

BAL-003-1 Frequency Response Obligation Allocation and Minimum Frequency Bias Settings for Operating Year 2019

Introduction

Compliance with Requirement R1 on Frequency Response performance of NERC Standard BAL-003-1 – Frequency Response and Frequency Bias Setting went into effect on December 1, 2017. The official Frequency Response Obligations (FRO) and Minimum Frequency Bias Settings (FBS) for each Balancing Authority (BA) for Operating Year 2019¹ are attached.

This document outlines the procedure for setting Frequency Bias Settings for 2019 and publishes the Frequency Response Obligations and minimum Frequency Bias Settings for BAL-003 operating year 2019 in accordance with BAL-003-1.

Frequency Response Obligation Allocations

Interconnection Frequency Response Obligations (IFROs) are annually calculated for each of the four Interconnections and published in the *Frequency Response Annual Analysis* (FRAA) report. Through annual endorsement of that report the NERC Operating Committee sanctions the IFROs for allocation by the ERO through the methods put forth in Standard BAL-003-1.

In accordance with the recommendations from the *2018 Frequency Response Annual Analysis* report that were approved by the NERC Resources Subcommittee and endorsed by the NERC Operating Committee the IFRO values for operating year 2019 (December 2018 through November 2019) shall remain the same values as calculated in the 2016 FRAA report for operating year 2017, shown in Table 1:

Table 1: Recommended IFROs for Operating Year 2019

| | Eastern (EI) | Western (WI) | Texas (TI) | Québec (QI) | Units |
|------|--------------|--------------|------------|-------------|----------|
| IFRO | -1,015 | -858 | -381 | -179 | MW/0.1Hz |

Allocation Methodology

The ERO annually allocates the approved IFROs to the individual registered BAs of record (as of July 1st) and other non-registered entities performing BA functions for the upcoming BAL-003 operating year (December 1st through November 30th) in accordance with the allocation methodology defined in BAL-003-1.

¹ Operating Year 2018 is from December 1, 2017 through November 30, 2018

Frequency Bias Setting Procedure for 2019 Bias Year

Note: Each year there will be a short lag period between receipt of the FRO for December implementation and its use in the implementation the Variable FBS by BAs using it in Requirement R3 of BAL-003-1.

BAs utilizing Variable Bias Settings should use the Operating Year 2019 FRO provided for implementation on December 1, 2018 for the purpose of compliance with Requirement R3 starting on April 1, 2019. That FRO shall remain constant through the entire FBS year (April 1, 2019 through March 31, 2020).

Minimum Frequency Bias Settings

In accordance with BAL-003-1 a BA using a fixed Frequency Bias Setting sets its Frequency Bias Setting to the greater of (in absolute value) any number the BA chooses between 100% and 125% of its Frequency Response Measure as calculated on FRS Form 1 or the BA minimum Frequency Bias Setting allocated from the Interconnection Minimum as determined by the ERO. This document provides the minimum FBS for each Balancing Authority.

2019 Frequency Performance Data Submittal

BAs will submit their 2018 data on FRS Forms FR-1 and FR-2 through the Balancing Authority Submittal Site (BAS Site) no later than March 7, 2019. The ERO will then publish the final Frequency Bias Settings in time for implementation on or about April 1, 2019.

L10 Calculations

The BA L₁₀ values, previously used for CPS2, are still calculated for information purposes and for use with the Western Interconnection Automatic Time Error Correction (ATEC). The BA L₁₀ values can only be calculated after all of the Frequency Bias Settings for the interconnections are known. Therefore, after all the Frequency Bias Setting are submitted, the ERO will calculate L₁₀ values and distribute the data along with the final FBS for implementation on or about April 1, 2019.

Frequency Bias Setting Schedule for 2019

The FBS to be used for Bias Setting year 2019 (April 1, 2019 through March 31, 2020) for compliance with Requirements R2, R3, and R4 of Standard BAL-003-1 will be implemented using the following process:

1. Prior to the 2nd business day in February 2019 the final FRS Form 1s will be posted for each interconnection pre-populated with frequency events for all four quarters of operating year 2018 (December 1, 2017 through November 30, 2018).
2. By March 7, 2019 all BAs complete their frequency response analysis using the frequency events selected by the ERO for all four quarters of operating year 2018 and their desired Frequency Bias Setting for the 2019 operating year. BAs submit their FRS Form 1 and FRS Form 2s to the ERO via the BAS Site. The final BA FBSs and L₁₀ values cannot be calculated until completed and accurate Form 1s are received for *all* BAs in that interconnection. *It is therefore essential that all BAs submit their FRS forms no later than March 7th in accordance with BAL-003-1.*
3. By March 24 the ERO validates FBS, computes the sum of FBS for each Interconnection, and determines L₁₀ values for each BA. The ERO will post that report on the BAS Site and the RS website.

4. During the first three business days of April 2019, unless specified otherwise by the ERO, BAs will implement the 2019 Frequency Bias Settings in their Area Control Error (ACE) calculation. In March of each year the ERO will announce a target date for implementation.

| Balancing Authority Frequency Response Obligations for Operating Year 2019 | | | | | For Comparison Only | | |
|---|------------|------------------|---|-----------------------------|------------------------------|-----------------------------|---|
| BA Name | BA Acronym | Reporting Region | Maximum Monthly Peak Demand (2017 MW) FERC 714 Data | 2019 OY BA FROs (MW/0.1 Hz) | Year over Year BA FRO Change | 2018 OY BA FROs (MW/0.1 Hz) | 2019 Minimum BA Frequency Bias Settings |
| Eastern Interconnection | | | | 2019OY EI IFRO | | | 0.9% of EI Peak Demand |
| | | | 578,475 | -1,015 | 0.00% | -1015 | -5,206 |
| Florida Municipal Power Pool | FMPP | FRCC | 3,491 | -5.6 | 0.00% | -5.6 | -28.9 |
| Duke Energy Florida, Inc. (Progress Energy (Florida Power Corp.)) | FPC | FRCC | 11,257 | -15.5 | 0.00% | -15.5 | -79.5 |
| Florida Power & Light Co. | FPL | FRCC | 23,232 | -40.7 | 0.25% | -40.6 | -208.9 |
| Gainesville Regional Utilities | GVL | FRCC | 418 | -0.6 | 0.00% | -0.6 | -3.2 |
| Homestead, City of | HST | FRCC | 110 | -0.1 | 0.00% | -0.1 | -0.5 |
| JEA | JEA | FRCC | 2,727 | -3.0 | -25.00% | -4.0 | -15.4 |
| New Smyrna Beach, Utilities Commission of | NSB | FRCC | 97 | -0.1 | 0.00% | -0.1 | -0.4 |
| Seminole Electric Cooperative | SEC | FRCC | 489 | -2.1 | 0.00% | -2.1 | -10.7 |
| Tallahassee, City of | TAL | FRCC | 598 | -0.9 | 0.00% | -0.9 | -4.6 |
| Tampa Electric Company | TEC | FRCC | 4,115 | -7.1 | 2.90% | -6.9 | -36.3 |
| Manitoba Hydro | MHEB | MRO | 4,887 | -10.6 | 1.92% | -10.4 | -54.5 |
| Southwestern Power Administration | SPA | MRO | 149 | -1.1 | -8.33% | -1.2 | -5.7 |
| Saskatchewan Power Corporation | SPC | MRO | 3,792 | -8.2 | 3.80% | -7.9 | -42.2 |
| Southwest Power Pool | SWPP | MRO | 50,421 | -86.0 | 0.35% | -85.7 | -441.0 |
| Ontario IESO | IESO | NPCC | 21,786 | -46.0 | -2.75% | -47.3 | -235.7 |
| ISO-NE | ISNE | NPCC | 23,968 | -36.9 | -1.86% | -37.6 | -189.4 |
| New Brunswick Power Corporation | NBPSO | NPCC | 3,304 | -5.1 | -3.77% | -5.3 | -26.2 |
| Nova Scotia Power Inc. | NSPI | NPCC | 2,018 | -3.6 | 5.88% | -3.4 | -18.2 |
| New York Independent System Operator | NYIS | NPCC | 29,699 | -47.7 | -3.05% | -49.2 | -244.9 |
| Midcontinent Independent System Operator, Inc. | MISO | RF | 112,929 | -206.8 | -1.43% | -209.8 | -1,060.6 |
| Ohio Valley Electric Corporation | OVEC | RF | - | 0.0 | -100.00% | -1.5 | 0.0 |
| PJM Interconnection, LLC | PJM | RF | 145,763 | -262.7 | 2.18% | -257.1 | -1,347.7 |
| PowerSouth Energy Cooperative (Alabama Electric Cooperative Inc.) | AEC | SERC | 2,125 | -2.0 | 0.00% | -2.0 | -10.4 |
| Associated Electric Cooperative, Inc. | AECI | SERC | 4,526 | -6.7 | 0.00% | -6.7 | -34.5 |
| Cube Hydro Carolinas | CHC | SERC | 10 | -0.1 | 0.00% | -0.1 | -0.5 |
| Duke Energy Progress, Inc. (Progress Energy (Carolina Power & Light Company)) | CPL | SERC | 14,534 | -22.0 | -0.90% | -22.2 | -112.6 |
| Duke Energy Carolinas | DUK | SERC | 20,120 | -34.4 | -1.43% | -34.9 | -176.4 |
| Electric Energy, Inc. | EEI | SERC | - | -0.6 | 20.00% | -0.5 | -3.3 |
| LG&E and KU Services Company | LGEE | SERC | 6,834 | -12.0 | -2.44% | -12.3 | -61.3 |
| South Carolina Public Service Authority | SC | SERC | 4,989 | -6.7 | -5.63% | -7.1 | -34.5 |
| South Carolina Electric & Gas Company | SCEG | SERC | 4,701 | -8.3 | -2.35% | -8.5 | -42.7 |
| Southeastern Power Administration | SEPA | SERC | - | -0.2 | -33.33% | -0.3 | -1.1 |
| Southern Company Services, Inc. - Trans | SOCO | SERC | 45,488 | -79.2 | 7.17% | -73.9 | -406.3 |
| Tennessee Valley Authority | TVA | SERC | 29,899 | -52.3 | -2.24% | -53.5 | -268.2 |

| BA Name | BA Acronym | Reporting Region | Maximum Monthly Peak Demand (2017 MW) FERC 714 Data | 2019 OY BA FROs (MW/0.1 Hz) | Year over Year BA FRO Change | 2018 OY BA FROs (MW/0.1 Hz) | 2019 Minimum BA Frequency Bias Settings |
|--|------------|------------------|---|-----------------------------|------------------------------|-----------------------------|---|
| Western Interconnection | | | | 2019OY WI IFRO | | | 0.9% of WI Peak Demand |
| | | | 181,568 | -858 | 0.00% | -858 | -1,634 |
| Avista Corporation | AVA | WECC | 2,382 | -11.8 | 0.00% | -11.8 | -22.4 |
| Avangrid Renewables | AVRN | WECC | | -1.6 | 8.11% | -1.5 | -3.1 |
| Arizona Public Service Company | AZPS | WECC | 7,365 | -29.2 | -5.19% | -30.8 | -55.5 |
| Balancing Authority of Northern California | BANC | WECC | 4,777 | -13.1 | -14.38% | -15.3 | -25.0 |
| Bonneville Power Administration | BPAT | WECC | 10,943 | -81.8 | 3.26% | -79.2 | -155.8 |
| Public Utility District No. 1 of Chelan County | CHPD | WECC | 494 | -3.8 | 2.70% | -3.7 | -7.2 |
| California Independent System Operator | CISO | WECC | 49,900 | -194.1 | -0.05% | -194.2 | -369.7 |
| Arlington Valley, LLC - AVBA | DEAA | WECC | - | -0.1 | -88.89% | -0.9 | -0.1 |
| PUD No. 1 of Douglas County | DOPD | WECC | 425 | -2.0 | 0.00% | -2.0 | -3.9 |
| El Paso Electric Company | EPE | WECC | 1,932 | -6.1 | 0.00% | -6.1 | -11.7 |
| Public Utility District No. 2 of Grant County Washington | GCPD | WECC | 803 | -6.5 | 0.00% | -6.5 | -12.3 |
| Gridforce Energy Management, LLC | GRID | WECC | - | -3.2 | -8.57% | -3.5 | -6.1 |
| Griffith Energy, LLC | GRIF | WECC | - | -0.2 | -80.00% | -1.0 | -0.5 |
| Gila River Power, LLC | GRMA | WECC | - | 0.0 | -100.00% | -0.9 | 0.0 |
| NaturEner Power Watch, LLC (Glacier Wind Balancing Authority) | GWA | WECC | - | -0.3 | 0.00% | -0.3 | -0.5 |
| New Harquahala Generating Company LLC - HGBA | HGMA | WECC | - | -0.9 | -47.06% | -1.7 | -1.7 |
| Imperial Irrigation District | IID | WECC | 1,073 | -2.4 | -7.69% | -2.6 | -4.6 |
| Idaho Power Company | IPCO | WECC | 3,806 | -17.2 | 6.17% | -16.2 | -32.8 |
| Los Angeles Department of Water and Power | LDWP | WECC | 7,094 | -26.1 | 0.38% | -26.0 | -49.7 |
| Nevada Power Company | NEVP | WECC | 9,186 | -32.1 | -3.02% | -33.1 | -61.2 |
| NorthWestern Corporation (NorthWestern Energy) | NWMT | WECC | 1,803 | -10.6 | 0.00% | -10.6 | -20.2 |
| PacifiCorp_East | PACE | WECC | 8,870 | -47.5 | -1.25% | -48.1 | -90.4 |
| PacifiCorp_West | PACW | WECC | 4,288 | -20.2 | 4.12% | -19.4 | -38.5 |
| Portland General Electric Company | PGE | WECC | 4,039 | -17.0 | 2.41% | -16.6 | -32.3 |
| Public Service Company of New Mexico | PNM | WECC | 2,571 | -13.9 | -3.47% | -14.4 | -26.4 |
| Public Service Company of Colorado | PSCO | WECC | 7,894 | -40.0 | -0.99% | -40.4 | -76.1 |
| Puget Sound Energy, Inc. | PSEI | WECC | 6,391 | -19.5 | -1.02% | -19.7 | -37.1 |
| Seattle City Light | SCL | WECC | 1,868 | -8.2 | -1.20% | -8.3 | -15.6 |
| Salt River Project Agricultural Improvement and Power District | SRP | WECC | 7,292 | -29.1 | 3.19% | -28.2 | -55.4 |
| Tucson Electric Power | TEPC | WECC | 3,365 | -14.1 | -2.76% | -14.5 | -26.9 |
| Turlock Irrigation District | TIDC | WECC | 654 | -2.2 | 4.76% | -2.1 | -4.3 |
| City of Tacoma, Department of Public Utilities, Light Division | TPWR | WECC | 997 | -4.1 | 0.00% | -4.1 | -7.9 |
| Western Area Power Administration - Rocky Mountain Region | WACM | WECC | 4,219 | -31.6 | 1.61% | -31.1 | -60.1 |
| Western Area Power Administration - Desert Southwest Region | WALC | WECC | 1,624 | -7.4 | -2.63% | -7.6 | -14.1 |
| Western Area Power Administration - Upper Great Plains Region | WAUW | WECC | 167 | -0.6 | 0.00% | -0.6 | -1.2 |
| NaturEner Wind Watch, LLC | WWA | WECC | - | -0.3 | 0.00% | -0.3 | -0.6 |
| Alberta Electric System Operator | AESO | WECC | 11,558 | -80.6 | 1.90% | -79.1 | -153.5 |
| British Columbia Hydro and Power Authority | BCHA | WECC | 11,165 | -65.5 | 1.55% | -64.5 | -124.8 |
| Comision Federal de Electricidad | CFE | WECC | 2,622 | -13.1 | 1.55% | -12.9 | -25.0 |

| BA Name | BA Acronym | Reporting Region | Maximum Monthly Peak Demand (2017 MW) FERC 714 Data | 2019 OY BA FROs (MW/0.1 Hz) | Year over Year BA FRO Change | 2018 OY BA FROs (MW/0.1 Hz) | 2019 Minimum BA Frequency Bias Settings |
|---|------------|------------------|---|-----------------------------|------------------------------|-----------------------------|---|
| ERCOT Interconnection | | | | 2019OY TI IFRO | | | |
| | | | 71,109 | -381 | 0.00% | -381 | N/A |
| Electric Reliability Council of Texas, Inc. | ERCO | TRE | 71,109 | -381 | 0.00% | -381.0 | |
| Québec Interconnection | | | | 2019OY QI IFRO | | | |
| | | | | -179 | 0.00% | -179 | N/A |
| Hydro-Québec TransEnergie | HQT | NPCC | | -179 | 0.00% | -179.0 | |