27.3.3 **Simulator Fails Simulator Performance Test**

27.3.3.1 **Definitions**

27.3.3.1.1 "Simulator Performance Test" means a three (3) part test, as described in section 27.3.3.3, that is conducted by BPA to assess the (1) energy, (2) peaking, and (3) ramp down capabilities of the Simulator.

27.3.3.2 **Simulator Performance Test To Be Completed No Later than October 15, 2010**
No later than August 1, 2010, BPA shall provide «Customer Name» access to the version of the Simulator that will be used by BPA to conduct the Simulator Performance Test. The Simulator Performance Test shall be conducted by BPA no later than October 15, 2010.

27.3.3.3 **Description of Simulator Performance Test**
The Simulator Performance Test shall be conducted by BPA and will consist of three separate tests: an energy test, a peaking test, and a ramp down test. Each test is described separately as follows.

27.3.3.3.1 ENERGY TEST: Using actual stream flows, operating constraints, initial project elevations, and project generation values for the months of January through September, 2010, as input parameters, a separate Simulator run shall be performed for each month of that period. The energy test will be deemed to have passed for a specific project and month if the month-end simulated project storage content deviates from the actual project storage content by no more than 2 percent of the total available storage for such project. The energy test will be deemed to have failed if one or more of the following occurs:

- Grand Coulee fails to meet the 2 percent storage content deviation test in any single month;
- More than 25 percent of the combined 54 monthly tests (six projects over 9 months) fail to meet the 2 percent storage content deviation test;
- There is any single month in which four or more of the projects fail to meet the 2 percent storage content deviation test; or

- Any of the six projects fails to meet the 2 percent storage content deviation test in all 9 months of the test period.

27.3.3.3.2 PEAKING TEST: Separate Simulator runs shall be performed as specified below for the following two 3-day periods; the hottest consecutive 3-day period and the coldest consecutive 3-day period that occurred during the period January through September 2010.

Each 3-day test period will be selected using the weighted-average temperatures for three major load centers: Portland, Seattle, and Spokane. The weighted-average temperatures for these load centers will be determined as follows:

- Each city's daily high and daily low temperature will be averaged;
- The resulting day-average temperature from each city will be weighted by applying load center percentage weightings, which will be determined by BPA and will sum to 100 percent for the three cities; and
- The resulting weighted day-average temperatures for each city will then be combined to determine each day's weighted-average load center temperature.

The daily weighted-average load center temperatures will be averaged for each consecutive 3-day period for the January through September 2010 period. The lowest such average will establish the coldest 3-day period and the highest such average will establish the hottest 3-day period.

The Simulator will be run using actual stream flows, operating constraints, and initial project elevations from the representative test periods as input parameters. Each project's hourly generation request will be set equal to the actual project generation values from the representative test period. The Simulator will compute the resulting hourly simulated discharge and forebay elevation for each project. The peaking test will be deemed to have failed if either of the following occurs:

- the Simulator forebay elevation for any project exceeds the project's elevation limit (either upper or lower) on any hour for either test period; or
- the sum of the generation values produced by the Simulator deviates from the sum of the requested generation values by more than 100 MW on any of the 6 peak hours on any of the test days. The 6 peak hours are the 6 hours with the highest total generation request each day, regardless of whether the hours are consecutive or not.

27.3.3.3.3 RAMP DOWN TEST: Using actual stream flows, operating constraints, initial project elevations, and project generation values from the dates specified below as input parameters, separate Simulator runs shall be performed for each specified date. Each Simulator run will test the simulated hourly ramp down capability for Grand Coulee and Chief Joseph combined for each two consecutive hours between HE 2000 and HE 0200. The ramp down test will be deemed to have failed if one or more of the following occurs:

- The combined simulated generation values for Grand Coulee and Chief Joseph deviates from the combined actual generation values for Grand Coulee and Chief Joseph by more than 100 MW on any hour, including HE 2100 through HE 0200 on any study day;
- The 6-hour average of the combined simulated generation values for Grand Coulee and Chief Joseph deviates from the 6-hour average of the combined actual generation values for Grand Coulee and Chief Joseph by more than 25 aMW for HE 2100 through 0200 on any given study day.
- The down ramp test dates will be:
  January 7-8 (W-Th) and 16-17 (Fr-Sa), 2010,
  February 4-5 (W-Th) and 24-25 (Tu-W), 2010,
  March 10-11 (Tu-W) and 22-23 (Su-M), 2010,

April 2-3 (Th-Fri) and 19-20 (Su-M), 2010,
May 6-7 (W-Th) and 27-28 (W-Th), 2010,
June 9-10 (Tu-W) and 21-22 (Su-M), 2010,
July 1-2 (W-Th) and 30-31 (Th-Fi), 2010,
August 12-13 (W-Th) and 20-21 (Th-F), 2010,
September 6-7 (Tu-W) and 16-17 (Th-F, 2010.

27.3.3.4 **Simulator Fails Simulator Performance Test**
If, as of October 15, 2010, the Simulator has failed one or more of the three tests that comprise the Simulator Performance Test, then «Customer Name» may terminate this Agreement by providing written notice to BPA. Such written notice must be received by BPA no later than December 15, 2010. The Simulator Performance Test shall continue to be conducted by BPA after October 15, 2010, until such time as it passes, pursuant to section 5.12.2 above.

27.3.3.5 **Simulator Passes Simulator Performance Test**
If, as of October 15, 2010, the Simulator has passed the Simulator Performance Test, then «Customer Name» shall not have the option to terminate this Agreement pursuant to this section 27.3.3.