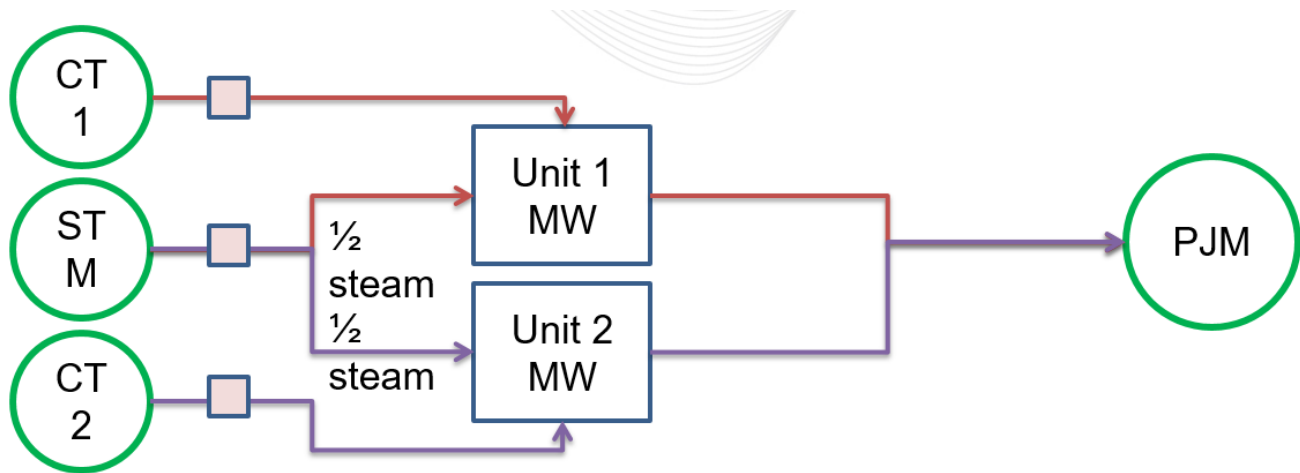


## Pseudo Modeled Combined Cycle Minimum Run Time Guidance

### Problem / Opportunity Statement

Many multiple block combined cycle units have disaggregated into individual Market Unit pseudo models.



Each pseudo model market unit can submit its own individual unit specific parameter limits into PJM's Energy Market. Parameters such as Minimum Run Time are parameter limited on the unit's price based PLS and cost based schedules. Unless the Market Seller submits a unit specific parameter adjustment request, each of the combined cycle's pseudo modeled units will be assigned a Minimum Run Time parameter limit of 4 hours. However, the combined cycle 4 hour Minimum Run Time parameter limit was developed based on the operating restriction of a 2x1 configuration. The 4 hour parameter limit includes the time to start the steam turbine in cold conditions. For the pseudo model units, only the first unit would include the steam turbine startup. The startup of any subsequent pseudo unit would still have a Minimum Run Time parameter limit of 4 hours, even though the steam turbine may already be running. If the subsequent pseudo unit is started some time after the first unit, PJM would be unable to release the subsequent pseudo unit until the 4 hour Minimum Run Time has been honored. This limits PJM's operating flexibility even when dispatching units on parameter limited schedules and can potentially increase uplift. PJM cannot solve this issue by just including a new proxy parameter for pseudo modeled combined cycle units in the Capacity Performance parameter limit matrix<sup>1</sup>. PJM's dispatch software would always select the pseudo model unit without the steam turbine start first because it would have a shorter Minimum Run Time, potentially causing the opposite of the problem if the pseudo model unit with the steam turbine startup is not selected.

<sup>1</sup> <https://www.pjm.com/-/media/committees-groups/committees/elc/postings/20150612-june-2015-capacity-performance-parameter-limitations-informational-posting.ashx>



## Problem/Opportunity Statement