

BAL-003-1 Frequency Response Obligation Allocation for Operation Year 2017

R1 Compliance Effective December 1, 2016

Introduction

Compliance with Requirement R1 on Frequency Response performance of NERC Standard BAL-003-1 – Frequency Response and Frequency Bias Setting go into effect on December 1, 2016. The official Frequency Response Obligations for each Balancing Authority (BA) for Operating Year 2017¹ are attached.

This document outlines the new procedure for setting Frequency Bias Settings for 2017 under BAL-003-1, and publishes the Balancing Authority Frequency Response Obligations (FROs) for BAL-003 operating year 2017 and the minimum FBS allocated 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* report.² Through approval of that report in September of each year, the NERC Operating Committee sanctions the IFROs for allocation by the ERO through the methods put forth in Standard BAL-003-1.

Due to inconsistencies outlined in the Findings section of the 2016 *Frequency Response Annual Analysis* report, this report, the IFRO values for operating year 2017 (December 2016 through November 2017) shall remain the same values as calculated in the 2015 FRAA report for operating year 2016, shown in Table 1:

Table 1 – Recommended IFROs for Operating Year 2017

	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). The IFROs will be published and posted each year on or about November 15th.

¹ Operating Year 2017 is from December 1, 2016 through November 30, 2017.

² This year 's FRAA was accepted by the NERC Operating Committee on September 30, 2016, and is posted on the Resources Subcommittee under Related Files at: <http://www.nerc.com/comm/OC/Pages/RS/Resources-Subcommittee.aspx>

The IFROs are allocated based on Net Generation MWh and Net Energy for Load MWh (NEL) for the most recent calendar year.³ The data source used for those values is from the most recently reported FERC Form 714, which is filed by the BAs in June of each year. There are some entities, such as Canadian, Mexican, and smaller BAs, that are not subject to those filings. The ERO separately polls those BAs for their data to complete the dataset for each Interconnection.

The IFRO allocation is calculated by the ERO using the following formula:

$$FRO_{BA} = IFRO \times \frac{\text{Annual Gen MWh}_{BA} + \text{Annual Load MWh}_{BA}}{\text{Annual Gen MWh}_{Int} + \text{Annual Load MWh}_{Int}}$$

Where:

- IFRO is the Interconnection Frequency Response Obligation.
- FRO_{BA} is the Frequency Response Obligation of the BA.
- Annual Gen MWh_{BA} is the annual Net Generation (MWh), FERC Form 714, Part II-Schedule 3.
- Annual Load MWh_{BA} is the annual Net Energy for Load (MWh), FERC Form 714, Part II-Schedule 3.
- Annual Gen MWh_{Int} is the sum of all Annual Gen MWh_{BA} values reported in that interconnection.
- Annual Load MWh_{Int} is the sum of all Annual Load MWh_{BA} values reported in that interconnection.

Frequency Bias Setting Procedure for 2017 Bias Year⁴

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 2017 FRO provided for implementation on December 1, 2016 for the purpose of compliance with Requirement R3 starting on April 1, 2017. That FRO shall remain constant through the entire FBS year (April 1, 2017 through March 31, 2018).

Minimum Frequency Bias Settings

The ERO is not publishing the minimum Frequency Bias Settings (FBS) for the BAs at this time. Those settings will be published in late December 2016 at the time the 2016 FRS Forms 1 and 2 are finalized with all of the selected 2016 frequency events. Those forms will also be posted on the BAS Site in late December 2016.

³ For example, 2015 reported generation and NEL are used for this year's allocation.

⁴ 2017 Bias Year is from April 1, 2017, through March 31, 2018.

2016 Frequency Performance Data Submittal

BAs will submit their 2016 data on FRS Forms FR-1 and FR-2 through the Balancing Authority Submittal Site (BAS Site)⁵ no later than March 7, 2017. The ERO will then publish the final Frequency Bias Settings in time for implementation on or about April 1, 2017.

L₁₀ Calculations

The CPS2 calculation requires accurate L_{10} limits, which can only be calculated after all of the Frequency Bias Settings for the interconnections are known. Therefore, after all the Frequency Bias Settings are submitted, the ERO will calculate L_{10} values and distribute the data along with the final FBS for implementation on or about April 1, 2017.

Frequency Bias Setting Schedule for 2017

The FBS to be used for Bias Setting year 2017 (April 1, 2017 through March 31, 2018) for compliance with Requirements R2, R3, and R4 of Standard BAL-003-1 will be implemented using the following process:

1. Late December 2016⁶ – Final 2016 FRS Forms FR-1 and FR-2 will be posted with Frequency Events for all four quarters of operating year 2016 (December 1, 2015 through November 30, 2016) contained in the forms.
2. By March 7, 2016 – BAs complete their frequency response sampling for all four quarters of operating year 2016, and their FBS calculations, and submit the results to the ERO through the BAS Site.
3. By March 24 – The ERO validates FBS, computes the sum of FBS for each Interconnection, and determines L_{10} 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 2017⁷ – BAs will implement the 2017 Frequency Bias Settings in their Automatic Generation Control (AGC) systems. The ERO will announce a target date.

⁵ Instructions on gaining access to the BAS Site are located in the Balancing Authority Submittal Site User Manual.

⁶ No later than the second business day in February 2017, in accordance with Standard BAL-003-1

⁷ April 1, 2017 falls on a Saturday. Therefore, implementation of the 2017 FBS will fall to the following week.

Balancing Authority Frequency Response Obligations (FROs) for Operating Year 2017

BA Name	NCR Number	BA Acronym	BA Net Generation (2015 MWh)	BA Net Energy for Load (2015 MWh)	BA Net Generation + BA Net Energy for Load (2015 MWh)	2017 OY % Ratio	2017 Operating Year BA FROs [MW/0.1 Hz]	For Comparison Only	
								2016 OY % Ratio	2016 Operating Year BA FROs [MW/0.1 Hz]
Non-FERC Form 714 data = 									
Western Interconnection			858,906,479	875,418,658	1,734,325,137	100%	-858	100%	-858
Arizona Public Service Company	NCR05016	AZPS	32,851,872	31,371,673	64,223,545	3.703%	-31.8	3.492%	-30.0
Arlington Valley, LLC - AVBA (Duke Energy Control Area Services LLC)	NCR03049	DEAA	1,823,944	-	1,823,944	0.105%	-0.9	0.065%	-0.6
Avista Corporation	NCR05020	AVA	11,260,380	12,560,815	23,821,195	1.374%	-11.8	1.365%	-11.7
Balancing Authority of Northern California (Sacramento Municipal Utility District & City of Redding Electric Utility)	NCR11118	BANC	11,303,353	17,175,488	28,478,841	1.642%	-14.1	1.652%	-14.2
Bonneville Power Administration	NCR05032	BPAT	103,321,931	53,617,806	156,939,737	9.049%	-77.6	9.641%	-82.7
California Independent System Operator	NCR05048	CISO	167,008,285	230,192,837	397,201,122	22.902%	-196.5	23.027%	-197.6
City of Tacoma, Department of Public Utilities, Light Division	NCR05097	TPWR	2,707,263	4,811,485	7,518,748	0.434%	-3.7	0.480%	-4.1
El Paso Electric Company	NCR05140	EPE	4,035,296	8,441,421	12,476,717	0.719%	-6.2	0.705%	-6.0
Gila River Power, LLC	NCR05169	GRMA	6,472,496	-	6,472,496	0.373%	-3.2	0.254%	-2.2
Gridforce Energy Management, LLC (CSTO)	NCR11393	GRID	4,356,979	-	4,356,979	0.251%	-2.2	0.179%	-1.5
Griffith Energy, LLC	NCR03050	GRIF	2,087,243	-	2,087,243	0.120%	-1.0	0.140%	-1.2
Idaho Power Company	NCR05191	IPCO	15,527,084	17,110,446	32,637,530	1.882%	-16.1	1.883%	-16.2
Imperial Irrigation District	NCR05195	IID	1,534,050	4,074,020	5,608,070	0.323%	-2.8	0.568%	-4.9
Los Angeles Department of Water and Power	NCR05223	LDWP	21,530,953	28,918,634	50,449,587	2.909%	-25.0	2.970%	-25.5
NaturEner Power Watch, LLC (Glacier Wind Balancing Authority)	NCR10395	GWA	519,906	-	519,906	0.030%	-0.3	0.031%	-0.3
NaturEner Wind Watch, LLC	NCR11382	WWA	609,632	-	609,632	0.035%	-0.3	0.033%	-0.3
Nevada Power Company	NCR05261	NEVP	23,441,448	24,258,499	47,699,947	2.750%	-23.6	2.918%	-25.0
New Harquahala Generating Company LLC - HGBA	NCR02552	HGMA	1,515,399	-	1,515,399	0.087%	-0.7	0.076%	-0.6
NorthWestern Corporation (NorthWestern Energy)	NCR05282	NWMT	11,879,058	10,812,971	22,692,029	1.308%	-11.2	1.339%	-11.5
PacifiCorp_East	NCR05304	PACE	49,552,747	49,350,772	98,903,519	5.703%	-48.9	5.865%	-50.3
PacifiCorp_West	NCR05304	PACW	19,654,973	20,998,572	40,653,545	2.344%	-20.1	2.481%	-21.3
Portland General Electric Company	NCR05325	PGE	12,779,900	20,729,453	33,509,353	1.932%	-16.6	1.835%	-15.7
Public Service Company of Colorado	NCR05521	PSCO	41,281,626	47,238,365	88,519,991	5.104%	-43.8	4.425%	-38.0
Public Service Company of New Mexico	NCR05333	PNM	13,969,896	14,602,804	28,572,700	1.647%	-14.1	1.677%	-14.4
Public Utility District No. 1 of Chelan County	NCR05338	CHPD	6,050,864	3,820,693	9,871,557	0.569%	-4.9	0.602%	-5.2
Public Utility District No. 2 of Grant County Washington	NCR05342	GCPD	8,035,475	4,767,160	12,802,635	0.738%	-6.3	0.788%	-6.8
PUD No. 1 of Douglas County	NCR05343	DOPD	2,399,916	1,563,813	3,963,729	0.229%	-2.0	0.347%	-3.0
Puget Sound Energy, Inc.	NCR05344	PSEI	16,756,920	23,982,011	40,738,931	2.349%	-20.2	2.295%	-19.7
Salt River Project Agricultural Improvement and Power District	NCR05372	SRP	34,132,695	29,296,597	63,429,292	3.657%	-31.4	3.761%	-32.3
Seattle City Light	NCR05382	SCL	6,399,415	9,678,214	16,077,629	0.927%	-8.0	1.005%	-8.6
Tucson Electric Power	NCR05434	TEPC	13,077,433	14,903,150	27,980,583	1.613%	-13.8	1.619%	-13.9
Turlock Irrigation District	NCR05435	TIDC	1,934,627	2,621,290	4,555,917	0.263%	-2.3	0.259%	-2.2
Western Area Power Administration - Desert Southwest Region	NCR05461	WALC	8,875,266	7,868,753	16,744,019	0.965%	-8.3	1.257%	-10.8
Western Area Power Administration - Rocky Mountain Region	NCR05464	WACM	39,317,115	25,262,270	64,579,385	3.724%	-31.9	3.609%	-31.0
Western Area Power Administration - Upper Great Plains Region	NCR05467	WAUW	487,777	809,065	1,296,842	0.075%	-0.6	0.074%	-0.6
Alberta Electric System Operator	N/A	AESO	79,825,764	80,255,962	160,081,726	9.230%	-79.2	9.141%	-78.4
British Columbia Hydro and Power Authority	N/A	BCHA	67,681,477	61,606,030	129,287,507	7.455%	-64.0	6.720%	-57.7
Comision Federal de Electricidad	N/A	CFE	12,882,001	12,717,589	25,599,589	1.476%	-12.7	1.419%	-12.2