



steelChallenge-18

Regional Championship



Audit Team
Report

1. steelChallenge-18 Audit Team Report

The steelChallenge-18 audit team reviewed the log files and results from participants runs. This work includes re-creating runs to ensure they are consistent with the mathematical model programmed in the simulator.

During its work, they found situations of exploiting unexpected behaviours in the simulator and modification of the code. To ensure the high level of confidence and recognise the participants who play fair during the challenge, the Team applied the following rules as a reason for disqualification of the runs and participants.

- 8.0. Simulation results which exploit unexpected and/or unrealistic behaviours in the simulator code will be considered invalid. Any attempt to modify the simulator code will result in disqualification from steelChallenge-18.
- 8.2. The purpose of steelChallenge is to encourage the development of fundamental ferrous metallurgy knowledge. Use of computational techniques to optimise simulator performance is not permitted. For example, using computer code to run the simulators thousands of times to optimise the output is not allowed. A participant found to violate this rule will be disqualified.

1.1 Alteration of electricity cost

The unit cost of electrical energy is a constant in the model. Calculating it backwards by dividing the total cost of electrical energy used by the total amount of energy used (Kwh) must match that constant. Altering this cost is only possible by altering the code and/or the graphical interface, which is against rule 8.0.

1.2 Low energy required to melt solids

The energy required to melt scrap and additions in the Electric Arc Furnace was detected to be lower than calculated by the mathematical model for the given materials selection. The Audit Team applied the rule 8.0.

1.3 Use of three baskets for raw materials in EAF

As we stated before the challenge, using three baskets to load raw materials that can fit into two baskets can lead to some advantage by exploiting an abnormal behaviour, and it is not realistic process wise. The Audit Team applied the rule 8.0.

1.4 Results not reproducible

The results obtained by the simulation based on raw material, additions and processes used are not reproduced by the Audit Team using the mathematical model implemented in the simulation. The Audit Team applies the rule 8.0.

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