Appendix F

#### November 25, 2015

## Introduction

# **Uneconomic Retention & Repowering Workbook**

As stated in the November 19, 2015 joint MIWG/ICAP Working Groups presentation on Uneconomic Retention & Repowering of Existing Units, the NYISO is releasing a workbook examining the potential incentive to suppress prices through hypothetical retention and repowering scenarios. Similar to the workbook released earlier this year on June 18 (and updated on July 15,) which pertains to potential incentives to suppress prices through new entry in Rest of State, this workbook is a "live" Excel workbook that was used by the NYISO and can be used by stakeholders to perform calculations. There are three scenarios included in the workbook: a simplified retention scenario, a retention scenario allowing for a more involved treatment of capital expenditures, and a repowering scenario. The fields for inputs on each of the respective tabs are in Column B and are in blue text.

This workbook is intended for active use and editing by users. The NYISO will facilitate a discussion with stakeholders pertaining to the workbook and its analysis at the December 2 MIWG/ICAPWG meeting.

# **ROS New Entry Workbook**

The NYISO is also releasing a supplemental update to the July 15 workbook that contains further analysis and certain updated assumptions. This workbook examines only one of the technology types included in the June 18 and July 15 workbooks, and reflects the same costs from the original analysis. The NYISO will facilitate a discussion with stakeholders pertaining to this further analysis and the updated assumptions, and to the analysis in the July 15 workbook, at the December 2 MIWG/ICAPWG meeting. There are three scenarios in this workbook: one taken directly from the July 15 workbook, a second updated to current market conditions, and a third exploring whether the anticipated departure of several generating resources that have announced their intention to retire or mothball affects whether a Load Serving Entity has the ability and/or incentive to exercise buyer-side market power.

## Description

The Uneconomic Retention and Repowering workbook has several key differences from the July 15 workbook. The July 15 workbook examined only new entry, and therefore looked at the net present value (NPV) of a single large capital expenditure followed by 20 to 30 years of uneven cash flows, including ICAP savings from the price suppression associated with the new entry. The repowering example in the Uneconomic Retention and Repowering workbook is similar in that it assumes that if a unit were to repower, the capital expenditure for repowering would be recovered over an extended period of time of up to ten years. The retention examples, however, do not assume a large capital expenditure at the beginning of the contract term. This assumption is in alignment with the potential short term nature of contracts to retain uneconomic existing units, the retention example examines terms of 1-5 years.

The manner in which the price suppression effect is reflected in the units' ICAP Revenue is different in the Retention and Repowering workbook. In the retention scenarios, the Annual ICAP Price remains flat and there is no price effect horizon. In the repowering scenario, prices are assumed to begin at the input Annual ICAP Price and increase over the length of the price effect horizon until the price suppression effect is zero. The differences between the handling of price suppression in the ROS New Entry workbooks and the Uneconomic Retention and Repowering workbook enables the user to capture the difference in how prices would move, first when a new unit is uneconomically built and enters the market (causing a downward movement in ICAP prices), and second, when an existing unit that is already participating in the market is uneconomically retained through either retention or repowering (causing ICAP prices to remain at their current levels by preventing an increase.) Due to the shortened timeframe likely involved in the retention or repowering of existing units (in contrast to a new entrant,) the "New Technology" variable which caused downward movement by 0.25% annually in ICAP prices in the June workbook was removed.

Costs and revenues in the Uneconomic Retention and Repowering workbook are hypothetical, and are intended to be loosely representative of a 350-450 MW coal facility. The NYISO recognizes that going forward costs can vary significantly between units and does not suggest that the costs and revenues represented in these workbooks are dispositive.

The Annual ICAP Price and Impact/100MW inputs have been updated to reflect current market conditions. The supporting calculations and inputs are included in the ROS New Entry workbook.