

Spring Operations Review Forum
Regional Conference Call
May 27, 2011
1:00 pm

Kurt Lynam of BPA introduced the call. Meeting materials were posted before the call on BPA's Overgeneration web page at <http://www.bpa.gov/corporate/AgencyTopics/ColumbiaRiverHighWaterMgmt/> and also emailed.

Steve Oliver of BPA hosted the call this week. He introduced Travis Togo to provide the hydro operations update and address key questions.

Travis Togo of BPA stated that the Federal Columbia River Power System (FCRPS) mainstem is operating to maintain flood stage at Vancouver and Portland. Slide 3 summarizes his main points, including that the River Forecast Center forecast is 133 million acre feet (MAF), but its latest set of Ensemble Streamflow Projections (ESPs) has a mean of 140 MAF. Snowpack is still building. Slides 4 and 5 show actions being taken to address overgeneration conditions. Total Dissolved Gas (TDG) levels are on average 120% or higher across the FCRPS. Spill is taken to levels 2 and 3 as needed; level 2 is 122% TDG, level 3 is 125%, and level 4 is 127%. Slide 5 notes that BPA has been delivering spill energy under the Mid-C Spill Exchange agreement. BPA is working with the Corps of Engineers and Bureau of Reclamation to move generator maintenance out of May and June and coordinating Light Load Hours (LLH) spill with the Willamette projects and headwater projects. Slide 6 shows the day 8-14 outlook for weather, including a high chance of below-normal temperatures in the Pacific Northwest but no strong signal for above or below precipitation.

Question from the phone: regarding Slide 3, why is the 165 kcfs listed there less than the maximum output at Grand Coulee? This question will be addressed in the responses to questions from last week, below.

Travis Togo presented responses to questions from last week:

Todd Summer, Macquarie Energy: How can BPA be without power to sell at the same time that there is a clear market signal (i.e., prices greater than \$0.00) during weekdays and spill unloaded turbines at Chief Joseph at the same time?

Response: We have reserve obligations, both contingency and balancing, that require the system to be operated below capacity on all hours. A portion of our total reserve obligation must be spinning; however, some of it can be carried on non-spinning, unloaded units.

Peter Richardson, Genscape: What techniques/strategies does the Corps employ in order to vary hydro generation for the Heavy Load Hours (HLH) and LLH?

Response: The request for generation and the shaping of generation is BPA's responsibility. We are minimizing LLH generation and maximizing HLH generation to

every extent possible at all FCRPS projects, including the Willamette and headwater projects.

Peter Richardson, Genscape: It was stated on Slide 3 (of last week's presentation) that since the maximum turbine discharge is about 185 kcfs at Grand Coulee/Chief Joseph, the resulting generation needs to be fairly flat across the day to minimize TDG; however, according to the Corps, the maximum hydraulic capacity is 280 kcfs at Grand Coulee and 219 kcfs at Chief Joseph. Why are these numbers different?

Response: The numbers are different because of unit outages. Units are taken out of service and returned to service on a regular basis for planned and unplanned maintenance. We have worked with the Corps and the Bureau to defer non-essential unit outages during high flow conditions.

Peter Richardson, Genscape: On Slide 6 (of last week's presentation) Spill Exchange Agreements are mentioned. What is a Spill Exchange? And how do high Mid-C inflows prevent this from being implemented?

Response: A spill exchange is a short-term energy for spill agreement where BPA delivers energy in exchange for a volume of spill. It is a mechanism for transferring spill from a high TDG region to a lower TDG region.

Peter Richardson, Genscape: How much pump load does Banks Lake have?

Response: Currently we are pumping with all available units at Banks Lake on all hours. The resulting load is about 220 MW. Once Lake Roosevelt fills to 1240' we can begin pumping with the pump generators, and that should give us another 150-200 MW of additional load.

Steve Oliver asked for other questions. Charles Pace asked if the people operating bypass facilities are noting TDG. Steve Oliver stated that some gas bubble trauma has been seen at Rocky Reach and Rock Island. He also indicated there had been some gas bubble trauma at other projects as well, but did not have details.

A caller representing Iberdrola stated that DSO216 is being initiated at 81% and 70%. When did the practice change? Was notification provided? Rich Ellison of BPA responded that when we are in the normal 216 process, there are no changes. If we just came out of a ramp, it could depend on where the project came out in relation to the ramp. The caller from Iberdrola stated that is not a good way to make things reliable. Steve Oliver responded "we can get back to you." Rich Ellison noted that the whole fleet is generating 200 MW below schedule now. Steve Oliver added that the call next Friday can address this question. The caller from Iberdrola stated that on May 16, 8:44 am, 81%. Steve Oliver reiterated that we will find out about that particular situation and discuss next Friday.

John Tompkins of SeaBreeze asked, if the system is carrying reserve on hydro and if the system is net exporting, is that not all the reserves you need? Rich Ellison responded that BPA has to maintain the 3 and 5% rule for the resources generating. Unless BPA is exporting interruptible load, reserve requirements are in effect during export.

Dave Wegner of the House of Representatives (Washington DC) asked about maintenance on the Corps units at dams. Steve Oliver asked whether anyone from the Corps was on the call and, receiving no answer, stated that we can get you the information. We try to avoid maintenance during high streamflow periods, but there is a list. Dave Wegner stated that he heard Little Goose was out with transformer issues. Steve Oliver responded that Little Goose is expected back on line next Tuesday. Also unit G-19 at Grand Coulee; that unit and a couple of others have had a history of poor performance and operational issues. BPA supports the Bureau in its efforts to rehabilitate the Third Powerhouse. We can send you a more exhaustive list.

Aleka Scott of PNGC asked how long environmental redispach would continue in light load hours. Steve Oliver responded that it may be for a number of weeks, especially in the graveyard period.

Jimmy Lindsay of Renewables Northwest Project asked about the environmental redispach data online and what the numbers represent. Kieran Connolly of BPA mentioned the after-hours page. Steve Weiss of BPA noted that Lindsay was asking if the data was all thermal or included wind. Kieran Connolly discussed the electronic versus manual means of collecting data and that those in the room did not know if the data shown is the total or only the electronic data.

A caller on the phone asked if BPA has made displacement sales to other balancing areas. Steve Oliver responded that BPA has made offers to thermal plants with any transmission connection with BPA's balancing authority area and remains willing to discuss thermal displacement. BPA sent out generic offers and is seeking negotiations to reduce thermal generation even outside the BPA balancing authority area.

Scott Levy of bluefish.org noted that gas bubble trauma is reported online; some has been seen at Lower Monumental.

Dan Severson of Turlock asked when Banks Lake will reach an elevation level at which it will provide more load. Travis Togo responded within the next 10 days. Steve Oliver added that it depends on how much rain and runoff occurs; we may back off Coulee for faster fill.

Ed Groce of Avista asked for clarification regarding thermal generation connected with BPA's balancing authority area. Steve Oliver reiterated that a thermal resource able to be displaced with BPA hydro needs a transmission connection with BPA so BPA can get the power to them.

Rich Ellison of BPA resumed the presentation at Slide 8. Last week he discussed an outage on the California-Oregon Intertie (COI) that would limit north to south to 3000; that outage was moved. The COI is at full rated capacity this week and next week will be close to full capacity. The DC intertie is at its full rating. The south to north restrictions on the Northern intertie are finished.

Kieran Connolly directed attention to Slide 12 for follow-up on questions to the Tech Forum. When there has been an instruction to go to environmental redispatch, some variable energy resources have responded by taking their plant to zero rather than the smaller amount asked for. Slide 12 illustrates this situation. The risk is encroaching on mandatory contingency reserve. Such oscillation on the system is a reliability concern. We know it can be a challenge to operate tightly to orders, just don't go to zero. We are working on enhancements to signaling so it is clearer what level to go to. Try to operate to ER instructions.

Blaine Sundwall of Iberdrola noted that several times at the end of environmental redispatch, plants came on when not scheduling before and went into a DSO event.

Kieran Connolly noted that some operators were opting to reduce schedules in anticipation of ER. The problem is volatility of output. Controls should be maintained at the plant level.

Steve Oliver reiterated: Schedule as accurately as possible, and manage plants to the schedule.

A caller asked whether environmental redispatch scheduling would be going on. Kieran Connolly responded that a variable energy resource's schedule should represent its best effort without ER. You can take the plant down, but you need to enforce that decision at the plant level. On Slide 13, Example A shows that the plant took its schedule to zero and held output to zero. BPA had to go into ER and then back out. Example B shows system oscillation.

Dan Severson of Turlock discussed one night when environmental redispatch was in effect, once through the ramp, BPA realized they asked for too much and turned off the signal and went manual. At that point it became a challenge to know whether BPA was in ER or not. When you ask for load, we can't tell how it works out for our unit on the other side of the ramp. Kieran Connolly responded that BPA is trying to get better signaling in place quickly. Rich Ellison added that it is a matter of generators following the signal. The other night, we were looking for 200 MW of redispatch, but generation dove down 1000 and put us into a reserve issue. It looked like a problem with programming, so we went manual. We can stay automated if you follow the signal.

Kurt Lynam of BPA noted that there are three new documents on the Overgeneration web page, posted in the What's New section. These are an overview of the six major categories of support BPA provides wind generation in the Northwest, a summary of actions BPA considered to avoid Environmental Redispatch, and a comprehensive analysis of BPA's interim policy on Environmental Redispatch in Q & A format. Feedback is welcome.

Peter Richardson from Genscape thanked BPA for answering his questions. In terms of how the dams are operating, it appears there is more turbine capacity than is currently

being used to generate, but 400 incremental load, but appears as though holding back more than 400 to increase. Kieran Connolly noted that BPA has both incremental reserves and contingency reserves. Where reserves are held moves around depending on what generation is operating. Peter Richardson asked whether the system is operating on hydro and wind, but no thermal? Kieran Connolly said yes, for the most part—there is some cogeneration operating. The chart on Slide 7 illustrates hydro, wind, and thermal generation, but BPA does not have a complete picture of thermal generation outside its balancing authority area. About 94% of the thermal in the region is down at night; higher in daytime. Hydro generation is maxed out during the day. We may use pondage to avoid spill.

Jimmy Lindsay of RNP asked, related to the 94% of thermals down at night, whether there is someplace the public can find this information. Kieran Connolly responded that all BPA can publish is data related to its balancing authority area. You can contact other balancing authorities in the region to try to get their data.

Chip Lazar asked whether, at Banks Lake, the generators are reversed to keep space in the lake. Kieran Connolly responded that they cannot run at the current low level of the lake.

Rich Ellison stated that he has an answer to Iberdrola's question. Blaine (Iberdrola) will call Bart (BPA).

There were 120 participants including BPA on the call. The call ended at 1:49 pm.