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TESTIMONY of

RONALD E. MESSINGER, REBECCA E. FREDRICKSON, DAVID L. GILMAN,
LARRY A. FURUMASU, PAUL A. FIEDLER, AND DENNIS E. METCALF

Witnesses for Bonneville Power Administration

SUBJECT: SEGMENTATION

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6 **SUBJECT: SEGMENTATION**

7 **Section 1: Introduction and Purpose of Testimony**

8 *Q. Please state your names and qualifications.*

9 A. My name is Ronald E. Messinger, and my qualifications are contained in BP-14-Q-
10 BPA-46.

11 A. My name is Rebecca E. Fredrickson, and my qualifications are contained in BP-14-Q-
12 BPA-21.

13 A. My name is David L. Gilman, and my qualifications are contained in BP-14-Q-BPA-24.

14 A. My name is Larry A. Furumasu, and my qualifications are contained in BP-14-Q-
15 BPA-22.

16 A. My name is Paul A. Fiedler, and my qualifications are contained in BP-14-Q-BPA-18.

17 A. My name is Dennis E. Metcalf, and my qualifications are contained in BP-14-Q-
18 BPA-47.

19 *Q. Please state the purpose of your testimony.*

20 A. The testimony describes how the Bonneville Power Administration (BPA) segments its
21 transmission facilities and determines the investment allocated to each segment and the
22 historical operation and maintenance (O&M) expenses associated with each segment.
23 This testimony supports the Transmission Segmentation Study (Study), BP-14-E-
24 BPA-06. It describes changes to the Study since it was last published in the 2002 rate
25 case.

1 **Section 2: Background**

2 *Q. What is segmentation?*

3 A. Segmentation is the process whereby BPA assigns its transmission facilities to various
4 segments based on the types of services those facilities provide and then assigns the
5 investment as well as historical O&M expenses to the segments.

6 *Q. What are segments?*

7 A. Segments are groups of facilities that serve a particular purpose. For example, facilities
8 used to integrate Federal power generation onto BPA's transmission system are assigned
9 to the Generation Integration segment. Facilities used to transmit power out of the
10 Pacific Northwest to California are assigned to the Southern Intertie segment.

11 *Q. Why does BPA segment its transmission system?*

12 A. Historically, BPA used the segmentation process to ensure equitable allocation between
13 Federal and non-Federal uses of the transmission system. Administrator's Record of
14 Decision, 1981 Transmission Rate Proposal and 1981 Wholesale Rate Proposal,
15 section VI at 7-8 (June 1981). In the 1996 rate case, segmentation was modified to also
16 ensure compliance with FERC's comparability requirements, which BPA voluntarily
17 complied with and under which transmission providers provide transmission service to
18 customers at rates comparable to the rates the transmission provider charges itself. For
19 example, BPA eliminated the Fringe Segment and rolled those facilities into the
20 Integrated Network, which allowed BPA's power sales customers to purchase power
21 from non-Federal suppliers and pay the same transmission charge as they paid for
22 purchasing Federal power. Gilman *et al.*, WP-96-E-BPA-28, at 3.

23 *Q. How does BPA use segmentation to establish transmission rates?*

24 A. The segmentation study determines the historical investment, the forecast investment in
25 the rate period, and historical O&M expenses for each segment. The Transmission

1 Revenue Requirement Study, BP-14-E-BPA-08, uses this information to establish the
2 segmented revenue requirement. The segmented revenue requirement is used in the
3 Transmission Rates Study, BP-14-E-BPA-07, to determine transmission rates.
4

5 **Section 3: The Segments**

6 *Q. What are the segments you are proposing for the FY 2014-2015 rate period?*

7 A. We propose seven segments—Generation Integration, Integrated Network, Southern
8 Intertie, Eastern Intertie, Utility Delivery, DSI Delivery, and Ancillary Services.

9 *Q. Are you proposing any changes to the segments for the FY 2014-2015 rate period?*

10 A. No. The segments are the same as for the last several rate periods, dating back to the
11 1996 rate case (except that the Ancillary Services segment was added in the 2002 Rate
12 Case). We evaluated whether these segments are still a reasonable approach to
13 segmentation. At this time, we have not identified any changes regarding how BPA's
14 system is used that would warrant a change in how its system is segmented. Therefore,
15 we propose to continue using these segments for this rate period.

16 *Q. How did BPA distinguish between the Integrated Network and Utility Delivery segments
17 in the 1996 rate case?*

18 A. We established a facility voltage threshold of below 34.5 kV to provide a clear distinction
19 between Integrated Network and Utility Delivery facilities. Facilities that transmit power
20 at voltages below 34.5 kV are included in the Utility Delivery segment.

21 As explained in the Transmission Segmentation Study, BP-14-E-BPA-06,
22 section 2.2, Integrated Network facilities serve a transmission function that benefits users
23 of BPA's integrated transmission system. Conversely, Utility Delivery facilities serve
24 distribution-like functions that do not benefit users of BPA's integrated transmission
25 system. Study section 2.5. Rather, as explained below, these facilities benefit a smaller

1 set of customers that use those facilities to serve local loads. We evaluated the segments
2 these facilities support on a broad (general) scale and made the following determinations:

- 3 1. We included facilities below 34.5 kV in the Utility Delivery segment because
4 they generally provide for the radial delivery (no parallel or looped paths) of
5 power to customers close to their retail load; it is not economical to transmit
6 power at low voltages over long distances due to losses and voltage drop. These
7 facilities are not used to transmit power to other markets. Instead, BPA's
8 customers use them to serve their local loads. Moreover, power that flows over
9 BPA's facilities below 34.5 kV flows into customers' systems and rarely, if ever,
10 flows out. Because these facilities generally do not provide any benefits to users
11 of BPA's integrated transmission system, we determined to segment them
12 separately from the Integrated Network segment.
- 13 2. We included facilities above 34.5 kV in the Integrated Network segment because
14 they are generally higher voltage, looped facilities that transmit power over longer
15 distances. The benefits provided by these facilities are similar to the benefits of
16 the Integrated Network segment described in the Study and, therefore, it is
17 appropriate to include them in that segment.
- 18 3. We included facilities at 34.5 kV in the Integrated Network segment because
19 power delivered at this voltage is typically transmitted to another substation over
20 the customer's 34.5 kV lines before being transformed to lower voltages and
21 distributed to retail users. Thus, these facilities serve a transmission function as
22 well. Additionally, BPA's predecessor, the U.S. Bureau of Reclamation, used
23 34.5 kV facilities to deliver power to its customers. As a result, many of the
24 Bureau's (now BPA's) customers constructed systems to take power at 34.5 kV.
25 Assigning these facilities to the Utility Delivery segment and increasing the costs

1 to these customers of using BPA's system would penalize them for conforming
2 their systems to the Bureau's standards.

3 An additional benefit to establishing a voltage threshold was that it allowed BPA to apply
4 an objective test to hundreds of low-voltage facilities, which otherwise would have
5 required many controversial judgment calls regarding whether specific facilities should
6 be classified as Utility Delivery or Integrated Network facilities. This evaluation would
7 have been time-consuming and, with no objective standard to apply, would have resulted
8 in hundreds of disputes between BPA and its customers and possibly years of litigation.
9 Applying a voltage threshold was a reasonable solution to segment these facilities.

10 *Q. What is BPA's policy regarding disposition of facilities in the Utility Delivery segment?*

11 *A.* As part of the 1996 rate case, BPA implemented a policy of selling the facilities that
12 comprised the Utility Delivery segment. BPA is a wholesale transmission provider, and
13 these delivery facilities do not serve a wholesale transmission function. While BPA has
14 sold most of these facilities, a few remain. The Transmission Rates Study, BP-14-E-
15 BPA-07, section 7, and supporting testimony, BP-14-E-BPA-30, describe the proposed
16 rates for service over the remaining Utility Delivery facilities that BPA expects to be in
17 service in the FY 2014-2015 rate period.

18
19 **Section 4: The Segmentation Process**

20 *Q. How does BPA segment its transmission system?*

21 *A.* BPA assigns transmission facilities to various segments based on the types of service
22 they provide. Historically, BPA assigned facilities to certain segments using a variety of
23 information, including:

- 24 • Power flow studies and one-line diagrams (schematic drawings of lines and
25 substation layouts)

- Contracts associated with those facilities
- Work orders under which facilities were constructed
- Standard costing procedures and accounting principles

For this rate case, we reviewed the one-line diagrams, contracts, work orders, plant investment records, and maintenance records to ensure that the facilities included in each segment are consistent with the segment definitions. *See* Study Chapter 2 (defining the segments). We are not proposing any changes to the segment definitions because the types of service provided by each segment have not changed.

Q. Are you making any changes to the segmentation process?

A. Although we are not proposing any changes to the number of segments, we are proposing some minor changes regarding multi-segmented facilities and the Ancillary Services segment.

Q. What is the minor change to multi-segmented facilities?

A. We made a minor change regarding how we determine and allocate the investment for major equipment (*e.g.*, transformers and circuit breakers) of multi-segmented substations. In the last published segmentation study, which was in the 2002 rate case, we estimated the investment for major equipment because the investment in specific equipment was not readily available. Since the actual investment data for equipment at these facilities is more readily available today, we use this actual investment data instead of estimated investment. This allows the investment in major equipment to be allocated pro-rata to the segments based on the number of terminals associated with each segment utilizing that specific major equipment. (Terminals are where transmission lines terminate in a substation.)

1 Q. *What is the change to the Ancillary Services segment?*

2 A. We made a minor change regarding how we allocate the investment for communication
3 and control equipment in the Ancillary Services segment. In the 2002 Segmentation
4 Study, we segmented the investment in communication equipment supporting ancillary
5 services to the Ancillary Services segment. We allocated this investment to each
6 ancillary service on a pro-rata basis by determining the number of communication
7 circuits deemed to support each ancillary service relative to the total number of
8 communication circuits.

9 For this rate case we are proposing to allocate only the communication
10 equipment that supports the Scheduling, Control, and Dispatch (SCD) service to the
11 Ancillary Service segment. This is equipment specifically associated with Supervisory
12 Control and Data Acquisition (SCADA), and control center computing equipment
13 associated with dispatch and scheduling. We are continuing to allocate the remaining
14 investment (not allocated to Ancillary Services) in communication equipment pro rata to
15 all the segments based on net plant investment. *See* Transmission Revenue Requirement
16 Study, BP-14-E-BPA-08, Chapter 2.

17 Q. *Does this conclude your testimony?*

18 A. Yes.

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