

Bill Bradbury
Chair
Oregon

Henry Lorenzen
Oregon

W. Bill Booth
Idaho

James A. Yost
Idaho



Jennifer Anders
Vice Chair
Montana

Pat Smith
Montana

Tom Karier
Washington

Phil Rockefeller
Washington

Council Meeting **Missoula Montana**

June 11-12, 2013

Minutes

Council chair Bill Bradbury called the meeting to order at 1:03 p.m.

Reports from Power Committee and Public Affairs Committee chairs:

Jim Yost, chair, power committee; and Henry Lorenzen, chair, public affairs committee.

Jim Yost, Power Committee chair, reported on the committee's review of a charter for the Resource Strategies Advisory Committee. We made recommendations to the staff on changes to the charter, and the final will be presented in July, he said. We had a tutorial on levelized costs and the difference between real and nominal dollars, and we had a presentation on the energy efficiency improvements in televisions, Yost said. As a result of efforts by the Northwest Energy Efficiency Alliance (NEEA) and others, manufacturers are going to be making efficiency improvements, he said.

The committee also decided how to provide context for the Seventh Power Plan, Yost said. The plan will be divided into two parts, a history of the Northwest Power Act and the circumstances that led up to it, he said. The second component will be how we use the Act to continue to address issues in a changing world, one that is quite different from when the Act was passed, Yost stated. We will discuss the legal history at the Power Committee in July and the next phase the following month, he added.

Henry Lorenzen said the Public Affairs Committee would meet later in the day to talk about the congressional staff tour in August and to hear a presentation on the potential need to update the Council's logo. The committee met last month and discussed the tour, and we agreed Grouse Mountain Lodge in Whitefish, Montana will be the location, he said. We reviewed a public affairs video and received feedback, Lorenzen stated, adding that the committee would solicit other comments for improving the video.

Bradbury noted that the Fish and Wildlife Committee did not meet.

1. Briefing on transmission planning issues

Brian DeKiep, Montana Council staff; and John Leland, Northwestern Energy.

Staffer Brian Dekiep and John Leland of NorthWestern Energy and chair of the Northern Tier Transmission Group (NTTG) planning committee provided a primer on transmission planning on the local, regional, and interregional level. Leland explained the reliability structure in the United States, which is made up of the Western Interconnection, Eastern Interconnection, and Texas Interconnection. Transmission planning is “both art and science” and you combine “the rules of man and the rules of nature” to get to a transmission plan, he said.

Leland explained that the science part allows planners to build computer models that can accurately show what the system will do. We can model the entire Western Interconnection, he said. Transmission planners talk about reliability, which is maintaining the adequacy and security of the system under normal and adverse circumstances, Leland said. The first question in testing reliability is whether the transmission is adequate to carry the load without overloads under normal operations and with an element out of service, he said. We can define these conditions very well, Leland explained. The art is predicting what is in the future and what the appropriate solution is, he said.

Transmission planning has changed almost 100 percent since I began in 2000, Leland said. The change has been driven by a number of factors, including outages in the East, a shift in attitudes and perceptions, public policy, and technology changes, he said. As a result, there is more regulation, open competition, expanded planning, and revised operations, Leland said. He pointed out that transmission planning was originally developed for vertically integrated utilities, and utility structures have changed since then.

Leland went on to list and describe Federal Energy Regulatory Commission (FERC) orders that are driving change in transmission planning, beginning in 1978 with PURPA, under which non-utility generators could connect to the power system for the first time. Succeeding FERC orders continued to drive change, and today utilities are working on compliance with FERC Order 1000, which was issued in 2011, he explained.

Local planning means planning for the entire NorthWestern Energy system, Leland said. Order 890, which prevents discrimination, didn't affect transmission planning a lot, but it inserted a lot of guidelines, he said. Prior to Order 890, NorthWestern planned on a five-year cycle, but now plans on a two-year cycle, Leland explained. There is also a lot of stakeholder involvement with transmission planning that didn't exist before, he added. Leland went on to explain the details and steps involved in the utility's biennial planning cycle. Order 890 also necessitated economic planning studies for congestion, and the order directed utilities to accept requests for studies from stakeholders, he said.

Who would request these studies? Bradbury asked. People who want to use our system, Leland responded. They could be developers who want to build generation in our service territory and need to know what it would take to move power out of the area, he said. There is also a mechanism to get such studies done on a regional basis, Leland added.

He went on to explain the coordinated regional planning that goes on under FERC Order 890. The requirements are for coordination, openness, transparency, information exchange, comparability, dispute resolution, regional participation, and congestion studies, Leland said. At the regional level, planning is coordinated by planning groups like NTTG, ColumbiaGrid, and West Connect, he explained.

Leland said the NTTG planning process takes a bottom-up approach. These are not construction plans, he said, adding that individual NTTG members have the obligation to construct facilities. Leland described the biennial planning cycle at NTTG as well as an economic study for moving 1,500 megawatts of wind power from the Great Falls area to Malin in southern Oregon.

Compliance with FERC Order 1000 is “a work in progress,” he stated. The point of interregional planning under the order is to try to find solutions that are more efficient and cost-effective, Leland said. NTTG made a regional planning compliance filing under Order 1000 in October 2012 and FERC issued an order May 17, 2013. He said the NTTG members crossed “a big big hurdle” in reaching agreement on common tariff language for its interregional planning filing, which was made May 10, 2013.

Bradbury asked for an example of interregional coordination. Leland gave an example of how one planning group comes up with information and shares it with others. The coordination involves sending data, plans, and results back and forth, he stated.

What are the benefits of this level of coordination? Bradbury asked. By looking at a bigger footprint, you have a better understanding of how things affect your neighbor, Leland stated. And you can ask if there are things that can be done jointly so not everyone is working on projects separately, he said.

You have the planning down pat, but have you built anything? Yost asked. Leland said a regional line was built, but on an interregional level, “we have tried to get out of Montana, but it hasn’t happened.” The questions in building a line are who will buy the power and the siting, he added. The idea behind this is to build transmission, Leland said. A proposal to build a line from Townsend, Montana to Midpoint, Idaho was studied, but the line was not built, he added.

Pat Smith asked what percent of time Leland spends on NTTG activities. Leland said it is probably a couple of months a year. The amount of time depends on the study requests we get, he stated. If we get economic study requests it takes more time, Leland added.

How should the Council coordinate with you in doing transmission planning for our Power Plan? Tom Karier asked. Sharing data and information is very important, Leland responded. Your plan would feed into our process as stakeholder input; submitting information to the planning committee is important, he said.

Dekiep gave an update on NTTG’s Order 1000 cost allocation issues. Order 1000 requires that each public utility transmission provider participate in a regional transmission planning process that includes a regional and interregional cost allocation methodology, he explained. NTTG made a compliance filing with FERC last October that laid out its regional cost allocation process, Dekiep reported. On May 17, FERC issued a ruling rejecting some parts of it, he said.

FERC rejected NTTG's proposal with regard to eligibility requirements to participate in a cost-allocation study, Dekiep said. NTTG had proposed that in order to participate in a cost allocation process for a transmission project, the project must be proposed by a pre-qualified transmission developer, he explained. In rejecting the requirement, FERC said Order 1000 "recognizes that entities that do not intend to develop a project may still submit the project" for a cost-allocation study, Dekiep noted.

In addition, NTTG proposed three metrics for its cost-allocation methodology, he continued. FERC approved the metrics, but asked for more detail, Dekiep said. FERC also ruled that NTTG's three-step process to allocate costs partially complies with Order 1000 but not entirely, he reported. NTTG proposed a cap on the net benefits attributed to a project, and FERC asked NTTG to justify or remove the cap, Dekiep said. In addition, FERC asked NTTG to justify the ratio it proposed to establish the net benefit, and FERC also has issues with NTTG's production cost modeling, he indicated.

Henry Lorenzen asked how the new planning requirements will affect reliability. Will they be an impediment or smooth the way to build transmission? he asked. More coordination should smooth the way, Leland replied. Providers still have an obligation to make sure the system is reliable, and transmission providers make their own decisions on the way to go, he said. The intention is not to affect reliability, and there are a lot of people making sure we don't, Leland stated.

2. Report on June 4, 2013 Greenhouse Gas Symposium

Charlie Black, director, power division.

Power division director Charlie Black reported on the first of several planned symposiums on power plan issues. The first took place June 4 and addressed greenhouse gases. The day started with staff presentations, including a primer on carbon and sources of emissions in the Northwest, and the level of carbon emissions predicted after planned coal plant retirements, he said. We also had a presentation by Elizabeth Kopits, an economist with EPA, who explained the development of estimates for the social cost of carbon, Black reported. Kopits unveiled new estimates of the costs and provided detail on the modeling, he said.

In the afternoon, we had several panels providing perspectives on greenhouse gases, Black continued. One panel included representatives from public utility commissions and state energy offices, and the other was made up of utilities explaining how they address greenhouse gases in their integrated resource plans, he said. BPA gave a presentation on river hydrology, and John Shurts provided a presentation on impacts of hydro changes on the power system, Black said.

He went on to say the symposium was fairly well attended with 70 people present, including three Council members and a fourth, who joined by phone.

Tom Karier said the EPA work provides an opportunity for the Council to incorporate those costs into its analysis, he said. Are we thinking about EPA as a potential source for the future costs of carbon? Karier asked. Black said that was the idea.

The EPA presentation addressed the global situation and was not specific to the United States or the Northwest, Yost commented. I had a different interpretation of how we would come up with

the carbon impact for the Seventh Power Plan, which would be to establish the level of a fee that would have to be imposed to alter the use of fossil fuels, he said. I didn't think it was an environmental-impact cost but more a measurement of risk we think exists from a federal tax, Yost said.

Bill Booth said the symposium was productive and useful. The presentation on the social costs was interesting and did take a world view, he said. The results of the EPA modeling "were all over the board," Booth said. We saw impacts from a warming climate that went all the way from a net benefit to a suggested \$200 per ton tax, he said. The response is more a policy decision than science, Booth said.

He asked if the Act requires the Council to consider a worldwide social cost "or do we focus on the region." The Northwest is already the cleanest you can find, he added. Does the plan need to consider the type of worldwide social cost Elizabeth Kopits presented or is it intended to be regional? Booth asked.

In the Act, renewable resources receive a 10 percent cost advantage compared to other types of generation, Lorenzen said. Is that implicitly accounting for carbon and social costs? If we consider them again, are we double counting? he asked.

The Act is silent on the regional versus global question, but you do consider the impacts of resources, according to staffer John Shurts. In doing so, we figure out what is reasonable and what is quantifiable, he said. The Act has a preference for efficiency but that doesn't keep you from quantifying the costs and making comparisons with other resources, Shurts stated.

This will be an important issue for the Council, Karier stated. Washington is very interested in the effect of carbon on oceans, he said. It seems we need to get used to thinking in terms of the global impact, Karier said. Carbon is by definition a global issue, he added.

The greenhouse gas symposium presentations are posted on the Council's website and there is an audio transcript of the day. The topic of the next symposium is Northwest Power Markets, and he went over the July 8 agenda and described the issues.

3. Status report on the Geographic Review:

Lynn Palensky, program development.

Staffer Lynn Palensky provided an update on the geographic review of ongoing habitat projects. Since my last update, we concluded our site visits and the preliminary Independent Scientific Review Panel (ISRP) review was released last Friday, she said. The ISRP asked for more information on some projects, and the sponsors' responses are due July 9, Palensky said. The final ISRP report will be out in August, she said. There will be a public comment period on the report, which will go into September, and staff will bring recommendations on the projects later in the fall, Palensky stated.

She recapped site visits that have taken place in recent weeks. The visits were in the Wenatchee, Entiat, Lemhi, Pahsimeroi, and other areas of the upper Columbia basin, Palensky said. The restoration activities we saw included log jams, screens, channel reconstruction, mine tailing removals, and water transfers, she said.

Palensky gave an overview of the ISRP review, noting that 13 projects met scientific criteria and 33 met the criteria with some qualifications, most of which can be handled in contracting. One project did not meet scientific criteria and three were not amenable to science review since they were more coordination than science, she said. The ISRP made 33 requests for responses on proposals, Palensky said. Once the responses are in, the ISRP will develop a final report and staff will base its recommendations on the report, she stated. Palensky described the issues the ISRP raised regarding the projects, including several programmatic issues.

Karier said the ISRP reports are interesting, but the panel also has an obligation to report on project results. We need the science panel to evaluate what is working and what is not, he said. Karier asked if there would be reporting on results.

We will see more in the final and retrospective reports, Palensky responded. Staffer Mark Frisch noted that several of the ISRP requests were related to results. Most addressed a lack of reporting on results, he stated.

4. Public comment on Council Draft Fiscal Year 2015 and Fiscal Year 2014 Revised Budget (Council document 2013-06)

Staffer Sharon Ossmann said the Council released a draft budget for comment after the May meeting. There has been no written comment so far, and the deadline is June 28, she said. In July, I will report back on whether we receive any comment, Ossmann said, adding that today there is an opportunity for the public to make verbal comment. There were no comments offered at the meeting.

5. Council Business

– Approval of minutes

Smith made a motion that the Council approve for the signature of the Chair the minutes of the May 7-8, 2013, Council meeting held in Boardman, Oregon. Karier seconded the motion, which passed unanimously.

– Council decision on Wildlife Advisory Committee Charter

Staffer Peter Paquet said the F&W Committee discussed the charter for the Wildlife Advisory Committee in May. He said staff is making an effort to get the language consistent in the various advisory committee charters on the power and F&W side, and he related some changes that will make the Wildlife Advisory Committee charter consistent with others. Current language says the chair will be appointed by the Executive Director, and a proposed change would have the chair of the advisory committee appointed by the chair of the Council, Paquet said. He said the F&W Committee approved the charter with that change.

Yost asked about the statement that the appointment will be with the concurrence of other Council members. The Council chair would consult with others, but the appointment is by the chair, Shurts clarified. He said the F&W Committee wants the Council chair to pick the Wildlife Advisory Committee chair, noting that the language in that section varies by charter.

The language implies there will be concurrence, Karier pointed out. If it means the chair is consulting with members then it should say that, he said. If it says concurrence, the Council should vote, Karier stated. Booth said he thought the F&W Committee wanted concurrence.

Smith made a motion that the Council approve the charter of the Wildlife Advisory Committee for a period of two years as presented by staff and recommended by the Fish and Wildlife Committee with changes in Section 7a to have the chair of the Wildlife Advisory Committee appointed by the Chair of the Council with concurrence of the Council.

Phil Rockefeller said that concurrence would require formal action by the Council. I suggest we change it to consultation, he said. Karier made a motion to change the language to consultation and Lorenzen seconded. The Council voted unanimously to accept the change to the language. The Council voted unanimously to adopt the motion.

– **Council decision on approving the Annual Report to the Northwest Governors on Bonneville’s 2012 Columbia River Basin Fish and Wildlife Program Costs**

Staffer John Harrison said the next proposed action for the Council is to approve the final version of the 12th annual report to the Northwest Governors on F&W costs. He explained comments the Council received and the issues they addressed, including a disagreement over how the report characterizes the percent of BPA expenditures F&W costs represent. Harrison provided detail on the issue and the options for the Council to address it. He said BPA submitted comments recommending the report use language from the previous year or in the alternative, consider new language BPA proposed. The decision for the Council is whether to use language from last year’s report or the alternative language recommended and written by BPA, Harrison said.

I recommend we stick with the paragraph from last year’s report, he stated. It may not be perfect, but it is a difficult concept to get across, Harrison said.

John’s solution is simple, clear, and supported by BPA, Karier stated. It is the approach that solves all of the problems so let’s move ahead with last year’s language, he said.

I’m okay with it, too, Booth said. The structural problem here is there are “apples and oranges,” he said. You could consider a change next year and be clear that you are talking about BPA’s wholesale rates, Booth suggested.

Harrison also pointed out that he wrote a footnote to explain why the figures on the tables differ from each other. The reason is that we asked BPA to give us the figures in ways they do not normally divide them, and they have to make decisions about how to assign program support costs, he said. BPA also commented that when we refer to F&W costs we need to be clear about whether they are direct or program costs, and we have straightened that out, Harrison stated.

Smith made a motion that the Council approve the 12th Annual Report to Northwest Governors on Fish and Wildlife Costs of the Bonneville Power Administration as presented by staff with all of the suggested recommendations in the July 11 memo, with the exception of the statement about BPA’s fish and wildlife costs in which case the Council would stay with the bolded

language on page 3 of the meeting packet. Karier seconded the motion, which passed unanimously.

6. Report from Western Montana Electric Generation & Transmission Cooperative, Inc.:

Joseph A. Lukas, General Manager.

Joe Lukas of Western Montana Generating and Transmission Cooperative said his organization represents seven rural co-ops: Glacier, Flathead, Lincoln, Mission Valley, Missoula Electric, Ravalli, and Vigilante. These co-ops serve 100,000 members and have 300 MW of load, he said.

All of the Council's funding comes from BPA ratepayers, Lukas stated, noting that he spotted two figures in the Council's budget document that conflict with one another about the budget's total. I hope the lower figure is the right one, he added.

Lukas complimented the Council's efforts to look into capacity in its Seventh Power Plan. But it is "unrealistic" to assume the plan will be useful for all utilities, he said. The plan's applicability varies from one utility to the next.

He urged the Council to use the plan as an opportunity to educate policymakers about meeting load. It is getting so utilities will need two plans, one for meeting renewable portfolio standards and another for meeting capacity, Lukas said. The situation is "misguided" and leads to oversized rate increases for customers, he stated, adding that it is hard for consumers to understand why they are seeing increases when there is a large reserve of energy available.

The Council's fish and wildlife program needs to adhere to the directives in the Northwest Power Act to protect, mitigate, and enhance fish and wildlife resources affected by the federal hydro system, Lukas continued. Under the Act, the Council's fish and wildlife program is not intended to address all of the problems in the basin, he said. "I was surprised not to see juvenile passage" in the program, Lukas said. Adult returns are important, but they depend on many factors other than the hydro system, he pointed out. The billions of dollars invested in the fish and wildlife program are making a major difference for juvenile passage, Lukas said. Your plan should recognize its limitations and stick to the Act, he added.

Ralph Goode of Mission Valley Power spoke about his participation on the Regional Technical Forum's Policy Advisory Committee. "The RTF is a good thing," and we need to help it be successful, he said. It was important to me to get more utility representation, and we now have co-op members from Montana serving on the RTF, Goode reported.

For Montana co-ops, the residential sector is most important, he said. Installers work in large geographic areas in the state, and we try to get measures that are standard among co-ops and have similar incentives, Goode explained. The way the Northwest Energy Efficiency Alliance configures measure incentives can be a problem for the co-ops, he indicated. In our utility, we prefer to work directly with the customer and deliver an incentive from the co-op, Goode said.

Our largest single load is now less than one megawatt, Goode said. Our industrial savings opportunities are limited, and we have to focus on residential customers and “mom-and-pop businesses,” he added.

Lorenzen asked if Mission Valley has irrigation load. We do, but our irrigation season is short, May to September, and September is very light, Goode responded, adding that a lot of seed potatoes are grown within the co-op’s service territory. There is also cattle production and hay and grain, he said. Goode added that the co-op offers an irrigation mitigation product, and irrigators are buying into efficiency.

Karier asked for Goode’s opinion on conservation potential assessments (CPAs). Goode said four co-ops did their own CPA. We found we didn’t have enough information for it, he said. Ross Holter added that Flathead did a CPA, and it came out close to what the Council showed in its plan. Our CPA agreed with the Council’s numbers and “confirmed the gut feeling we had” about what we thought was available in our territory, he said.

Smith asked Lukas if BPA’s tiered rates structure works for co-ops. Lukas said people made decisions about taking Tier 2 before the economic downturn. The economy didn’t recover and some utilities did not get to their expected Tier 2 loads, he said. Load forecasts drive resource decisions and purchases, Lukas said. Utilities were forecasting the need for Tier 2, but in fact, they didn’t need it, he said. The G&T is served 99 percent by BPA’s Tier 1, and the member total for the next rate period is 300 aMW, Lukas said. We have a little Tier 2 and Flathead Electric has some biomass, small hydro, and landfill gas resources, he added.

“It was a big eye opener,” Goode said. We had to make a decision in 2009 about what we would need, and it turns out, we don’t need what we purchased, he said. It doesn’t look like we will need Tier 2 until 2017 or 2019, Goode added. Our mill shut down, and “we have not recovered in western Montana,” he stated.

7. Presentation by Independent Economic Advisory Board on Interim Report on the Cost-Effectiveness of Fish Tagging Technologies and Programs in the Columbia River Basin:

William Jaeger, IEAB.

Bill Jaeger of the Independent Economic Advisory Board (IEAB) gave a report on the cost-effectiveness of fish tagging technologies in the Columbia River Basin. He said he would share results of the IEAB analysis of fish tagging covering the research approach, model, results, and where this leads for the next steps.

Jaeger said the IEAB realized early on the fish tagging analysis would be difficult because of the complexity with shared resources, multiple technologies, and multiple species involved. We realized this was the kind of problem that would benefit from a mathematical programming model that could incorporate the complexities, he said. Because the fish tagging forum was going on when the IEAB did its analysis, we could learn from their activities and this helped in constructing the mathematical model, Jaeger added.

He next described the model and its components. The model incorporates 64 river segments and four ocean zones, five species of salmon and steelhead, and four tagging technologies. It is

calibrated based on recent 10-year average data, Jaeger said. In explaining how the model works, he said it is set up “to do what it’s told to do.” It will go about satisfying the requirements the modelers give it in the least-cost way, Jaeger stated.

He described data used in the model in more detail, including the river segments and the populations of fish. A lot of effort was spent to come up with accurate costs to incorporate into the model, and the input included a table of costs, Jaeger said. We needed to come up with marginal costs to give the model options it could choose, he added.

Often we learn the most when building a model and trying to understand a complex system, Jaeger continued. Building a model forces you to think carefully about the pieces, and by the time you run the model, you have a good sense of what the answers will be, he explained.

Jaeger listed specific things the IEAB learned from the fish-tagging model, including that costs to fulfill a detection requirement vary greatly across release sites, species, and detection/recovery locations. There was one very specific lesson, which is that a coded wire tag (CWT) is lower cost than a genetic tag for harvest data under most conditions and given current costs, he said. The reverse may be true in a non-mixed fishery, Jaeger added.

We all understand that genetic tagging is valuable for many purposes, but for most fisheries, CWT costs are lower, he stated. The reasons, he said, have to do with the laboratory costs and the ability to discover readily the fish you want to test, Jaeger said.

He provided examples of the incremental cost to increase the number of detections, which vary a lot from subbasin to subbasin. The examples showed costs ranging from \$31 to \$1,073 to increase the number of detections from 100 to 101, depending on the species and the location.

So you could increase the rate of detection by tagging more fish or increasing the number of detection devices, Karier stated.

Jaeger said the modeling assumed the existing detection infrastructure. He explained what choices the model is making to increase the number of detections or increase the number of tag recoveries with different species and different locations.

There are several take-away messages, Jaeger stated. The model was successful and can be a highly powerful and useful tool for evaluating fish tagging programs when costs and priorities matter, he said. It isn’t clear whether current tagging decisions take into account the wide variation in costs of meeting different detection/recovery requirements, Jaeger said. As a result, the IEAB sees a need for rationalization, that is, taking measures to promote both cost-effectiveness and program effectiveness, he stated.

Booth thanked the IEAB for its work. He noted that Idaho’s specialist on tagging, Paul Klein, reviewed the study. Klein said the laboratory costs make genetic tagging way too expensive to be used throughout the region, Booth said. But the technology is evolving and Paul believes those costs will decline dramatically, he continued, adding that the modeling data needs to stay fresh. I support genetics work and think it will become a major tool for us, and the costs will go down, Booth said. I’d encourage you to stay engaged on this, he added, noting that Klein intends to visit with the IEAB about the model.

Jaeger said the IEAB is interested in staying involved. One way the model can be useful is in evaluating how changes in costs might affect the comparison of cost-effectiveness among approaches, he said. For example, if the cost of genetic tagging declines, how would that affect the results, Jaeger added.

As we put the model together, it was clear that the relative cost of genetic tags versus CWT is sensitive to the number of non-target fish in the fishery, he said. Out in the ocean there are lots of fish you aren't interested in, so the CWTs had an advantage, Jaeger pointed out. But if a fishery has mostly fish you are interested in recovering, genetics can have an advantage over CWTs, he said. By the time fish get to the Snake River, for example, there are not many non-target fish in the fishery and genetics make sense, Jaeger stated.

This is a great model, Karier said. One of the next steps you could take would be an optimization to see whether we are tagging the right number and investing the right amount in detections, he said. You could then optimize across tagging methods to see if there is a method that would be cheaper that could replace another, Karier stated.

The spirit of your questions is consistent with how we see this model being used, Jaeger responded. There are so many interdependencies across technologies, it is a little difficult to separate them individually, but we may be able to, he said. There are limits to what the model can do when the types of information are qualitatively different, Jaeger said. I see a lot of potential to improve and refine the model and do a lot more analysis of specific efforts, he said.

Bradbury asked what drives the figures so high on some pit tag recovery, for example the \$3,682 for spring and summer chinook tagged in the Methow. Jaeger said he could look to find out what is causing such a jump in the cost. One of the factors, he speculated, is that given the prevalence of the particular fish in the Oregon coastal fishery, you have to sample a lot to find a fish that came from that particular stock. The model "is tagging" a lot more of those fish and spending money to sample them, Jaeger said, adding that he would look further into the question.

Rockefeller asked Jaeger about the logical next steps for the Council to take to further refine the model. Jaeger said the IEAB could refine the model and work with the Independent Scientific Advisory Board (ISAB) and other scientists to carefully examine the model to be sure it accurately reflects biology and technical elements. There are dozens of questions one could explore such as tradeoffs and improving cost and program effectiveness, he said. Jaeger said he would look forward to working with the ISAB and developing a second generation of the model and evaluating the results.

Rockefeller asked if the states could vet the model. Staffer Tony Grover suggested the model could be put out for comment and staff could report back on what others have to say. Karier said the Council needs to think clearly about the questions it would be asking in a review. We don't want the model to drive the questions, we want the opposite, he added.

Bradbury asked if the Council wants to put the model out for public comment. We have a head nod of agreement to put the model out for comment so let's do it, he stated.

Grover thanked Jaeger for the enormous amount of time and thought he put into the model and he noted that the model is being well received.

8. Presentation on Toxics in the Columbia River Basin:

Dr. Ric Hauer and Erin Sexton, Flathead Lake Biological Station.

Dr. Richard Hauer of the Flathead Lake Biological Station briefed the Council on toxics in the upper Columbia River Basin. He said his talk would focus on the Elk and Flathead river systems, which are located in a unique area of North America known as “the Crown of the Continent,” where several large river systems come together. The area includes Glacier National Park and is an internationally recognized species reserve and a World Heritage Site, Hauer said. There is national and global recognition of its significance, he said. The river systems are the backbone of the area and contribute to its uniqueness, Hauer added.

He went on to describe the geology and existence of rich coal deposits in the river basins. There are two large coal fields known as the East Kootenai and Elk, and mining began 100 years ago in the area, Hauer said. He provided background on the mining and said the product is “highly valuable coking coal.” Hauer said there has long been mining in the Elk Basin, but a coal mine was recently proposed near the mouth of the North Fork of the Flathead River. Studies were done to see what the impact would be to the Flathead River, which he said “has some of the cleanest water anywhere in the world,” and the areas downstream, he stated. There are low concentrations of nitrates in the Flathead Basin above and below the proposed mine site, Hauer said.

We see extraordinarily high concentrations of nitrates, sulfates, and selenium in areas below coal mines, which are serious pollutants, he explained. Hauer provided concentrations of these chemicals found in the Elk drainage below the coal mines compared with the Flathead, and he described what the pollutants do to aquatic life. In the Flathead, there is a high level of species diversity, and in the Elk the diversity is greatly reduced, Hauer said.

He pointed out that the effects of too much selenium on fish are extensive, and fish eggs exposed to selenium pollution have low levels of survival. As toxic levels increase, you can have population collapse due to the lack of reproductive success, Hauer stated. In summary, he said there is a significant concentration of nitrates, sulfates, and selenium in the Elk versus the Flathead system, and in the Elk, there is a decrease in pollution sensitive species, and an increase in tolerant species, as well as bioaccumulations in the fish. The Elk is a distinctly impaired system, Hauer stated.

To address the problem means remediating, reducing the pollution, and mitigating for the current effects, he said. The remediation will be very expensive, and the mining company has dedicated \$600 million to \$800 million toward it, he said. Hauer described some efforts that are being made to address the problem. They are depending on a lot of dilution of the chemicals to achieve the needed reduction in concentrations, he said. Hauer suggested the compensatory mitigation needed for the Elk could take place in the Flathead as long as no mining is allowed there.

Lorenzen asked if there is a way to reduce nitrate pollution from the mine. Hauer said probably so. The nitrate comes from exposing coal and also from blasting, he said. The mining company has plans to treat water that leaves the site, Hauer stated. “They have a huge problem,” he said. “If they walked away now, there would still be a huge problem with selenium for hundreds of years to come,” Hauer stated.

This was a sobering presentation, particularly the juxtaposition between the North Fork and the Elk, Smith commented. The expansion of mining into the North Fork and on the boundary of Glacier Park has been very controversial, he said. Smith said under Governor Schweitzer, Montana engaged British Columbia to protect the North Fork, and there is legislation moving in Congress to prohibit mining in the North Fork. It is a high priority with Senator Baucus, he added. Research from the Flathead Lake Biological Station at the University of Montana has raised the profile on the magnitude of the pollution problem, Smith stated.

Hauer said attention to the issue started in the 1970s. The North Fork is special place for many Montanans, but it doesn't hold such status for British Columbia, he said. It has been up to Montana to bring attention to the issue, and "British Columbia gets it now," he added. People in the Elk have come to understand the Flathead issues and recognized the problem they have in the Elk, Hauer said.

There was a question about the implications of mining for white sturgeon. It is a protected species and there has been a big reduction in spawning success, Hauer responded. Libby Dam has played a big role in that problem, with a changed hydrograph and the loss of spawning ground, he said. "Selenium could put them over the top," he said, adding that sturgeon have not been checked for selenium.

9. Presentation on energy efficiency implementation and Smart Grid in Montana:

Deb Young, Northwestern Energy; and Ross Holter, Flathead Electric.

NorthWestern Energy serves electricity to 364,000 customers in a territory of about 110,000 square miles, and the company provides natural gas in the western part of Montana, Deb Young of NorthWestern told the Council. Montana is the largest state geographically in the Northwest, but smallest in population, with one million people compared to Washington, the most populous, with 6.7 million people, she said.

The largest metropolitan area in the state is Billings, with a population of just over 152,000 people, Young said, and it takes a drive to Boise, Spokane, or Calgary to get to a large population center. In other words, Montana is a very rural state, and NorthWestern's operations are closely intermingled with 15 rural electric cooperatives, she added.

NorthWestern just completed a huge evaluation of its demand side management (DSM) programs conducted by a third-party contractor, Young explained. We wanted to see if energy efficiency is in fact the least-cost resource, and because our electricity supply counts on DSM, we needed to demonstrate we are getting the savings, she said.

The evaluation, which covered 24 programs, took place in 2012 and considered activities from July 2006 through December 2011, Young said. The study looked at the impact of the program, including whether the savings are appropriate and the activities are cost-effective, she said. On the process side, we were looking for ways to improve what we do, Young added.

At the end of the day, NorthWestern adjusted the amount of electricity savings from its DSM programs downward by 13 percent, she stated. On the gas side, there was a downward

adjustment of 34 percent, Young reported. In terms of the total resource cost test, we came out very well on both gas and electricity, she said.

Young recapped recommendations from the report and said there were “no major surprises.” There have been changes in our program as a result of the evaluation, she said, most notably with the savings being claimed for compact fluorescent light bulbs. Actual data from a residential CFL study indicates that 2.3 hours of use per day is more accurate than the seven hours NorthWestern had been using to calculate energy savings, Young noted. On the other hand, the CFL study showed hours of use higher than what we were using for non-residential customers, she reported.

NorthWestern offers incentives for small-scale renewables as part of its Universal System Benefits Program, Young continued. The incentives for solar, small-scale wind, and micro-hydro are intended to offset a percentage of the cost of installation, she explained. There is a lot of legislative activity on this topic every session and “never enough dollars to meet the demand,” Young added.

NorthWestern is participating in the Battelle and BPA-sponsored Smart Grid demonstration project, she stated. We are collecting data on the Smart Grid installations that NorthWestern has offered in two Montana locations, Helena and Philipsburg, Young said. “We are trying to walk before we run, look before we leap” with Smart Grid, she stated.

On the utility side of the Smart Grid project, NorthWestern is exploring distribution automation and volt/VAR optimization, and on the customer side, the offerings are time-of-use pricing and demand response and load control, Young explained. NorthWestern has \$4.2 million committed to the Smart Grid project, she stated. Young described the challenges of getting project participation, noting the company reached out to 6,000 residential customers in Helena, population 30,000, to get 200 participants. The Smart Grid testing will end in October 2014, and the project will wrap up in December 2014, she concluded.

Ross Holter of Flathead Electric Co-op said in 2012, Flathead had 48,620 members, 61,620 meters, and 155 employees. The co-op also added 531 new connections, so it looks like things are improving, he added.

Flathead has implemented a new rate structure designed to collect costs “from those who create them” and provide an incentive for energy efficiency, Holter said. The basic charge has gone from \$16 per month to \$22.13, and the flat per-kilowatt-hour rate is now three tiers that increase in cost with higher use, he explained.

The rate design “has worked for the intended purpose,” Holter said. People responded to the higher rate and called the utility to see what they could do to reduce their consumption, he added.

Flathead is also part of the region’s Smart Grid pilot and has three options for participation, Holter continued: option one provides an in-home display for demand response; option two allows the co-op to operate the customer’s hot-water heater in response to peak demands; and option three is a home energy network with Smart appliances and advance controls. Flathead has participants in each of the categories and is now collecting the data, he said.

Flathead is very active with energy efficiency and offers a diverse set of programs, Holter said. The co-op's goal this year is to save 9.6 million kWh, he added. Our newest program is a loan program that provides on-bill financing for several efficiency measures, including ductless heat pumps, window retrofits, and insulation upgrades, Holter explained. "It's a great program" and is proving to be "very successful," he stated. "Without the incentives, people wouldn't do it," Holter said of the efficiency measures.

Like other "far east" utilities, Flathead has challenges and issues with offering energy efficiency, he acknowledged. We are fortunate that our board supports efficiency, and "we spend our own dollars" on programs, Holter said.

But there has been a "meltdown" in energy efficiency at BPA, he commented, adding that he hopes the new vice president at the agency will make things better. Uncertainty about funding is an issue for the co-op, as are changes with, and elimination of eligible measures, Holter stated.

There's also a mismatch between some measures that BPA and the Council favor and what works in rural Montana, he explained. For example, we can't take advantage of heat pump water heaters since many rural homes don't have garages or basements, and water heaters are in a utility or laundry room, Holter said. HPWHs make noise, and they vent cold air, so they aren't going to be "a big player here," he added.

We also don't want "third-party" programs, Holter said. We prefer a direct hands-on approach with our customers, he stated.

10. Council decision on ISEMP, CHaMP, and Action Effectiveness

Monitoring, as part of the RMW and AP Category review:

Mark Fritsch, manager, project implementation; and Nancy Leonard, fish, wildlife and ecosystem monitoring and evaluation manager.

Staffer Mark Fritsch presented the background on a programmatic issue identified by the Council during its 2010-2011 review of the research, monitoring, and evaluation (RME) and artificial production category review of habitat monitoring and evaluation projects, specifically the Integrated Status and Effectiveness Monitoring Program (ISEMP), the Columbia Habitat and Monitoring Program (CHaMP), and Action Effectiveness Monitoring. He said the F&W Committee had approved a recommendation on the issue.

Since that meeting, Council members requested that additional clarifications be included in the staff recommendation on these projects, Fritsch reported. Grover handed out a document summarizing the changes added to clarify the staff recommendation, and he noted these have been discussed with BPA staff and with Council members. Today we are looking for Council concurrence with the original staff recommendation, as well as on these additional clarifications, Grover said.

Karier explained he had proposed the clarifications because of the need for more oversight and control of these very large projects. There needed to be more discipline in reporting so I outlined some additional recommendations "to zero in on those management issues," he said. Karier

added that he has been in touch with BPA staff about the projects and that so far, he is encouraged by BPA's interest in carrying out the recommendations.

I have no problems with the clarifications, said Booth. These projects are being driven by the Biological Opinion and the RPAs, he stated. It might make sense for us to bring in NOAA Fisheries staff to talk with us again about these projects, Booth recommended.

Smith made a motion that the Council support with conditions the continued implementation of the Integrated Status and effectiveness Monitoring Program and Columbia Habitat and Monitoring Program, and support the proposed Action Effectiveness Monitoring effort as presented by staff and recommended by the Fish and Wildlife Committee including the changes presented today. Lorenzen seconded the motion, which passed unanimously.

The meeting adjourned at 11:50 a.m.

Approved July ____, 2013

Vice-Chair

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