

# Chernobyl simulator startup procedure

## Forward

This document sums up the tutorial made by Argilaga which can be found on YouTube:

[https://www.youtube.com/watch?v=XLmFjCTa-](https://www.youtube.com/watch?v=XLmFjCTa-FU&list=PLtMqEBTig8fJzthGYTWWWuMYIB1z3nhJX&index=17)

[FU&list=PLtMqEBTig8fJzthGYTWWWuMYIB1z3nhJX&index=17](https://www.youtube.com/watch?v=XLmFjCTa-FU&list=PLtMqEBTig8fJzthGYTWWWuMYIB1z3nhJX&index=17)

## Xenon concentration fix

With the help of Cheat Engine, look for address 10023210 and set it as active. Then set the value to 0. This will prevent the Xenon concentration from constantly increasing and thus improving the quality of the simulation.

Action	Details
1. Turn ON pump 1 and 2	Water treatment panel
2. Open 2 flow valves	Water treatment panel
3. Turn ON 1 pump	Condensate system panel
4. Set DA level on AUTO	Condensate system panel
5. Set DA level setpoint on 0	Condensate system panel
6. Set 2 polishers in IN position	Condensate system panel
7. Turn loop 1 pump OFF	Off-line cooling system panel
8. Turn loop 2 pump OFF	Off-line cooling system panel
9. Turn 2 outlet valves OFF	Off-line cooling system panel
10. Set ECC cooling valve on AUTO	Diesel ECC panel
11. Set setpoint on 4,0 and check	Reactor drain control panel
12. Set drain on AUTO	Reactor drain control panel
13. Turn condenser air ejector ON	Condenser vacuum system panel
14. Set condenser vacuum breaker CLOSE	Condenser vacuum system panel
15. Turn control on AUTO	Condenser hotwell panel
16. Set setpoint on 0	Condenser hotwell panel
17. Turn control on AUTO	Deaerator steam supply
18. Set DA vent valve on 50%	Deaerator steam supply
19. Set 1 inlet valve OPEN	Loop 1 & 2 panel, wait flow at 100% before this step
20. Turn 1 pump ON	Loop 1 & 2 panel
21. Set 1 outlet valve OPEN	Loop 1 & 2 panel
22. Turn 2 pumps ON	Condenser circulating water pumps panel
23. Set setpoint on 5'000	Main steam dump control panel
24. Turn center core only ON	Absorber rod control panel

25. Pull rod until 75%	Absorber rod control panel
26. Turn auto SCRAM control ON	Reactor power regulation panel
27. Turn auto reactor control ON	Reactor power regulation panel
28. Turn center core only OFF	Absorber rod control panel
29. Set 1 inlet valve OPEN	Feedwater pumps panel
30. Turn 1 inlet pump ON	Feedwater pumps panel, wait 100% before this
31. Set 1 discharge valve OPEN	Feedwater pumps panel
32. START lube oil	Turbine support panel
33. START hydraulics	Turbine support panel
34. OPEN steam drain	Turbine support panel
35. Reset turbine trip	Turbine control panel
36. Turn turning gear OFF	Turbine control panel
37. START steam seal	Turbine control panel, wait 20 before this
38. Set power setpoint at 10%	Reactor power panel, increase slowly
39. Wait condenser vacuum 100kPa & pressure at 8'000 on drum screen	
40. Gradually set setpoint to 8'500	Main steam dump control panel, then wait water levels stabilization (red and green)
41. Set turbine control on AUTO	Turbine control panel
42. Click UP arrow	Turbine control panel
43. Click on OPEN	Turbine control panel
44. Set valve select on STARTUP	Turbine control panel
45. Set speed setpoint on 900	Turbine control panel, then wait until 1'800rpm
46. Gradually set setpoint to 10'000	Main steam dump control panel
47. Set setpoint on 2'700	Turbine control panel
48. Set 2 inlet valves on OPEN	Feedwater pumps panel
49. Turn 2 pumps ON	Feedwater pumps panel, wait valve on 100% before that
50. Set 2 discharge valves OPEN	Feedwater pumps panel
51. Set drum level control on 3 ELEMENTS	Feedwater pumps panel
52. Set drum level control on MAIN VALVE	Feedwater pumps panel
53. Set power setpoint on 14%	Reactor power regulation panel
54. Set setpoint to 10'500	Main steam dump control panel
55. Set setpoint on 3'600	Turbine control panel
56. Set 2 inlet valves OPEN	Loop 1 & 2 recirculation pumps panel
57. Turn 2 pumps ON	Loop 1 & 2 recirculation pumps panel
58. Set 2 outlet valves OPEN	Loop 1 & 2 recirculation pumps panel

59. Turn 2 condensate pumps ON	Condensate system panel
60. Click on SCOPE ON/OFF	Turbine speed control panel
61. Click on CLOSE on the top mark	Turbine speed control panel, do it slightly before it reaches the top mark
62. Set power setpoint on 16%	Reactor power regulation panel
63. Set steam drain on CLOSE	Turbine support systems panel
64. Set power setpoint on 30%	Reactor power regulation panel
65. Set setpoint on 11'000	Main steam dump control panel, do it during the next step if it doesn't work
66. Set power setpoint on 70%	Reactor power regulation panel, slow increase
67. Set setpoint on 11'500	Main steam dump control panel
68. Set power setpoint on 90%	Reactor power regulation panel, slow increase
69. Set setpoint on 13'500	Main steam dump control panel, slow increase
70. Set power setpoint on 100%	Reactor power regulation panel, slow increase