NERC Reliability Standards for the Bulk Electric System of North America Updated July 20, 2020

This NERC Standards document has 2,249 pages.

NERC Standard Section (Abbreviation)	Number of Standards
Resource and Demand Balancing * (BAL)	5
Critical Infrastructure Protection (CIP)	17
Communications (COM)	2
Emergency Preparedness and Operations (EOP)	6
Facilities Design, Connections, and Maintenance (FAC)	10
Interchange Scheduling and Coordination (INT)	6
Interconnection Reliability Operations and Coordination (IRO)	12
Modeling, Data, and Analysis * (MOD)	13
Nuclear (NUC)	1
Personnel Performance, Training, and Qualifications (PER)	4
Protecttion and Control (PRC)	27
Transmission Operations (TOP)	5
Transmission Planning (TPL)	5
Voltage and Reactive (VAR)	4
Total	**117**

Only two of the above 117 standards include both phrases central to electric grid reliability, namely "Resource Adequacy" and "Long Term Planning." The two sections above are marked with an asterisk.

1. Title: **Planning Resource Adequacy Analysis, Assessment and Documentation**

2. Number: BAL-502-RF-03

3. Purpose: To establish common criteria, based on “one day in ten year” loss of Load expectation principles, for the analysis, assessment and documentation of Resource Adequacy for Load in the ReliabilityFirst Corporation (RF) region.

Number of instances of "Resource Adequacy" in Standard BAL-502-RF-03**: 31**

Number of instances of "Longer Term Planning" in Standard BAL-502-RF-03**: 6**

The numbers in parentheses in the next two sentences are the number of nuclear power reactors in each state from the NRC Map of Power Reactor Sites as of November 23, 2020.

Per the Wikipedia article regarding ReliabilityFirst (RF) Corporation, the region encompasses, "all or portions of New Jersey (3), Pennsylvania (8), Delaware, Maryland (2), Virginia (4), West Virginia, Ohio (2), Michigan (4), Kentucky, Tennessee (4), Indiana, Illinois (11), Wisconsin (2), and the District of Columbia."

Per the Wikipedia article regarding the Western Electricity Coordinating Council (WECC) the region incorporates all or portions of 13 western states. (Washington (1), Idaho, Montana, Oregon, Utah, Wyoming, California (2), Nevada, Utah, South Dakota, Arizona (3), New Mexico, and Texas,) British Columbia and Alberta, Canada, and a portion of Baja California, Mexico.

To insure generation resource adequacy, the number of nuclear power reactors in the ReliabilityFirst region is 40 versus 6 power reactors in the geographically much larger WECC region. Within WECC's vast geographic area there are only six power reactors. One third of WECC's reliable generation would disappear in 2025 under this voluntary plan. Per the NRC, there are currently 94 nuclear power reactors in the United States. The northeast blackout of 2003 began on August 14, 2003 in the state of Ohio as a consequence of inadequate transmission right-of-way maintenance, a problem currently plaguing California utility PG&E. CGNP believes that as a consequence of the 2003 blackout, ReliabilityFirst has become much more vigilant relative to other NERC regions in preventing blackouts.. Recently, as a consequence of a policy shift during the past decade to unreliable solar and unreliable wind generation with questionable environmental benefits, California had its first rolling blackouts in mid-August 2020 since the ENRON debacle two decades ago.

CGNP believes that to insure dispatchable generation resource adequacy this important NERC Standard should encompass the entire United States instead of only the ReliabilityFirst region.

The term "Capacity Benefit Margin" is used in modeling transmission resource adequacy.

1. Title: **Capacity Benefit Margin**

2. Number: MOD-004-1

3. Purpose: To promote the consistent and reliable calculation, verification, preservation, and use of Capacity Benefit Margin (CBM) to support analysis and system operations.

Number of instances of "Resource Adequacy" in Standard MOD-004-1: 4

Number of instances of "Longer Term Planning" in Standard MOD-004-1: 3

R1.1. The process through which a Load-Serving Entity within a Balancing Authority Area associated with the Transmission Service Provider, or the Resource Planner associated with that Balancing Authority Area, may ensure that its need for Transmission capacity to be set aside as CBM will be reviewed and accommodated by the Transmission Service Provider to the extent Transmission capacity is available.

R1.2. The procedure and assumptions for establishing CBM for each Available Transfer Capability (ATC) Path or Flowgate.

R1.3. The procedure for a Load-Serving Entity or Balancing Authority to use Transmission capacity set aside as CBM, including the manner in which the Transmission Service Provider will manage situations where the requested use of CBM exceeds the amount of CBM available.