HOW TO DEAL WITH SCHEDULED OUTAGES IN MONTHLY CRR AUCTION

1   INTRODUCTION

According to MD02 CRR Tariff Section 9.3.3,

> "10)   Revision of the network topology and associated path ratings as needed to reflect planned outages and de-ratings of transmission facilities, to be used as the basis for allocating and auctioning monthly CRRs. This will be done monthly. In a timely fashion as needed to support this monthly process, the PTOs shall provide to the ISO all available information on planned transmission outages and de-ratings for the coming month."

This white paper addresses how to use the planned outage information in the monthly CRR auction. One way to deal with this information is to remove from the network model all the lines that are planned to be out at any time during the month under consideration. . This planned outage modeling may result in very little capacity left for CRR auction. Another way of dealing with this planned outage information is to totally ignore it. Obviously, the second treatment may result in revenue shortage in paying CRR holders because of over sale of network capacity.

A more accurate approach to taking into account the outages in the monthly CRR auction is to determine the CRR release hourly by removing all the lines that are planned to be out in that hour. The monthly CRR awards will then be determined by taking the most conservative release among all the hours.

There are the following problems associated with this approach:

- A planned outage most likely will last for days instead of hours; computing CRR release for each hour may not be necessary.

- Certain outages last only a short period of time on the low voltage network. It may be appropriate to discard these planned outages from the analysis of awarding the monthly CRRs.

- Running CRR release for each hour manually may not be efficient.

- More importantly, the "most conservative release" among all the releases of all the hours is actually not precisely defined and/or may be too conservative.

The following sections describe exactly how to address these issues in order to accurately account for the outages in monthly CRR auction.

2   PROPOSED APPROACH

2.1   Overview

The approach consists of the following steps:

1) Determine the list of significant outages

2) Determine Minimum Outage Period (MOP)

3) Define a contingency for each MOP

4) Add the contingencies defined for all MOPs to the contingency list of the CRR optimization problem.

2.2   Significant Outages

A significant outage is a planned outage that cannot be ignored in the monthly CRR auction. The determination of the significant outage is based on the following criteria:

- Length of the outage,

- Voltage level of the outage,

- Certainty of the planned outage being implemented, and

- Other factors.

The exact criteria for determining the list of significant outages need to be determined finally through the stakeholder process. The ISO provides the following initial suggestion as the starting point of discussion:

- Length of the outage:

    o > 24 Hours

- Voltage level of the outage,

    o >= 230 KV for PG&E (no visibility for low voltage transmission facilities)

    o >= 220 KV for SCE

    o >= 69 KV for SDG&E

2.3   Minimum Outage Period

The Minimum Outage Period (MOP) is defined to be the smallest time window within which all significant outages are considered of the same importance.

As an initial proposal, we determine the MOP to be a day. If one significant outage lasts for 24 hours and another significant outage lasts for 12 hours in the same day, both outages are considered to be effective for the whole MOP without being treated differently.

2.4   Contingency Definition for Each MOP

Technically, planned outages are not contingencies. Contingencies are hypothetical outages with certain probability of occurrence. However, for simplicity all significant outages in each MOP are defined to be contingencies. For example, if the MOP is determined to be a day, 30 contingencies will be defined for a month of 30 days.

2.5   Contingency List in CRR Optimization

The CRR auction software consistent with the CAL ISO tariff will have the capability of handling contingencies in the simultaneous feasibility test (SFT). The simultaneous feasibility test ensures revenue adequacy under both normal and contingency conditions. By adding the contingencies that comprise the significant outages, the SFT ensures revenue adequacy under these significant outages.