The Generator Capability Monitor provides real-time Power Factor, Apparent Power, Maximum Apparent Power, and Alarm Status. This tool provides a handy visualization making it easy to compare actual conditions with the real-time dynamic limitation. Note that this plot does not use an image, but plots the black curves from a table, interpolates the red limit curve real-time, and plots the blue operating condition all within the same plot. The result is highly accurate.
The generator reactive capability curve is displayed in a dynamic real time display. This display is unique in that the cooling gas parameter (or voltage where applicable) “D-curve” accurately moves real-time and reactive/real power is plotted within. The D-curve is plotted with extreme accuracy using true polar coordinates so that the entire limit curve is displayed dynamically around the entire 180 degree plot. This tool provides a very handy visualization of real time operation compared to the limitations.

PI Notifications are triggered with this alarm to notify the appropriate personnel.

Using the ‘Element Relative Display’ feature, one master Process Book display file may be used to consistently display the key performance indicators of each Generator by simply selecting the asset in the Element Relative pane (left side of display). With the ‘Element Relative Display’ feature, one master display file may be used for an unlimited number of similar assets. Corporate level summary “drill down” screens make navigation easy via PI Process Book, or Internet Explorer using PI Web Parts.

Flexibility of the OSIsoft AF structure allows for value substitution whenever certain instrumentation may be unavailable. This substitution can take a number of forms including real-time calculation of the expected value based upon surrounding instrumentation, manual input via AF, manual input to a PI tag based on operator rounds, or any combination of manual and calculated inputs.

The Process Plugins™ solution has the capability of monitoring an unlimited number of assets, which could be added by the end user at any time in the future.

**MORE ABOUT PROCESS PLUGINS™**

OSIsoft’s PI System continues to be the industry standard in data historians, which has been the core of its 21st century real-time infrastructure platform. And now this platform comes fully loaded with every feature necessary to support all of your needs for monitoring, modeling, diagnostics, or forecasting without the need for any 3rd party software. That’s where the Process Plugins™ package comes in.

Process Plugins™ is not 3rd party software. The Process Plugins™ package customizes your OSIsoft platform for your plant. This is the only existing solution if you want:

1. No unnecessarily redundant PI tags
2. No 3rd party software
3. One Microsoft certified package with seamless integration of calculations and models
4. Web browser interface capability
5. Ability to drill down into calculations to see (or edit) exactly what they’re doing
The Process Plugins™ package resides primarily within OSIsoft’s PI Asset Framework (PI-AF). Your plant customization exists in the form of elements which handle most of your basic performance calculations. Using PI System Explorer, system administrators can view, modify, or enhance elements as desired.

**Element Formulas**

![Formula Configuration (ApparentPower)](image)

Fundamental performance calculations exist as formulas within elements.
Element Templates

The Process Plugins™ package comes with a complete set of “Drag & Drop” Element Templates for use in PI-AF. Some routines utilize the Process Plugins™ Windows service, which delivers results back to an element.
The Process Plugins™ package comes with both industry standard and site specific tables which are used by elements for lookup functions as well as interpolation.
Key resultant data generated by Process Plugins™ modules are stored in the OSIsoft PI historian. Process Plugins™ modules do not store redundant or unnecessary data, but only a handful of PI tags for key results.
The Process Plugins™ package includes a complete set of engineering units utilized by the utility industry for use with the PI AF Unit of Measure (UOM) system. PI-AF automatically performs unit conversions on demand and delivers results in either the U.S. English or S.I. engineering unit systems.
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