

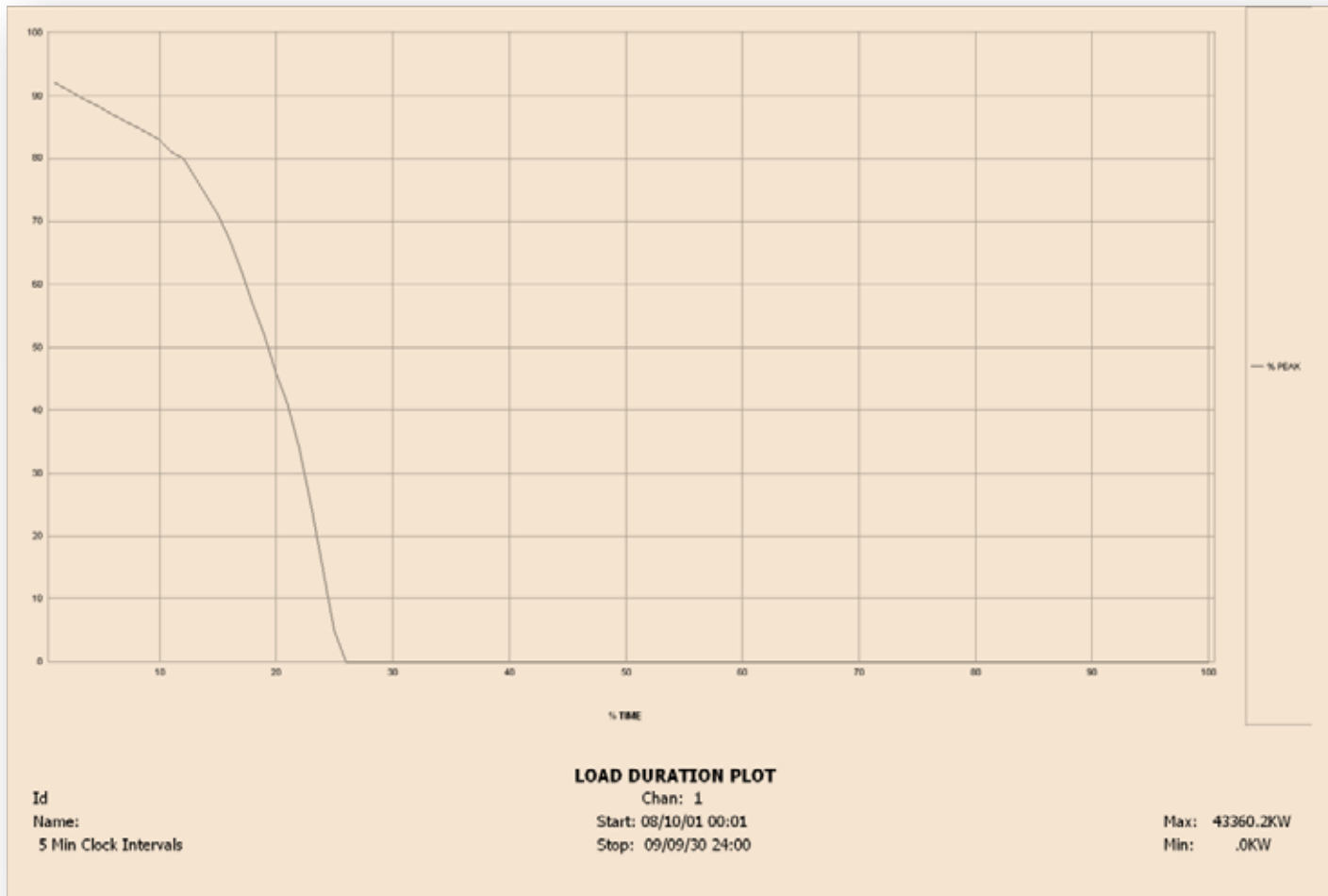
# RMSC Working Group

## No-Load Losses

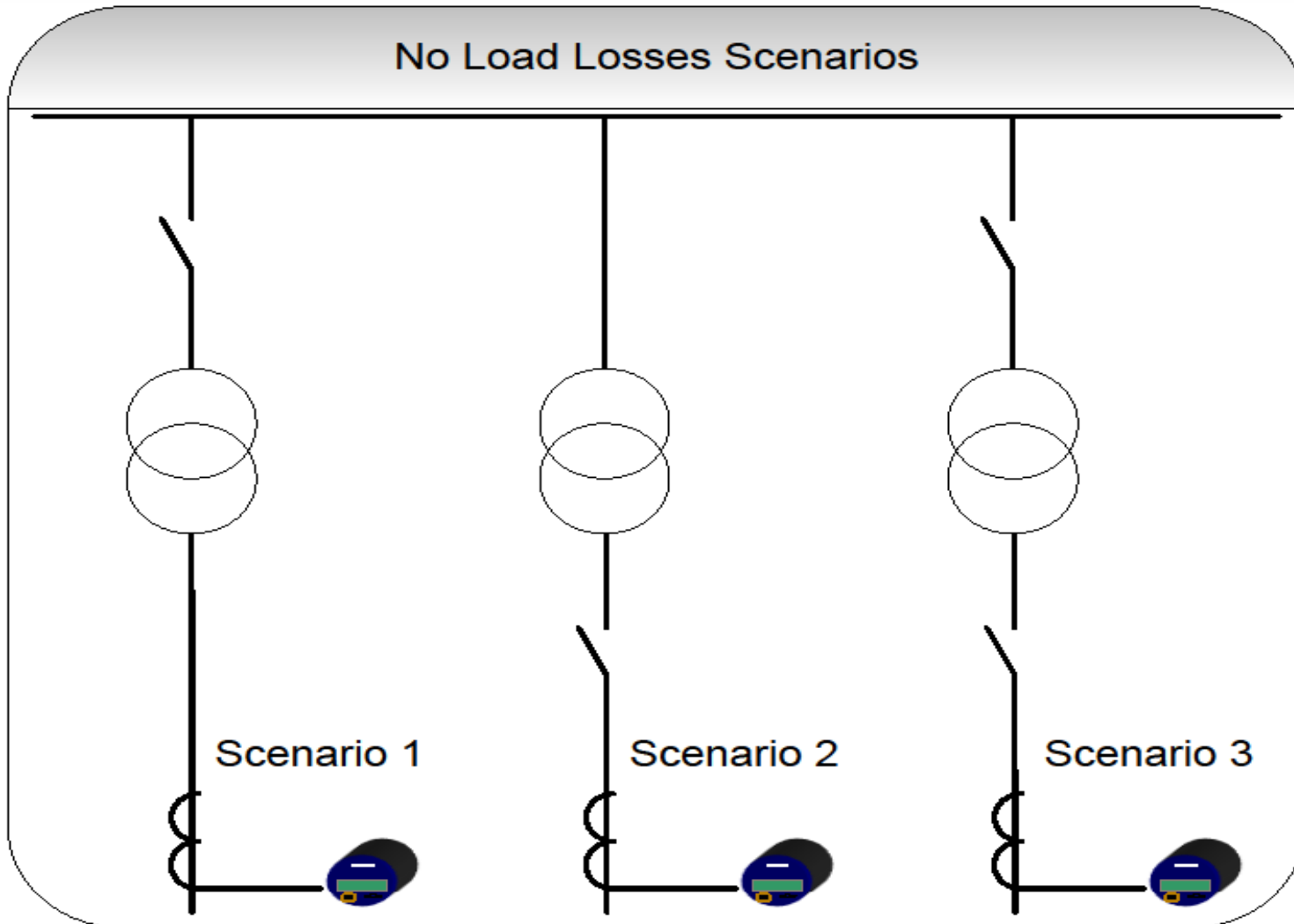
RMSC Meeting  
October 8, 2009



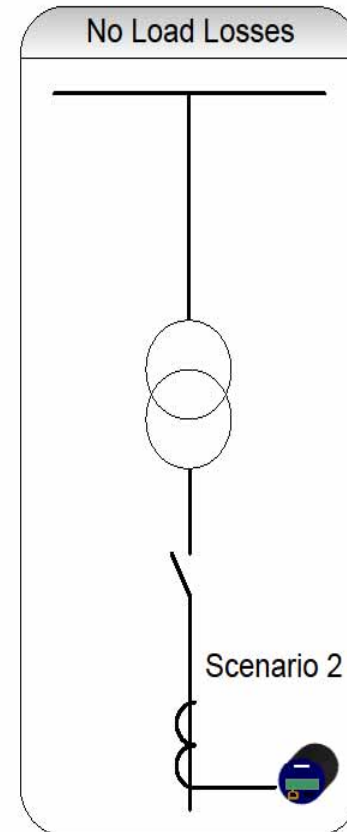
- We have some participants that, as part of their normal day to day operation, disconnect their facility from the IESO controlled grid.
- Depending on the metering arrangement, they may incur no load losses when disconnected from the grid.
- These types of loads are typically arc furnace loads which are production driven.
- One participant estimates that between \$30K to \$80K in no-load losses are incurred annually in this situation.



- Low side metering under normal circumstances compensates for no-load losses, but may under switched conditions continue to calculate no-load losses even when the transformer is de-energized.
- The metering registration system cannot accommodate dynamic changes of registration details, and continues to generate no-load losses.
- At the time, there were no options to address this condition.
- Based on estimates of no-load losses over short periods of time, the costs in comparison to the normal load were negligible.
- For switched conditions longer than 14 days, MSP can register a new totalization table to reflect the switched condition. For short or regular duration, there is no present option.



- Current tools cannot differentiate between scenarios 1, 2 and 3 outlined in previous slide.
- Tool is designed to protect market under all scenarios.



- Upgrade to existing tool (MV-Star)
  - Many challenges - tool is hard coded (not flexible)
- Future replacement of MV-Star
  - 2 to 3+ year time frame
  - Need to establish new Loss Principles
- High side metering
  - May not be practical or justified based on cost and cost recovery period.
- Process and registration changes
  - Regular Totalization Table changes, not practical
  - Continuous editing of meter data by MSP's, not practical

- **Must meet certain conditions/requirements:**
  - Scenario 1 power system configuration
  - Disconnection from grid part of normal operations
- **Use the meters capability/logic to identify when facility is disconnected from grid**
- **Metering Requirements**
  - Main meter to include 11<sup>th</sup> channel.
  - The 11<sup>th</sup> channel will, on an interval by interval basis, perform the following logic expression:
    - If sum of voltage Ch5, 6 & 7 equals zero, then Ch11=1
    - If sum of voltage Ch5, 6 and 7 does not equal zero, then Ch11=0
  - The Alternate meter must have the same configuration as the Main meter.

- Totalization Table requirements
  - Incorporate channel 11 into the totalization table.
  - A scaling factor applied to channel 11 (no-load loss/12)
  - Subtract channel 11 meter data from delivery point
- Resulting settlement equation (assume  $120\text{kW}_{\text{no-load loss}}$ ):  
$$\text{DP} = (\text{M}_{\text{ch1}} + \text{SSLA}) - (\text{M}_{\text{ch11}} * \text{SF})$$
$$\text{DP} = (0 + 10) - (1 * 10)$$
$$\text{DP} = 0$$

- Alternate meter data (11 channels) use in event Main meter data not available
- Estimate meter data for channels 1 to 4 when both main and alternate meter data not available.
- Ch 11 meter data estimated with 0, by default no-load losses will be applied.
- If no replacement data provided by MSP to estimated data, no-load losses are applied in scenarios where power transformer is disconnected from grid.

- Does RMSC support this proposal?
- Test proposal with IESO tools.
- Implement solution with participant(s) that qualify.