

W. Bill Booth
Chair
Idaho

James A. Yost
Idaho

Tom Karier
Washington

Dick Wallace
Washington



Bruce A. Measure
Vice-Chair
Montana

Rhonda Whiting
Montana

Melinda S. Eden
Oregon

Joan M. Duker
Oregon

Council Meeting
Skamania Lodge
Stevenson, Washington

April 14-15, 2009

Minutes

Dick Wallace welcomed the Council to Skamania Lodge in the Columbia River Gorge, noting that Skamania is the Chinook word for “swift water.”

Bruce Measure made a motion that the Council add to the agenda of this meeting discussion of a within-year budget adjustment for Project 2003-072-00, Habitat and Biodiversity Information System for the Columbia River Basin; find that the Council business requires this discussion; and find that no earlier notice was possible. Jim Yost seconded the motion, which passed on a unanimous roll call vote.

Reports from Fish and Wildlife, Power and Public Affairs committee chair:

Rhonda Whiting chair, fish and wildlife committee; Melinda Eden, chair, power committee; and Dick Wallace, chair, public affairs committee.

Fish and Wildlife Committee chair Rhonda Whiting reported that the committee had a lengthy discussion of research, monitoring, and evaluation (RME), noting that staff is putting a lot of time into the issue. The committee also discussed the Independent Scientific Review Panel’s (ISRP) reviews of three projects associated with the Columbia Basin Fish Accords with tribes, she said. The committee gave its support to a Yakama Nation lamprey project and gave conditional support to a Snake River fall Chinook project at Lyons Ferry and an expanded multi-species acclimation project, a consolidation of six Accord proposals, Whiting said. The agenda also included a quarterly review of 13 project funding requests, which were slated to come before the Council in May, she said. One of the requests is an emergency and will be presented to the Council at this meeting instead, Whiting wrapped up.

Committee chair Melinda Eden provided a report on the Power Committee meeting, which was dedicated to the Sixth Power Plan. Our meeting included a discussion of the Portfolio Model used in developing the plan and the different resource scenarios that are being evaluated for risk

and cost in the model runs, she said. We also discussed how the power plan will address the issue of capacity and flexibility, which is needed for integrating variable resources, Eden said, and the committee also addressed climate-change policy and how the issue will be treated in the plan, Eden reported.

The demand forecast for the Sixth Power Plan has changed based on updated assumptions, she continued, adding that the adjustments brought the forecast into closer alignment with the sum of utility forecast done by PNUCC. Staff has identified a lot more conservation potential, particularly related to the information, communication, and entertainment (ICE) segment of residential load, Eden said.

Wallace reported that the Public Affairs Committee would meet later in the day to talk about an outreach strategy for the power plan and setting up another opportunity for Congressional staff to visit the Northwest.

1. Council decision on accord reviews:

Mark Fritsch

Staffer Mark Fritsch described four projects associated with the Columbia Basin Fish Accords, including: Yakama Nation Pacific Lamprey Program for \$2,738,629 total; Snake River fall Chinook – modify ponds at Lyons Ferry to improve adult holding for \$500,000 total; Sturgeon Strategic and Hatchery Master Plan for \$1,643,178 total; and Expanded Multi-Species Acclimation Wenatchee/Methow for \$4,845,345 total.

The objective of the lamprey project is to restore natural production to a level that will provide robust species abundance, significant ecologic contributions, and meaningful harvest within the Yakama's ceded lands, he explained. The Council received the ISRP review for the project March 6, and the review had several recommendations, Fritsch said. The Yakama Nation responded to the recommendations and another ISRP review was provided, which gave the project a "meets scientific review criteria, qualified" rating, he said. The ISRP concerns related to the sampling protocol for the distribution analysis, Fritsch stated.

The IRSP found that the Snake River fall chinook project, which is to modify the Snake River fall Chinook adult holding ponds at Lyons Ferry Hatchery to provide additional segregation capacity, meets scientific criteria, he reported. As for the master plan for white sturgeon, which is to restore productive, viable sturgeon populations and fishery opportunities in the mid Columbia and lower Snake River, the Council received the ISRP review April 1, which gave the project a "meets scientific review criteria, in part, qualified" rating, Fritsch reported. The project is subject to the scientific review steps for artificial production, he said.

The multi-species acclimation project, which is to develop an expanded acclimation program for spring chinook and steelhead in the Wenatchee and Methow basins, received a rating of "meets scientific criteria, qualified," Fritsch said. He said the ISRP gave the qualified rating since the project will undergo further planning steps, which are also subject to ISRP review.

Council chair Bill Booth noted that the ISRP put conditions on three of the four projects and project sponsors will be working to have the qualifications removed. The future of the projects

depends on further ISRP review, and in the case of the sturgeon production there will be a step review, he said. Fritsch pointed out that BPA will be involved in overseeing sequencing details for the project. There is little knowledge of the abundance and distribution of the lamprey on ceded Yakama lands, and the future direction of the project depends on further investigation, he indicated.

We are making better progress on the Accord projects, Booth stated. The sponsors are collaborating, the ISRP is reviewing and approving them, and sponsors are coming back with responses to the concerns, he added. Melinda Eden said she would vote for the projects, but was concerned that the ISRP scientific criteria be met.

Bruce Measure noted that the projects have contingencies, but the motions do not reflect them. Fritsch said the motion for the acclimation project in particular should acknowledge the contingency. For the lamprey project, the ISRP had qualifications on the approach, but I saw this as more of a contracting issue with BPA, he added. There is so little information about the lamprey that this is very preliminary, Wallace pointed out. They don't have the protocols or specifics, yet, he added.

Our expectation is that the project sponsors will continue to work with the ISRP on meeting the conditions in the scientific review, Joan Dukes stated. Staffer Tony Grover said the ISRP didn't provide details because there is so little known, "they may be wrong" if they do. The Yakamas fully intend to go back to the ISRP with more information – they have been "more than willing" to do that, he said.

Measure made a motion that the Council recommend that Bonneville fund Project 2008-470-00, Yakama Nation Pacific Lamprey Program, as presented by staff and recommended by the Fish and Wildlife Committee to include further review if the project is expanded due to translocation or supplementation issues. Tom Karier seconded the motion, which passed unanimously.

Measure made a motion that the Council recommend that Bonneville fund Project 2008-210-00, Snake River Fall Chinook, to modify ponds at Lyons Ferry to improve adult holding, as presented by staff and recommended by the Fish and Wildlife Committee. Whiting seconded the motion, which passed unanimously.

Measure made a motion that the Council recommend that Bonneville fund Project 2007-155-00, development of a Master Plan for a Rearing Facility to Enhance Selected Populations of White Sturgeon in the Columbia River Basin, as presented by staff and recommended by the Fish and Wildlife Committee. Eden seconded the motion, which passed unanimously.

Measure made a motion that the Council recommend that Bonneville fund Project 2009-001-00, Expanded Multi-Species Acclimation in the Wenatchee/Methow Basins, with the understanding that implementation of the project be dependent on the outcome of the proposed planning effort and future review by the ISRP and the Council, as presented by staff and recommended by the Fish and Wildlife Committee. Wallace seconded the motion, which passed unanimously.

2. IEAB report on Fish and Wildlife Program and Power Plan interactions:

Dr. Joel Hamilton, Independent Economic Advisory Board.

Dr. Joel Hamilton and Dr. Noelwah Netusil of the Independent Economic Analysis Board (IEAB) reported on their analysis of interactions between the Council's F&W Program, adopted early this year, and the Sixth Power Plan. Morlan said the IEAB was asked to look into relationships between the two, a task "intended to generate ideas and survey the possibilities."

Hamilton said the IEAB identified a number of potential interactions, including impacts of mainstem actions, such as the 2008 Biological Opinion (BiOp) and the Columbia Basin Fish Accords; increased costs as a result of the BiOp that may reduce power demand; uncertainties about mainstem improvements and spill levels; role of environmental credit markets, including carbon; impacts from integration and wind and solar generation on F&W; and impacts from changes in water storage and use.

The 2008 BiOp and the Accords will increase F&W program costs by \$90 million annually and mainstem actions will reduce revenue from generation by \$15 million, he reported. Passing the additional costs on to customers could reduce demand by up to 177 MWa in the short run and up to 472 MWa in the long run, Hamilton said.

A number of projected changes in fish bypass facilities, including removable spillway weirs, could affect hydropower generation, as could litigation that would increase spill, he explained.

Netusil outlined the potential role of environmental markets and how they could affect the F&W program and the power plan. With regard to the region's carbon footprint, she pointed out that BPA's F&W program has protected about 300,000 acres of land that have carbon sequestration benefits. Markets for these benefits are emerging, Netusil said, recommending the Sixth Power Plan recognize the potential they offer.

Hamilton pointed out the increasing value of the hydro system for firming variable resources, as well as constraints for doing so due to fish operations. The Sixth Power Plan needs to recognize the cost of integrating variable resources and the potential for institutional changes that will lessen the impacts to the hydro system, he said. The Sixth Power Plan is well on its way to incorporating these issues, Hamilton added.

In wrapping up the presentation, Hamilton said many of the topics addressed would benefit from additional IEAB analysis.

Wallace listed several other areas of intersection, including more efficient turbine installations at dams, which affect both generation and fish, and irrigation efficiencies, which provide water for both fish and power production.

Karier asked if land acquired to meet a F&W mitigation requirement would also qualify for environmental credits. There is a lot about the environmental credit markets that is unsettled, Netusil responded.

3. Council Decision on BOG Management Group recommendations for Habitat and Biodiversity Information System for Columbia River Basin, #2003-072-00

Mark Fritsch

The Council approved a \$64,294 funding request to replace the Northwest Habitat Institute's aging computer equipment. The NHI develops data sets and data collection methods for F&W planning purposes. The computer system, which was due for replacement, experienced a failure with its main storage server April 7.

Measure made a motion that the Council recommend that Bonneville fund the within-year budget adjustments for Project 2003-072-00, Habitat and Biodiversity Information System for the Columbia River Basin in the amount of \$64,294 in FY 2009 expense funds, as presented by the staff and recommended by the Fish and Wildlife Committee. Whiting seconded the motion, which passed unanimously.

4. Council business: Approval of minutes

Measure made a motion that the Council approve for the signature of the Vice-Chairman the minutes of the March Council meeting, held in Boise, Idaho. Wallace seconded the motion, which passed unanimously.

5. Council work session on development of the Sixth Power Plan

– NWEBC Bright Future presentation: Sara Patton and Steve Weiss, Northwest Energy Coalition

Opening a work session on the Sixth Power Plan, Power Committee chair Melinda Eden introduced speakers from the Northwest Energy Coalition (NWEBC) and PNUCC to discuss a vision for the Northwest's energy future. But the speakers didn't want this to be framed as a dichotomy between one set of interests and another, she stated.

NWEBC's *Bright Future* is the second report in a "Light in the River" series, according to Sara Patton of NWEBC. The report's subtitle refers to the interconnected goals of keeping the lights on, growing jobs, moving goods, and swimming salmon, she said. The report is NWEBC's effort to take on the issues where clean energy, climate change, and preserving wild places intersect, Patton explained.

According to *Bright Future*, the region would need another 6,500 average megawatts (MWa) of power by 2020: 4,000 to meet new demand; 1,000 to replace generation from the Snake River dams; 1,000 to replace coal-fired generation; and 500 to fuel electric vehicles. By 2050, the region would need another 19,100 MWa: 12,000 to meet growth; 1,500 for electric vehicles; and 5,600 to replace coal-fired generation, Patton said.

Bright Future sees energy efficiency as "the powerhouse" that can provide an additional 340-MWa resource annually, she said. Combined heat and power (CHP) technology is another piece of the solution, Patton added, as are new renewables, including wind, solar, and geothermal. The

Council's estimates of conservation potential are even better than 340 MWa in the out-years, she pointed out.

The renewable resource potential in the Northwest "is more than enough" to meet future power needs, according to Patton. In outlining the potential by state, she pointed out that the analysis includes only 20 percent of the wind potential in Montana because there would have to be new transmission built to make use of it. Patton said that beyond using hydro and natural gas to integrate wind, Smart Grid technology has the potential to be valuable for that purpose.

The region has more than three times the energy efficiency, CHP, and new renewables to meet demand between now and 2050 at 10 cents per kilowatt-hour (kWh), she continued.

Moving to recommendations, Patton said the Obama Administration and Congress should act quickly to set carbon emission limits and establish a mechanism to meet them. But the Northwest can't wait, she stated, adding that NWEC is working with the legislatures in Oregon and Washington and with the Western Climate Initiative to get out ahead of national action. NWEC is also encouraging regional leadership from BPA on energy efficiency and renewables, Patton said.

The *Bright Future* report also recommends a strong regional power plan, she stated. The Council should take the initiative to meet the IPCC goal, Patton said. We also need to work to extend state renewable portfolio standards (RPS) and prohibit both new coal plant construction and extending the lives of existing coal plants, she wrapped up.

We need a vision in the Sixth Power Plan, and you have given us yours, Dick Wallace commented. My question is with the underlying assumptions in your report, he said. You have renewables meeting future load at 10 cents per kWh, but my sense is that the next increments will be more expensive than that, Wallace stated. What underlies your assumption that renewables will continue to cost about what they cost today? he asked.

The cost of all technologies is going down, Weiss replied. The price of wind generation has come down, and we are confident that the price of these technologies will decrease based on their past track record, he said. We think the costs of integration will come down, too, Weiss stated. These are assumptions, but "we don't think they are unrealistic" – you could have nine-cent power with a one-cent integration cost, he said.

One tool in the toolbox is diversity of location for renewables, Eden said. This has been "an unhappy week" in terms of the potential to get resources to load centers, given Oregon's legislative action on transmission lines, she indicated. How do we get the resources to where they need to be? Eden asked.

We need balance and tradeoff, and I think there will be, Patton responded. She pointed to efforts that would allow the federal government to pre-empt siting decisions for transmission.

– **Comments from PNUCC**

John Prescott of PNGC Power told the Council he would share some practical thoughts for the Sixth Power Plan on behalf of PNUCC members. We want to ensure the region's utilities and the Council have a common view on the basics of the current power system and future

challenges, he said. We also want the power plan to clearly communicate the complexities of the system and the challenges of ensuring an adequate and reliable power supply, Prescott stated.

We share a vision of a cleaner and reliable energy future that is affordable and supports a vibrant economy, he said. PNUCC members are developing a common vision they will return to discuss with the Council in the near future, Prescott added.

Utilities are headed toward an energy future that embraces conservation, efficiency, and renewables, he said. Our integrated resource plans call for those resources, and we will continue to be at the forefront with them, Prescott stated. According to PNUCC's Northwest Regional Forecast, utilities plan to acquire the equivalent of 1,700 MW of energy efficiency in the next 10 years, along with renewable resources, he reported.

While we support clean energy goals, "we are obliged to be realistic and consider real-world consequences," Prescott said.

Prescott urged the Council to be vigilant and ensure the Sixth Power Plan is both visionary and realistic. The Council's plan "cannot be a wish list that gets out ahead of what is technologically feasible" and must provide a voice of reason and independent analysis, he said.

The "struggling economy" is yet another consideration, Prescott continued. Clean, affordable, and reliable electricity is a must to compete nationally and globally, he said. As utilities, we have the obligation to balance the need for new resources with environmental stewardship, reliability, and costs in the form of the monthly electricity bills customers pay, Prescott said, adding that difficult economic times make that obligation more important than ever.

Wallace asked about his view of the Smart Grid. We hope it is part of the future, Prescott responded. But the term Smart Grid implies the grid we have today "is dumb," and it is actually very sophisticated, he added. We are teaming with BPA to explore the potential, Prescott said.

Are we underestimating the demand for electric vehicles? Booth asked. We wanted to get that on the radar screen for the plan, Prescott responded.

Paul Norman of BPA pointed out that BPA foresees the need to acquire resources in coming years and must be consistent with the Council's plan in doing so. BPA could potentially need to augment its resources to serve Tier 1 load, he said. Customers will buy as much as they are entitled to from Tier 1, and we could need to purchase seasonal energy and capacity to meet that load, Norman said.

BPA will also acquire resources to serve Tier 2 load, he continued, noting that customers have a choice about whether to purchase from BPA to meet load beyond Tier 1. In addition, BPA will have a need to acquire resource support services (RSS), Norman said. We have told our customers we will firm up wind resources, including capacity, but we don't know how much RSS we will need, he said. We will also need ancillary services for wind integration, and that could be significant, Norman stated. We have not reached any conclusion about the amount of resources we will need, he acknowledged.

With regard to capacity and flexibility, "I'm glad you are talking about it," Norman stated. Our assessment points to the need to buy capacity in winter heavy-load hours, he reported. We are

hitting our capacity limit on wind integration, which points to a need to acquire, and we would not want to see a Sixth Power Plan that does not address these issues, Norman added.

We expect to see an increase in the conservation targets, he continued. We've done well with exceeding the targets so far, but a lot was due to introducing compact fluorescent light bulbs, Norman said. Utilities are stepping up with their own conservation programs, and it may be appropriate to break down your lump-sum conservation target in terms of categories and where savings are to be achieved, he suggested.

Some flexibility and capacity needs can be met with demand response, Norman said. We should "push the envelope" there, but we don't have estimates of what we can achieve, so we can't be reasonably sure what's achievable yet, he noted.

Norman said the Council can provide scenario analyses that point out the implications of big policy choices, like carbon costs and impacts. We need that, he added.

Addressing the *Bright Future* report, Norman said a future with all conservation, renewables, and Smart Grid is attractive – that vision is good and inspirational. But the report is being used as support for things like removing dams and other resources, he pointed out. The report does not have the quality of analysis that would be needed to approach something like dam removal, Norman stated. "It is not up to snuff," he said, adding that the Council needs to put forward a reliable future "we can count on."

Karier said the Council and BPA need to collaborate on the issue of providing system flexibility. He asked if BPA's request for information (RFI) had produced insights. Norman said BPA would be looking to acquire from the RFI offers received, but the technology must be in place to accommodate automatic transactions for third-party services. There are also other decisions to be made about when one would call on those supplies, he said, adding that pilot projects would help to work out those issues. Norman said BPA would share its work in that area with the Council.

– **Future power system vision**

The Council's power plan has to consider the resources that are available, according to staffer Terry Morlan. But technology has changed over time, and in shaping a vision, we should think about what the future looks like 20 years from now, he said. Is the future large central-station generation or is it more akin to Smart Grid? Morlan queried. And how committed is the Council to meeting climate change goals? he asked. We could have a discussion about all of these things as we consider the vision, Morlan stated.

Yost pointed out that Idaho does not have an RPS, yet utilities are engaged in conservation because it is cost-effective. He said he would like to see an analysis of what would happen with resource choices absent an RPS mandate. What would the model show us is the most cost effective? Yost asked. The RPS may force things that are not cost-effective, and I'd like to know what happens without that mandate, he stated. Yost also raised several questions about how the cost of conservation is reflected in the portfolio modeling and ultimately the plan.

Karier said staff has done impressive work identifying the available conservation. We can show the public how much conservation potential is out there – no one does a better job of this, he stated. If conservation and renewables will cover load growth, the next question is removing

generation resources from the power system, Karier said. We need to know more about adding wind and the potential for integration, including what it costs and what it does to reliability, he stated. That is key to talking about reducing carbon, and when we have that information, we can look at ways to get there, Karier added.

In terms of a vision, we need to look at the interaction between fish and wildlife (F&W) and power, Wallace stated. They aren't in opposition to one another, he said. Climate change has implications for both, and a vision that captures areas of common ground is desirable, Wallace said. We need to include an informed public as part of our vision and an open, transparent process that educates the public, he indicated.

Another element is how to manage risk and uncertainty, Wallace continued. In the vision, we should describe these in ways the public can understand, he said. Part of our vision should also be providing clarity about roles and responsibilities, Wallace said. He suggested the vision could sort out confusion about who is responsible for what.

It's important to be visionary, but we also have to meet the requirements in the Power Act for an adequate and affordable power system, Booth stated. We want to serve the region with clean renewable resources, and we need to make that statement, he said. But we also have to be realistic about things like technology and transmission, Booth said. We can't have a plan, for example, that is based on lines that do not exist, he added.

We also need to be realistic about costs, Booth continued. We need to have a place in the plan that brings the costs down to the level of the homeowner, Bruce Measure stated. Let's have a vision and plan that face the transmission cost and wind integration issues, Booth recommended. He added that the economics of wind now depend on production tax credits and depreciation schedules.

I am a big fan of wind and renewables, but "the mistake in Montana has been putting all of our eggs in one basket," he said. It's time to realize that a fair competition among resources needs to occur, Measure stated. Wind has favorable treatment, and we've seen "the perfect storm" with wind, he said.

Montana is a net exporter of energy, and we intend to continue to be, Measure went on. We don't want to throw resources out of the mix, he said. Taking out the Colstrip plants would be a mistake, "especially for folks in the I-5 corridor," Measure pointed out. We want to look at ways to protect fish but not diminish the hydro system, he said. Our plan has to acknowledge that "we must wrest as much as possible from the hydro system," Measure stated.

The vision should lay out realistically what we can see for the future, Joan Dukes offered. I am particularly interested in conservation and renewables, and when I see that we could cover load growth with these resources, I am impressed, she said. I agree with Dick on the idea of F&W and power integration – we should begin to look at both pieces and do a better job of integrating them, Dukes said. I want to see innovation in our plan – "we have been pushing the envelope on conservation," and we need to keep pushing the region in the power plan, she wrapped up.

– **Summary of power planning analysis and status**

Morlan provided an overview of how the Sixth Power Plan is taking shape and what chapters have been completed. An updated demand forecast puts load growth at about 300 MWa or 1.3 percent per year in the medium case, according to the overview.

Staffer Tom Eckman outlined key findings with regard to conservation. He summed up his major points with three terms: “big, cheap, and pacing.” The 20-year achievable potential is now pegged at 6,000 MWa at costs up to \$100 per megawatt-hour (MWh) and 4,000 MWa at costs up to \$40 per MWh, with new measures identified in all customer sectors, Eckman reported. It will take time to develop the conservation – it’s not all available at once – and deployment will require many approaches, from changing codes and standards to carrying out research and development, he said.

Staffer Jeff King explained the generating resource options in the plan, breaking them out in terms of availability in the near term, mid term, and long term. In the near term, he said the available resources are natural gas; local wind (that does not require new long-distance transmission); limited amounts of geothermal, biomass, and hydro; cogeneration from biomass and gas; and solar photovoltaics, which are “extraordinarily expensive.”

Additional resources are available to the Northwest in the mid term, including imported wind that requires new transmission and perhaps new coal technologies, King continued. However, he noted that coal bears a carbon risk.

In the longer term, “I’m impressed with the diversity of resources,” King said. A number of resources, including local solar, carbon separation and sequestration, new nuclear technology, offshore wind, wave, and storage technologies are not available now, so they won’t go into the portfolio, he said. But they are resources to start thinking about for 2030 – “this is where I see the vision in the plan,” King added.

How realistic is offshore wind? Dukes asked. King explained that the Pacific Coast would require floating wind turbines because the drop-off in the continental shelf precludes stationary units, and the turbines would be more than three miles offshore. We have a tremendous resource, but it’s at least 15 years out, he said, adding that people are interested in developing the resource. Wave technology is coming on faster, and those efforts will resolve some issues with offshore generation, King said.

Morlan wrapped up with an explanation of how cost and risk are treated in modeling for a resource portfolio. Improved energy efficiency is the most cost-effective and least risky resource, he said. RPS in the Northwest require installation of most of the available wind (5,300 MW), according to Morlan, and geothermal is attractive for reasons that include reducing the carbon risk. The geothermal potential in the 20-year plan is about 840 MW at \$85 per MWh, he added.

Yost asked how much geothermal is online in the region. Today we are producing about 10 to 11 MW, and overall, there is about 1,200 MW of estimated potential, King responded. I like geothermal, but with all of the potential, we only have a small amount online, Yost commented. It may not be realistic, he said. King pointed out that the “upfront risk” has constrained geothermal development.

So far the portfolio does not address the issue of system flexibility, Morlan said. We still need to understand it, and we may tap into this issue through our treatment of integration costs for variable resources, he said.

Public Comment

A representative of the Sierra Club, Aaron Robins, praised the Council for the quality of data it is producing for the Sixth Power Plan. We need a plan that envisions a carbon-free Northwest in the mid term, he stated, and we need analysis that helps us to calculate “the fully loaded cost of coal.” I’m convinced that moving away from coal is the least-cost approach, Robins said. We need the data to make the calculations and chart a path forward that replaces coal, he stated.

The meeting adjourned at 11:45 a.m.

Approved May _____, 2009

Vice-Chair

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