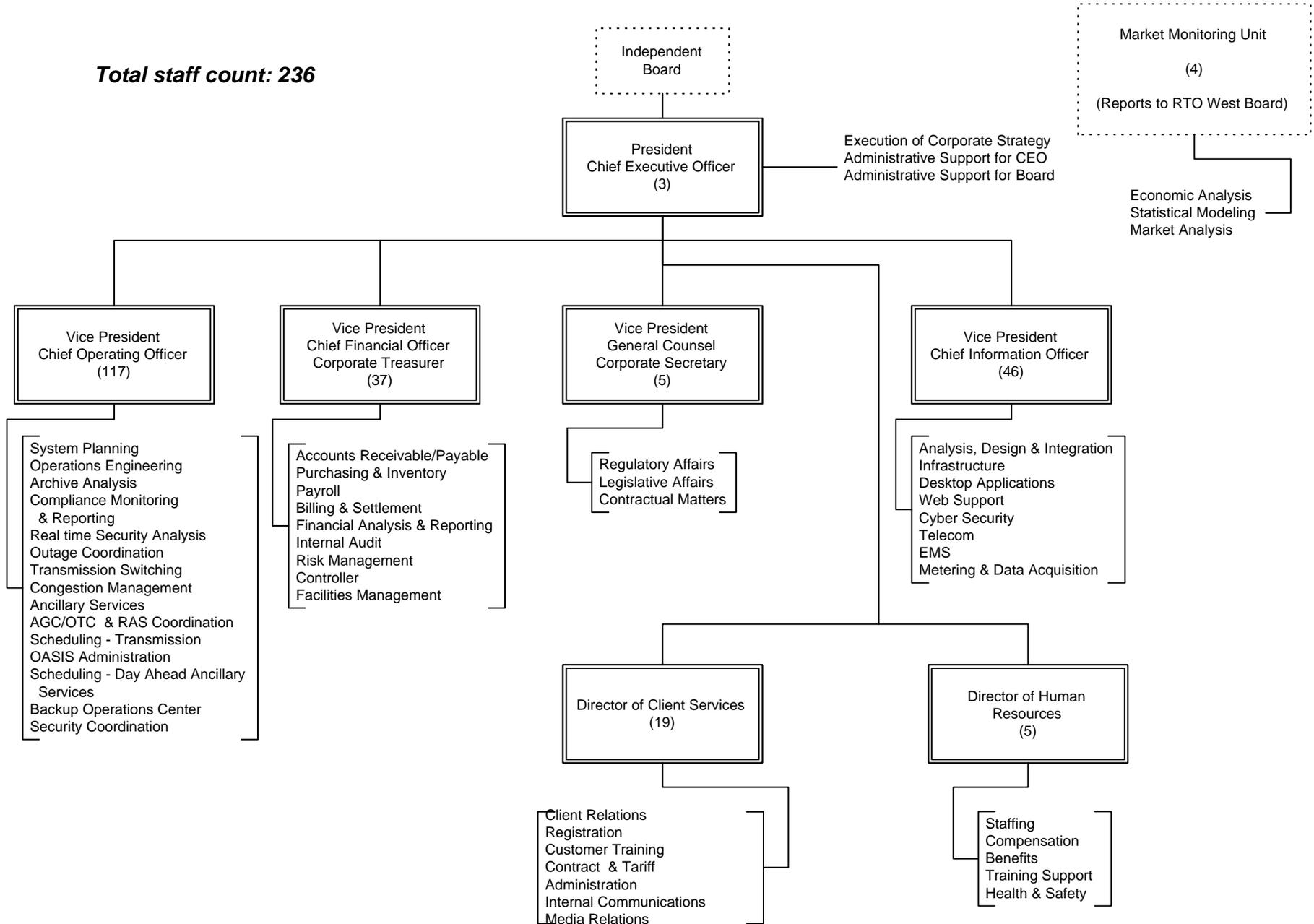
### 2.1 RTO West Organizations and Staffing

In order to carry out its responsibilities, RTO West requires a dedicated staff of employees at both a primary and a backup center. Both the fully functioning primary center, and the backup center, with limited functions, are staffed and operated on a 24x7 continuous basis.

Technology and staffing estimates are based on “light” implementations of all functions except for a mid-range implementation of congestion management and planning. Some functions may be outsourced, such as physical security, reprographics, IT support, additional legal and HR support, market monitoring, and/or security coordination.

The President/CEO will report to the RTO West Board of Trustees. The President/CEO will lead the RTO West organization that will include the following functions: Chief Operating Officer, Chief Accounting Officer, General Counsel, Chief Information Office, Client Services, Human Resources, and a Market Monitoring Unit. A preliminary staffing estimate is approximately 236 full time employees. The following organization chart depicts allocation of responsibility and planned organization size for each of the functions of a fully staffed “second year” RTO West organization.

**Total staff count: 236**



## 2.2 RTO West Facilities

The RTO West physical facilities will include a primary control center and a backup control center. The primary control center for RTO West will contain both the operation center and related supporting business systems. A second facility is needed to provide a backup center in case the primary control center is made inoperable.

Selection criteria for the primary control center included availability of experienced personnel, preferred location to attract key personnel, availability of building for lease or purchase, and access to existing communication infrastructure that interconnects to existing control centers. Several sites were evaluated. The Portland, OR / Vancouver, WA area was selected for the primary control center site. The backup site has not yet been selected. Other considerations for the facilities are identified below.

### **Primary Control Center**

Existing control centers, “brownfield” (lease or purchase existing facility) and “greenfield” (ground-up new facility) sites were evaluated as candidates for the facility. The driving criteria for a facility were to minimize the time to become operational and the capital expenditure.

It was determined the cost to locate RTO West at one of the existing control center locations was comparable to the development of a “brownfield” site in the Vancouver/Portland area (leased office space). The preferred solution is a “brownfield” site and the next step is to identify and evaluate possible sites in the Portland/Vancouver area.

### **Backup Control Center**

The backup center will operate as a “hot” backup with 24X7 dispatch coverage, and will perform a limited subset of RTO West functions. The facility will use a non-federal “brownfield” or “greenfield” site remotely located from the primary control center.

### **Redundant Systems**

Both centers will use redundant systems for building HVAC and AC electrical. Both will be equipped with UPS capacity exceeding 30 minutes and backup generator(s) for UPS and emergency power needs.

It is expected that all critical systems and software will be duplicated at each site with identical data. This will include all near-term systems such as the OASIS/scheduling/tagging systems, EMS systems (substation data and automatic generation control), etc.

### **Control Centers Infrastructure**

Control center infrastructure captures hardware and software systems needed by the RTO. It includes all components for the RTO except the building shell with its primary HVAC

and building infrastructure. In addition to systems that support the transmission commercial business, communications, networks, work areas, computer hardware and software to support personnel and financial systems will have to be planned and procured.

Systems will accommodate seamless workflow (data that is used in various, different systems will automatically move through those systems with reliable outcomes and minimum manual interaction). Databases to be used by multiple systems will be integrated to the maximum extent possible. Commercially available, open systems will be used to the maximum extent possible.

### 3.0 Implementation Timeline

RTO West implementation plan is for a ground-up development. Assuming prompt action by the Commission and all regulatory bodies on the various regional transmission organization applications, there is much work and resulting time to establish the Board of Directors, hire the RTO West staff, procure a building, procure and install business systems, procure and install the operational systems that controls the transmission facilities and finally to test the operational system with the market participants. The filing utilities ask KEMA Consulting, RTO West Filing Program Manager, to evaluate the feasibility of meeting the operational data of December 15, 2001. KEMA Consultants, evaluating similar implementations in scope and functions, advised the filing utilities that development could not be completed by the Commission operational date of December 15, 2001.

To minimize the delay beyond December 15, 2001 to get RTO West operational, certain activities need to proceed in parallel to Commission approval of governance and the development the Tariff. One possible approach is to select a group of people to begin certain implementation tasks as soon as possible. This Transition Team could consist of loaned utility personnel, contractors and consultants who have the skills desired to successfully perform RTO West implementation activities.

Certain work associated with establishing a Governing Board and supporting infrastructure (regardless of its purpose) must be accomplished before the organization can begin to function. The Transition Team will begin these activities plus early action on those RTO specific activities that the Tariff requires to be in place when the RTO begins operation.

In any case, no meaningful work will be accomplished until sufficient funds have been set aside and either an interim Managing Director is selected by the filing utilities or the board hires the President/CEO. Although it is possible to determine how long the transition process may take, actions will not be effective until a single person responsible for the success of the transition and authorized to make decisions and expend funds has been appointed.

#### **RTO West Implementation Staff**

The RTO West Implementation staff would include those responsible for major implementation activities during startup. The following tasks have been identified for this functional area:

- Administer RTO West implementation;
- Work closely with transmission owners/control areas to define requirements, interfaces, and data models;
- Define processes and procedures;
- Review and approve specifications for the communications and control systems infrastructure;
- Enter into contracts for the communications and control systems infrastructure;
- Enter into contracts for RTO West primary and backup facility construction/remodel activities;
- Participate in factory and field acceptance testing;
- Conduct field trials in preparation for RTO West commissioning.

### **Human Resource Consulting**

Human resources development will play a key role during startup. An outside HR consulting firm may be used to assist RTO West HR personnel in the following:

- Executive search;
- Relocation;
- Performance incentive program;
- Job development;
- Performance measurement system development;
- Human resource policies and procedures;
- New employee training.

### **Other Staffing Requirements**

Consultants and/or contractors may be required to provide specialized knowledge or expertise to assist the RTO West staff during project implementation. Consultants and/or contractors may be required to:

- Provide project management;
- Prepare process diagrams;
- Prepare procedure manuals;
- Prepare and conduct training programs for RTO West employees and/or transmission customers;
- Prepare databases;
- Provide IT support;
- Perform administrative functions.