

# BAL-003-2 Frequency Response Obligation Allocation and Minimum Frequency Bias Settings for Operating Year 2023

## Introduction

Compliance with Requirement R1 on Frequency Response performance of NERC Standard BAL-003-2 – Frequency Response and Frequency Bias Setting went into effect on December 1, 2022. The official Frequency Response Obligations (FRO) and Minimum Frequency Bias Settings (FBS) for each Balancing Authority (BA) for Operating Year 2023 are attached.

This document outlines the procedure for setting FBS for 2023 and publishes the FRO and minimum FBS for BAL-003 operating year 2023 in accordance with BAL-003-2.

## 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 Reliability and Security Technical Committee sanctions the IFROs for allocation by the Electric Reliability Organization (ERO) through the methods put forth in Standard BAL-003-2.

In accordance with the recommendations from the 2022 FRAA report that were approved by the NERC Resources Subcommittee and endorsed by the NERC Reliability and Security Technical Committee the IFRO values for the Eastern, Western, and Québec Interconnections for operating year 2023 (December 2022 through November 2023) shall not remain the same values as calculated in the 2016 FRAA report for operating year 2017. The IFRO value for the each Interconnection shall increase or decrease slightly (in absolute terms) due to a change in the credit for load resources (CLR) and resource loss protection criteria as discussed in the 2021 FRAA.

### Effective IFROs for Operating Year 2023

	Eastern (EI)	Western (WI)	Texas (TI)	Québec (QI)	Units
IFRO	-890	-1096	-463	-211	MW/0.1Hz

### ***Allocation Method***

The ERO annually allocates the approved IFROs to the individual BAs for the upcoming BAL-003 operating year (December 1 through November 30) in accordance with the allocation method defined in BAL-003-2.

## **Frequency Bias Setting Procedure for 2023 Bias Year**

Note that 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-003-2.

BAs utilizing Variable Bias Settings should use the Operating Year 2023 FRO provided for implementation on December 1, 2022 for the purpose of compliance with Requirement R3 starting on the 3 business days starting on or after June 1, 2023 as specified by the ERO.

### ***Minimum Frequency Bias Settings***

In accordance with BAL-003-2 a BA using a fixed Frequency Bias Setting sets its Frequency Bias Setting to the greater of (in absolute terms) 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 BA.

### ***2023 Frequency Performance Data Submittal***

BAs will submit their 2023 data on FRS Forms FR-1 and FR-2 through the Balancing Authority Submittal Site (BAS Site) no later than April 1, 2023. The ERO will then publish the final FBSs in time for implementation on or about May 1, 2023.

### ***L10 Calculations***

The BA L<sub>10</sub> 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 L<sub>10</sub> values can only be calculated after all of the FBS for the interconnections are known. Therefore, after all the FBS are submitted, the ERO will calculate L<sub>10</sub> values and distribute the data along with the final FBS for implementation on or within 3 business days of June 1, 2023.

## **Frequency Bias Setting Schedule for 2023**

The FBS to be used for Bias Setting year 2023 (June 2023 through May 2024) for compliance with Requirements R2, R3, and R4 of Standard BAL-003-2 will be implemented using the following process:

1. Prior to March 1, 2023 the final FRS Form 1s will be posted for each Interconnection pre-populated with frequency events for all four quarters of operating year 2022 (December 1, 2021 through November 30, 2022).
2. By April 1, 2023 all BAs complete their frequency response analysis using the frequency events selected by the ERO for all four quarters of operating year 2022 and their desired FBS for the 2023 operating year. BAs submit their FRS Form 1 and FRS Form 2s to the ERO via the BAS Site. The final BA FBSs and L<sub>10</sub> 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 April 1st in accordance with BAL-003-2.*

3. By May 1 the ERO validates FBS, computes the sum of FBS for each Interconnection, and determines L<sub>10</sub> 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 June, 2023, unless specified otherwise by the ERO, BAs will implement the 2023 FBS in their Reporting ACE calculation. In May of each year the ERO will announce a target date for implementation.

Balancing Authority Frequency Response Obligations for Operating Year 2023						For Comparison Only		For Comparison Only		
BA Name	BA Acronym	Maximum Monthly Peak Demand (2021 MW) FERC 714 Data	BA Net Generation + BA Net Energy for Load (2021 MWh) FERC 714 Data	2023 OY BA % Ratio (BAL-003-1 Attach A)	2023 OY BA FROs (MW/0.1 Hz)	Year over Year BA FRO Change	2022 OY BA FROs (MW/0.1 Hz)	2023 OY Minimum Frequency Bias Settings For Fixed Bias BAs	Year over Year Min FBS Change	2022 OY Minimum BA Frequency Bias Settings
<b>Eastern Interconnection</b>		581,896	6,086,391,816	100.00%	2023 OY EI FRO -890	-2.73%	-915	0.9% of EI Peak Demand -5,237		-5,211
Associated Electric Cooperative, Inc.	AECI	5,610	46,271,523	0.76%	-6.8	-2.86%	-7.0	-39.8	0.25%	-39.7
Cube Hydro Carolinas	CHC	10	900,874	0.01%	-0.1	-50.00%	-0.2	-0.8	-27.27%	-1.1
Duke Energy Progress, Inc. (Progress Energy (Carolina Power & Light Co.))	CPL	13,046	132,193,110	2.17%	-19.3	-2.03%	-19.7	-113.7	1.25%	-112.3
Duke Energy Carolinas	DUK	20,310	213,394,404	3.51%	-31.2	-0.95%	-31.5	-183.6	2.46%	-179.2
Florida Municipal Power Pool	FMPP	3,587	36,897,535	0.61%	-5.4	5.88%	-5.1	-31.7	8.93%	-29.1
Duke Energy Florida, Inc. (Progress Energy (Florida Power Corp.))	FPC	11,470	96,329,802	1.58%	-14.1	-4.73%	-14.8	-82.9	-1.89%	-84.5
Florida Power & Light Co.	FPL	23,973	255,434,514	4.20%	-37.4	-5.79%	-39.7	-219.8	-2.70%	-225.9
Gainesville Regional Utilities	GVL	468	4,069,488	0.07%	-0.6	0.00%	-0.6	-3.5	6.06%	-3.3
Homestead, City of	HST	116	595,712	0.01%	-0.1	0.00%	-0.1	-0.5	0.00%	-0.5
Ontario IESO	IESO	22,986	276,395,232	4.54%	-40.4	-5.39%	-42.7	-237.8	-2.26%	-243.3
ISO-NE	ISNE	25,769	218,782,383	3.59%	-32	-0.31%	-32.1	-188.3	2.90%	-183.0
JEA	JEA	2,582	20,715,990	0.34%	-3	-11.76%	-3.4	-17.8	-7.77%	-19.3
LG&E and KU Services Company	LGEE	6,730	64,374,090	1.06%	-9.4	-2.08%	-9.6	-55.4	1.84%	-54.4
Manitoba Hydro	MHEB	4,977	54,708,876	0.90%	-8	-17.53%	-9.7	-47.1	-14.52%	-55.1
Midcontinent Independent System Operator, Inc.	MISO	116,195	1,269,164,359	20.85%	-185.6	0.76%	-184.2	-1,092.1	4.08%	-1,049.3
New Brunswick Power Corporation	NBPSO	3,223	29,286,101	0.48%	-4.3	-4.44%	-4.5	-25.2	-1.18%	-25.5
Nova Scotia Power Inc.	NSPI	1,968	21,043,113	0.35%	-3.1	-3.13%	-3.2	-18.1	-1.09%	-18.3
New York Independent System Operator	NYIS	30,919	278,619,465	4.58%	-40.7	-5.13%	-42.9	-239.7	-1.96%	-244.5
PJM Interconnection, LLC	PJM	148,770	1,603,191,515	26.34%	-234.4	-1.43%	-237.8	-1,379.5	1.86%	-1,354.3
South Carolina Public Service Authority (Santee)	SC	4,634	43,913,223	0.72%	-6.4	0.00%	-6.4	-37.8	4.42%	-36.2
South Carolina Electric & Gas Company (Dominion)	SCEG	4,573	50,959,662	0.84%	-7.5	-3.85%	-7.8	-43.8	-1.13%	-44.3
Seminole Electric Cooperative	SEC	435	13,384,893	0.22%	-2	0.00%	-2.0	-11.5	0.00%	-11.5
Southeastern Power Administration	SEPA	-	1,867,241	0.03%	-0.3	-25.00%	-0.4	-1.6	-27.27%	-2.2
Southern Company Services, Inc. - Trans	SOCO	41,488	381,049,024	6.26%	-55.7	-22.32%	-71.7	-327.9	-19.75%	-408.6
Southwestern Power Administration	SPA	180	7,989,246	0.13%	-1.2	-7.69%	-1.3	-6.9	-8.00%	-7.5
Saskatchewan Power Corporation	SPC	3,910	49,596,240	0.81%	-7.3	0.00%	-7.3	-42.7	3.49%	-41.3
Southwest Power Pool	SWPP	50,851	538,549,226	8.85%	-78.8	-1.99%	-80.4	-463.4	1.16%	-458.1
Tallahassee, City of	TAL	573	5,352,485	0.09%	-0.8	0.00%	-0.8	-4.6	0.00%	-4.6
Tampa Electric Company	TEC	4,393	42,543,392	0.70%	-6.2	-3.13%	-6.4	-36.6	0.55%	-36.4
Tennessee Valley Authority	TVA	28,149	328,819,097	5.40%	-48.1	2.34%	-47.0	-282.9	5.76%	-267.5

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<b>Western Interconnection</b>		<b>175,341</b>	<b>1,743,611,975</b>	<b>100.00%</b>	<b>-1096</b>	0.00%	<b>-1096</b>	<b>0.9% of VI Peak Demand</b>		<b>-1,587.2</b>
Alberta Electric System Operator	AESO	11,970	166,439,288	9.55%	-104.6	1.85%	-102.7	-150.6	1.28%	-148.7
Avista Corporation	AVA	2,380	24,736,774	1.42%	-15.5	2.65%	-15.1	-22.4	2.28%	-21.9
Avangrid Renewables	AVRN	-	8,631,513	0.50%	-5.4	5.88%	-5.1	-7.8	5.41%	-7.4
Arizona Public Service Company	AZPS	7,575	62,306,683	3.57%	-39.2	1.03%	-38.8	-56.4	0.53%	-56.1
Balancing Authority of Northern California	BANC	4,471	29,735,034	1.71%	-18.7	-1.58%	-19.0	-26.9	-2.18%	-27.5
British Columbia Hydro and Power Authority	BCHA	11,792	136,149,702	7.81%	-85.6	2.51%	-83.5	-123.2	1.90%	-120.9
Bonneville Power Administration	BPAT	10,123	144,706,205	8.30%	-91	-4.71%	-95.5	-131.0	-5.28%	-138.3
Comision Federal de Electricidad	CFE	3,150	30,583,587	1.75%	-19.2	5.49%	-18.2	-27.7	4.92%	-26.4
Public Utility District No. 1 of Chelan County	CHPD	490	7,245,513	0.42%	-4.6	0.00%	-4.6	-6.6	-1.49%	-6.7
California Independent System Operator	CISO	43,789	380,704,116	21.83%	-239.3	0.67%	-237.7	-344.6	0.12%	-344.2
Arlington Valley, LLC - AVBA	DEAA	-	1,336,536	0.08%	-0.8	0.00%	-0.8	-1.2	9.09%	-1.1
PUD No. 1 of Douglas County	DOPO	467	2,391,556	0.14%	-1.5	-34.78%	-2.3	-2.2	-35.29%	-3.4
El Paso Electric Company	EPE	2,037	13,454,413	0.77%	-8.5	-2.30%	-8.7	-12.2	-3.17%	-12.6
Public Utility District No. 2 of Grant County Washington	GCPD	960	12,088,082	0.69%	-7.6	0.00%	-7.6	-10.9	0.00%	-10.9
Gridforce Energy Management, LLC	GRID	-	12,163,429	0.70%	-7.6	-13.64%	-8.8	-11.0	-13.39%	-12.7
Griffith Energy, LLC	GRIF	-	2,345,910	0.13%	-1.5	66.67%	-0.9	-2.1	61.54%	-1.3
NaturEner Power Watch, LLC (Glacier Wind Balancing Authority)	GWA	-	547,593	0.03%	-0.3	-25.00%	-0.4	-0.5	-16.67%	-0.6
New Harquahala Generating Station	HGMA	-	452,747	0.03%	-0.3	0.00%	0.0	-0.4		-1.1
Imperial Irrigation District	IID	1,135	4,806,835	0.28%	-3	15.38%	-2.6	-4.4	15.79%	-3.8
Idaho Power Company	IPCO	4,142	33,304,616	1.91%	-20.9	-4.57%	-21.9	-30.1	-5.35%	-31.8
Los Angeles Department of Water and Power	LDWP	5,387	39,654,466	2.27%	-24.9	-18.36%	-30.5	-35.9	-18.78%	-44.2
Nevada Power Company	NEVP	9,583	70,980,337	4.07%	-44.6	2.53%	-43.5	-64.2	1.90%	-63.0
NorthWestern Corporation (NorthWestern Energy)	NWMT	1,909	20,802,933	1.19%	-13.1	2.34%	-12.8	-18.8	1.08%	-18.6
PacifiCorp_East	PACE	9,634	103,891,037	5.96%	-65.3	2.83%	-63.5	-94.0	2.29%	-91.9
PacifiCorp_West	PACW	4,177	41,680,773	2.39%	-26.2	3.56%	-25.3	-37.7	3.01%	-36.6
Portland General Electric Company	PGE	4,528	39,792,137	2.28%	-25	5.04%	-23.8	-36.0	4.65%	-34.4
Public Service Company of New Mexico	PNM	2,586	28,555,592	1.64%	-17.9	6.55%	-16.8	-25.8	5.74%	-24.4
Public Service Company of Colorado	PSCO	8,097	85,409,554	4.90%	-53.7	-9.75%	-59.5	-77.3	-10.22%	-86.1
Puget Sound Energy, Inc.	PSEI	4,742	41,356,911	2.37%	-26	2.77%	-25.3	-37.4	1.91%	-36.7
Seattle City Light	SCL	1,893	15,912,776	0.91%	-10	1.01%	-9.9	-14.4	0.70%	-14.3
Salt River Project Agricultural Improvement and Power District	SRP	6,814	55,758,144	3.20%	-35	-3.31%	-36.2	-50.5	-3.63%	-52.4
Tucson Electric Power	TEPC	3,418	31,111,753	1.78%	-19.6	-3.45%	-20.3	-28.2	-4.08%	-29.4
Turlock Irrigation District	TIDC	670	4,666,359	0.27%	-2.9	0.00%	-2.9	-4.2	0.00%	-4.2
City of Tacoma, Department of Public Utilities, Light Division	TPWR	968	7,897,471	0.45%	-5	2.04%	-4.9	-7.1	0.00%	-7.1
Western Area Power Administration - Rocky Mountain Region	WACM	4,455	59,716,563	3.42%	-37.5	16.82%	-32.1	-54.0	15.88%	-46.6
Western Area Power Administration - Desert Southwest Region	WALC	1,812	20,220,565	1.16%	-12.7	2.42%	-12.4	-18.3	2.23%	-17.9
Western Area Power Administration - Upper Great Plains Region	WAUW	187	1,429,141	0.08%	-0.9	12.50%	-0.8	-1.3	8.33%	-1.2
NaturEner Wind Watch, LLC	WWA	-	645,331	0.04%	-0.4	0.00%	-0.4	-0.6	0.00%	-0.6
<b>ERCOT Interconnection</b>		<b>#N/A</b>	<b>#N/A</b>	<b>100%</b>	<b>-463</b>	12.38%	<b>-412</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Electric Reliability Council of Texas, Inc.	ERCOT	#N/A	#N/A	100%	-463	12.38%	-412.0			
<b>Québec Interconnection</b>				<b>100%</b>	<b>-211</b>	0.00%	<b>-211</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Hydro-Québec TransEnergie	HQT			100%	-211	0.00%	-211.0			