UNITED STATES DEPARTMENT OF ENERGY
BEFORE THE
BONNEVILLE POWER ADMINISTRATION

FY 2012-13 PROPOSED POWER RATE ADJUSTMENT	))))))	**Docket No. BP-12**

DIRECT TESTIMONY

OF

PACIFIC NORTHWEST GENERATING COOPERATIVE AND MEMBERS (PN), NORTHWEST REQUIREMENTS UTILITIES AND MEMBERS (NR), and WESTERN MONTANA ELECTRIC GENERATION AND TRANSMISSION COOPERATIVE (WM)

(JOINT PARTY 2)

WITNESSES:

Aleka Scott

Steve King

Megan E. Stratman

William K. Drummond

SUBJECT:
Dispatchable Energy Balancing Service (DERBS)

January 21, 2011

Section 1: Introduction and Purpose of Testimony

Q. Please state your names, qualifications and involvement in this testimony.

A. My name is Aleka Scott and my qualifications are contained in BP-12-Q-PN-01. I am serving as a witness for all of this testimony.

A. My name is Steve King, and my qualifications are contained in BP-12-Q-PN-04. I am serving as a witness for all of this testimony.

A. My name is Megan E. Stratman, and my qualifications are contained in BP-12-Q-NR-02. I am serving as a witness for all of this testimony except Section 4, and other parts of the testimony that pertain to the Coffin Butte Landfill Gas Project (Coffin Butte), a resource that only the Pacific Northwest Generating Cooperative (PNGC) and its Members are associated with for purposes of this testimony.

A. My name is William K. Drummond, and my qualifications are contained in BP-12-Q-WM-01-E01. I am serving as a witness for all of this testimony except Section 4 and other parts of the testimony that pertain to Coffin Butte, a resource that only PNGC and its Members are associated with for purposes of this testimony.

Q. What is the purpose of your testimony?

A: The purpose of our testimony is 1) to provide an introduction and state our interest in the DERBS rate, 2) to summarize the DERBs rate as BPA proposes it, 3) to highlight the significant problems with the DERBS proposal, 4) to illuminate the disproportionate impact of DERBS on a small, landfill gas generating project from which PNGC and one of its Members acquire power, as an example of the negative consequences of the proposed DERBS rate on small thermal

resources, 5) to show that BPA should not implement DERBS in this rate case, and 6) to propose modifications to DERBS should BPA choose to go ahead with the rate in this rate case despite its problems. We have organized our testimony in six sections according to these purposes.

Q. What is your interest in the DERBS rate?

PNGC, Northwest Requirements Utilities (NRU), Western Montana Electric Generation and Transmission Cooperative (WMG&T) and their respective members may develop new small resources to meet Above High Water Mark (AHWM) Load Obligations in the future, and so we want to ensure that any DERBS type of rate does not have general problems. Members of our organizations either currently purchase power from or own small thermal resources or plan to acquire such resources in the future. For example, PNGC and one of its Members, Consumers Power, Inc., purchase power from Coffin Butte, a landfill gas resource with two units located near Adair, Oregon. BPA indicated in a response to a data request in this proceeding that Coffin Butte would be subject to DERBS as proposed in BPA's initial proposal (Response to Data Request IN-BPA-1).

Section 2: Summary of BPA's DERBS Proposal

Q. Briefly, what is BPA's DERBS proposal?

A. DERBS would be a new Control Area Service necessary to support within-hour deviations of thermal generation from the hourly generation estimate (i.e. generation schedule) (BP-12-E-BPA-05, section 10.6). The design of the rate is based on thermal generator's maximum one minute calculated use of balancing reserve capacity for regulation, following, and imbalance for a month in the BPA Balancing Authority Area, expressed as a percentage of all DERBS

generators' similarly calculated usage. DERBS also contains a penalty rate that is assessed on one minute deviations that are the lesser of 36 MW or one-half of nameplate capacity.

Q. *How does BPA define "dispatchable" for purposes of applying the DERBS rate?*

A. BPA does not define "dispatchable." BPA simply says that the DERBS rate would apply "to all non-Federal Dispatchable Energy Resources (thermal generation) of 200 kW nameplate rated capacity or greater in the BPA Control Area." (BP-12-E-BPA-10-E01, page 66)

Q. What is the purpose of the DERBS rate according to BPA's testimony?

A. BPA states that DERBS is meant to recover the costs of federal generation's capability to follow within-hour variation caused by dispatchable resources (BP-12-E-BPA-29, page 40, section 8). BPA states that DERBS would not only collect this revenue requirement but the rate design and the penalty rate would provide an economic incentive to dispatchable energy resources to limit their use of balancing reserves held for the Balancing Authority Area (BP-12-E-BPA-05, page 118, section 10.6.2).

Section 3: General Problems with the DERBS Proposal

Q. What problems do you see with the DERBS proposal?

A. The DERBS proposal has several problems:

Issue 1) DERBS is designed on the assumption that all non-federal thermal generators over 200 kW nameplate are dispatchable and thus able to respond to this rate. However, some small generators are not dispatchable and thus would not be able to respond to the rate.

Issue 2) DERBS could put a disproportionate share of hourly balancing costs and penalties on small generators hour after hour.

Issue 3) Utilities with generators subject to DERBS could not verify the components of their individual DERBS bills because of the proportional use component of the billing factor which relies on the confidential data of other generators.

Issue 4) The administrative burden on both BPA and those subject to DERBS would be enormous both in the initial calculation, attempts to verify the bill, and any rebilling events.

Issue 5) It is not possible to predict or budget for this rate because of the proportional use portion of the billing factor.

Issue 6) The rate double counts regulation costs collected by load for behind-the-meter resources.

Issue 7) The rate could create a chilling effect on the development of new small resources.

Issue 8) Procedurally, the development of the DERBS rate lacked an adequate public process which has resulted in many of the above problems.

Q. Why would some small resources not be able to respond to the DERBS rate? (Problem 1)

A. Some small resources do not dispatch to load or economic conditions. It is our understanding that many small resources have contractual and operational requirements that require them to generate steadily, at as close to nameplate as possible, and recover quickly from

any outages. Their small use of balancing capacity is the unavoidable consequence of normal, good utility practice operation. Second, small resources do not have the ability to ramp slowly across the top of the hour.. Small resources are more like cars that start with the turn of a key than large thermal plants; that is, they can be turned on or off rapidly, often in 3-5 minutes. If a small resource experiences an outage, the plant would incur a DERBS charge and possibly a DERBS penalty.. When the plant returned to service, it would again incur a DERBS charge and possibly another penalty Thus, even though a small plant is operating in accordance with good utility operation, it is extremely likely to incur DERBS charges and penalties in outage situation.

Q. How could DERBS put a disproportionate share of hourly balancing costs and impose huge costs on small generators (Issue 2)?

A. Transmission schedules or generation estimates are submitted in whole MW values only. Small generators measure output in fractional megawatts. For example, a generator that generates 2.7 MW per hour will vary its schedule by scheduling 2 MWs some hours and 3 MWs other hours in order to come up to the correct average energy over a day. However, under the current DERBS rate design, this generator would have a deviation on every hour, even though it was operating and scheduling prudently. If this small generator had the only deviation in a particular direction for an hour, it could be subject to the full hourly DERBS charge. This could be the case hour after hour. Consequently, a disproportionate amount of the DERBS revenue requirement could be collected from small generators.

Q. Please explain why parties would not be able to verify the components of their individual DERBS bills. (Issue 3 and 4)

A. A formula that depends on other parties' deviations makes the DERBS bill impossible for parties to verify. BPA has indicated that other parties' data is confidential. The only part of the billing factor that can be verified is one's own generation. Further, it is not clear where the one-minute values will come from for some small generators that do not compute station control error or for generating plants that have multiple units which are separately scheduled or estimated.

Q. How could a meter inaccuracy at a single resource subject to DERBS result in corrected bills for all parties subject to DERBS for the hours of the inaccuracy (Issue 4)?

A. Because the billing factor for the base DERBS rate is based on each generator's contribution to each hour's positive or negative deviation, any change in a generator's deviation calculation, such as a bad meter or a meter outage, will change the DERBS bill for all parties having a DERBS bill in that hour. Because meter inaccuracies can go unnoticed for extended periods of time, years sometimes, the possibility for corrected DERBS bills for an extended period of time is significant. BPA has also demonstrated its ability and willingness to reach back years to make billing corrections. Recall the Total Transmission System Load correction that BPA proposed to span a decade of transmission bills.

Q. Why would DERBS impose a large administrative burden compared to the revenue it is designed to collect (Issue 4)?

A. The rate would impose several administrative burdens. For example, keeping track of, verifying and storing one-minute data will be an administrative burden for both BPA and those being charged DERBS. This data will have to be kept for years in case of billing corrections. Secondly, DERBS will be calculated 8,760 times per year at a minimum. Generators could have

positive and negative deviations and positive and negative penalties within the same hour, thus further increasing the workload for verification, storage, and billing corrections.

Q. *Can those subject to DERBS predict their DERBS charges with any accuracy for budgeting purposes? Is historical data a good indicator of future behavior for predicting the size of the DERBS rate charge? (Issue 5)*

A. No and no. Any specific level of deviation, say 0.5 MW for a small plant, could incur a very small hourly charge or a very high hourly charge depending on how other generating plants are deviating in that hour. BPA staff has said that it is unlikely that no other units would be deviating, but they have also indicated in their DERBS testimony that just their DERBS testimony might be enough for generators to change behavior (BP-12-E-BPA-29, page, 43, lines 22-24). Thus, historical data is not an accurate predictor of future behavior, nor is it an accurate predictor for any particular hour. So, the rate design makes it nearly impossible to make any kind of prediction for budgeting purposes of any particular generating plant's exposure to DERBS.

Q. How is there double counting in the DERBS rate? (Issue 6)

A. The DERBS rate would double count for regulation costs which are recovered in the load based Regulation and Frequency control charge for behind the meter resources. The billing factor for Regulation is Total Retail Load. If a utility has a behind the meter resource, the hourly output of that resource is added back into the metered load readings for each hour to get Total Retail Load. Thus, the regulation charge for load is already recovering the costs of balancing through the use of the load regulation charge.

Q. *How could the DERBS proposal have a chilling effect on the development of small resources? (Issue 7)*

A. The lack of ability to predict and control costs by having the ability to respond to DERBS will become a significant factor in the financing and development of small resources. The injection of this level of financial uncertainty in small resource development may well be the death knell for many otherwise viable small renewable thermal resource projects such as biomass, biogas, and landfill gas projects.

Q. *What procedural defect do you find with the development of the DERBS rate? (Issue 8)*

A. BPA staff indicated in the DERBS workshops and in their materials (August 19, 2010 DERBS workshop materials) that DERBS was aimed at large thermal generators who ramped across the top of the hour and that DERBS would not apply to small resources, particularly small behind-the-meter resources. As a result of this understanding, those with small resources did not offer suggestions as to how a DERBS rate could best apply to small resources. The public process that occurred provided insufficient discussion of how the DERBS rate would impact small thermal generators.

Section 4: Specific Problems that Coffin Butte Would Experience Under the Proposed DERBS Rate

Q: Please describe the Coffin Butte project.

A: Coffin Butte is a landfill gas generating resource which combusts methane gas to generate electricity. The Coffin Butte complex consists of two separately scheduled units. Coffin Butte 1 has a nameplate capacity of 2.46 MW. Coffin Butte 2 has a nameplate capacity of 3.2 MW. Coffin Butte 1 is a Small, Non-Dispatchable Resource in the BPA Regional Dialogue power

sales contract. Coffin Butte 2 receives the "Small Resource Exception" which relieves certain resources under 10 MW without the ability to access the market from the Unauthorized Increase Charge. Coffin Butte 1 and Coffin Butte 2 are included in PNGC's NT contract as Network Resources and are included in PNGC's Energy Imbalance calculations. Both resources are in Consumers Power Inc.'s service area behind the BPA's Adair Point of Delivery. They are "behind-the-meter" resources that offset Consumers Power Inc.'s retail load

Q. Are the Coffin Butte units scheduled for transmission purposes?

A. No, these resources are not scheduled. PNGC submits hourly generation estimates for Coffin Butte 1 (usually 2 MWs) and Coffin Butte 2 (usually 3 MWs) through Customer Data Entry.

Q. Can Coffin Butte respond to minimize use of balancing reserves in the way necessary to reduce charges, as anticipated by BPA staff?

A. BPA designed DERBS to incent dispatchable thermal generators to use less within-hour balancing reserves, especially when ramping across the top 20 minutes of the hour. But, Coffin Butte cannot respond in the way that BPA intends; the rate cannot provide an incentive for Coffin Butte to use less within hour balancing reserves. Coffin Butte units are typically generating flat across all hours, and are either on or off, in general. As mentioned above, Coffin Butte can go from zero to full production in 3 to 5 minutes.

Q. Is Coffin Butte dispatchable?

A. No. Coffin Butte does not dispatch for either load or economics. In its Methane Gas Supply Agreement with its gas supplier, Valley Landfill, Coffin Butte is contractually committed to

"repair promptly any failures in the electric generating facilities necessary to resume combustion of methane gas in the event of any interruption in electricity generation."

Similarly, Coffin Butte has an obligation under its power sales contracts to produce its maximum output less maintenance and forced outages. In its contract with Consumers Power, Coffin Butte is obligated to "restore full deliveries of electricity as soon as practicable" if "[Coffin Butte] for any reason suspends or reduces deliveries of electricity" (Section 7, Standards for Plant Performance, Amended and Restated Power Purchase Agreement Between Power Resources Cooperative and Consumers Power, Inc.).

Further, Coffin Butte does not have plant operators on duty 24/7. Plant operators respond to alarms 24/7 but do not dispatch for load variations or for economic reasons. The plant operator's job is to keep the Coffin Butte units running at maximum capacity. The plant only goes down for scheduled maintenance outages or forced outages.

Q. What other problems does DERBS pose for Coffin Butte?

A. DERBS would not provide predictability or certainty for cost forecasting purposes.

Q. Please explain.

A. The majority of outages of Coffin Butte units are resolved in less than an hour, but may span a period across the top of a clock hour. Under the DERBS rate structure, Coffin Butte units would be subject to potentially the full DERBS hourly rate and the penalty rate for these normal, very short outages.

Q. Could Coffin Butte control its exposure to DERBS?

No. No matter how accurately we schedule, the majority of our outages are very short, typically less than an hour. In fulfillment of contractual obligations and good utility practice, the plant is brought back to full production as quickly as possible. The small size of the resource makes ramping a non-issue. Whole MW scheduling means we will be subject to DERBS in every hour that we operate due to generation measured in fractional megawatts and schedule estimates in whole megawatts. In short, the Coffin Butte resource, and other small resources like it, cannot respond to the DERBS rate signals.

Q. What kind of exposure might Coffin Butte have to DERBS?

We analyzed PNGC's possible exposure to DERBS from outages only, not from fractional MW generation, using December 2010 outage data and assumed that every outage had a potential DERBS exposure of 2 hours. For this analysis, we assume that for every less than one hour outage, the outage could span 2 clock hours and the multi-hour outages only incurred DERBS for the first and last hour, a conservative assumption. Exhibit A shows that Coffin Butte 1 and 2t would be potentially subject to $40,716 in DERBS charges due only to outages in a month when the plant was operating 99 percent of the time. (See Exhibit A, BP-12-E-JP02-02-AT01).

Q. Is the level of these charges acceptable?

A. No. These potential DERBS charges are totally unacceptable in magnitude.

Section 5: Why BPA Should Not Implement DERBS in this Rate Case

Q. What do you propose BPA do to address the many problems with the proposed DERBS rate?

A. Given the serious problems with DERBs that we explain above, **BPA should withdraw the DERBS rate from this rate case** and continue to develop the rate with its customers. We do not

disagree that thermal generators impose balancing reserve costs on the system and that those costs should be recovered appropriately. We do, however, disagree with this specific, fundamentally flawed rate design. Given the modest amount of revenue anticipated to be collected from this rate over this rate period, we propose that it is more important to get this rate right than rush to implement such a deeply flawed rate.

A delay in implementation could allow parties to develop an equitable rate that does not pose the problems outlined in this testimony, allows a fair and predictable collection mechanism, and incents behavior that can be achieved directed at those generators that can achieve it.

Section 6: Proposed Modifications to DERBS should BPA Go Ahead with the Rate in this Rate Case Despite its Problems

Q. If BPA decides to go forward with the rate, what changes are necessary to make the rate work?

First, a +/- 1 MW deadband needs to be included to take care of the fractional deviation problem.

Under this deadband, the first 1 MW of a positive or negative deviation would not be included as a DERBS billing factor. This would recognize that generating plants submitting whole MWs schedules or generation estimates in accordance with good utility practice would not have deviations the first 1 MW of deviation included in DERBS. This resolves the fractional MW deviation issue.

Second, because the DERBS rate was developed to address large, dispatchable generators, and the current rate design cannot achieve its purpose when applied to small generators, the DERBS rate schedule should not apply to small resources with a nameplate capacity of 10 MW or less that are not dispatchable.

Q. Does this conclude your testimony?

A. Yes, it does.