INP Reference

IHKW Heidenheim – Operating reserve marketing

LOCATION: Heidenheim, Germany

SYSTEM/TECHNOLOGY: Siemens PCS7, S7

SERVICES: Commissioning, Basic-engineering and pre-engineering, Detail engineering

INDUSTRY BRANCH/TYPE OF PLANT: Power Generation, Power plants

CLIENT: EnBW

Tasks

The target objectives of the Federal Government for the German energy market mean that operating reserves are becoming an increasingly important topic for power plant operators. These operators include the EnBW, which operates several large and small power plants. For most power plants in this group, it is not possible to provide sufficient operating reserve from their own power. EnBW has therefore grouped several small power plants into one virtual power plant. Data from all individual plants is collected and analyzed as a group in this virtual power plant. The analysis can be utilized to determine how much operating reserve is available overall. This operating reserve can then be offered on the energy market. The industrial power plant Heidenheim is intended as part of such a virtual power plant with corresponding consideration.

Project description

In 2016, INP was commissioned by EnBW to integrate the control system functionality for providing minute operating reserves in the main control technology supplied by INP at the Heidenheim power plant. To be able to implement the functionality, a connection between the plant and control center of the virtual power plant first needs to be established. To this end, a new communication participant – the so-called N.E.S.T. box – was coupled to the PCS7 main control technology in the power plant. This enables the connection between the plant and remote control center to be established, so as to exchange information on the status of the plant, as well as send data such as setpoint values from the virtual power plant to the plant. After setting up and commissioning the communication, the new requirements were to be integrated in the PCS7 main control technology of the power plant, taking into account the priorities of the other block operations implemented (local/remote, power reduction for municipal services, heat-operated mode, manual timetable, current-operated mode, operating reserve technology). This programming was tested extensively and put into operation after implementation.
After completion and implementation, it is now possible for the IHKW Heidenheim to provide part of its output as positive and/or negative operating reserves for equalizing power fluctuations in the grid.

POINTS OF CONTACT

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Services INP

- Connection and commissioning of N.E.S.T. box via S7 coupling CPU to the PCS7-HLT of the power plant
- Commissioning of signal exchange between the virtual power plant and PCS7-HLT of the industrial power plant
- Integration of the new control functions in the superordinate PCS7 block control, taking into account the priorities of the other block operations implemented (local/remote, power reduction for municipal services, heat-operated mode, manual timetable, current-operated mode, operating reserve marketing
- Commissioning of the new control function