

U1.01/94A Computer Information Systems for the operation of Rovno NPP Units 1 & 2



Project description

The objective of the project, implemented in the frame of the European Commission TACIS Nuclear Safety Programme, is to replace the monitoring systems for the 2 VVER 440

units of ROVNO NPP - UKRAINE.

The systems acquire data and display processed information, giving the operators an overview of the plant parameters.

The project includes software development; design, tests and delivery of the new systems; documentation, training, supervision of installation; spare parts and consumables.

Cost of equipment: ~ 5 Mln. Euros



Organisations involved

Funding and logistic support: EC,

Installation and testing: ROVNO NPP

Beneficiary: ENERGOATOM,

End User: ROVNO NPP,

Procurement Agent: FICHTNER,

Manufacturer: SYSECA,

On Site Assistance: EDF.

Fig. 2 Interface man-machine in Unit 1 of Rovno NPP main control room



Fig. 3 Installing the new false floor



Fig. 4 Computer room

Time schedule

- 1994: Basic design studies
- 1995: Drawing-up & approval of Technical Specifications
- 1995-96: Selection of Supplier & contract negotiation
- 1997: Drawing-up of detailed specifications
- 1998: Fabrication, factory tests, design of mimics
- 1999: CIS Installation & commissioning on Units 1 & 2

Benefits of the project

- Replace the former CIS system with state-of-the-art equipment,
- Increase the knowledge of units behaviour,
- Decrease the risk of operator errors: more user-friendly display and ergonomic design,
- Draw attention to incidental events,
- Reduce down-time of units with a more available system,
- Provide an up-to-date man-machine interface,
- Give potential and flexibility for further improvements to the systems,
- Give access to the processed data.

Safety concerns

- The flexibility of the new system allows ROVNO NPP to develop mimic displays dedicated to operator tasks, taking into account the need for more ergonomic design.
- Monitoring of the plant's parameter during operations is made easier and leads to an improvement of safety.
- Improvements in data processing allows better memorisation of the operating events leading to more accurate analysis and better experience feedback.

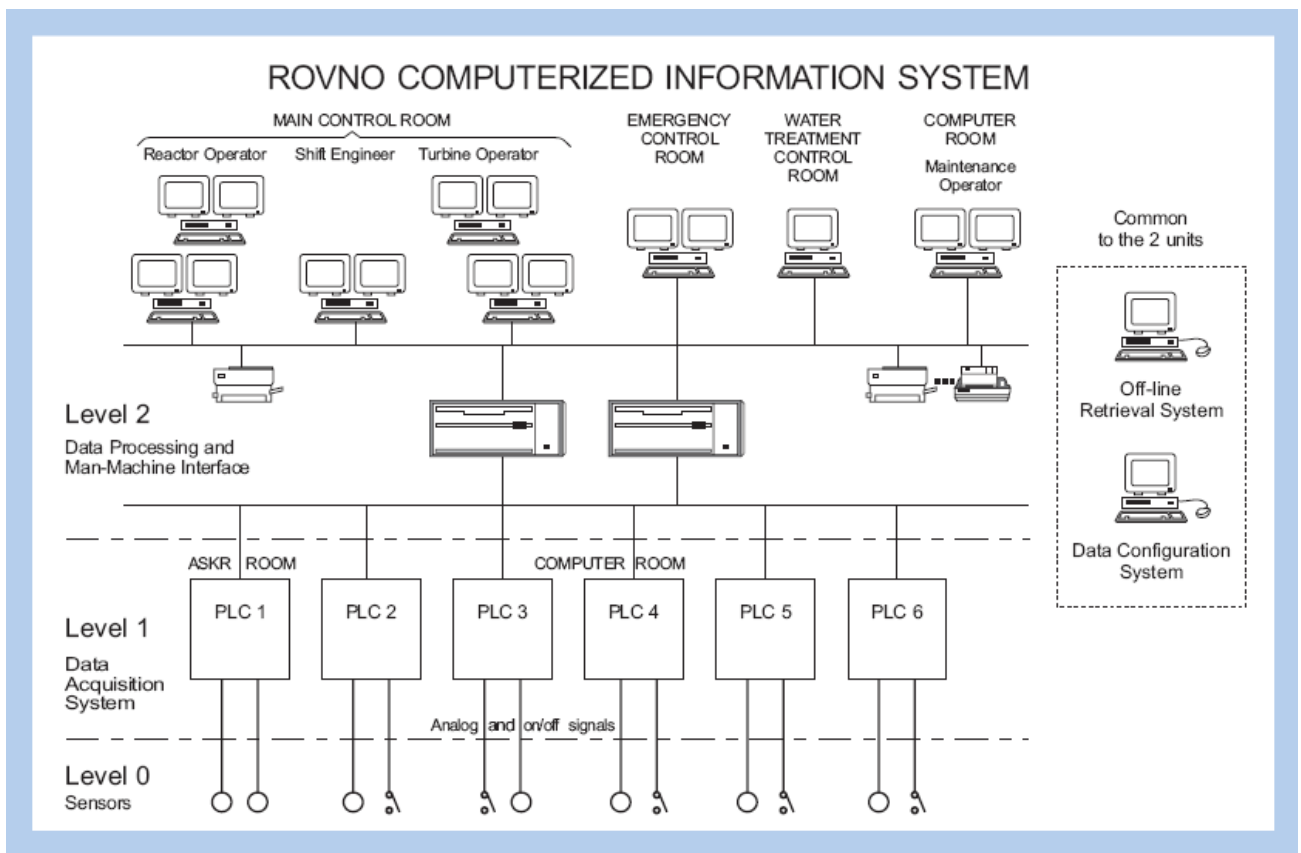


Fig. 5 Outline of the system

The unit monitoring system consists of :

A first level, based on SIEMENS programmable logic controllers, performing the acquisition of analog and binary information from the process (3600 analog input signals, 2720 logic input signals),

A second level composed of 2 DEC servers in normal/standby mode performing the data processing and a set of workstations with several screens providing the man-machine interface.

Two systems are common to the two units :

the Data Configuration System used for the definition or modification of data-bases and on-screen views, the off-line Retrieval System which allows retrieval and analysis of long-term archived data.



Fig. 6 Checking the input signals



Fig. 7 Programmable logic controllers