

Exercise: Create Layers and Views

Example 1 – Create two views for a diagram, Manual On and Manual Off

The challenge

The user wants to be able to show/hide some operator controls on a specific diagram, to represent modes for either manually controlled operation or automatically controlled operation.

The solution

To describe how this can be done by using Layers, the procedure has been divided into three smaller steps.

STEP 1: Name layers

First it is recommended to rename the default names for the layers to be used. This will make it easier to recognize the correct layers to include in a specific view.

STEP 2: Define the Views

The next step is to create the needed views, in this case we will create three views. The first view will be a global view where the included descriptors should be displayed both in automatic and manual mode. This view will always be active for this configuration. The next two views will both be local and represents either the automatic or manual mode respectively.

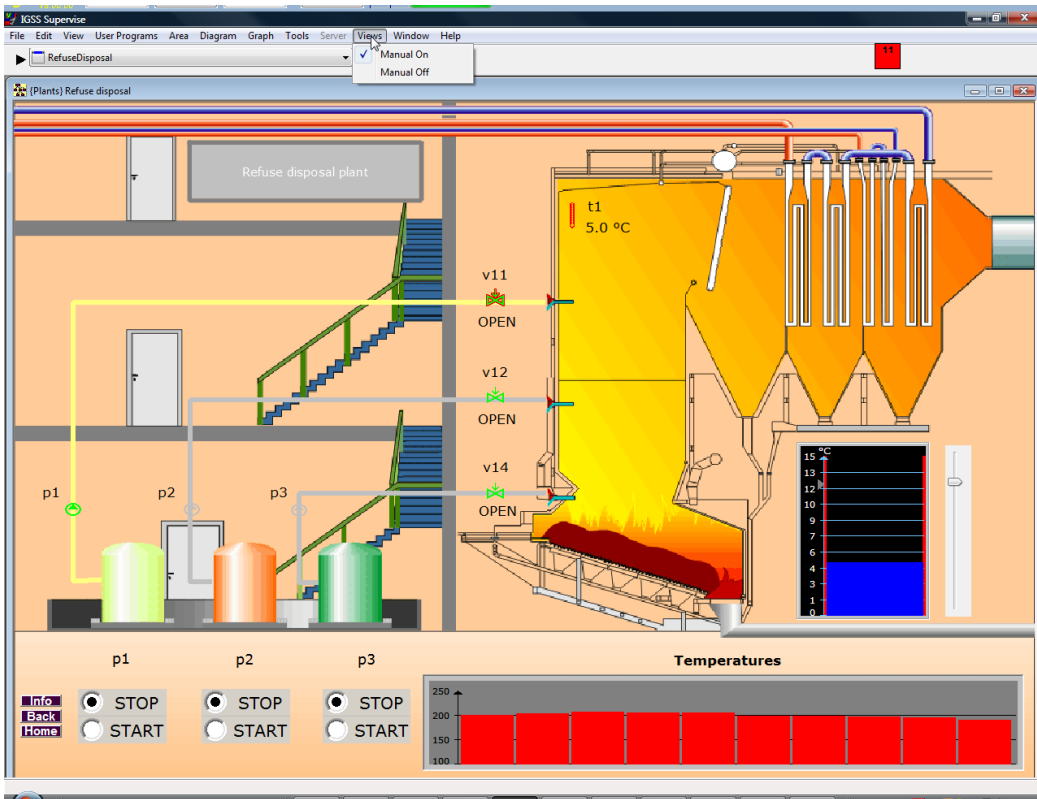
STEP 3: Add Layers to Views

Now layers will be added to each of the three views, which will define the descriptors to be visible in each view. The operator controls will here only be displayed in the manual view.

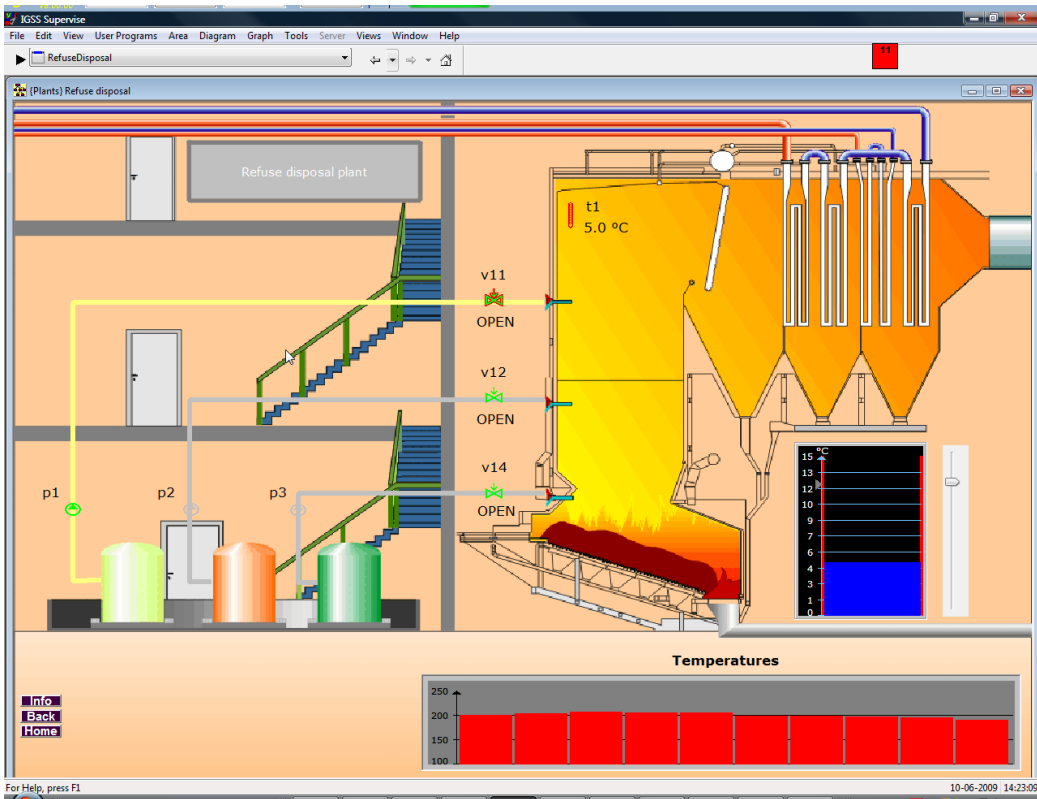
At the end, we will test the views in Supervise to make sure that all descriptors are included in the respective layers.

The final result

When *Manual* operation has been selected the controls are visible, as illustrated below:

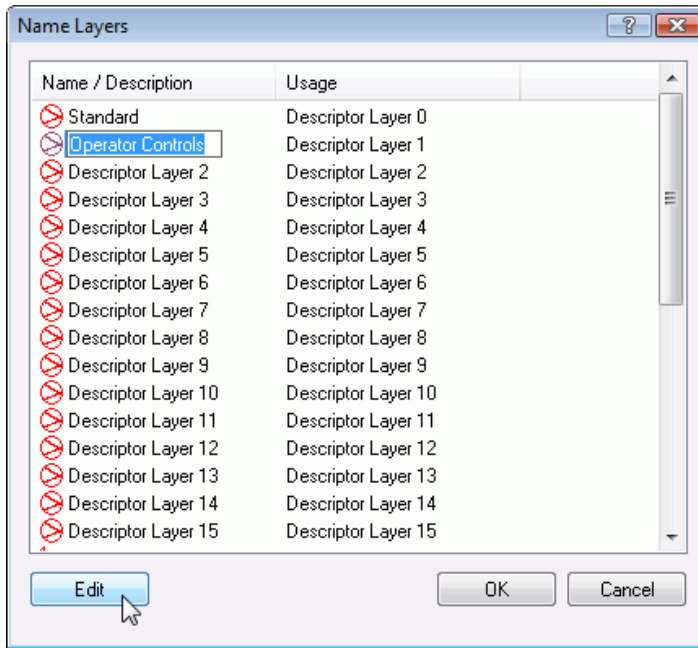


When the *Manual Off* view is selected, the controls are hidden for the operator, as seen below:

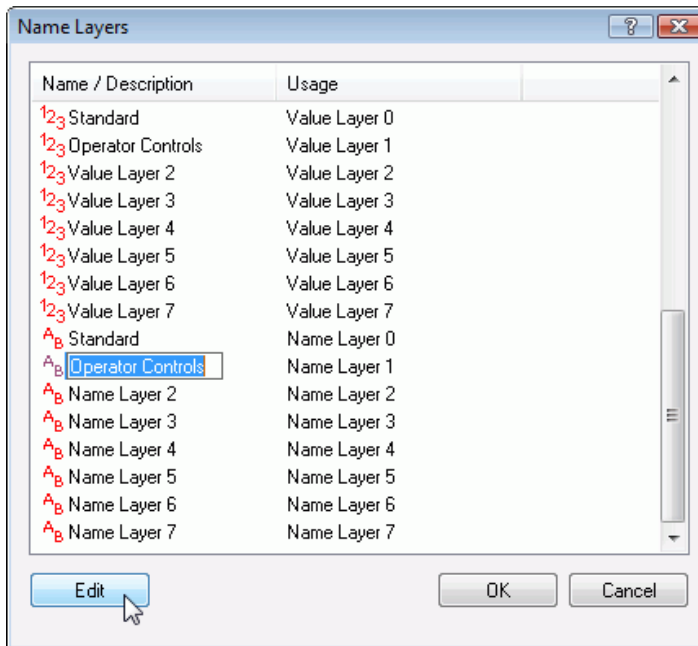


Step 1 - Name Layers

1. In the Definition module, select **File -> Open Demo Configuration**.
2. In the **Area** menu, select the **Training** area and go to the **Refuse Disposal** diagram.
3. Select **Views -> Name Layers**. This dialog box lists the names of all the available layers. We will now change the names for some of the layers.
4. Select the first layer name, *Descriptor Layer 0*, in the list and click the **Edit** button.
5. Change the first Descriptor Layer name to "*Standard*".
6. Similar, change the second Descriptor Layer name to "*Operator Controls*" (see illustration below).



7. Scroll down the name list and repeat step 5 and 6 for the first two Value Layers and for the first two Name Layers (see the illustration below).



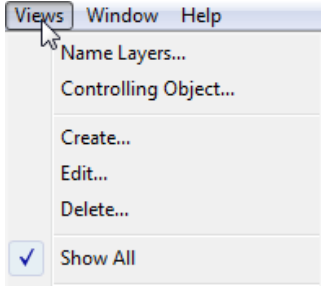
8. Click **OK**.

The required Layers have now been renamed.

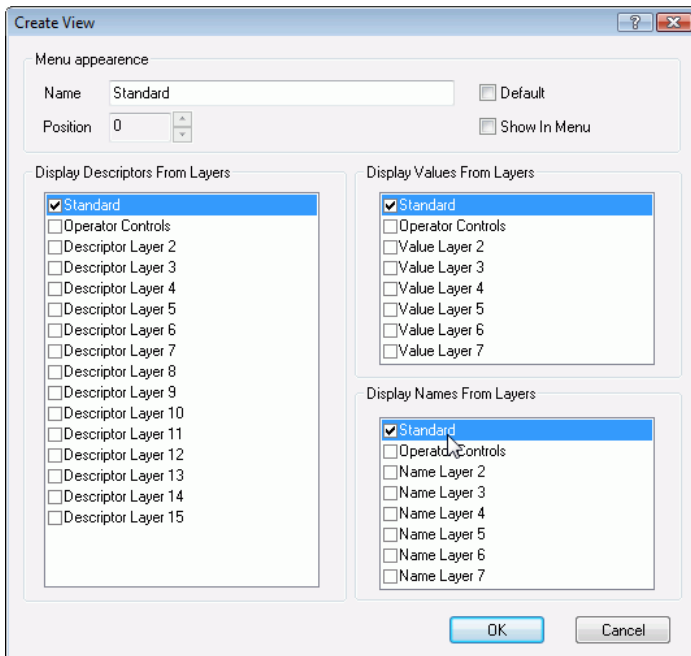
Step 2 - Define the Views

The next step is to define the required diagram views - one global and diagram views will be created.

1. To create the global view, select **View -> Create**. The **Create View** dialog box is now opened.



2. In the **Name** field type "*Standard*" and select the **Default** check box.
3. Remove the checkmark from the **Show In Menu** checkbox. Since this global view should always be active, we don't want it to be displayed in the Views menu (this way, operators cannot manually select/unselect this global view).
4. In the three lists of layers to be displayed, select the *Standard* for each list (see illustration below). The *Standard* view will now display all the descriptors that are later on included in the Standard layers.

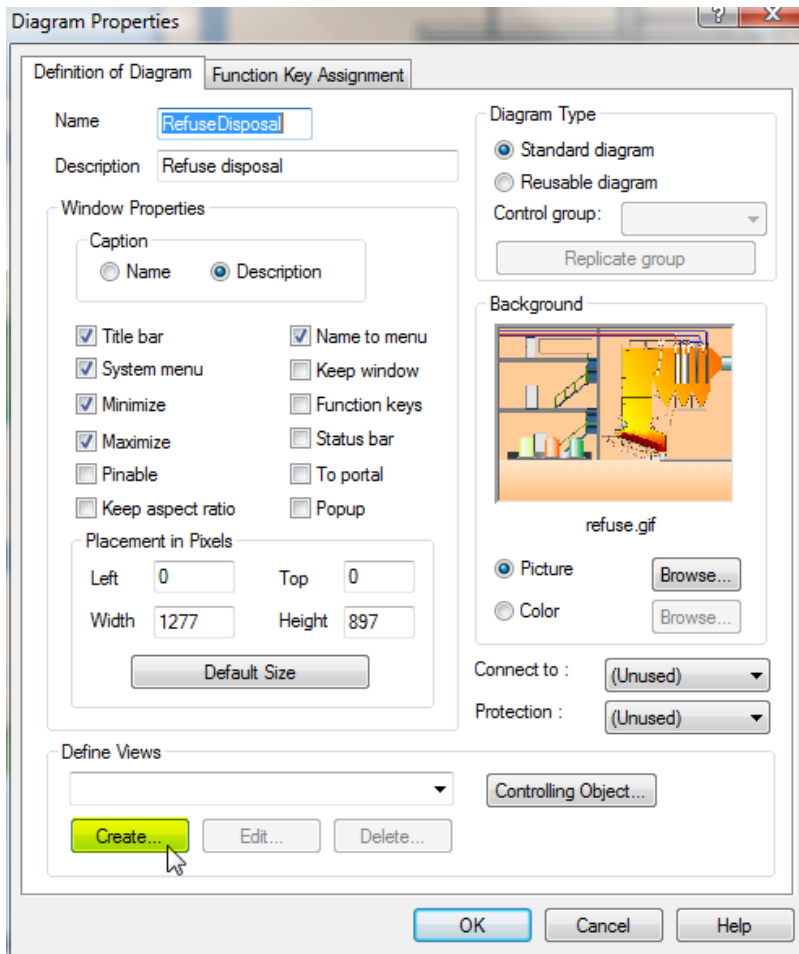


5. Click **OK**. The global view *Standard* has now been created.

Now we want to create the two local views for the *Refuse Disposal* diagram.

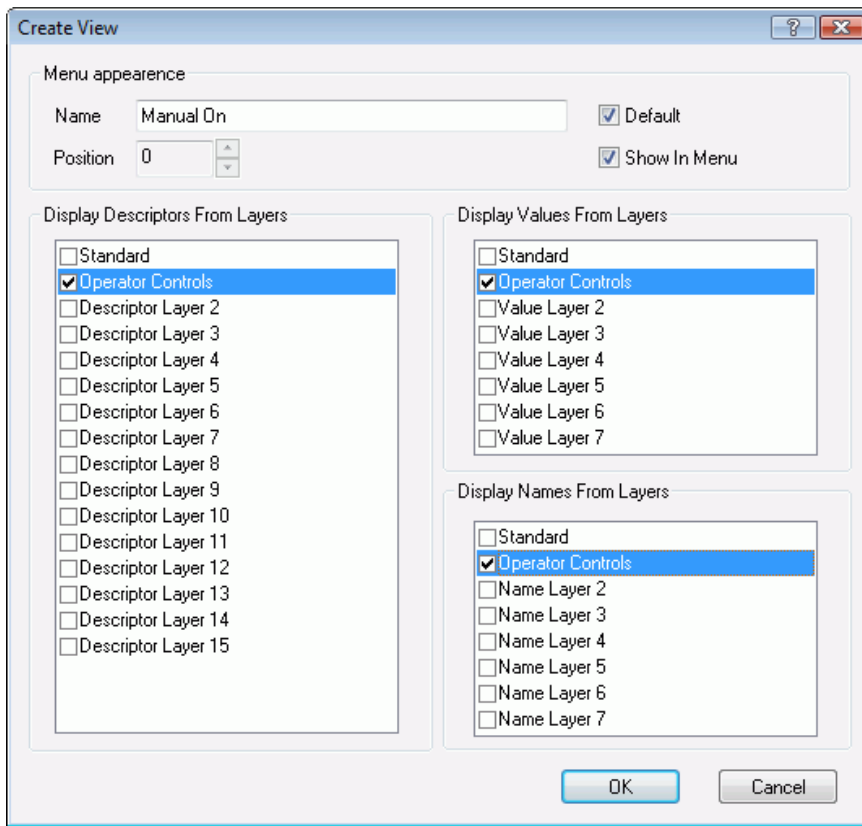
6. Select **Diagram** -> **Diagram Properties**.

8. In **Define Views** click the **Create** button. The Create View dialog box is now opened.



In the **Name** field type "*Manual On*" and select the **Show In Menu** and **Default** checkboxes.

9. In the **three** lists of *layers* to be displayed, select the **Operator Controls** for each list (see illustration below).



10. Click **OK**.

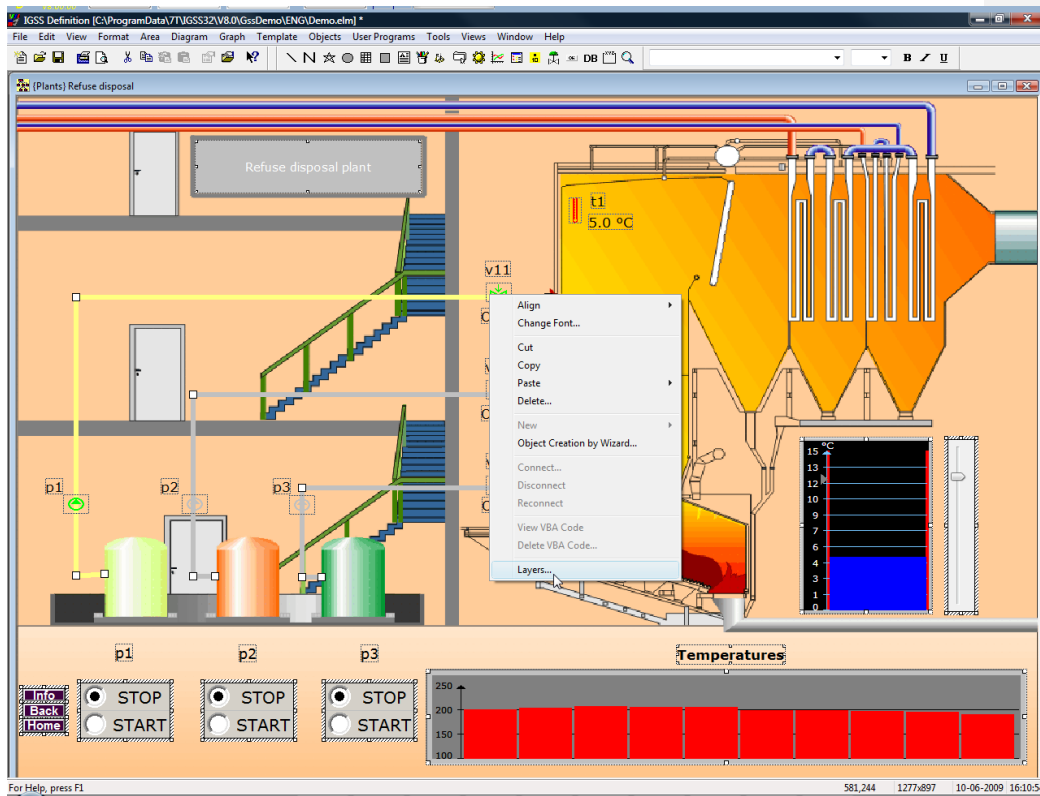
11. Create a second diagram view called "*Manual Off*". For this view, do not select any layers to be included.

12. Click **OK**. Now we are done creating the required views.

Step 3 - Add Layers to Views

The next step is to define which descriptors that are displayed under each layer. Here it is important to remember that all descriptors should be included in at least one layer, otherwise they will never be shown.

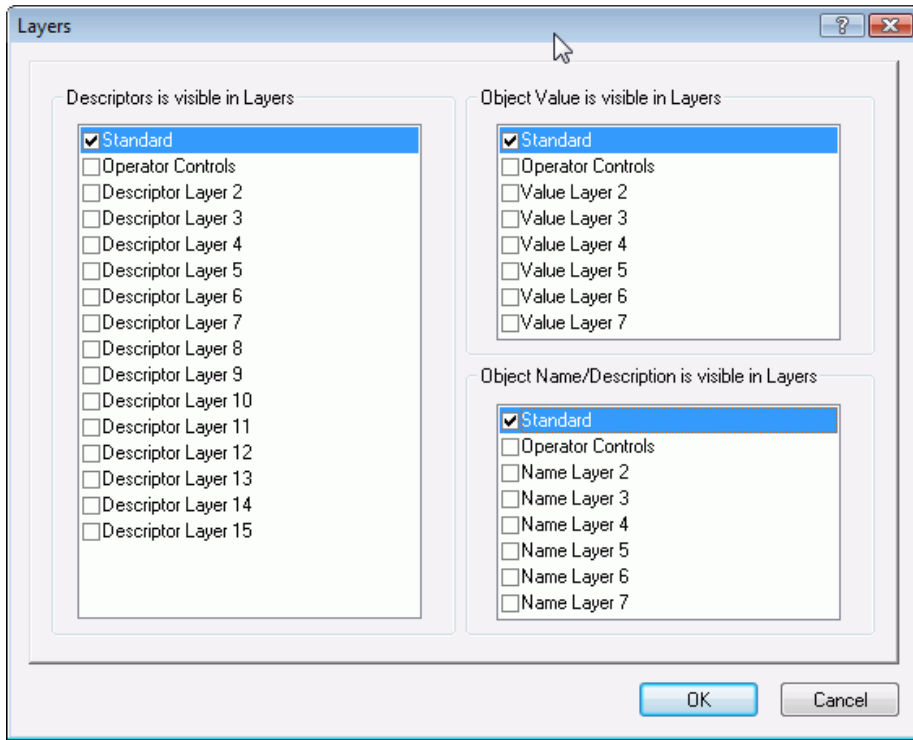
1. Press Ctrl+A to select all descriptors, names and values on the diagram and right-click on one of the descriptors.
2. Select the **Layers** menu item from the bottom of the right-click menu.



Note

This menu item is only shown when multiple objects are selected. To access the Layers settings for a single object, right-click and select Properties->Layers.

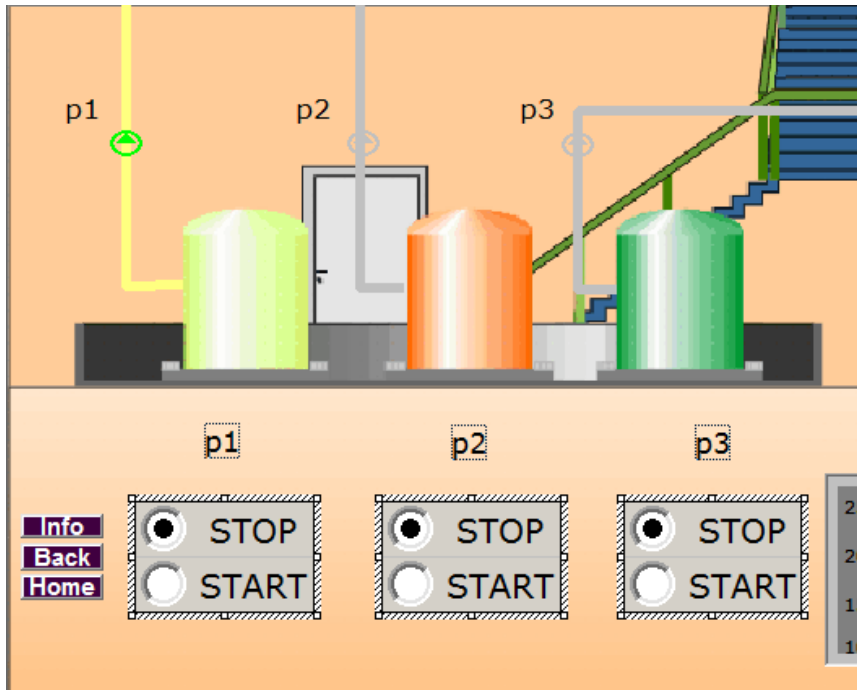
3. Select the *Standard* layer in all of the three layers lists (see illustration below).



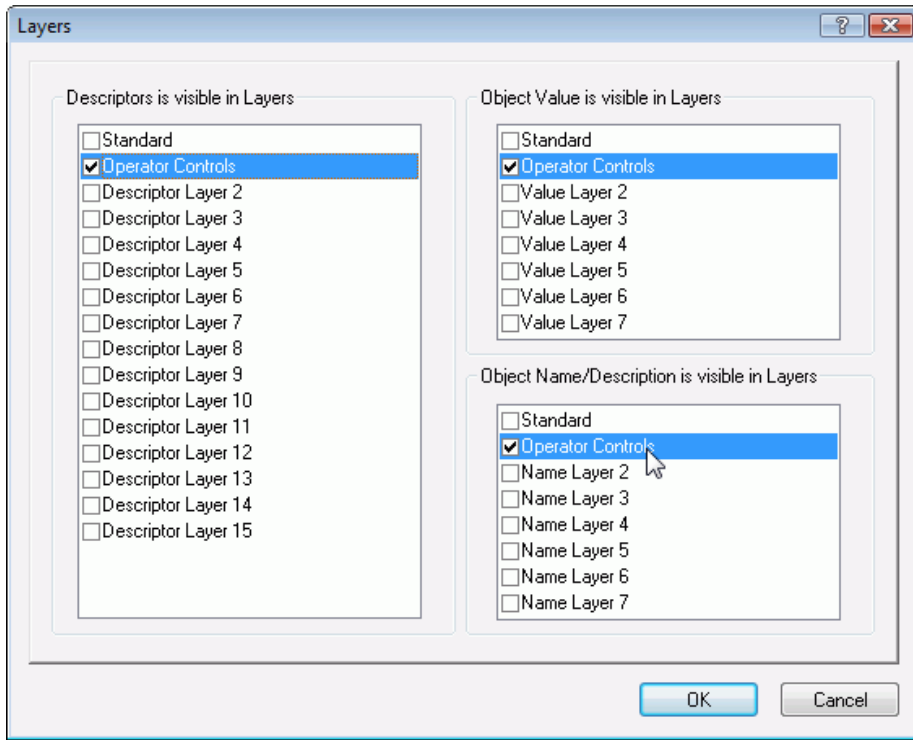
4. Click **OK**.

Now we want to remove the three operator controls when the *Manual Off* view is active.

5. Select the three radio buttons for the pumps, right-click and select **Layers**.



6. Remove the checkmark from the *Standard* layer and instead select the *Operator Controls* layer in the three layers lists (see illustration below).



7. Click **OK**. The layers and views are now ready for use.

Hint

Defining layers for objects are most easily done using Property Table View. For more info see ["Defining Layers Using Property Table View"](#).

8. To test the settings, select **Views** and remove the checkmark from **Show All**.

First select the *Standard* view to enable this and then try to switch between the two local views and make sure that the operator controls are not seen, when the *Manual Off* view is selected.

9. Install and test the views in Supervise.

Field Code Changed

Example 2 – Create a digital object which controls the active view

The challenge

The user again wants to be able to show/hide some operator controls, but now this should be controlled by a configuration parameter or from the PLCs.

The solution

A digital object will be used as the Controlling Object, which means that its state will determine which view (automatic or manual) that should be active.

Steps - summary

Create a digital template

It's not necessary to use a template for this functionality, however it will make it possible to add additional states and rename these with a more descriptive name.

Create a digital object based on the template

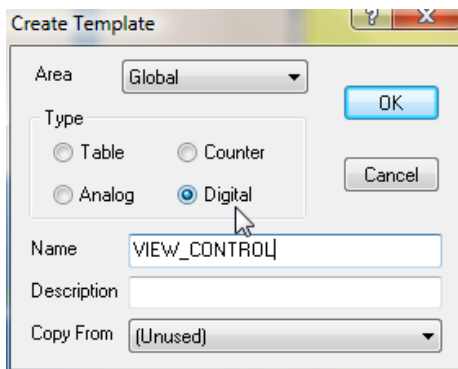
A new unreferenced digital object will be created based on the above template.

Set the digital object as the Controlling Object

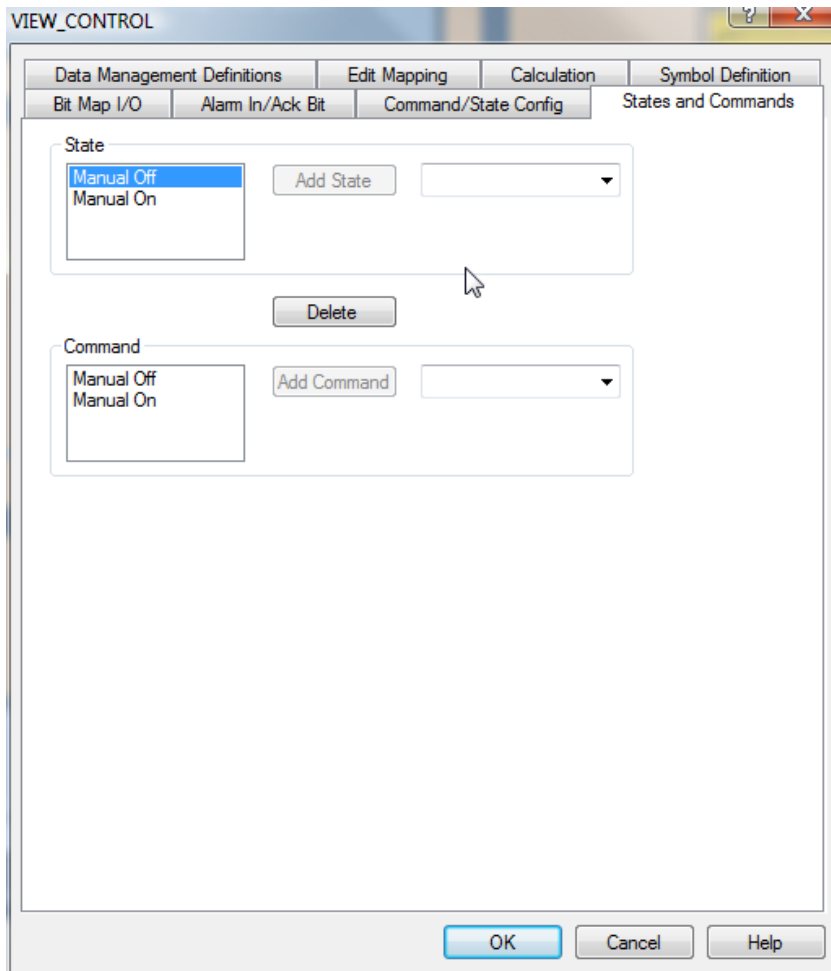
From the diagram properties, the digital object will be set to control the active diagram view.

Step-by-step procedure

1. Select **Template** -> **Create**.
2. Under **Type** select **Digital** and in the **Name** field type "VIEW_CONTROL".



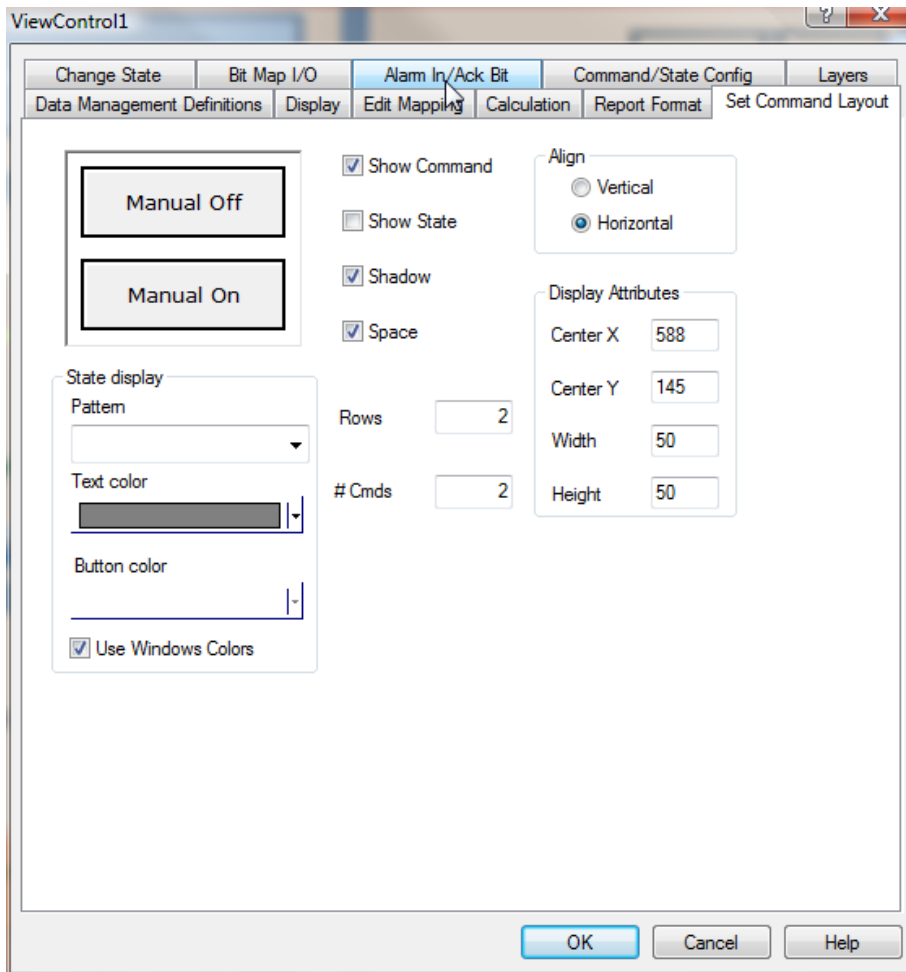
3. Click **OK**. The Properties dialog box is opened for the new digital template.
4. Select the **Edit Mapping** tab and set the **Command** and **State** atoms as *Local*.
5. Select the **States and Commands** tab. Change the names of the two states and commands to "Manual Off" and "Manual On" (see illustration below).



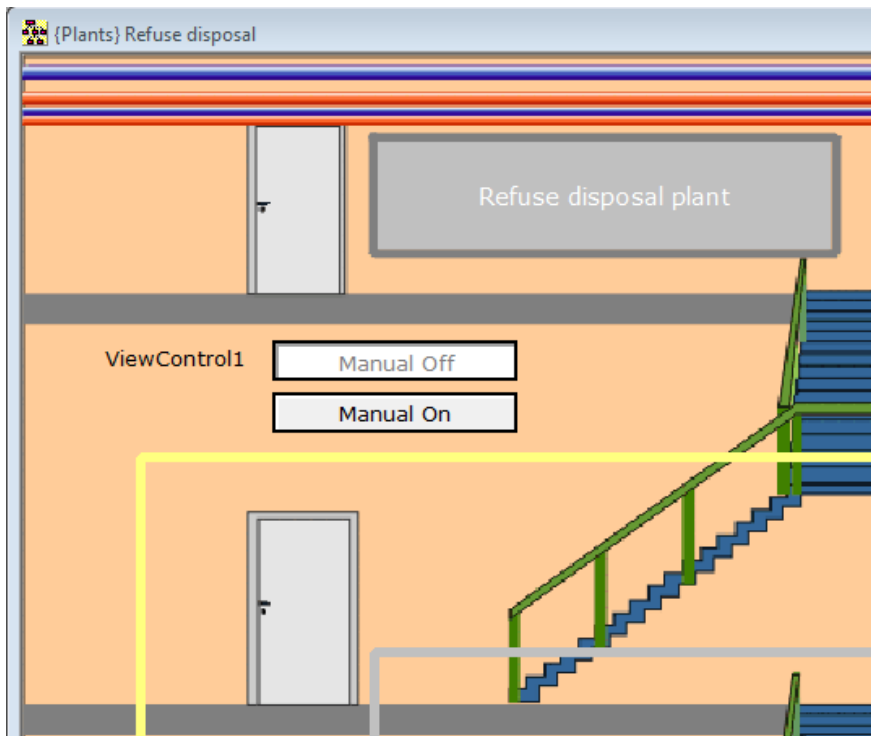
Note:

It is important to know the sequence of the defined views in order to associate the correct digital states to the respective views. The listed order of states, given above, will match the sequence in the list of our created views, shown in the **Views** menu.

6. **OK**. The digital template is now created. Next we will create a digital object based on the template.
7. Select **Objects** -> **Command Field** (or press Ctrl+2). The **Object Browser** window is now opened.
8. Create a new digital object based on the VIEW_CONTROL template. In the **Name** field type "ViewControl1" and in the **Description** field type "Controlling of the diagram view".
9. Click **Create**. The properties dialog box is opened for the new digital object.
10. Click the **Set Command Layout** tab and select the **Show Command**, **Shadow** and **Space** check boxes.

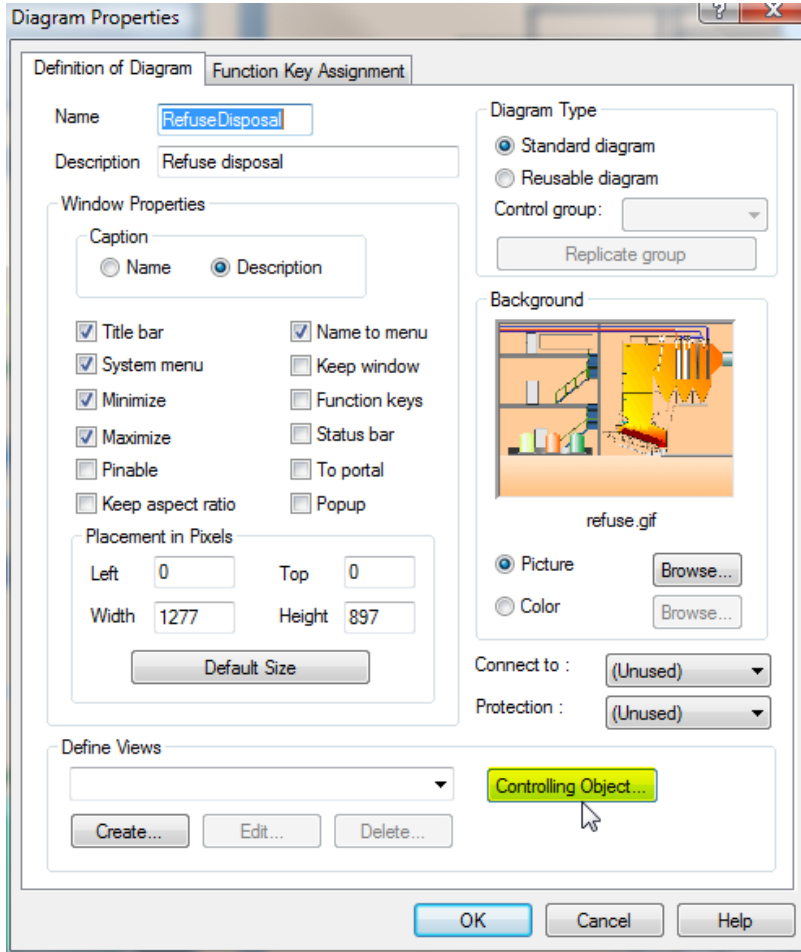


11. Click **OK** and place the command field in the upper left corner of the diagram as shown below.



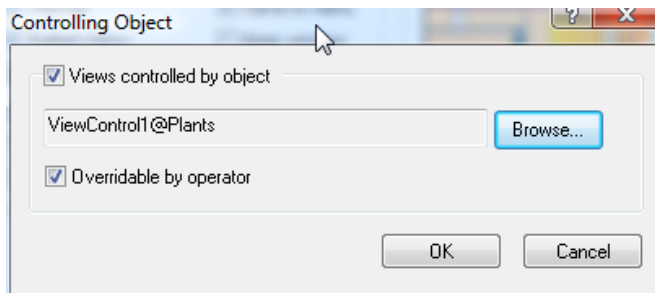
11. To enable this digital object to control the diagram views, select **Diagram -> Diagram Properties**.

12. Click the **Controlling Object** button.



13. Select the **Views Controlled by Object** check box.

14. Click the **Browse** button, locate the *ViewControl1* digital object and click **Open/Select**.



16. Click **OK**.

The digital object, *ViewControl1*, has now been set up to control the active view for the diagram. In this example, the operator can control the view directly from the command

field.

In the real world, the controlling object will not be visible on the diagram and the active view will be controlled by the PLC. If you want the operator to be able to override the controlling object, you must check the **Overridable by operator** check box. This will allow the user to change view from the **Views** menu.

17. Save and install the configuration.

18. Test the functionality in Supervise both from the command field and from the **Views** menu.

YOU HAVE SUCCESSFULLY COMPLETED THE EXERCISE.