

ACCESS

T B L M A R K E T I N G B I - M O N T H L Y

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Lancaster Substation: TBL is building a completely new substation that splits up the Bell-Noxon No. 2 line to integrate the new Rathdrum II generation plant into the Northwest grid.

Nine utilities file RTO document

Nine utilities filed in October a plan to consolidate over 50,000 miles of high voltage transmission lines that stretch across eight Western states. The filing with the Federal Energy Regulatory Commission describes how the utilities intend to form a regional transmission organization, known as RTO West, to improve the reliability and efficiency of the power grid.

RTO West will cover an enormous territory, operating participating transmission owners' systems needed for bulk power transfers. This is most of the U.S. portion of the Northwest Power Pool, providing service in Oregon, Washington, Idaho, Montana, Utah and Nevada, and small portions of California and Wyoming. It will also accommodate British Columbia and Alberta utilities, if they choose to join.

Across that area, access to transmission will be available to all eligible customers. To use the system, customers will have to pay a single load-based access charge, rather than today's pancaked rates (multiple rates paid to move power across two or more owners' systems).

This filing is the first major step toward a response to FERC's Order 2000. The Order called for voluntary formation of RTOs nationwide, and set a schedule requiring filings by Oct. 16 and to be operational by Dec. 15, 2001.

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Nine utilities file RTO document

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The utilities filed "stage one" of a two-stage filing with its submissions of documents on Oct. 16 and Oct. 23.

"This has been a huge undertaking just to get to this point," said Peggy Olds, TBL's RTO project manager. "It has been a process that draws on all those interested in transmission access and ownership. And, the process has worked."

However, not all issues have been resolved at this point. Still to go is a lot of work to develop the remaining pieces of the proposal and prepare the stage two filing. This will include an RTO tariff, certain agreements between RTO West and transmission owners, schedules of transfer charges, the allocation of firm transmission rights, along with implementation work. Filing utilities intend to file stage two in spring 2001. In addition to

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PEGGY OLDS

RTO PROJECT MANAGER

FERC approval, investor-owned utilities will need to get approval from state regulatory commissions to transfer operations of properties and to recover costs associated with that transfer.

Also on Oct. 16, six investor-owned utilities filed with FERC a proposal to form a for-profit independent transmission company known as TransConnect. The company would own or lease the high voltage transmission facilities held by Montana

Power Co., Avista Corp., Puget Sound Energy, Portland General Electric, Nevada Power Co. and Sierra Pacific Power Co.. TransConnect will join RTO West as a transmission owner, but separate from their respective utilities. The hope is to gain efficiencies in services and operations by pooling assets and focussing on the transmission business.

WITH THE REMAINING WORK TO COMPLETE THE FILING, AND THE CONSIDERABLE EFFORT NEEDED TO SET UP AN RTO, IT'S HIGHLY UNLIKELY RTO WEST WILL MAKE THE 2001 DATE.

Although the FERC order calls for RTOs to be operational by the end of 2001, a preliminary assessment by RTO West facilitators say that with the remaining work to complete the filing, and the considerable effort needed to set up an RTO, it's highly unlikely RTO West will make the 2001 date. The RTO has a great number of tasks ahead, including establishing the Board of Trustees, hiring a CEO and staff, procuring a building and the business systems needed to operate a large organization, and then testing everything before going live.

"It is not surprising that the timeline could slip," said Olds. "We are working with many parties with a wide range of often conflicting goals. What is surprising is the number of issues we've already agreed on, including an overarching structure for the RTO and a way to resolve other issues."

RTO West will be a non-profit independent system operator. As an ISO, it will not initially own transmission wires and poles. Individual filing utilities will maintain ownership of their own transmission systems. Governance will be by an independent board of trustees that will take input from a stakeholder advisory board.

Initial budgets estimate RTO West will employ about 270 people to start and open a control center some place in the Portland, Ore./Nancouver, Wash. metropolitan area. Estimates of the annual operating costs range from about \$63-\$89 million, including the amortization of \$80-\$100 million in start-up costs. Costs include facilities, computers, outside services and staff.

There are other costs, as well as counterbalancing benefits, the region may encounter once RTO West is operating smoothly. A workgroup looking at both the costs and benefits of the RTO determined annual savings in regulating reserves of \$28 million, fuel savings of about \$30 million and a broad range of benefits due to improved system reliability of \$33-\$328 million (see adjoining article).

A Regional Representatives Group made up of Northwest stakeholders brought RTO West this far. That group last met formally on Sept. 20. Now the filing utilities are in the process of developing plans, which will include a public process, for overseeing resolution of the final issues, submitting the supplemental report in the spring and implementing their plans to start-up the RTO.

The process is public and ongoing. The best way to keep up and to view the filing documents is to log onto the Internet and point your browser to www.rto west.org.

RTO West participants

Transmission utility	Line miles
Avista	2,100
BPA	15,000
Idaho Power	4,600
Montana Power	6,800
Nevada Power	1,200
PacifiCorp	15,000
Portland General Electric	2,000
Puget Sound Energy	2,700
Sierra Pacific	1,800
TOTAL LINE MILES	51,120

Workgroup looks at RTO benefits and costs

An independent workgroup attempted over the past several months to identify and quantify the benefits and costs to the regional electric power system of implementing RTO West. Basing its work on the latest design for the RTO, it was able to quantify some benefits and costs and to list qualitatively those for which they could not assign numbers.

In their work, they quantified savings in regulating reserves and reliability improvements, but have not yet been able to determine the value of eliminating pancaked rates within the vast area that will be overseen by RTO West. That continues to be examined. They also included in their report (available on the Internet at www.rto-west.org) a brief discussion of RTO West's implementation costs.

The estimated annual regulating reserve savings is 364 megawatts or approximately \$28 million, based on BPA tariff rates for this product. These savings come from taking advantage of two things:

- the load diversity of the larger RTO control area (295 megawatts savings),
- recent North American Electric Reliability Council standards for relaxation of regulation requirements (69 MW).

The RTO should improve reliability because it will manage and operate the entire grid. It will have clear planning authority with an ability to ensure system investments are made if they are needed for reliable service. The RTO should also provide significant cost-savings by reducing both the risks of cascading outages and the duration of such outages by managing system restoration.

The workgroup attempted to model the effects that removal of pancaked rates within the RTO region would have on the market

prices of electricity. To date, they determined that:

- Removal of pancaked rates tends to lower market pricing in areas of current high prices and tends to raise them in areas of relatively lower prices. The impacts on loads, integrated utilities and independent power producers differ.
- Due to more efficient dispatch, there is a modest annual fuel savings (on the order of \$30 million) in the Western Systems Coordinating Council area.
- Generators that are currently available for service should be dispatched more efficiently, thereby delaying future generation expansion.

They also discussed other benefits and costs, as well, but a lack of precise information made it difficult to quantify those impacts.

Qualitative benefits include:

- the expectation it will facilitate more appropriate market signals,
- increase trading,
- provide savings and efficiencies by shopping at one OASIS for reservations and purchases of RTO transmission services.
- improvements in managing transmission congestion,
- improved reliability of the transmission system through clear planning authority and greater visibility of the grid,
- reductions in filing utility staffs.

Qualitative costs include:

- the cost of having to retain a schedule coordinator at some utilities,
- the cost of operating secondary markets for transmission rights over constrained paths,
- the risk to some loads of exposure to market-based ancillary services prices,
- the market imperfections that may occur should this RTO get the market rules wrong.

What RTO West will do and what it won't do

RTO West will perform many of the functions that are now the responsibility of nine separate entities, including:

- have operational authority and responsibility for short-term reliability;
- manage its own tariff;
- manage congestion through a system of market-driven, physical-rights-based, tradeable transmission rights;
- address parallel path flow issues within its region and that cross its control-area boundaries into neighboring transmission systems;
- facilitate appropriate markets for ancillary services and act as provider of last resort for ancillary services;
- maintain its own open access same time information system site, and calculate total transfer capability and available transfer capability on its own transmission system;
- carry out independent market monitoring functions;
- have ultimate responsibility to plan all transmission facilities under its control and have "backstop" authority to address failures to construct or upgrade transmission facilities needed for reliability;
- build on efforts by filing utilities and others to proactively address inter-regional coordination with respect to market interface and reliability issues.

RTO West will not:

- initially own transmission facilities;
- build, maintain or repair facilities, unless as a backstop to ensure reliability;
- have operational control over all transmission facilities under FERC rules. Participants can exclude facilities not having a significant affect on transfer capability.

TBL briefs customers on RTO

The Transmission Business Line is completing a series of workshops around the region to talk to customers about the recent RTO West filing to the Federal Energy Regulatory Commission. It completed its fifteenth and last workshop in Salem, Ore. as this publication hits mailboxes.

While the meetings were not an opportunity for formal comment, TBL account executives and others did provide a complete overview of the regional transmission organization filing, answered questions and acknowledged customers' comments.

"Customers will have an opportunity through representatives to participate in workgroups to resolve remaining issues," said Nancy Morgan, TBL account executive and organizer of the workshops. "There will also be public comment opportunities prior to the filing and with FERC after the filing."

At the meetings, presenters provided an overview of the filing, including why the region is going through the RTO process. They also looked at the RTO pricing structure, with information about the Bonneville Power Administration company rate, the congestion management design, the scheduling coordinator concept, the costs and benefits and a description of important concepts.

Two topics that will affect customers are still at a conceptual level. BPA will offer scheduling coordinator services to simplify the RTO process for small customers. A scheduling coordinator acts as the interface between the customer and RTO West to arrange certain transactions. How this will be done is still unclear and is subject to further discussions with customers.

The other topic has to do with the option for existing transmission customers to switch to RTO West service or stay with BPA service. If customers with existing long-term BPA transmission agreements elect to stay with existing BPA service, BPA will obtain sufficient rights from RTO West to continue to carry out its obligations under those contracts.

TBL construction crews at work



Monroe Substation: TBL installed this summer a new 500 kV, 386 MegaVar capacitor group to maintain main grid stability during loss of lines and heavy loading.



Alvey Substation: TBL crews upgraded the capacitor and reactor group to allow for greater switching flexibility for voltage control and to replace PCB-contaminated capacitors.



Teton Substation: TBL installed a new 115kV circuit breaker bay for the termination of the new Swan Valley-Teton No. 2, 115kV line. This line is needed to support the growing load in the Jackson Hole, Wyo. area during the winter.

Washington 500 kV line to address multiple issues

Is it possible for one new line on the east side of the Cascade mountains to reduce transmission constraints on both the east and west sides of the mountains and provide more capacity to export energy to California, while also helping the Bonneville Power Administration meet its obligations to endangered salmon?

Although not fully developed, the project is likely to include about 59 miles of single-circuit 500 kV line and it could include a new substation. According to Kyle Kohne, TBL network planning engineer, the line will originate at TBL's Schultz substation northwest of Ellensburg, Wash., but its other terminal point is still under

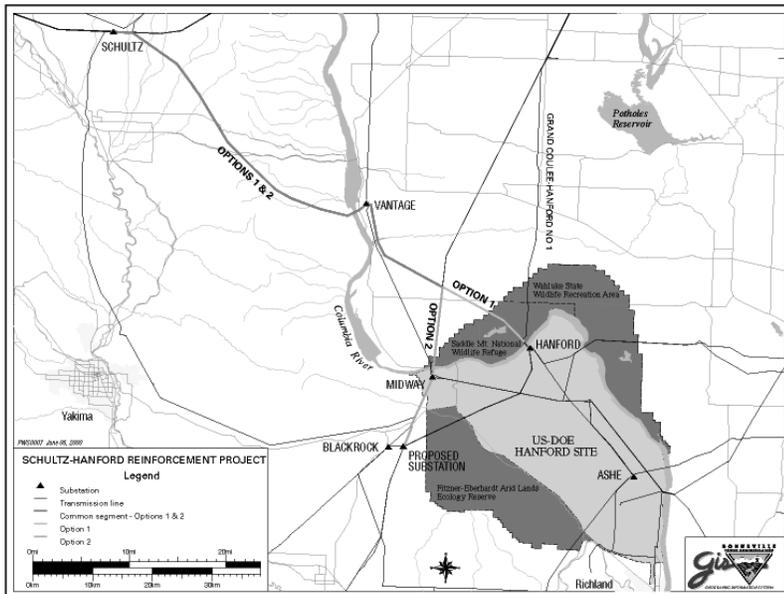
Reach National Monument, an area that received its Monument status in the middle of initial project planning. Hanford and Ashe substations are both located within the National Monument.

"We helped develop language for the background paper on Hanford Reach, which accompanied the Monument's proclamation to ensure the designation would allow for continued development of the transmission system," Kohne said. "However, if we terminate at the Blackrock substation, we might not have to go through the Monument."

The proposed line could also help reduce strain on the system along the I-5 corridor from Raver substation south to Portland, Kohne said.

"Often these projects will have multiple benefits," Kohne said. "While they don't always completely solve all the problems, they can delay the date for other projects."

Scoping meetings will be held in Ellensburg, Yakima and Desert Air, all in Washington, according to Lou Driessen, Bonneville Power Administration project manager. BPA will notify interested parties about the schedule in mid-November.



In getting to the answer, Transmission Business Line engineers are considering a 500 kV line from its Schultz substation to the Hanford area in Washington. Although the line is not scheduled to be completed until 2005, it could go a long way to correcting the constrained transmission capacity through central Washington. And, if done as envisioned, the new line could help solve other problems as well.

"Certainly, the line will allow more generation in from the north — places like Grand Coulee Dam and Canada," said Marv Landauer, TBL planner. But, that's not the end of the benefits. "The line is also related to salmon recovery. It will keep the intertie capability up by increasing the ability of the system to move power from the north to the Southern Intertie. This allows more spill to pass fish on the lower Columbia River projects."

study. Three points are being considered: the Hanford and Ashe substations, or a new Blackrock substation located southwest of the Hanford Nuclear Reservation.

The decision on which route the line should take won't be made for at least another year, but TBL does plan public scoping meetings in early December to discuss the line and its optional routes. The meetings are required by the National Environmental Policy Act when developing an environmental impact statement. It is a two-way process for landowners, governments, businesses, tribes, media and others. BPA will lay out the project purpose and proposed options and then listen to public statements, which are factored into the analysis.

A project like the Schultz-Hanford 500 KV line is complicated by the fact that it may go through the Hanford

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Send your letters and comments to your account executive or to "Access: Letters to the Editor," Bonneville Power Administration, Transmission Business Line – T-Dittz, P.O. Box 491, Vancouver WA 98666; e-mail: llhunziker@bpa.gov

New alternative cuts Celilo costs

Southern partners in the Pacific high-voltage direct-current Intertie suggested replacing mercury arc valves with roll-in thyristor valves at the Bonneville Power Administration's Celilo converter station as a way to maintain the DC Intertie's capacity at 3,100 megawatts. This partial replacement alternative would lower the cost of maintaining the Intertie's capacity to a point where it could be paid for under current tariffs and rates.

The Los Angeles Department of Water and Power and Southern California Edison must replace part of their Sylmar converter station at the southern end of the Intertie due to fire and earthquake damage. They asked BPA to also commit to maintaining the Intertie's capacity at Celilo for 30 years. If either station is decreased, then the total DC Intertie capacity is decreased.

The new plan suggested by the partners for maintaining the Intertie capacity calls for a partial replacement of equipment that would lower the initial cost by putting off as long as possible the heavy cost of replacing transformers at Celilo, extend the life of the transformers, and lower the operation and maintenance costs associated with repairs to keep the aging mercury arc valves operating.

Transmission Business Line officials outlined the alternative, a financing proposal and a draft of estimated benefits to society at a Nov. 7 public meeting to brief customers and interested parties and to take comment on the DC Intertie's future.

"The advantage of this plan is that it's much less expensive than the other alternatives," Wayne Litzenberger, TBL electrical engineer said.

"Eventually, we'll have to replace the existing transformers, but they may have 10 to 25 years left."

Thyristors cause less damage to transformers and so would extend their lives. On the other hand, the roll-in thyristor option would not be available in the future because continued use of the mercury arc valves puts stress on the transformers, thus cutting their expected life.



Celilo converter station at the north end of the 3,100 mw DC Intertie.

The direct cost of the alternative is \$25 million, while replacing the mercury arc valves, transformers, related equipment and a new building could cost between \$57 million and \$100 million. Annual O&M costs would also drop from \$4.9 million to about \$3 million. Another option is to retire the mercury arc valves and allow the Intertie capacity to drop to about 1,100 MW in 2003.

Although an initial economic study using the higher costs showed that the revenues forecasted did not justify that cost, the new scenario closes the gap between costs and forecasted revenues.

Dennis Metcalf, manager of Transmission Rates and Tariffs, said the incremental costs of the project may be covered under current open access tariffs if Long-term firm contract demand increases by 450 MW to 700 MW over 10 to 20 years. These are in addition to current contracts and those that are pending.

One way to do this is to choose a specific date when parties could request DC service at the Intertie rate. All requests would receive the same priority. Contracts would be contingent on whether enough capacity is sold.

There are other benefits not captured in the initial economic study. Audrey Perino, a BPA economist, looked at the benefits to society for maintaining the Intertie at 3,100 MW instead of 1,100 MW. In the Western System Coordinating Council area, she found a \$45 to \$57 million net present value benefit for maintaining the capacity. Although the numbers are preliminary, she said it looks like there is value to the energy markets in maintaining the DC Intertie at the higher capacity.

She also said that the model that calculates societal benefits only looks at energy sales. It does not look at other products, nor does it factor in reliability.

More information and the updated studies are available on TBL's web site at <http://www.transmission.bpa.gov/tblib/dcintertie>. Public comments have been extended to Nov. 24. They can be e-mailed to comment@bpa.gov, or mailed to BPA Public Involvement, P.O. Box 12999, Portland, OR 97212. Questions should be directed to Mike Hansen, (503) 230-4328.

Transmission Business Line closes the gap on customer needs

Transmission customers are saying the gap is closing between the service they want from the Transmission Business Line and the service they get. An annual survey of a cross-section of TBL customers is showing that steps TBL has taken over the past three years to improve performance is paying off.

“WE USE THE SURVEY TO HELP US EVALUATE OUR PERFORMANCE FROM OUR CUSTOMERS’ PERSPECTIVE. WE WANT TO KNOW WHAT THEY EXPECT OF US AND WHERE THEY THINK WE NEED TO IMPROVE TO MEET THOSE EXPECTATIONS.”

RUTH BENNETT
TBL SALES MANAGER

The TBL surveys a sampling of customers once a year in July to gain customers’ perspective on whether it is meeting their expectations. What customers say influences management actions and goals for the following fiscal year. This year surveyors doubled the number of potential interviewees to 100, finding 89 willing participants. Not only has the response rate been rising, but so have the results.

“We use the survey to help us evaluate our performance from our customers’ perspective,” said Ruth Bennett, TBL sales manager. “We want to know what they expect of us and where they think we need to improve to meet those expectations. We were very pleased this year. This is the biggest jump in performance we’ve ever had.”

Bennett, who joined the TBL in May 1999 to oversee TBL customer account executives, had asked for a more comprehensive and far-reaching survey this year in order to get the

opinions of customers about quality of service, responsiveness and efficiency.

TBL asked customers in July 2000 how the quality of its services compared with what customers want. The survey is unique because, unlike many other surveys that are administered by Bonneville and others in the utility industry, the customers themselves were interviewed and the survey questions designed around service characteristics that are important to them. The consulting firm of Bourke and Company interviewed customers from direct service industries, public utilities, investor-owned utilities and marketers, asking them 21 questions about how well TBL delivers services. Sixteen TBL employees were also interviewed in order to compare Transmission’s view of performance with those interviewed.

TBL made some of its biggest gains in both quality of service and in quality of the business relationship. Customers said account executives have the appropriate decision-making authority and understand their business needs better than at any time in the past. They said that the AEs are good and reliable business partners and that TBL’s business decisions strike a fair balance between customer and TBL business needs.

“I think the TBL account executives are providing significant value to our customers,” Bennett said. “However, there is still an area where we need to improve. We are finding that customers still believe that the BPA bureaucracy is too cumbersome. We are listening and will continue to take actions that streamline our processes.”

Other areas customers rated higher are in the quality of communications — customers are increasingly seeing that their input is reflected in TBL business decisions — and

in sales and product-related services (invoices, rates, contracts, scheduling services, etc.).

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RUTH BENNETT

Customers have consistently graded TBL’s quality of operations very high. While customers’ perceptions of reliability, operations and maintenance and response to unplanned outages fell slightly this year, quality of service continues to rank higher than other categories of service.

TBL managers are looking at ways to improve in these areas, setting new targets for improvement and tying management goals to customers’ suggestions. It began last year an internal evaluation of its processes and procedures to speed up its response to customers.

Many of the customers who were interviewed this year will have another chance in 2001, according to Bennett. That’s a very clear way to benchmark our progress, she said.

“It’s important for TBL to have satisfied customers,” Bennett said. “The utility world is changing rapidly and an annual survey is a good way to find out how satisfied our customers are and what we can do to improve.”

Utilities consider Puget Sound option

Two efforts to bolster the transmission system north of Seattle, Wash. were described at a public meeting in Vancouver, B.C. The proposed plans for providing long-term solutions, including transmission reinforcements and managing constraints, were designed to help meet load service in the Seattle and Bellingham areas, as well as to strengthen the electrical system for flows to and from Canada.

BC Hydro hosted the meeting Nov. 2 to discuss Northern interconnection and Puget Sound area long-range transmission studies. Representatives from Puget Sound utilities, BC Hydro, PowerEx, the Bonneville Power Administration and others attended.

One of the two studies described transmission reinforcements in the Seattle and Bellingham areas that would improve transmission capacity between the U.S. and Canada. The second study by BC Hydro described improvements in Canada to the east side interconnection between the two countries.

Puget Sound transmission upgrade projects for fiscal years 1999-2000 totaled about \$16.5 million, according to Kyle Kohne, TBL network planning engineer. He and colleague Berhanu Tesema described reinforcement options and said some components of the preferred option were already underway. The environmental process for the Kangley-Echo Lake 500kV line has begun and a 500/230-kV transformer that will be installed at SnoKing is already on order.

Puget Sound Energy and Seattle City Light said they would meet with other area utilities to develop a schedule for evaluating TBL's preferred transmission reinforcement option.

Suggestions for changing the reinforcement plan should be made by early Feb. 2000. Financial commitments also need to be completed to ensure a fall 2002 completion date.

TBL's John Anasis outlined how the region could manage internal constraints in the Puget Sound area. In doing so, he defined a South of Bothel

(SOBO) cutplane and offered two tools to manage curtailments over it.

"Under redispatch protocols, prior arrangements would be made among parties to provide redispatch that would relieve curtailments over SOBO," Anasis said. "Operating instructions would be put in place to enable the redispatch to be called upon in the event of curtailments."

He added that load shedding could also be used for this purpose if parties wanted to offer that service. The other tool is scheduling protocols. Under this approach, schedules and transactions using the SOBO cutplane would have to be explicitly identified. When these transactions and schedules exceed the SOBO capacity, curtailments would be executed to reduce transfers. Nonfirm uses would be cut before firm uses of the cutplane. Firm schedules would be subjected to pro-rata cuts.

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