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December 31, 2012

Patricia Van Gerpen  
Executive Director  
SD Public Utilities Commission  
500 E. Capitol Ave.  
Pierre, SD 57501

RE: Docket EL08-028 – In the Matter of the Consideration of the New PURPA Standards Annual Report

Dear Ms. Van Gerpen:

NorthWestern Corporation, d.b.a. NorthWestern Energy (NorthWestern), hereby submits its Annual Report regarding Smart Grid Investment Deployment Opportunities in compliance with the South Dakota Public Utilities Commission (Commission) order dated December 18, 2009 in the above referenced matter.

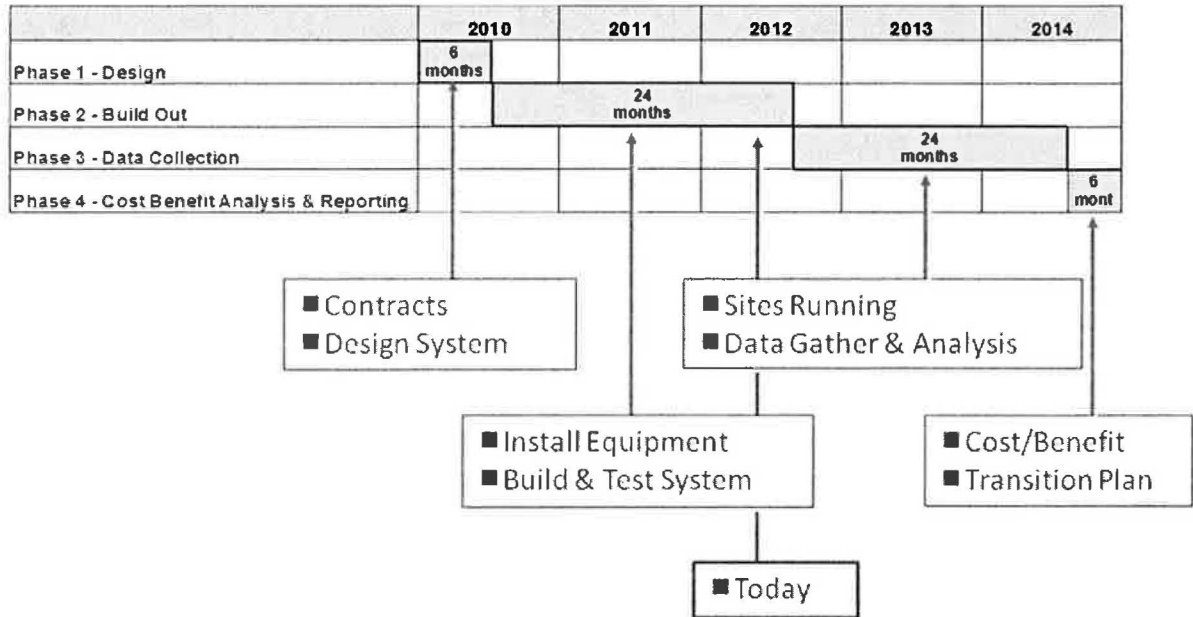
NorthWestern will describe our Smart Grid Deployment Opportunities in South Dakota and in Montana in relation to the questions presented in the Commission's order.

1. Smart Grid Deployment Opportunities.

NorthWestern is completing year 3 of its 5-year project in partnership with many other entities in a larger, multi-utility Pacific Northwest Regional Smart Grid Demonstration Project (PNW-SGDP). The PNW-SGDP involves a portion of our Montana service area (Helena and Philipsburg, MT) and other utilities from the northwest region of the United States. Information gathered from this pilot program will be used by NorthWestern in evaluating appropriate Smart Grid technologies for future deployment in South Dakota and Nebraska.

Figure 1 below provides a generalized timescale of major phases of the project in Montana.

Figure 1: NorthWestern Energy PNW-SGDP Project Schedule



2. Why or why not was deployment made?

As NorthWestern evaluates Smart Grid technologies, it must consider the cost of the technology versus the benefits to system operations or in providing better reliability and services to our customers. Additionally, if NorthWestern identifies a particular operational need that can be satisfied using more than one possible technology, it will use pilot programs to determine which technology meets our needs at the best cost before engaging in full scale deployment. Results from earlier Smart Grid project deployments around the country show mixed results (e.g., Smart Grid City in Boulder, CO) and suggest proceeding with caution is prudent. By utilizing this approach, NorthWestern hopes to be able to avoid costly mistakes in adopting a technology that does not deliver as expected. Also, participation in the PNW-SGDP is an excellent opportunity for NorthWestern to learn from the many and varied other project participants (and their diverse Smart Grid projects) at a fraction of the cost if NorthWestern attempted all of same itself.

3. The extent of deployment.

NorthWestern's participation in the PNW-SGDP is a \$4.2 million effort, termed a "subproject" within the larger regional project footprint. NorthWestern's subproject will test advanced metering infrastructure, demand response, time-of-use pricing and energy management systems for up to 200 residential electric customers and two state government buildings/facilities in its Montana service territory. In addition, the subproject will examine costs and benefits of smart technologies on the electric distribution system, including

conservation voltage reduction (CVR), Volt/VAR control, and automatic fault isolation and reconfiguration. A total of nine distribution feeder circuits, fed from four substations, have been fitted with one or more of these technologies. The project will be built out in 2011 and 2012, and operated in 2012-14. Evaluation of costs and benefits will occur in late 2014.

During 2011 and into 2012 in South Dakota, NorthWestern continued with its deployment and use of fault indicators in our transmission and distribution infrastructure. We also replaced high voltage system switches that have historically been operated manually with switches that can be remotely operated and can automatically sectionalize a fault. The ability to sectionalize faults has the potential to reduce outage time for customers by restoring service to customers not on the section of line where the fault is present. NorthWestern has been installing SCADA-mate switches in the Freeman/Menno/Scotland area for over the past three years and is in the process of linking the communications element of these switches to enable the auto-sectionalizing capability of the switches. In 2012, the final SCADA-mate switches in the auto-sectionalizing scheme were installed in Menno and Freeman 34.5 kV line taps. The SCADA-mate switches also allow system operators to remotely view loads, observe fault indications, and to open or close switches.

NorthWestern continued in its efforts to install SCADA/RTU equipment (equipment capable of remotely monitoring the status of electric system equipment and controlling the actions of that equipment). Examples of the type of remote control equipment that has been installed include remote breakers, reclosers, substation power transformers, and switches. Specific sites where remote control equipment was added includes the Aberdeen 115 kV "A" tap, Warner substation, the Freeman substation, and SCADA-mate switches described previously.

Also in 2011, NorthWestern identified the WAPA Mt. Vernon to Chamberlain 69kV line (which serves Mt. Vernon, White Lake, Chamberlain, Corsica, Stickney and Kimball), as a low-reliability performing line due to the time required to physically patrol the line when a fault occurred. The 2011 faults themselves were circumstantial but the restoration time was significant due to the miles involved. In 2012, 69kV switches capable of identifying loads and faults were installed at the Mt. Vernon and White Lake substations taps. With the new switches in place, fault locations can be identified and switching can be performed remotely from the system control center, averting lengthy drive/walk time necessary to find faults.

Remote read electric meters continue to be deployed in locations where meter access is an issue, e.g. dogs or meters located inside buildings or facilities, or where cycle replacement meters were scheduled to be replaced. As we move forward, this technology may not be the technology of choice for future automatic meter reading applications but for now, it provides a quick return on investment through reduced overall workforce costs associated with reading meters in locations where access is an issue. Evaluations of these remote read meters versus new technologies will continue on an on-going basis.

4. Possible deployments that could be made in the forthcoming year.

No additional deployments are planned in 2013. This project has moved into Phase 3, which is the operations stage of the overall 5-year effort. The system is built as planned and designed, testing has largely been completed, and the next logical step is operation of the Smart Grid system. Specific build-out accomplishments include:

- NorthWestern's control systems are now in place and in live operation between the Montana data center (Montana Call and Computer Center) and the PNW-SGDP control center in Richland, WA at the Pacific Northwest National Laboratory control center in Richland, WA.
- 198 residential customers have been recruited, enrolled, received installation of and training on Home Area Network (HAN) systems.
- Interval metering is installed and functioning correctly.
- The wireless fixed meter reading network is installed and functioning correctly.
- Time of Use (TOU) energy pricing has been placed into full operation and associated metering and billing systems are functioning correctly and reliably.
- Smart technologies on the electric distribution system, including conservation voltage reduction (CVR), Volt/VAR control, and automatic fault isolation and reconfiguration have been installed, tested and are functioning correctly.

NorthWestern's Smart Grid Project also includes buildings at the Capitol Complex in Helena, MT. The existing lighting plan, HVAC and installed systems were examined and upgraded lighting equipment and HVAC with controls, communications and other equipment has been installed as appropriate for project objectives. Integration of Lockheed Martin (LM) SeeLoad/SeeGrid demand response application software with state buildings control systems is nearly complete; final application program interfaces are being tested. Operation of this portion of the project will begin in first quarter 2013.

From this point forward, the project and all supporting systems will be operated and consumer participation and system performance data will be collected and reported to Battelle. NorthWestern will make necessary adjustments and corrections to the system to maintain proper functioning. Best efforts will be made to ensure continuing participation by residential consumers and State of Montana buildings involved in the project, and also to maximize the knowledge gained in pursuit of Smart Grid Demonstration Project goals and objectives.

5. What considerations will determine whether or not Smart Grid applications will be deployed, including costs and potential cost savings of deployment?

The main considerations remain the same as before; the cost of a technology and the benefits of what that technology can provide to the company and its customers are the two

primary considerations for whether to deploy a Smart Grid application or not. Secondary but contributing factors include customer acceptance of home energy management technology, level of response to changing energy prices, level of change of those energy prices, cost, performance and reliability of smart grid systems and equipment, and the level of scale needed to support a satisfactory business case for Smart Grid.

NorthWestern appreciates this opportunity to update the Commission on Smart Grid activities in South Dakota or other applicable projects in our three state service area. If you, or any of your staff, have additional questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Pamela A. Bonrud". The signature is written in black ink and is positioned below the word "Sincerely,".

Pamela A. Bonrud  
Director – Government and Regulatory Affairs

Cc: Brian Rounds, Staff Analyst, SD PUC