

Beamex Case Story

Nuclear Power Plant Temelín, I&C Energo
Czech Republic



When quality and exactness
is an absolute must
for the calibration system.

beamex

I&C ENERGO WAS AMONG THE COMPANIES THAT SIGNIFICANTLY CONTRIBUTED TO THE CONSTRUCTION OF THE NUCLEAR POWER PLANT TEMELÍN.

I&C Energo was established in 1993 and their mission is to provide comprehensive services in the area of instrumentation and control systems, electrical systems and technological information systems for industrial customers. Comprehensive services can be divided into three main products: industrial maintenance, capital project deliveries (both new constructions and reconstructions) as well as system integration and engineering solutions. I&C Energo operates in demanding market segments, such as the nuclear power industry, classical power industry, heating plants, water treatment, paper, mining and chemical industry and other utilities. Quality and exactness is an implicit part of all their operations. Jan Krška is the director of the Temelín division at I&C Energo.

The situation

I&C Energo was among the companies which significantly contributed to the construction of the Temelín nuclear power plant and it played a key role in its sphere of business in various supply chains. One of the major companies to which we provided our supplies was Westinghouse Electric Company Pittsburgh, the supplier of the control system for NPP Temelín.

“Activities we provided to the mentioned company were fairly extensive in terms of quantity and quality”, Jan Krška recollects. In particular, they included the connection and installation of field instrumentation cabling, hardware and software modifications, installations in the main and emergency control rooms, and modifications and testing of the I&C system equipment. The purchase of the first special calibrators for NPP Temelín was considered for the first time in 1997, when such calibrators were prescribed in the Westinghouse procedures for the testing



I&C Energo's mission is to provide comprehensive services in the area of instrumentation and control systems, electrical systems and technological information systems for industrial customers.

of the I&C system. “The procedures recommended specific types (manufacturers) of calibrators, but for many reasons we also considered the use of alternative options”, Jan Krška explains.

They surveyed the market and sometimes it was fairly difficult to find a way through the “jungle” of abundant marketing data. “Technical specifications of the Beamex calibrators (then PC106) looked optimal for our purpose and we began communications with the Czech representative of Beamex, the company D-Ex Limited”, Jan Krška remembers.

Between 2000 and 2002, the MC5 calibrators, particularly the first two units, were used to verify or calibrate over 3000 sensors and pressure and temperature measuring circuits, including other recalibrations.

The solution and main benefits

During the onset of testing, other alternatives were proposed for the calibrator prescribed by the procedures – one French calibrator and the BEAMEX calibrator. Following ca. 2 months of testing, an internal evaluation was completed and, together with the customer, BEAMEX calibrators were selected for further use. In the first stage, two PC106's, including external probes for the launching stage of the NPP Temelín control system testing at the time, were purchased in 1998. In 1999, I&C Energo purchased the TC305 calibrator and at the same time, the company was learning about the MC5 calibrator at the International Engineering Fair in Brno. They tested the MC5 and subsequently ordered it. Based on an extremely favorable experience with the calibrator, several more of them were gradually purchased.

“We may conclude that MC5 calibrators passed a series of very demanding tests between 2000 and 2002”, Jan Krška comments. In situ calibrations, both input and output tests were conducted at NPP Temelín in round-the-clock shifts. The MC5 calibrators, with their comfortable and simple controls, gradually overshadowed PC106 calibrators. Between 2000 and 2002, the MC5 calibrators, particularly the first two units, were used to verify or calibrate over 3000 sensors and pressure and temperature measuring circuits, including other recalibrations.

“We estimate that only few comparable devices have gone through such a load test in operating conditions during the construction of a nuclear installation and at the same time observe all legislative (metrological) regulations”, Jan Krška states. “We greatly appreciate the stability of the calibrators, including their external probes. This excellent feature has been confirmed in regular



“We may conclude that MC5 calibrators passed a series of very demanding tests between 2000 and 2002”, Jan Krška comments.

‘relating of the calibrators’ to higher order standards – by accredited calibration laboratories”, Jan Krška continues.

Based on previous, favorable experience, MC5 calibrators have been constantly used for recalibration, including the related software QD3 or the newly procured CMX for recording, planning, analysis, and work with measured data, i.e. calibration maintenance management. “Beamex calibrators have become a common part of our activities, not only at NPP Temelín, but also at the other Czech nuclear power plant in Dukovany and in other industrial facilities”, Jan Krška concludes.

“We estimate that only few comparable devices (other than Beamex) have gone through such a load test in operating conditions during the construction of a nuclear installation and at the same time observe all legislative (metrological) regulations”, Jan Krška states.

CASE STORY IN BRIEF

Customer profile

Nuclear Power Plant Temelín, I&C Energo Czech Republic

Business Situation

I&C Energo was among the companies which significantly contributed to the construction of the nuclear power plant Temelín; it played a key role in its sphere of business in various supply chains. I&C Energo provides comprehensive services in the area of instrumentation and control systems, electrical systems and technological information systems for industrial customers. Between 2000 and 2002, Beamex's MC5 calibrators, particularly the first two units, were used to verify or calibrate over 3000 sensors and pressure and temperature measuring circuits, including other recalibrations.

Solution description

- Portable PC106 and TC305 calibrators
- Portable MC5 calibrators
- QD3 upgraded to CMX calibration management software
- Accessories: calibration hand-pumps, etc.

Main benefits

- Beamex's calibration equipment maintains high reliability and stability even with very extensive use and under demanding conditions
- Beamex's calibration equipment has comfortable and simple controls

Beamex representative in Czech Republic:

D-Ex Limited s.r.o.
Optátova 37
CZ-63700 Brno
CZECH REPUBLIC

Phone: +420-541 423 211
Fax: +420-541 221 580
E-mail: beamex@dex.cz
Internet: <http://www.dex.cz>

For more information

Please visit
www.beamex.com

or contact
info@beamex.com