1.1 Components List

™ There are 8 phases in METSIM, as shown in Table 2. It is good practice to first order the components by phase number, but as well, within each phase, a proper order should be kept to ensure that METSIM will operate correctly. When receiving a model and after having checked the syntax throughout the model described in the section above, it is recommended to reorder the components as follows (Do this from **ICOM**, as shown in Appendix 1):

Table 2: Phases and Order of Components

First: Phase Order	Second: Component order required by METSIM
1. Solid Inorganic	1. Component like SiO_2, or inert component.
2. Solid Organic	2. The rest in alphabetical order
3. Liquid Inorganic	1. H_2O or solvent in organic phase
4. Liquid Organic	2. The rest in alphabetical order
5. Molten Metal	1. Component like SiO_2, or inert component.
6. Molten Sulphide - Halide	2. The rest in alphabetical order.
7. Molten Oxide - Slag	
8. Gas	1. N_2
	2. O_2
	3. H_2O
	4. The rest in alphabetical order

™ Save the model using a different name.

™ Update any user objects affected by this change and any APL expressions that will not have updated automatically.

™ Run the model to ensure that it has not been affected by this change.

1.2 Controller Numbering

™ Once the two steps above have been performed, it is recommended to renumber the controllers such that they can then be reordered and found easily on the flowsheet. See Section 3.3 for a description of how this is done.

™ Save the model using a different name.

™ Run **ICTL**, then click on the column heading **LOOP** to order the controllers by number.

™ Run the model section by section, starting from the back to ensure it has not been affected by this change. Some controllers may not have been renumbered if they are turned off, so be careful.

1.3 Stream numbering

It is not recommended to renumber streams at this point as it is far more difficult to keep track of the effect of doing this on the model.

1.4 Revisit convergence

At this stage it is a good idea to do a few diagnostic checks to ensure the model converges properly. Run various checks from the Calc menu until you feel you understand where imbalances may occur in the model. You can then decide whether to address those now or later.

2. Other Tips

2.1 Deleting and Renumbering Specific Objects

Unless you have extensive knowledge of a particular model, it is always difficult to know whether it is safe to delete a stream or a controller, or even a unit operation. There are often places where we do not remember or simply are not aware that their numbers are being used elsewhere. Perhaps in a user defined object or in DDE or somewhere completely different in the model.

What is important to remember is that when a stream is deleted, METSIM does not zero it. It keeps the last value it had and thus, consequences of deleting the stream are not always obvious.

It is important to be systematic before deleting anything. First, run **OIDT** on your screen (see Appendix 1). Select the whole text and paste it into Word. From there, you can do a search for the object you wish to delete. For example s120 or just 120 to find that particular stream. You will know from there precisely where the stream has been referred to throughout the model and you will be able to make appropriate changes to your model before deleting the stream. The same goes with controllers, but here you could do a search for VCTL 1000 as an example.

This same check might be performed when renumbering specific objects as well.

2.2 Steps to Building a Model

Here is a quick reference to the model building steps to follow. The first tutorial example in Appendix 6 covers these steps in detail.

1. Draw your flowsheet on paper.
    a. Select unit operation sequence
    b. Select unit operation type
    c. Number the streams

2. Set-up model in METSIM
    a. Title
    b. Modules
    c. Redraw/refresh the screen

3. Select components
    a. Remember order of phases and components
    b. Modify any components as necessary