



# Executive Summary Manual Changes

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| <b>Effective Date</b>  | 6.27.2024 |
| <b>Impacted Manual #(s)/Manual Title(s):</b><br>Manual 14B: PJM Regional Transmission Planning Process<br>Manual 20: Resource Adequacy Analysis<br>Manual 20A: Resource Adequacy Analysis<br>Manual 21: Rules and Procedures for Determination of Generating Capability<br>Manual 21A: Determination of Accredited UCAP Using Effective Load Carrying Capability Analysis<br>Manual 21B: Rules and Procedures for Determination of Generating Capability |           |
| <b>Conforming Order(s):</b><br>CIFP-RA Filing: ER24-99-000   |           |
| <b>Associated Issue Tracking Title:</b>  |           |
| <b>Committee Approval Path - What committee(s) have already seen these changes?</b><br>PC First Read: 4.30.2024<br>PC Endorsement: 6.4.2024<br>MRC First Read: 5.22.2024<br>MRC Endorsement: 6.27.2024   |           |
| <b>MRC 1<sup>st</sup> read date:</b>   | 5.22.2024 |
| <b>MRC voting date:</b>  | 6.27.2024 |
| <b>Impacted Manual sections:</b><br><b><u>Manual 14B</u></b><br>2.3.9 Load Deliverability Analysis<br>C.2.1.4 General Procedures<br>C.2.4 Capacity Emergency Transfer Objective (CETO) Procedure   |           |

## C.2.5 Capacity Emergency Transfer Limit (CETL) Procedure

### **Manual 20A**

#### 1 Resource Adequacy Planning

##### 1.1 Overview

##### 1.2 Resource Adequacy Metrics

##### 1.3 Resource Adequacy Criteria

##### 1.4 Key Parameters

##### 1.5 Approval Process

#### 2 Reserve Requirement Study (RRS) and Effective Load Carrying Capability (ELCC) Study

##### 2.1 Overview

##### 2.2 Inputs for RRS and ELCC Study

###### 2.2.1 Load Inputs

###### 2.2.2 Resource Performance Inputs

##### 2.3 Simulated Output of Resources

##### 2.4 Calculation of LOLE and EUE

##### 2.5 Meeting the RTO-wide Resource Adequacy Criteria

##### 2.6 Calculation of ELCC Class Ratings

##### 2.7 Calculation of Unit-Specific ELCC Ratings

##### 2.8 Calculation of the Installed Reserve Margin

##### 2.9 Calculation of the pool-wide average Accredited UCAP Factor

##### 2.10 Calculation of the Forecast Pool Requirement

#### 3 Capacity Emergency Transfer Objective (CETO) Study

##### 3.1 Overview

##### 3.2 Inputs for CETO Study

##### 3.3. Simulated Output of Resources

##### 3.4 Calculation of LOLE and EUE

3.5 Meeting the LDA Resource Adequacy Criteria

3.6 Calculation of the CETO

3.7 Calculation on an LDA's Reliability Requirement

## **Manual 21B**

1 Overview of Effective Load Carrying Capability Analysis

2 ELCC Classes

2.1 Variable Resource Classes

2.2 Limited Duration Resources Classes

2.3 Combination Resources Classes

2.4 Unlimited Resources Classes

2.5 Demand Resources Classes

2.6 Administration of ELCC Classes

3 ELCC Results Posting Schedule

4 Calculation of ELCC Class Rating, ELCC Resource Performance Adjustment, Accredited UCAP, and Accredited UCAP Factor

4.1 Calculation of ELCC Class Rating

4.2 Calculation of ELCC Resource Performance Adjustment

4.3 Calculation of Accredited UCAP

4.4 Calculation of Accredited UCAP Factor

5 Capacity Interconnection Rights

5.1 Attaining CIRs

5.2 Retaining CIRs

6 Determination of Installed Capacity (ICAP)

6.1 Determining Rated Capability

6.1.1 Variable Resources ICAP

- 6.1.2 Limited Duration Resources ICAP
- 6.1.3 Combination Resources ICAP
- 6.1.4 Unlimited Resources ICAP
- 7 Determination of Effective Nameplate
  - 7.1 Effective Nameplate Capacity for Variable Resource and Combination Resources
  - 7.2 Effective Nameplate Capacity for Limited Duration Resource
- 8 Data Submission Requirements
  - 8.1 Data Required
    - 8.1.1 Onshore Wind and Solar
    - 8.1.2 Variable Resources Other than Onshore Wind and Solar
    - 8.1.3 Energy Storage Resources Including Pumped Storage Hydropower
    - 8.1.4 Combination Resources (Other than Hydropower with Non-Pumped Storage)
    - 8.1.5 Hydropower with Non-Pumped Storage
  - 8.2 ELCC Data Submission Process
- 9 Backcasts
- 10 Testing Requirements
  - 10.1 Acceptance Testing
  - 10.2 CAPMOD Testing
  - 10.3 Capability Verification Testing
    - 10.3.1 Summer Capability Verification Testing Requirements
    - 10.3.2 Winter Capability Verification Testing Requirements
    - 10.3.3 Impacts of Test Results
- 11 Net Capability
  - 11.1 General

## 11.2 Generator Site Conditions and Weather Data

**Reason for change:**

Conforming changes for the approved FERC filing for the CIFP-RA changes.

**Summary of the changes:**

These changes phase out three PJM Manuals (Manual 20, Manual 21, and Manual 21A), and introduces two new Manuals (Manual 20A and Manual 21B). These are to bring PJM Manuals in line with the FERC filing for the CIFP-RA changes. Changes also include minor clean-up revisions to Manual 14B to align with changes in CETO methodology.

**Reliability Risk Modeling & Procurement Targets**

- Hourly resource adequacy model and the associated inputs
- Simulated output of resources and the considerations for binning
- Calculation of Loss of Load Expectation (LOLE) and Expected Unserved Energy (EUE)
- Calculation of the Installed Reserve Margin, Accredited UCAP Factor, and Forecast Pool Requirement
- Change in the CETO criteria to EUE-based metric and its calculation

**Capacity Accreditation**

- Calculation of ELCC Class Ratings and Unit-Specific ELCC Ratings
- Calculation of ELCC Resource Performance Adjustment
- Calculation of Accredited UCAP