The contractor/supplier training and qualification process at Dukovany ensures that technical competence is assured by both pre-qualification and further specific training relevant to the task to be performed on the plant. The training arrangements for site access and general plant knowledge, including appropriate standards and expectations, ensures staff are well prepared for their duties on site.

Dukovany 1/4, Czech Republic

Training department’s use of simulator for maintenance support training using role playing scenarios with operations crew. Which includes multiple debriefs following simulator role playing for a maintenance training session. In addition, the role playing use by the plant was well used in other areas, including emergency preparedness training whereby improved communications between different emergency planning organizations within the plant was realized. For example, the training on communications and use of the 3D-3P emergency equipment during emergency preparedness and severe accident situations.

The maintenance role playing training was specifically set to focus on human performance requirements with respect to instrument testing/maintenance of safety related equipment affecting the response of the simulator (plant), risk assessment and staff response. The training focused on pre-briefs by maintenance personnel given to the control room operators, participation by all involved in analyzing risk, the execution of the activity and subsequent mitigating actions due to given problems during the scenario. Following the training session debriefs were effectively conducted. In fact, not just one but three debrief sessions were conducted. One was a combined debrief with both maintenance and operators. Then there were two additional debriefs conducted separately for maintenance and operators only. Each debrief was well structured with good participation and satisfactory facilitation by the instructors. The team has noted the presence of the first line management during the training and debriefs. The presence of human factor engineer was also noted, who participated actively to debrief on the human performance topics. This training effectively demonstrated the use of the full scope simulator to improve the interaction and support between operations and maintenance.
Extensive use of local simulators in the KhNPP personnel training system.

Local simulators are widely used in KhNPP personnel training system, both for initial training and for acquiring skills of safe work on plant process systems:

- **Welding simulator and integrated approach of training.**
  The simulator is designed to provide initial training and coaching on electrical arc welding techniques. While using the simulator, a welder acquires necessary hands-on skills. The simulator provides on-line measures of the temperature of the arc, the length and the angle.
  After training on simulator, trainees will perform a real welding. The material used for welding is also used to train technicians on elimination of weld flaws and preparation of surfaces for inspection (radiography, ultrasonic, penetrating test) and for training on cutting torch.

- **Refuelling machine simulator.**
  The main purpose of simulator use - to raise safety and reliability of fuel handling works at the NPP owing to improvement of refuelling machine operators’ training.
  Simulator purpose:
  - Conducting of initial training of the personnel recommended for work as a refuelling machine operator;
  - Regular training of operators, which provides their high preparedness to carry out works, and development of correct actions under emergency situations (process disturbances or faults).
  Running-in of the nuclear refuelling programme prior to the upcoming refuelling campaign during scheduled NPP unit outage.

- **Training simulator for I&C personnel**
  The Training Centre of Khmelnitsky NPP makes use of an I&C simulator for training of I&C personnel. The I&C simulator incorporates equipment which is being used at the NPP. It has operational remote and automatic control circuits, protections and interlocks, technological alarms as well. Using the simulator, hands-on training is provided for operations and maintenance I&C personnel, connected with operational control, maintenance diagnosis and repair of automatic process control systems equipment.

- **Klotik- local simulator for training on systems of chemistry and electrical departments:**
  The Chemistry Training Simulator (Klotik) mimics 6 operating areas under chemistry responsibility: the Make-up Water Plant, Liquid Radwaste Processing, Radwaste Deep Evaporation, Condensate Demin Operation, and Steam Generator Blowdown Cleanup.
  The in-plant water treatment systems have full alarm capability and annunciator display. The simulator is used in both initial and continuing training and higher level training objectives have been developed and are practiced. Simulator training hours usually average 20-40 hrs per year with instructors covering multiple equipment modes, including emergency operation.
  Results have improved practices, skills along with diagnostic ability in equipment malfunctions. Workers become proficient in water treatment processing prior to performing work in the field.