REACTOR++

User Manual and Game Guide

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Introduction

In REACTOR++, you must fight to maintain balance in the power plant whilst trying to generate the maximum amount of power. As simple as it may sound, with components failing every few minutes and the risk of unreliable output from fallible Operator Software, you cannot risk losing concentration if you hope to achieve an impressive score. One mistake and the reactor may explode, losing the game and making you responsible for millions of virtual deaths.

This guide will help to prepare you for the pressurised role of Power Plant Operator. Make sure you pay attention, any mistake could be your last!

The power generated, and your score, directly derives from the temperature of the reactor. As the control rods in the reactor boil water, the steam is passed to the turbine to generate power. There are valves to control the flow and direction of steam which are user controlled. However if the temperature is too high in the reactor the rods will melt and the game will be over. A good way to stop this is raising the control rods out of the water when things get dangerous.

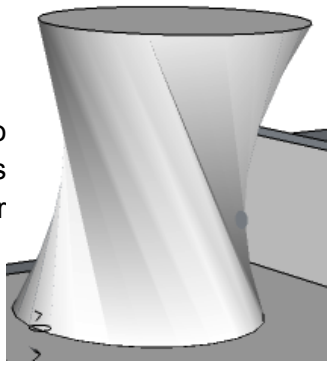
Once the steam reaches to the condenser, it is again converted to water for reuse, and is passed through cold water pipes through the pumps and back to the reactor. You can also control the rate at which the condenser converts steam to water by altering the rate at which coolant is pumped through it. By controlling these pumps you will be expected to maintain a balance between the water level in the condenser and the reactor. Should the water level in either component fall too low, the component may overheat causing the it to fail.

To conclude the water level, pressure and the temperature of the reactor should be monitored carefully and continuously to avoid an untimely demise.

Components

Condenser

The steam generated in the reactor needs to be condensed for re-use. To achieve this, it is necessary to pump coolant around this component with its inbuilt pump. Should the pump break the condenser will no longer cool the water inside so repairing this pump should be a priority should it ever break down.

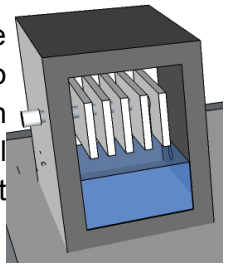


Pumps

The water level of the condenser and the reactor should be balanced as equally as possible. Should the water level in either fall too low then the the component is likely to overheat. Therefore careful management of the pumps is paramount.

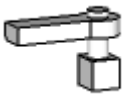
You can set the pump to be on or off, pushing the water when they are on or letting it through at a slow rate when they are off. The rate at which an active pump moves water can be controlled by increasing or lowering it's RPM. Pumps may breakdown, so be prepared to repair them!

Reactor



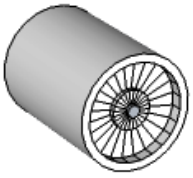
This is the most important component of the game. The fuel rods in the reactor heat the water in it to a really high temperature, with causes it to form steam which is directed to the turbine. You can lower the control rods thus dipping them further in the water, which will cause it to create less heat. The trick is to know when to raise and lower the control rods to ensure that you're generating enough power without endangering your power plant

Valves



The valves control the flow of steam going to the turbine and the generator. Thus the valves being open will reduce the pressure in the reactor affecting the rods and causing them to generate lesser heat, the same way keeping it closed might increase the pressure causing the reactor or the pipes to blow.

Turbine



As high pressure steam passes through the turbine, it is caused to turn thus inducing power in the generator. It is important to pass as much steam as possible through the turbine in order to achieve a high score.

Generator

The more the turbine will turns the more will it generate. So to get maximum output possible, it is important to manage the performance of the turbine. You can't change the generator itself, but this is where champions are born!

Controls

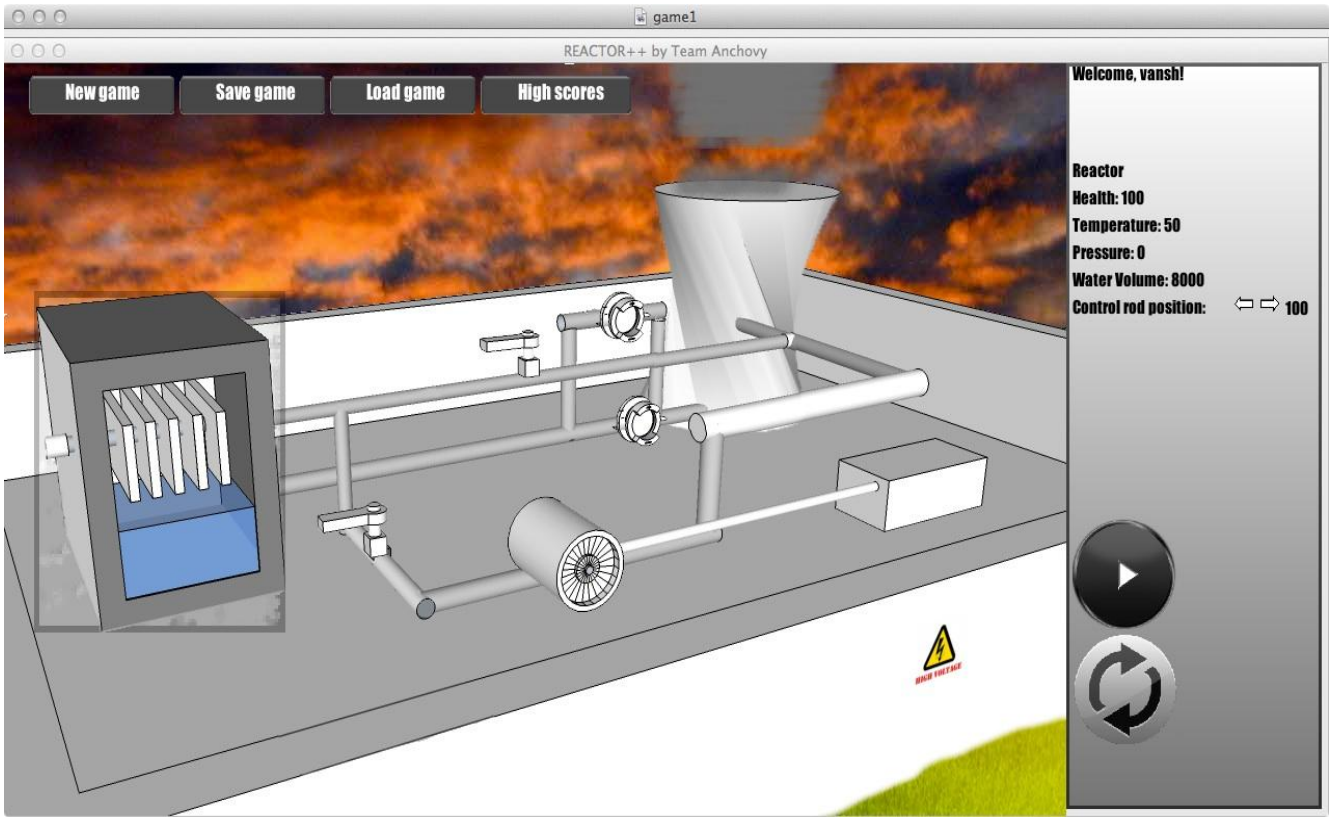
As the power plant operator, you have full liberty to change the control rods in the reactor and open and close the valves and the pumps. To go further into the game, you need to do it manually using the STEP button.

The top of the main window has several buttons allowing you to create a new game, load an existing game, save the current game and read through high scores.

In order to change the state of a component, simply click on the picture of the component you want to make changes to in the main window. The panel on the right hand side of the window will display all the information related to the component, with a collection of relevant buttons to help you change the system.

For example, to make changes to the control rods, the user should:

- select the reactor in the main display of the game
- it will display the reactor details along with the control rods positions
- the user can change the control rod positions according to his needs and step through the game



To make any other changes you can follow the same procedure for the other components.

Increasing and Decreasing Values

Some components can be controlled by increasing and decreasing their value; RPM for pumps and Position for control rods. Clicking the left facing arrow decreases the value of the component and the right facing arrow increases the value of the component.
It's important to note that neither control rod position nor pump RPM can be lowered below 0 or raised over its maximum tolerance (100 for control rods and 1000 for pumps).

Turning components Off and On

Other components can be switched on and off, these include pumps and valves. Clicking the On/Off button on a valve opens or closes it and for a pump reduces its RPM to 0 for off and returning it to its previous RPM for on.

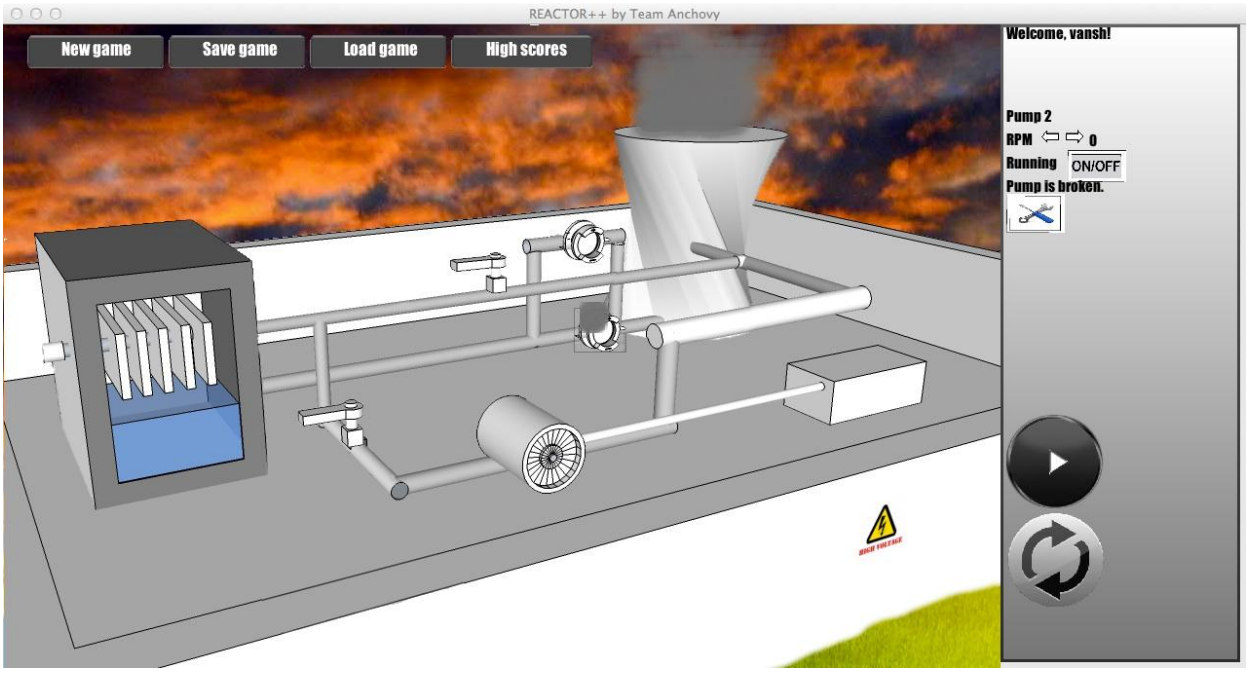
Rebooting Operator Software

Occasionally while playing, the operator software will fail randomly fail. This will result in random values to be displayed to the screen and commands not doing what you expect them to do. To rectify this problem you must Reboot the Operator Software. This is done by clicking the REBOOT button.

Repair

At certain times in the game, certain hardware components may break down. In order to repair a failed component, the user can:

- select the component
- the right pane will display the component details and a series of functions that can be performed on it(in case of a failed component, it will display a repair button)
- select the options and step through the game



Should the software component of the game fails and it starts to display random and failed figures simply select the restart button in the right window pane.

Hints and Tips

- Don't play too aggressively, this is likely to cause a meltdown.
- It is easy to find which components can be controlled, move your mouse around usable components will be highlighted. The one you have selected will be permanently highlighted.
- Playing too safe will get you nowhere fast.
- Watch out for Reactor and Condenser health, it may creep down without you noticing.
- Smoking components are not healthy for you.