

# BAL-003-1 Frequency Response Obligation Allocation and Minimum Frequency Bias Settings for Operating Year 2021

## 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 2021 are attached.

This document outlines the procedure for setting FBS for 2021 and publishes the FRO and minimum FBS for BAL-003 operating year 2021 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 Reliability and Security Technical Committee sanctions the IFROs for allocation by the Electric Reliability Organization (ERO) through the methods put forth in Standard BAL-003-1.

In accordance with the recommendations from the 2020 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 2021 (December 2020 through November 2021) shall remain the same values as calculated in the 2016 FRAA report for operating year 2017. The IFRO value for the Texas Interconnection shall increase slightly (in absolute terms) due to a change in the credit for load resources (CLR) and resource loss protection criteria as discussed in the 2020 FRAA.

### Effective IFROs for Operating Year 2021

	Eastern (EI)	Western (WI)	Texas (TI)	Québec (QI)	Units
IFRO	-1,015	-858	-471	-179	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-003-1.

## **Frequency Bias Setting Procedure for 2021 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-003-1.

BAs utilizing Variable Bias Settings should use the Operating Year 2021 FRO provided for implementation on December 1, 2020 for the purpose of compliance with Requirement R3 starting on April 1, 2021. That FRO shall remain constant through the entire FBS year (April 1, 2021 through March 31, 2022).

### ***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 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.

### ***2021 Frequency Performance Data Submittal***

BAs will submit their 2021 data on FRS Forms FR-1 and FR-2 through the Balancing Authority Submittal Site (BAS Site) no later than March 7, 2021. The ERO will then publish the final FBSs in time for implementation on or about April 1, 2021.

### ***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 about April 1, 2021.

## **Frequency Bias Setting Schedule for 2021**

The FBS to be used for Bias Setting year 2021 (April 1, 2021 through March 31, 2022) for compliance with Requirements R2, R3, and R4 of Standard BAL-003-1 will be implemented using the following process:

1. Prior to the 2<sup>nd</sup> business day in February 2021 the final FRS Form 1s will be posted for each Interconnection pre-populated with frequency events for all four quarters of operating year 2020 (December 1, 2019 through November 30, 2020).
2. By March 7, 2021 all BAs complete their frequency response analysis using the frequency events selected by the ERO for all four quarters of operating year 2020 and their desired FBS for the 2021 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 March 7<sup>th</sup> in accordance with BAL-003-1.*

3. By March 24 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 April 2021, unless specified otherwise by the ERO, BAs will implement the 2021 FBS 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 and Minimum Frequency Bias Settings for Operating Year 2021								For Comparison Only		For Comparison Only		
BA Name	NCR Number	BA Acronym	Reporting Region	Maximum Monthly Peak Demand (2019 MW) FERC 714 Data	BA Net Generation + BA Net Energy for Load (2019 MWh) FERC 714 Data	2021 OY BA % Ratio (BAL-003-1 Attach A)	2021 OY BA FROs (MW/0.1 Hz)	Year over Year BA FRO Change	2020 OY BA FROs (MW/0.1 Hz)	2021 OY Minimum Frequency Bias Settings For Fixed Bias BAs	Year over Year Min FBS Change	2020 OY Minimum BA Frequency Bias Settings
<b>Eastern Interconnection</b>												
				591,862	6,284,520,278	100.00%	2021 OY EI FRO			0.9% of EI Peak Demand		
PowerSouth Energy Cooperative (Alabama Electric Cooperative Inc.)	NCR10203	AEC	SERC	1,991	10,967,954	0.175%	-2.0	0.00%	-2.0	-9.3	-12.26%	-10.6
Associated Electric Cooperative, Inc.	NCR01177	AECI	SERC	4,953	47,744,701	0.760%	-7.4	10.45%	-6.7	-40.5	3.32%	-39.2
Cube Hydro Carolinas	NCR01169	CHC	SERC	10	1,042,190	0.017%	-0.2	100.00%	-0.1	-0.9	0.00%	-0.9
Duke Energy Progress, Inc. (Progress Energy (Carolina Power & Light Company)	NCR01298	CPL	SERC	13,669	133,969,081	2.132%	-21.7	-1.36%	-22.0	-113.6	-1.05%	-114.8
Duke Energy Carolinas	NCR01219	DUK	SERC	20,597	217,715,066	3.464%	-35.2	2.33%	-34.4	-184.5	-1.07%	-186.5
Electric Energy, Inc.	NCR11399	EEL	SERC	-	-	0.000%	0.0	-100.00%	-0.6	0.0	#DIV/0!	0.0
Florida Municipal Power Pool	NCR00023	FMPP	FRCC	5,424	33,350,178	0.531%	-5.5	-1.79%	-5.6	-28.3	-3.08%	-29.2
Duke Energy Florida, Inc. (Progress Energy (Florida Power Corp.))	NCR00063	FPC	FRCC	11,667	96,317,266	1.533%	-15.3	0.00%	-15.3	-81.6	0.62%	-81.1
Florida Power & Light Co.	NCR00024	FPL	FRCC	24,113	254,372,378	4.048%	-41.1	2.75%	-40.0	-215.6	1.94%	-211.5
GridLiance Holdco, LP	NCR11783	GLHB	SERC	-	2,381,193	0.038%	-0.4	0.00%	-0.4	-2.0		-2.2
Gainesville Regional Utilities	NCR00032	GVLT	FRCC	429	3,993,161	0.064%	-0.6	-14.29%	-0.7	-3.4	-10.53%	-3.8
Homestead, City of	NCR00037	HST	FRCC	115	585,116	0.009%	-0.1	0.00%	-0.1	-0.5	0.00%	-0.5
Ontario IESO	NCR07184	IESO	NPCC	21,791	283,328,326	4.508%	-45.8	3.62%	-44.2	-240.1	2.61%	-234.0
ISO-NE	NCR07124	ISNE	NPCC	24,324	215,408,000	3.428%	-34.8	-3.33%	-36.0	-182.6	-4.35%	-190.9
JEA	NCR00040	JEA	FRCC	2,717	19,725,058	0.314%	-3.2	-13.51%	-3.7	-16.7	-14.36%	-19.5
LG&E and KU Services Company	NCR01223	LGEE	SERC	6,892	69,158,287	1.100%	-11.2	-7.44%	-12.1	-58.6	-8.86%	-64.3
Manitoba Hydro	NCR01003	MHEB	MRO	4,935	60,223,568	0.958%	-9.7	-4.90%	-10.2	-51.0	-5.73%	-54.1
Midcontinent Independent System Operator, Inc.	NCR00826	MISO	RF	116,627	1,315,489,264	20.932%	-212.5	1.63%	-209.1	-1,115.0	0.70%	-1,107.3
New Brunswick Power Corporation	NCR07155	NBPSO	NPCC	3,354	30,233,288	0.481%	-4.9	0.00%	-4.9	-25.6	-1.54%	-26.0
Nova Scotia Power Inc.	NCR07178	NSPI	NPCC	2,060	21,563,019	0.343%	-3.5	2.94%	-3.4	-18.3	1.10%	-18.1
New York Independent System Operator	NCR07160	NYIS	NPCC	30,397	288,472,431	4.590%	-46.6	-1.69%	-47.4	-244.5	-2.63%	-251.1
PJM Interconnection, LLC	NCR00879	PJM	RF	151,499	1,605,202,150	25.542%	-259.3	-0.69%	-261.1	-1,360.6	-1.56%	-1,382.2
South Carolina Public Service Authority	NCR01312	SC	SERC	4,558	42,941,383	0.683%	-6.9	1.47%	-6.8	-36.4	0.83%	-36.1
South Carolina Electric & Gas Company	NCR00915	SCEG	SERC	4,714	53,224,024	0.847%	-8.6	3.61%	-8.3	-45.1	2.97%	-43.8
Seminole Electric Cooperative	NCR00068	SEC	FRCC	305	12,776,694	0.203%	-2.1	0.00%	-2.1	-10.8	-1.82%	-11.0
Southeastern Power Administration	NCR00070	SEPA	SERC	-	2,209,319	0.035%	-0.4	100.00%	-0.2	-1.9	72.73%	-1.1
Southern Company Services, Inc. - Trans	NCR01320	SOCO	SERC	45,867	486,708,528	7.745%	-78.6	0.26%	-78.4	-412.5	-0.63%	-415.1
Southwestern Power Administration	NCR01144	SPA	MRO	138	9,307,952	0.148%	-1.5	50.00%	-1.0	-7.9	43.64%	-5.5
Saskatchewan Power Corporation	NCR01029	SPC	MRO	3,723	49,934,873	0.795%	-8.1	2.53%	-7.9	-42.3	0.95%	-41.9
Southwest Power Pool	NCR01143	SWPP	MRO	50,510	545,891,484	8.686%	-88.2	-0.90%	-89.0	-462.7	-1.76%	-471.0
Tallahassee, City of	NCR00073	TAL	FRCC	616	5,718,341	0.091%	-0.9	0.00%	-0.9	-4.8	0.00%	-4.8
Tampa Electric Company	NCR00074	TEC	FRCC	4,298	42,944,807	0.683%	-6.9	0.00%	-6.9	-36.4	0.00%	-36.4
Tennessee Valley Authority	NCR01151	TVA	SERC	29,569	321,621,199	5.118%	-51.9	-1.89%	-52.9	-272.6	-2.64%	-280.0

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<b>Western Interconnection</b>										<b>2021OY WI IFRO</b>		<b>0.9% of WI Peak Demand</b>	
				178,276	1,740,835,035	100.00%	-858	0.00%	-858	-1,604.5		-1,567.9	
Alberta Electric System Operator	N/A	AESO	WECC	11,561	168,342,379	9.670%	-83.0	3.36%	-80.3	-155.2	5.65%	-146.9	
Avista Corporation	NCR05020	AVA	WECC	2,201	24,824,432	1.426%	-12.2	3.39%	-11.8	-22.9	6.02%	-21.6	
Avangrid Renewables	NCR10259	AVRN	WECC	-	5,664,402	0.325%	-2.8	-20.00%	-3.5	-5.2	-17.46%	-6.3	
Arizona Public Service Company	NCR05016	AZPS	WECC	7,030	59,854,188	3.438%	-29.5	2.43%	-28.8	-55.2	4.74%	-52.7	
Balancing Authority of Northern California	NCR11118	BANC	WECC	4,457	31,480,405	1.808%	-15.5	6.16%	-14.6	-29.0	8.21%	-26.8	
British Columbia Hydro and Power Authority	N/A	BCHA	WECC	10,905	123,803,037	7.112%	-61.0	-6.58%	-65.3	-114.1	-4.52%	-119.5	
Bonneville Power Administration	NCR05032	BPAT	WECC	10,275	143,127,910	8.222%	-70.5	-7.72%	-76.4	-131.9	-5.58%	-139.7	
Comision Federal de Electricidad	N/A	CFE	WECC	2,818	27,483,543	1.579%	-13.5	3.05%	-13.1	-25.3	5.86%	-23.9	
Public Utility District No. 1 of Chelan County	NCR05338	CHPD	WECC	463	6,854,349	0.394%	-3.4	-12.82%	-3.9	-6.3	-11.27%	-7.1	
California Independent System Operator	NCR05048	CISO	WECC	44,145	386,455,887	22.199%	-190.5	2.09%	-186.6	-356.2	4.43%	-341.1	
Arlington Valley, LLC - AVBA	NCR03049	DEAA	WECC	7,411	1,236,708	0.071%	-0.6	-40.00%	-1.0	-1.1	-42.11%	-1.9	
PUD No. 1 of Douglas County	NCR05343	DOPD	WECC	414	4,354,331	0.250%	-2.1	0.00%	-2.1	-4.0	5.26%	-3.8	
El Paso Electric Company	NCR05140	EPE	WECC	1,972	13,958,604	0.802%	-6.9	1.47%	-6.8	-12.9	4.03%	-12.4	
Public Utility District No. 2 of Grant County Washington	NCR05342	GCPD	WECC	838	12,017,491	0.690%	-5.9	-6.35%	-6.3	-11.1	-3.48%	-11.5	
Gridforce Energy Management, LLC	NCR11393	GRID	WECC	-	15,860,503	0.911%	-7.8	25.81%	-6.2	-14.6	28.07%	-11.4	
Griffith Energy, LLC	NCR03050	GRIF	WECC	-	3,109,330	0.179%	-1.5	50.00%	-1.0	-2.9	61.11%	-1.8	
NaturEner Power Watch, LLC (Glacier Wind Balancing Authority)	NCR10395	GWA	WECC	-	528,503	0.030%	-0.3	50.00%	-0.2	-0.5	0.00%	-0.5	
Imperial Irrigation District	NCR05195	IID	WECC	1,067	4,104,088	0.236%	-2.0	0.00%	-2.0	-3.8	2.70%	-3.7	
Idaho Power Company	NCR05191	IPCO	WECC	3,611	34,691,449	1.993%	-17.1	1.18%	-16.9	-32.0	3.23%	-31.0	
Los Angeles Department of Water and Power	NCR05223	LDWP	WECC	6,203	48,922,094	2.810%	-24.1	-5.12%	-25.4	-45.1	-2.80%	-46.4	
Nevada Power Company	NCR05261	NEVP	WECC	8,423	68,184,908	3.917%	-33.6	0.90%	-33.3	-62.8	-0.32%	-63.0	
NorthWestern Corporation (NorthWestern Energy)	NCR05282	NWMT	WECC	1,904	23,604,218	1.356%	-11.6	7.41%	-10.8	-21.8	10.10%	-19.8	
PacifiCorp_East	NCR05304	PACE	WECC	8,964	97,873,781	5.622%	-48.2	-1.83%	-49.1	-90.2	0.56%	-89.7	
PacifiCorp_West	NCR05304	PACW	WECC	3,897	40,078,472	2.302%	-19.8	2.59%	-19.3	-36.9	4.53%	-35.3	
Portland General Electric Company	NCR05325	PGE	WECC	3,759	38,075,238	2.187%	-18.8	11.24%	-16.9	-35.1	13.59%	-30.9	
Public Service Company of New Mexico	NCR05333	PNM	WECC	3,557	27,256,158	1.566%	-13.4	3.88%	-12.9	-25.1	6.81%	-23.5	
Public Service Company of Colorado	NCR05521	PSCO	WECC	8,419	92,061,431	5.288%	-45.4	-2.16%	-46.4	-84.9	0.12%	-84.8	
Puget Sound Energy, Inc.	NCR05344	PSEI	WECC	4,742	39,835,300	2.288%	-19.6	2.62%	-19.1	-36.7	4.86%	-35.0	
Seattle City Light	NCR05382	SCL	WECC	1,804	15,199,436	0.873%	-7.5	-6.25%	-8.0	-14.0	-4.11%	-14.6	
Salt River Project Agricultural Improvement and Power District	NCR05372	SRP	WECC	7,411	62,075,857	3.566%	-30.6	-0.97%	-30.9	-57.2	1.06%	-56.6	
Tucson Electric Power	NCR05434	TEPC	WECC	3,190	32,681,605	1.877%	-16.1	3.21%	-15.6	-30.1	5.99%	-28.4	
Turlock Irrigation District	NCR05435	TIDC	WECC	645	4,414,231	0.254%	-2.2	0.00%	-2.2	-4.1	5.13%	-3.9	
City of Tacoma, Department of Public Utilities, Light Division	NCR05097	TPWR	WECC	939	6,706,753	0.385%	-3.3	-1.81%	-3.7	-6.2	-7.46%	-6.7	
Western Area Power Administration - Rocky Mountain Region	NCR05464	WACM	WECC	3,347	56,780,147	3.262%	-28.0	3.70%	-27.0	-52.3	5.66%	-49.5	
Western Area Power Administration - Desert Southwest Region	NCR05461	WALC	WECC	1,746	17,365,306	0.998%	-8.6	10.26%	-7.8	-16.0	11.89%	-14.3	
Western Area Power Administration - Upper Great Plains Region	NCR05467	WAUW	WECC	158	1,363,947	0.078%	-0.7	0.00%	-0.7	-1.3	0.00%	-1.3	
NaturEner Wind Watch, LLC	NCR11382	WWA	WECC	-	604,613	0.035%	-0.3	0.00%	-0.3	-0.6	0.00%	-0.6	
<b>ERCOT Interconnection</b>										<b>2021OY TI IFRO</b>			
				74,819	768,727,054	100%	-471	10.82%	-425	N/A	N/A	N/A	
Electric Reliability Council of Texas, Inc.	NCR04056	ERCO	TRE	74,819	768,727,054	100%	-471	23.62%	-381.0				
<b>Québec Interconnection</b>										<b>2021OY QI IFRO</b>			
						100%	-179	0.00%	-179	N/A	N/A	N/A	
Hydro-Québec TransÉnergie	NCR07112	HQT	NPCC			100%	-179	0.00%	-179.0				