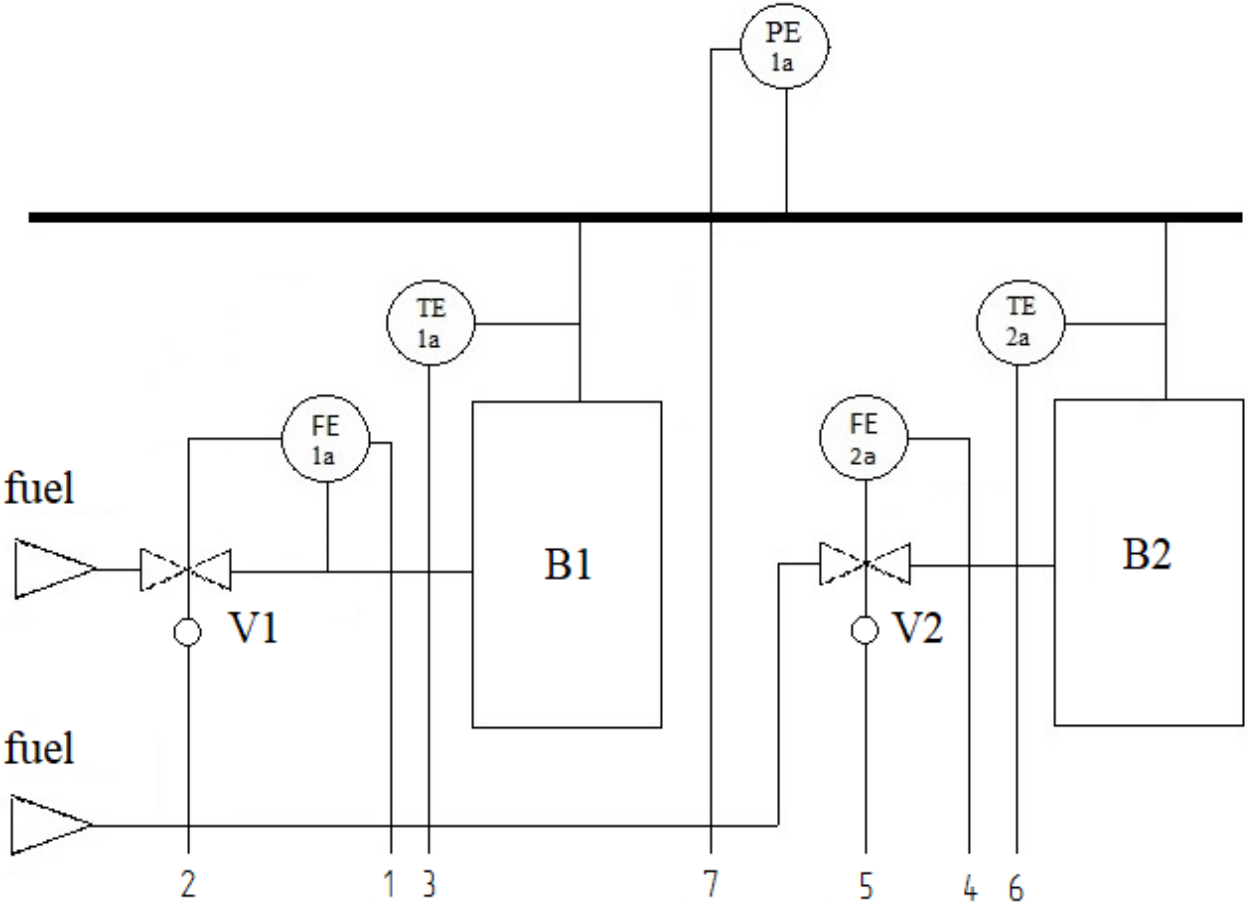


DEVELOPMENT OF THE INTELLECTUAL COMPLEX FOR PARALLEL WORK OF STEAM BOILERS

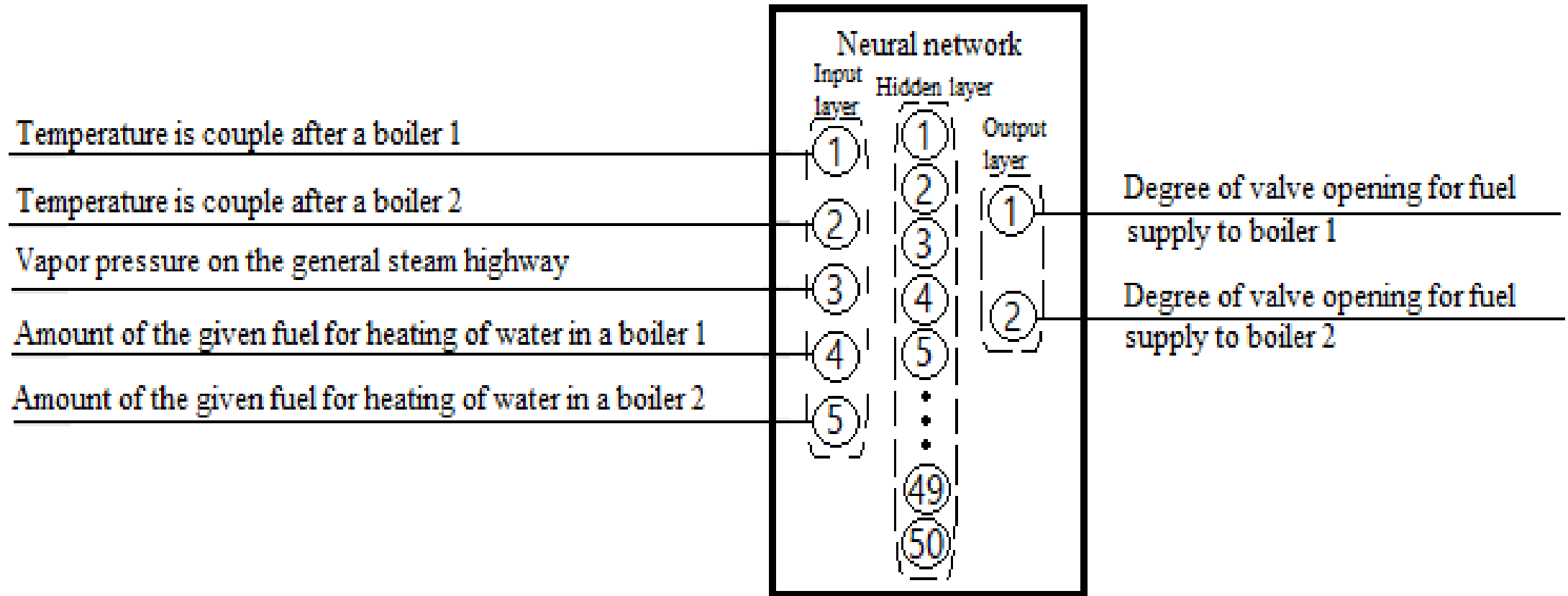
E.A. Muravyova, R.F. Gabitov

Ufa State Petroleum Technological University, Branch in Sterlitamak,
Sterlitamak, Russia

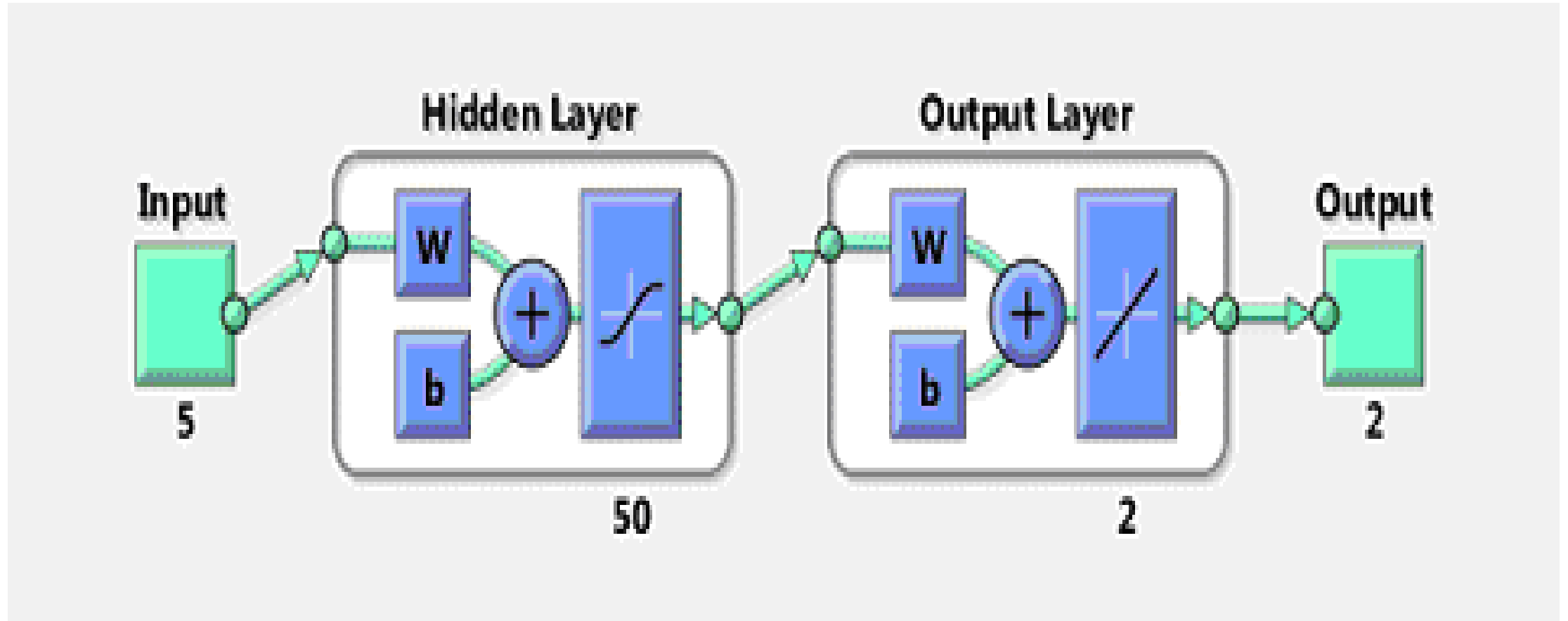
Scheme of parallel operation of boilers



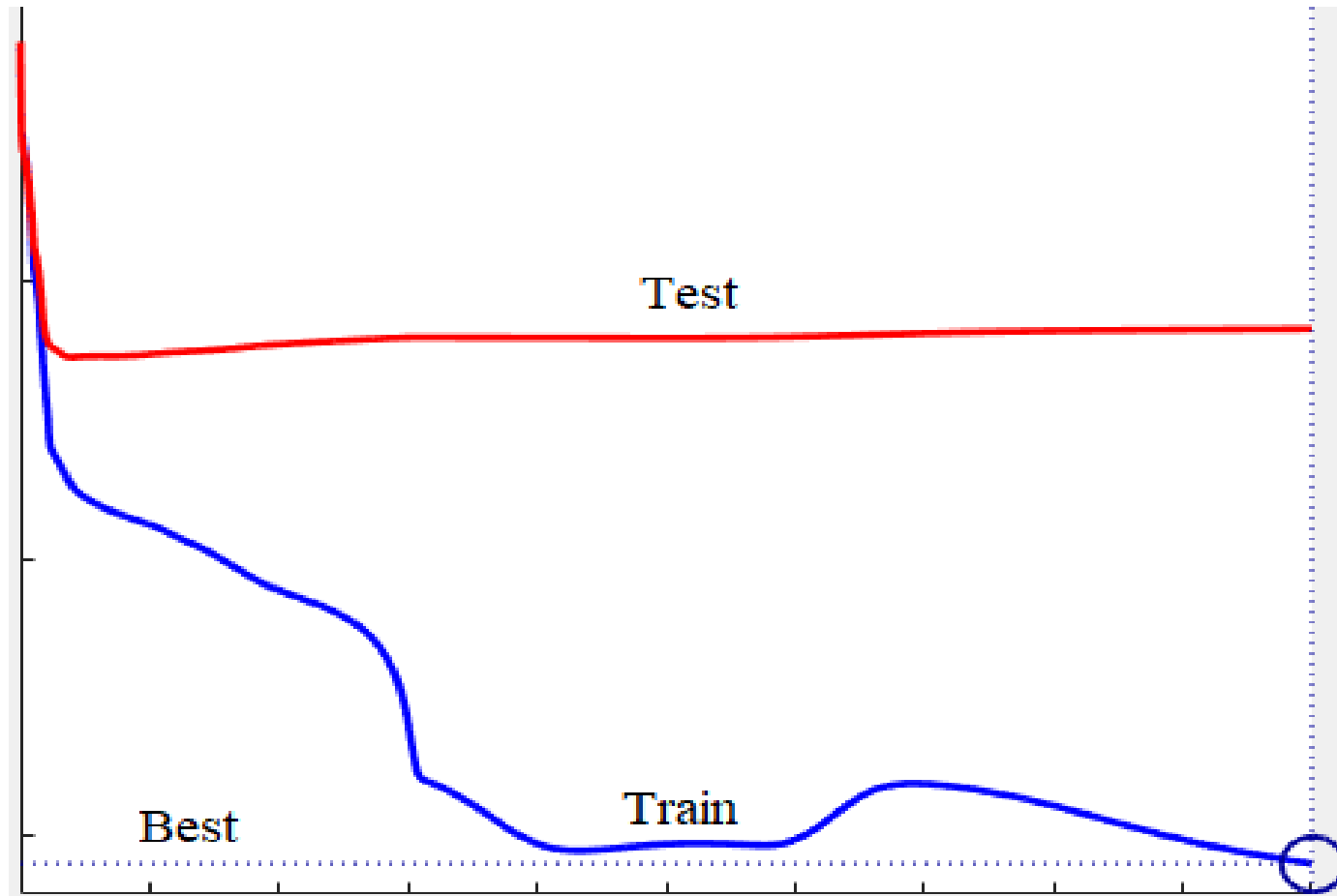
Structural diagram of ANN



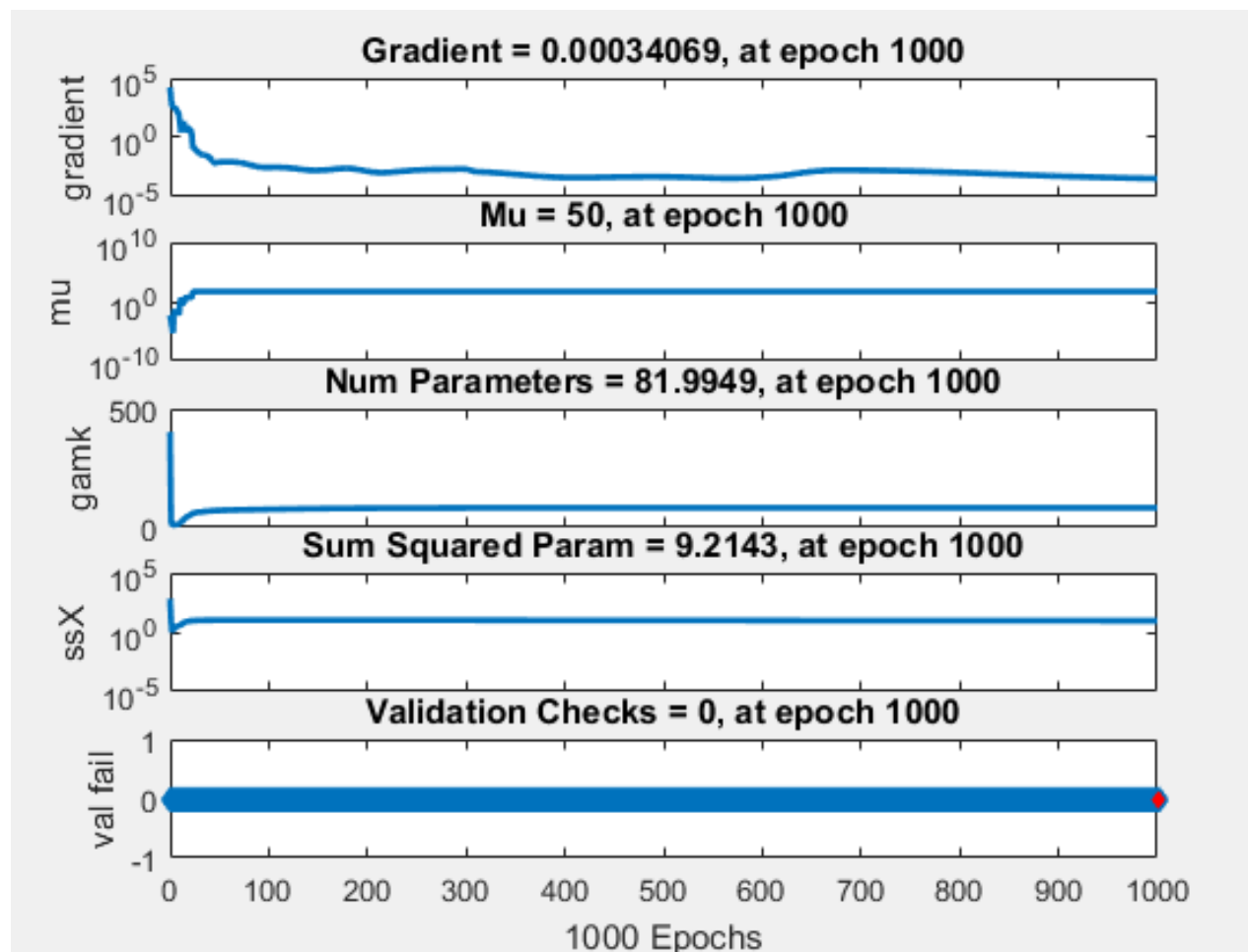
Neural Network Block Structure



Mean quadratic error



Network Training Schedules



Conclusion

- In the course of solving the problem of controlling parallel operation of steam boilers, the expediency of developing an automatic control system based on a neural network with parameters of steam boilers during their parallel operation is justified and shown, taking into account the mutual influence of parameters of the object.
- A model for controlling the steam boiler system is presented, taking into account the relationships between the process parameters. During neural network development, the most optimal number of hidden layers is selected, the selected training algorithm is effective at the specified task and at the specified conditions and parameters.
- Stable operation and low RMS error result in high-quality use of neural network to control boilers in real time.