


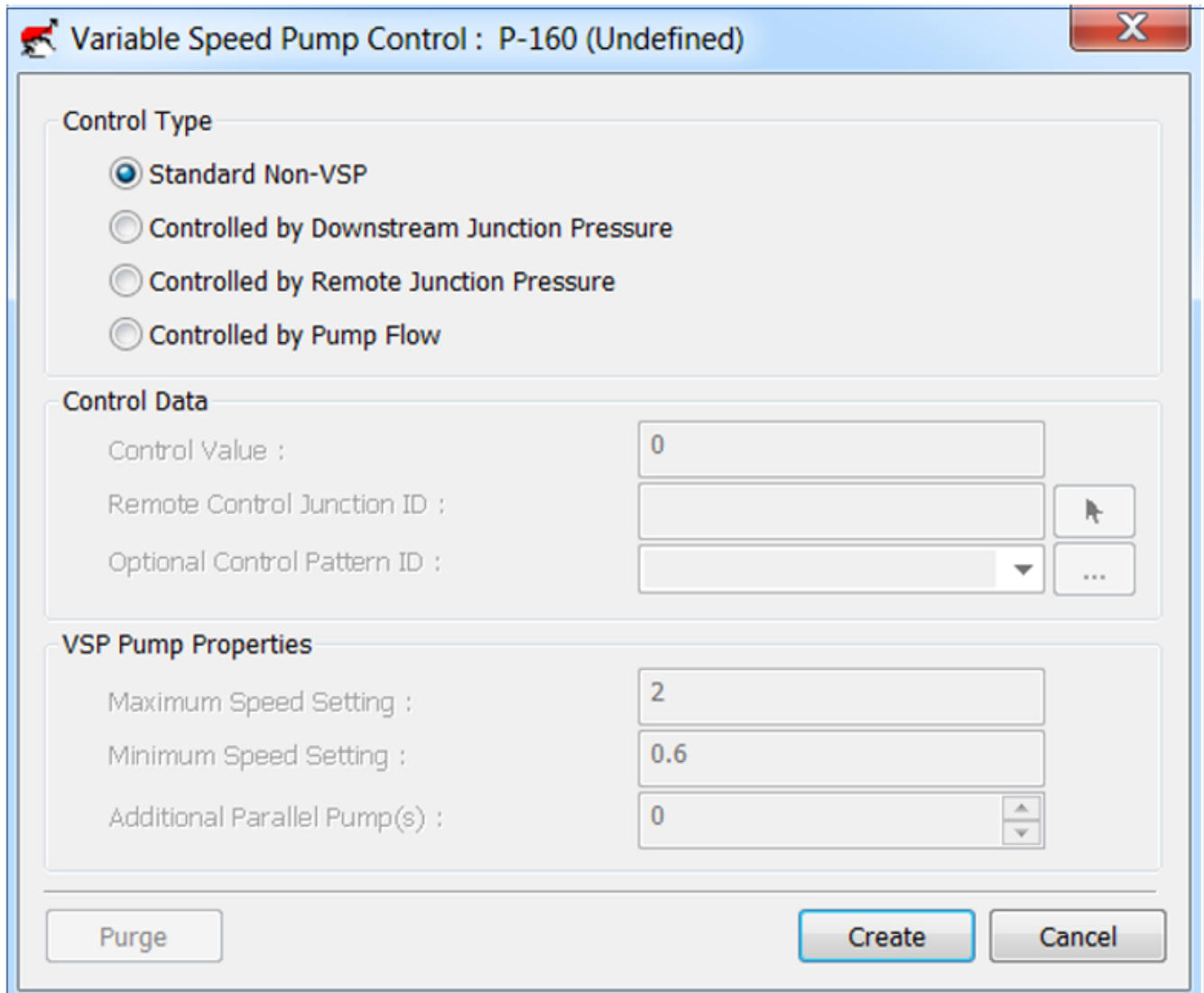
# Variable Speed Pump Control

The Variable Speed Pump Control (VSP Control) automatically calculates pump speed over time during an Extended Period Simulation (EPS), in order to maintain user-specified fixed or time-varying (pattern-based) pressure at a junction anywhere in the system or fixed or time-varying (pattern-based) pump discharge flows.

The VSP Control allows you to accurately mimic the actual operational behavior of the pump with variable frequency drive.

Use the **Variable Speed Pump Control**  toolbar button from the [Model Explorer - Attribute Tab Toolbar](#) to access the Variable Speed Pump Control dialog box.

To enter a VSP control for a pump, do the following to bring up the VSP Control dialog box.



**Variable Speed Pump Control : P-160 (Undefined)**

**Control Type**

- Standard Non-VSP
- Controlled by Downstream Junction Pressure
- Controlled by Remote Junction Pressure
- Controlled by Pump Flow

**Control Data**

Control Value :

Remote Control Junction ID :

Optional Control Pattern ID :

**VSP Pump Properties**

Maximum Speed Setting :

Minimum Speed Setting :

Additional Parallel Pump(s) :

Purge Create Cancel

## Control Type



- **Standard non-VSP** - Select to remove VSP control or to make this pump a non-VSP controlled pump.
- **Controlled by Downstream Junction Pressure** - Pump speed is controlled by the downstream junction pressure of the pump discharge junction. Pump speed will be varied to match the downstream junction pressure setting or the pressure pattern setting at the discharge of the pump element.
- **Controlled by Remote Junction Pressure** - Pump speed is controlled by the remote pressure setting at a remote junction. Pump speed will be varied to match the pressure setting or the pressure pattern at the designated remote junction.



For the remote junction control to work properly, the remote junction pressure must be directly related to the controlling pump speed.

- **Controlled by Pump Flow** - Pump speed is controlled by the flow through the pump. Pump speed will be varied to match the pump-flow setting or the flow pattern.

#### Control Data

- **Control Value** - Enter the junction pressure or pump flow to be controlled by the pump.
- **Remote Control Junction ID** - Enter the remote junction ID or use the **Search**  button to locate the remote junction in the map view.
- **Optional Control Pattern ID** - Use the pattern feature if the control pressure or flow varies with the time of day. Select the pattern ID from the pull-down menu or use the **Browse**  button to open the Pattern Editor. If no pattern is selected, the pressure or flow setting will be used.

#### VSP Pump Properties

- **Maximum Speed Setting** - Select the maximum speed factor value. For example, if the pump speed is limited to twice the rated speed of the pump, enter the speed factor of 2.0.
- **Additional Parallel Pump(s)** - Enter the number of additional identical pumps to be simulated in parallel.

 Purge

**Purge** - Clear all variable speed pump control data.

 Update

**Update** - Save the current data or changes, and exit the Variable Speed Pump Control dialog box.

 Cancel

**Cancel** - Do not save any changes and exit the Variable Speed Pump Control dialog Box.