



Implementation WG Rough Budgetary for RTO West August 2, 2000



Topics

- Assumptions
- Technology
- Facilities
- Organization and Staffing
- Budgetary Summary
- Plans for August



Assumptions

- “Lite” Functionality
- Vendor-Supplied Systems
- Interface to GMSs and SCADAs
- Existing and Brown-field Sites
- Outsourcing



“Lite” Functionality

- Transmission planning based on “RTO Coordinate” of grid facilities
- Minimum RTO-based ancillary services markets
- Minimum centralization of congestion management
- Scheduling coordinators who are responsible for meter certification and billing and settlement for their customers
- Addition of Canadian entities would add to budget
- Functionality fully compliant with FERC 2000



Vendor-Supplied Systems

- Most systems will have to be purchased new from vendors and have been estimated on this basis
- Reuse (lease) of a few utility applications have been assumed:
 - OASIS
 - Outage Coordination
 - Security Applications
 - OTC Nomograms
 - Power System Monitoring and Analysis



External System Interfaces

- Data links to transmission owner SCADA systems
- Some direct RAS control
- Data links to scheduling coordinator generation management systems
- When contracted, some direct generation control



Control Center Sites

- Primary
 - Dittmer
 - Brown-field in Portland-Vancouver, WA area
- Back-up
 - IOU location
 - Existing or brown-field



Outsourcing

- Security coordination
- Information services
- Legal services
- HR support
- Market monitoring support
- Physical security
- Reprographics



Technology

- Computer systems and applications
- Communications
- Scheduling and billing/settlement



Computer systems and applications - Primary

	<u>Initial</u>	<u>Annual</u>
Scheduling & Marketing	\$15M	\$2.3M
Dispatch & Operations	\$18M	\$2.5M
General Purpose/Support	\$ 8M	\$1.0M
Other/Contingency 10%	<u>\$ 4M</u>	<u>\$0.6M</u>
Total – Primary	\$45M	\$6.4M



Computer systems and applications – Back-up

	<u>Initial</u>	<u>Annual</u>
Scheduling & Marketing	\$2.6M	\$0.4M
Dispatch & Operations	\$7.0M	\$1.1M
General Purpose/Support	<u>\$0.5M</u>	<u>\$0.1M</u>
Total – Back-up	\$10.1M	\$1.6M



Communications

- Leased communications services
 - From transmission owners
 - From public network providers
- ICCP/T-1
 - Transmission SCADA
 - Generation GMS
- Included in computer/applications costs



Scheduling and Billing/Settlement

- Scheduling/billing/settlement/metering
\$11.5M
- Scheduling coordinator performs metering, billing, and settlement for its customers
- High cost uncertainty
- Possible outsourcing



Facilities

- Primary control center
 - Dittmer
 - Brown-field in Portland-Vancouver, WA area
- Back-up control center
 - IOU location
 - Existing or brown-field
- Key selection criteria
 - Personnel availability
 - Facilities availability



Primary Site

- Dittmer
 - BPA equipment walled off
 - 75K square feet
 - Existing office build-out
 - HVAC, emergency generation, and dual feeds in place
- Brown-field
 - Existing class A (estimated) or class B facility
 - 50K+ square feet



Back-up Site

- Brown-field or existing utility site
- 10K square feet
- Replication of primary's computing systems for operations
- Functions
 - Transmission coordination
 - Scheduling
- Immediate assumption of critical functions



Control Center Costs (\$K)

<u>Improvements</u>	<u>Dittmer</u>	<u>Brown-field</u>	<u>Back-up</u>
Office build-out	625	1250	250
HVAC	Inc	340	170
Emergency gen.	Inc	930	400
UPS	750	750	400
Dual Feeders	<u>Inc</u>	<u>20</u>	<u>20</u>
Total	1375	3490	1240



Control Center Costs (\$K)

<u>Annual Cost</u>	<u>Dittmer</u>	<u>Brown-field</u>	<u>Back-up</u>
Lease/license	1420	925	185
Maintenance	142	50	10
Utilities	<u>200</u>	<u>200</u>	<u>80</u>
Total	1762	1175	275



Organization and Staffing

- Impacts of “lite” assumptions
- Outsourcing
- Staffing estimates
- Headcount Comparisons



Impacts of “Lite” Assumptions

- Transmission planners – long term
- Congestion management desk
- Ancillary services desk
- Scheduler desks
- Billing analysts
- Settlement administrators



Staffing Estimates

Office of the CEO	3
Operations	97
Finance and IS	65
Client services	16
Human resources	5
Legal	5
Market monitoring	<u>3</u>
Total	194



Headcount Comparisons

Headcount (present)

RTO West	194
New York	278 (198)
Mid West	250 (50)
ERCOT	200 (70)



Budgetary Summary

	<u>Initial</u>	<u>Annual O&M</u>
Computer systems, comm, & applic	\$55.1M	\$ 8.0M
Facilities (Dittmer)	\$ 2.6M	\$ 2.0M
Staffing	TBD	\$26.2M
Outsourcing, expenses, etc.	TBD	\$ 4.8M
Cost of capital	<u>TBD</u>	<u>TBD</u>
Total	\$57.7M+	\$41.0M+



Plans for August

- Transition plan
- Refinement of budgetary
- Documentation to support filing
- Agreement from RRG on progress to date and direction

