

LPCutpoint

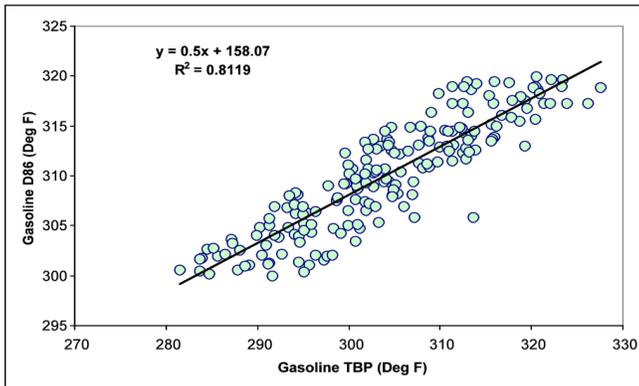
Connects LP Cutpoints to Measured Cutpoints

For Planners who need to know how LP cutpoints correspond to measured cutpoints. Most modern refinery planning LPs contain cutpoint specifications for important product streams. The LP cutpoints are often described in terms of True Boiling Point. Unfortunately True Boiling Point measurements are rarely performed in refinery laboratories. Cutpoints are usually measured in the laboratory using quicker chromatographic techniques or other standardized methods such as D-86. AIM's LPCutpoint Service provides the Planner with a way to quickly understand how the LP-based cutpoints correspond to the measured cutpoints used by Operators to make the products.

Why you need LPCutpoint

Before a Planning LP can be compared to actual plant operation, it's necessary to specify to the LP what the measured plant cutpoints are. This is not easy because Planning LPs are almost always set up in terms of True Boiling Point (TBP) cutpoints, while the cutpoints used by operators are measured using standardized chromatographic techniques (e.g. D2887) or laboratory distillations (e.g. D86). Without LPCutpoint, it's not possible to directly compare LP cutpoints with measured ones.

Figure 1- Plant cutpoint data



Making the connection

TBP correlates with D2887 or D86- but the exact correlation differs from refinery to refinery and from stream to stream. AIM's LPCutpoint Service uses plant data to match measured plant cutpoints with the TBP cutpoints used by the LP. Historical measurements of plant yields and cutpoints are compared with yields and cutpoints used in the LP, and a set of equations is produced relating the plant to the LP.

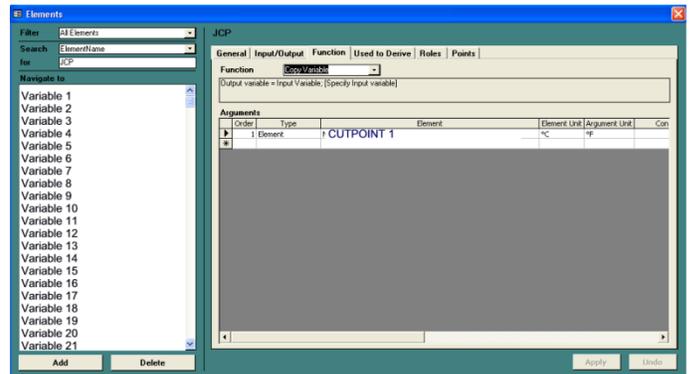
Implementation

When the equations relating plant and LP cutpoints have been set up, these are implemented in AIM's LPMonitor

database. The AIM database contains a sophisticated calculation engine which is used to make the numerical translation from plant measurements to LP cutpoints. Each time data are read from the plant, LP cutpoints are automatically calculated and are then used by AIM's LP Assurance solution to perform the LP predictions versus plant measurements.

LPCutpoint results can also be used to compare your LP solutions to actual plant operation. For example, if you LP solution calls for a gasoline TBP cutpoint of 350°F, but the process controls in the plant are running at a D86 90% cutpoint of 372°F, there is no way to know whether these results represent the same operation or different operation- unless you are using LPCutpoint.

Figure 2- LPCutpoint Implemented



Why it's better

- Maintain benefit stream from LP Assurance.
- Keep LP Assurance knowledge in your business.
- Maintain consistency during staffing changes.
- Large bottom-line savings: 25 ¢ per BBL.
- At least 10 / 1 annual benefits / project cost.
- Up to \$ 5 million per year benefits per refinery.

