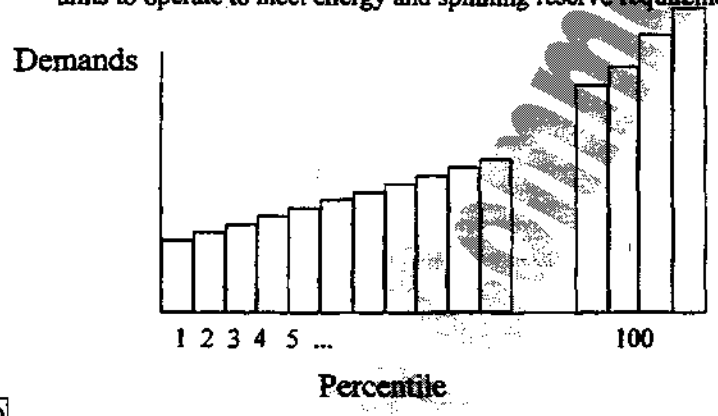
How Does ATLAS Deal With Hour-by-Hour Changes in Demand?

- We break the year in 100 demand 'percentiles', each representing 87.6 hours with roughly similar demand; for each percentile, ATLAS determines which units to operate to meet energy and spinning reserve requirements



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Since demand varies from hour to hour, we in effect run the operating model 100 times for each year of each scenario, to capture the full range of demands expected throughout the year.

Here we have made one simplifying assumption not generally made by production costing models--that each hour can be modeled separately from the hour that came before it. We believe this assumption is appropriate for the Railbelt, with its heavy dependence upon quick-starting combustion turbine units. This assumption would be less appropriate in a system heavily dependent upon steam units, which have boilers that must be started some hours before the unit goes into production.

Chugach Review Comment -	The simplifying assumption "that each hour can be modeled separately from the hour that came before it" underestimates production cost by ignoring hourly unit commitment constraints. For example, although gas turbines are quick starting, it is not economic to start and stop them hourly. ATLAS does not capture this cost.