I&C Energo a.s.

New Unit Construction

Knowledge and Skills Maintaining and Development

11th Annual Conference on Nuclear Energy, Prague







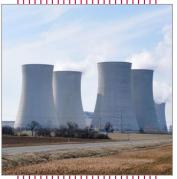


CONTENTS



- **Company Data**
- **Nuclear Power Plants Engineering and Procurement**
- **Projects in the Cooperation with ZAT Company**
- **Product Development (Examples)**









COMPANY DATA



- YEAR OF INCEPTION: 1993
- COMPANY OWNER PI 1 a.s. (100 %)
- 900 COMPANY EMPLOYERS (73 % university or high degree)
- VALUE OF REGISTERED CAPITAL 150 000 000.- CZK
- CERTIFICATION (ISO 9001, ISO 14001, ČSN OHSAS 18001)

ENGINEERING COMPANY

Engineering + Procurement + Service

In the fields (power engineering – thermal power plant; nuclear, fossil)

- Instrumentation & Control
- Electrical
- Machine
- Building Technologies





Design, Calculation

Procurement

Instrumentation & Control OT/IT, Information Systems

Assembly



Electrical

Testing

Start up

Service

Machine





Complex design

Machine

Dimensioning

Thermo-hydraulic calculation

Assembly

Testing

Consultation

- Pipework Systems
- Pressure Vessels
- Steel Structures
- Special Mechanical Equipment
- Welding





Complex Design

Electro

Procurement

Assembly

Testing

Start up

Service

- 6 kV, 12 kV, 400 V
- Substation, cabling
- Alternating, direct current
- Battery
- Cabling management system





Complex Design



Instrumentation & Control PLC, DCS, OT/IT, IS

Application SW

Procurement

Testing

Start up

Service

- Instrumentation
- Cabling
- Distributer, supplying
- PLC / DCS, Application SW
- OT / IT; Process Monitoring & Optimization
- IS; Maintenance, Life-time, Configuration

 Management



PROJECT IN COOPERATION WITH ZAT COMPANY



Complex Design

Instrumentation & Control PLC, DCS, OT/IT, IS

Application SW

Procurement

Testing

Start up

Service

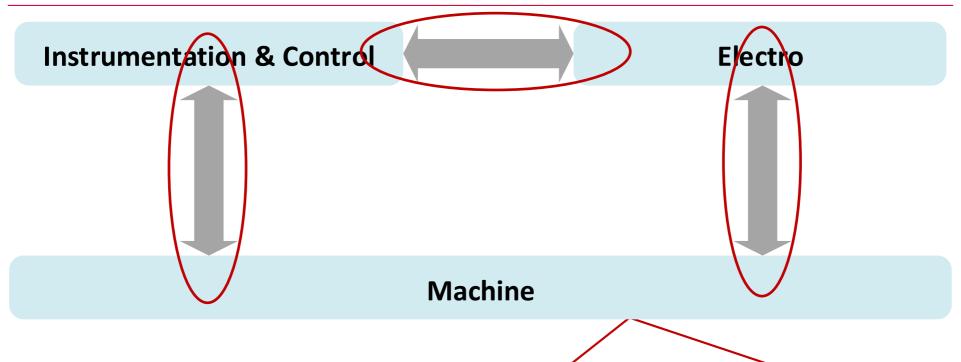
- ZAT DCS Application SW Development –
 Development Team Enlargement
- Server Application SW Development
- HIL (hardware-in-the-loop) DCS Testing

Dukovany NPP I&C Refurbishment



PRODUCT DEVELOPMENT WITH HIGH ADDED VALUE CABLING MANAGEMENT SYSTEM





Cable Placement in space (thousand cables)

(Energy Cabels, Information Cables)

- Regulation Compliance = Cables Needs Specific Condition of Environment
- Regulation Compliance = Overload Environment
- Regulation Compliance = Other Cables Influencing
- Methods= > SEPARATION, SEGREGATION



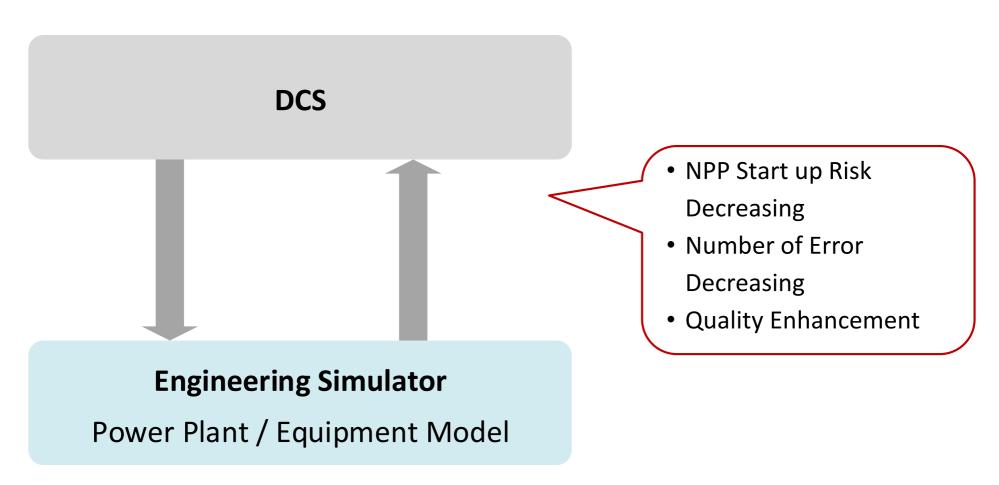
PRODUCT DEVELOPMENT WITH HIGH ADDED VALUE ENGINEERING SIMULATOR



ANALYSES

NPP START UP SUPPORT

HIL (HARDWARE-IN-THE-LOOP), see below





PRODUCT DEVELOPMENT WITH HIGH ADDED VALUE POWER PLANT CONFIGURATION MANAGEMENT



WITH AVEVA COMPANY COOPERATION

CONFIGURABLE, OPEN AND SCALABLE PLATFORM FOR CONFIGURATION MANAGEMENT:

- Project Data Management
- Requirement and Rules Management
- Complex Coordination of All Data



- Link Management
- Inconsistency Elimination
- Number of Errors Decreasing
- Quality Enhancement
- Productivity Enhancement



SUSTAINIBILITY AND DEVELOPMENT OF KNOWLEDGE AND SKILLS



PROOFS:

- Long-term stable company
- Significant participation on projects of renewal and life extension of NPP in Czech
 Republic and Slovakia
- Continuous development of products with high added value
- Significant participation on reconstruction and construction of new NPP and coal power plants







Thank you for Attention

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