



Review of NYISO ELR/CLR Data

John Adams

NYSRC Consultant

May 4, 2016

Background

- Concerns were raised concerning whether Energy Limited Resources (ELR) and Capacity Limited Resources (CLR) hourly operating limitations would require these units to be modeled differently.
- Action item 170-8 established to tract this issue: “Investigate Energy Limited Resources and Capacity Limited Resources - Collect data on these resources by superzone/zone, operating limits (*i.e.*, 4, 6, hour, *etc.*) and provide reason for limitation without violating confidentiality. Depending on findings modeling assumptions may be adjusted.”
- It was agreed at ICS meeting 181 that an independent consultants would review and verify the values presented at meeting 181.

What Are ELRs and CLRs?

- Units claiming a upper operating limit normal (UOLn) less than their ICAP equivalent must register as an ELR or a CLR with the NYISO.
- ELR is an energy supplier that is unable to operate at a level that represents its ICAP obligation for all hours of the day, but can operate at that level for at least four consecutive hours of each day. It is defined in the tariff as:
 - *A resource that, due to environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously on a daily basis, but is able to operate for at least four consecutive hours each day.*

What Are ELRs and CLR's (continued) ?

- CLR is an energy supplier that is able to take extraordinary measures to reliably increase its output above its UOLn and has sold UCAP based on taking those extraordinary measures. It is defined in the tariff as:
 - *A resource that is constrained in its ability to supply energy above its Normal Upper Operating Limit by operational or plant configuration characteristics.*
- Examples of a CLR include, but are not limited to, (i) a combustion turbine that has peak firing or inlet cooling capability, and (ii) a steam plant that has the ability to remove its top feedwater heater from service.

ELR Data Observations

- NYISO provided ELR unit data that totaled 5,590 MW
- Approximately 60% of the ELR total was identified as attributable to a winter limitation and would require reduced output in some hours.
- Approximately 25% of the total are storage units with limited hours of operation.
- One unit that is less than 20 MW can operate only 4 hours no matter what the output level because of local noise issues.
- There are ELR units that take derates totaling up to 43 MW during high and low tide conditions

CLR Data Observations

- NYISO provided CLR unit data that totaled 3,043.4 MW.
- For approximately 25% of the total, the UOLn exceeds the MW modeled as ICAP and the differences totals 15.8 MW.
- For approximately 52% of the total, the UOLn is less than the MW modeled as ICAP and the difference totals 31.7 MW.
- The balance of the units provided no UOLn information but operating data was supplied which demonstrated these units consistently operated at or above their ICAP value.

Findings

- Based on the available data, I generally concur that the overall potential MW limitations for ELR and CLR units not being able to operate at the modeled ICAP MW value at the system peak hour except for a forced outage or derate is de minimis as stated by the NYISO.