UNDERTAKING JT2.26

Undertaking

TO PROVIDE THE NAME OF THE ECONOMIC ANALYSIS TOOL OPG USES TO DETERMIND WHEN TO UTILIZE THE PGS OR NOT

Response

This response addresses the Environmental Defense motion for OPG to disclose the methodology and/or equation it uses to determine when to operate the pump at the Sir Adam Beck Pump Generating Station ("PGS").

OPG's economic assessment of the decision to operate the PGS is based upon:

- The expected cost of pumping based on:
  - the energy cost of pumping at the PGS at the forecasted Hourly Ontario Energy Price ("HOEP"); and
  - the HOEP and GRC impact on the Sir Adam Beck 1 and 2 Generating Stations ("SAB 1" and "SAB 2") in instances when pumping removes water that otherwise would be available to be generated at SAB 1 and SAB 2 at the higher efficiency noted in JT2.24; and
  - applicable non-energy charges.
- The on-peak HOEP required to recover these costs based on:
  - the expected HOEP energy revenue of PGS generation less GRC costs; and
  - the expected HOEP energy revenue at SAB 1 and SAB 2 at the higher efficiency noted in JT2.24 less GRC costs in instances when there is capacity to generate incremental water from the PGS at SAB 1 and SAB 2.

The economic assessment is reflected in the following formula for the breakeven PGS generation market price, subject to terms being set to zero, as applicable, in order to reflect the expected impact of PGS operations on SAB 1 and SAB 2:

$$\frac{\begin{array}{c} PGS\ Pump\ Efficiency\ \times (Forecast\ Pump\ Price + PGS\ Load\ Charges) + \\ Beck\ Gen\ Efficiency * (Forecast\ Pump\ Price - Beck\ GRC) + \\ (PGS\ Gen\ Efficiency * PGS\ GRC) + (Beck\ Gen\ Efficiency * Beck\ GRC) \end{array}}{PGS\ Gen\ Efficiency\ MW + Beck\ Gen\ Efficiency\ MW}$$

OPG compares the market price derived from this calculation with the forecasted on-peak market prices in order to determine if operation of the PGS will be economic. This economic assessment of the PGS is performed by OPG's Portfolio Management Center ("PMC") staff assisted by an Excel-based computational model.

PMC staff also assess whether to operate the PGS based on SEAL related limitations as a result of crossover and downstream elevations as described in JT2.22, in accordance with IESO system constraints, and in coordination with the Niagara Operations Control Center.