

## Definition of Less-Than-Peak Case (LTP)

### Introduction

The conclusion of phase I will provide delivery of three (3) resource scenarios that will be used for transmission built-out in phase 2 during 2012. These resource scenarios will be selected through stakeholder consensus and guidance from among the seventy (70) macroeconomic resource expansion sensitivities accomplished in 2011. A peak summer power flow case will be used for each resource scenario during the transmission build-out phase; however, a less-than-peak case may be required to determine system performance when benefits are realizable under conditions that are other-than-peak. The purpose of this document is to describe the off-peak case that will be used, and under what circumstances it will be required.

### Factors

The factors affecting the selection of a less-than-peak case are many. Described below are a number of these factors and the less-than-peak case will include consideration of each:

- High renewables penetration
- Delivery of renewable resources
- Availability and predictability of renewable resources in the west when load is increasing in the east.
- Consistency of NEEM results
- Degree of system stress

### Case Selection

The less-than-peak powerflow case will encompass a unique set of operating conditions and parameters within the eastern interconnection, and will reflect one NEEM output scenario hour. This hour is represented in the simplest of terms by a seasonal (Summer, Shoulder, or Winter) load block and an optimized generation dispatch.

The hour chosen will be a summer shoulder hour. Load blocks for this season are shown in table 1. consisting of high renewable penetration. The average pu-of-highest load across all regions and blocks is 0.625. Since block 13 is close to the overall average, and it experiences this load a reasonable amount of time (600 hours) of the year, an hour from this block will be selected.

**The scenario hour with the highest renewables generation within block 13 will be chosen as the less-than-peak case.**

**Table 1: Load Block Characteristics**

| Summer Shoulder Load Block | Number of Hours in Load Block | % of Total Shoulder Hours in Load Block | Average pu-of-highest load across all regions |
|----------------------------|-------------------------------|---|---|
| Block 11                   | 25                            | 0.9                                     | 0.698   |
| Block 12                   | 200                           | 6.8                                     | 0.656   |
| Block 13                   | 600                           | 20.5                                    | 0.622   |
| Block 14                   | 900                           | 30.7                                    | 0.580   |
| Block 15                   | 1203                          | 41.1                                    | 0.568   |
|                            | Total Hours 2928              |   | Average = 0.625                               |

Subsequent to the Phase I scenario selection, the EIPC, with stakeholder input, will perform a review of the NEEM data. This review will assess the characteristics of Load Block 13 to determine that:

- Sufficient loading exists during the hour of highest renewable generation
- Sufficient transfer levels exist between NEEM region for that hour

Should this assessment reveal inadequate characteristics, a more detailed investigation will be performed to determine the most appropriate hour for the given scenario.