

**2010 BPA Rate Case  
Wholesale Transmission Rate Final Proposal**

**2010 ANCILLARY SERVICE AND  
CONTROL AREA SERVICES  
STUDY AND STUDY DOCUMENTATION**

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July 2009

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TR-10-FS-BPA-02



**Table I**  
**Ancillary Service and Control Area Service Rate Calculation**

Continued on next page

|      |   | (A)<br>FY10<br>(\$000) | (B)<br>FY11<br>(\$000) | (C)<br>FY10/11<br>(\$000) | (D)<br>Rates | Units        |
|------|---|------------------------|------------------------|---------------------------|--------------|--------------|
| 1.01 | <b>Regulation &amp; Frequency Response</b> .....    |                        |                        |                           |              |              |
| 1.02 | FY10/ 11 Balancing Authority Load Forecast.....     | 7,595                  | 7,802                  | 7,699                     |              | (\$000)      |
| 1.03 | Rate.....   | 5,886.6                | 6,047.2                | 5,966.9                   |              | MW           |
|      |   |                        |                        |                           | 0.15         | mills/ kWh   |
| 1.04 | <b>Wind Balancing Service</b> .....                 |                        |                        |                           |              |              |
| 1.05 | Average Installed Wind (MW) during Rate Period..... | 38,573                 | 56,247                 | 47,410                    |              | (\$000)      |
| 1.06 | Rate (30-min Persistence Assumption).....           | 2,483.7                | 3,621.7                | 3,052.7                   |              | MW           |
| 1.07 | Regulation.....                                     |                        |                        |                           | 1.29         | \$/ kW month |
| 1.08 | Following.....                                      |                        |                        |                           | 0.05         | \$/ kW month |
| 1.09 | Imbalance.....                                      |                        |                        |                           | 0.26         | \$/ kW month |
| 1.10 | Alternate W1 (45-min Persistence Assumption).....   |                        |                        |                           | 0.98         | \$/ kW month |
| 1.11 | Rate.....   |                        |                        |                           | 1.58         | \$/ kW month |
| 1.12 | Regulation.....                                     |                        |                        |                           | 0.05         | \$/ kW month |
| 1.13 | Following.....                                      |                        |                        |                           | 0.26         | \$/ kW month |
| 1.14 | Imbalance.....                                      |                        |                        |                           | 1.26         | \$/ kW month |
| 1.15 | <b>Operating Reserve</b>                            |                        |                        |                           |              |              |
| 1.16 | Total Reserve Obligation.....                       | 428.1                  | 358.7                  | 393.4                     |              | MW           |
| 1.17 | Spinning Reserve Obligation.....                    | 214.0                  | 179.3                  | 196.7                     |              | MW           |
| 1.18 | Supplemental Reserve Obligation.....                | 214.0                  | 179.3                  | 196.7                     |              | MW           |
| 1.19 | Operating Reserve - Spinning.....                   | 15,985                 | 13,393                 | 14,689                    |              | (\$000)      |
| 1.20 | Rate.....   |                        |                        |                           | 8.53         | mills/ kWh   |
| 1.21 | Default Rate.....                                   |                        |                        |                           | 9.80         | mills/ kWh   |
| 1.22 | Operating Reserve - Supplemental.....               | 15,447                 | 12,943                 | 14,195                    |              | (\$000)      |
| 1.23 | Rate.....   |                        |                        |                           | 8.24         | mills/ kWh   |
|      |   |                        |                        |                           | 9.47         | mills/ kWh   |
| 1.24 | <b>Generation/Energy Imbalance</b> .....            | 0                      | 0                      | 0                         |              | Market Based |

1/ Revenue Requirement amounts established in TR-10-FS-BPA-01.

2/ Load Forecast from the Revenue Forecasting Application.

3/ Installed wind estimate from reserve forecast study at WP-10-FS-BPA-08, Section 2.

4/ Reserve Forecast based on 6 months at existing standard (5/ 7), and 18 months on new standard (3/ 3); Reserve Forecast at WP-10-FS-BPA-08, Section 5.

**2010 BPA Rate Case  
Wholesale Power Rate Final Proposal**

**GENERATION INPUTS  
STUDY**

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July 2009

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WP-10-FS-BPA-08



| Table 1.1                          |  |                          |                             |  |
|------------------------------------|--|--------------------------|-----------------------------|--|
| Generation Inputs Revenue Forecast |  |                          |                             |  |
|                                    | A  | B                        | C                           | D  |
|                                    | Generation Inputs Total  | Quantity                 | Per Unit Cost (\$/kW/month) | Annual Average Revenue for FY 2010-FY 2011 |
| 1                                  | Regulating Reserve - Embedded Cost Portion                             | 83 MW                    |                             | \$ 5,697,120                               |
| 2                                  | Regulating Reserve - Variable Cost Portion                             | 83 MW inc<br>89 MW dec   |                             | \$ 2,001,664                               |
| 3                                  | <b>Regulating Reserve Total</b>  | <b>83 MW</b>             | <b>\$ 7.73</b>              | <b>\$ 7,698,784</b>                        |
| 4                                  | Wind Balancing Reserve - Embedded Cost Portion                         | 585 MW                   |                             | \$ 40,154,400                              |
| 5                                  | Wind Balancing Reserve - Variable Cost Portion                         | 585 MW inc<br>838 MW dec |                             | \$ 7,255,487                               |
| 6                                  | <b>Wind Balancing Reserve Total</b>                                    | <b>585 MW</b>            | <b>\$ 6.75</b>              | <b>\$ 47,409,887</b>                       |
| 7                                  | Operating Reserve - Spinning (Embedded Cost Portion)                   | 196.5 MW                 | \$ 6.02                     | \$ 14,195,160                              |
| 8                                  | Operating Reserve - Spinning (Variable Cost Portion)                   | 196.5 MW                 | \$ 0.21                     | \$ 493,672                                 |
| 9                                  | <b>Operating Reserve - Spinning Total</b>                              | <b>196.5 MW</b>          | <b>\$ 6.23</b>              | <b>\$ 14,688,832</b>                       |
| 10                                 | <b>Operating Reserve - Supplemental Total</b>                          | <b>196.5 MW</b>          | <b>\$ 6.02</b>              | <b>\$ 14,195,160</b>                       |
| 11                                 | <b>Operating Reserve Total</b>   | <b>393 MW</b>            |                             | <b>\$ 28,883,992</b>                       |
| 12                                 | <b>Synchronous Condensing</b>  | <b>40,301 MWh</b>        |                             | <b>\$ 1,959,419</b>                        |
| 13                                 | <b>Generation Dropping</b>   | <b>1.5 drops/year</b>    |                             | <b>\$ 611,948</b>                          |
| 14                                 | <b>Redispatch</b>  |                          |                             | <b>\$ 400,000</b>                          |
| 15                                 | <b>Segmentation of COE/Reclamation Network and Delivery Facilities</b> |                          |                             | <b>\$ 6,203,000</b>                        |
| 16                                 | <b>Station Service</b>   | <b>79,567 MWh</b>        |                             | <b>\$ 3,228,829</b>                        |
| 17                                 | <b>Generation Inputs Total</b>   |                          |                             | <b>\$ 96,395,859</b>                       |