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Dear business partners,

the year 2006 presents a continuing successful development of the company aimed at complex services for the energy.

At the end of 2006 our company will have celebrated the thirtieth anniversary of a self-existent Nuclear Power Plant Research Institute (VUJE), which was established on January 1, 1974 by the Czechoslovak Federal Ministry of Fuel and Power. On this occasion we can assert that a way of preservation of the institute and later its existence as the incorporation with the activities to manage all the activities of nuclear power plant was a good choice.

Our company has shown during its 30-year existence that it is able to preserve the commenced trend to be a significant engineering company in the field of energy and it has confirmed continuously its image of modern, flexible and viable company.

Our prosperity has been based on the prosperity of our clients and on our ability to offer and realise top technical solutions that will provide economic, reliable and safe operation of the devices in energy.

In the past including 2006 our company has been realising the most important projects in Slovak energy as Modernization of Bohunice V-2, Technology of medium and low-level radioactive treatment for Mochovce nuclear power plant, the Reconstruction of Krížovany substation. Our success has been achieved thanks to our employees, their knowledge, qualitative products and modern technologies.

Regarding the approaching the 30th anniversary of our institute we have to take into consideration that the success of our company depends on the collective work of all employees and their activities. Therefore it is obvious that in the 2006 we have been continuing in the improvement of social security scheme of our employees and in the process of increasing of their qualifications.

A story of our company is the story of a successful firm, which managed to hold its own trend under difficult economic conditions of the last time. I believe in a well done joint realisation of new modern solutions aimed at preserving of electricity to be fundamental condition of a society development.

Zoltán Harsáňy
Chairman of board of directors
POLICY OF THE COMPANY

The policy of the company has been developed based on the expected evolution of the power sector. VUJE set its goals in such a way that it would be fully competitive in the economic environment and would meet the needs of its customers, expectations of shareholders and employees.

Strategic Priorities

- Maintain and strengthen the position of VUJE as outstanding firm in the power sector on domestic market, but also on international market even after its full opening;
- Improve the value of the firm;
- Offer new products to its business partners with the objective to improve their satisfaction and loyalty;
- Respect is a fundament of our team’s work;
- Develop staff competencies and share effectively the information inside the firm;
- Contribute to the protection and development of the environment.

Our company draws from its traditional knowledge of products, the environment and customer’s base. Our aim is to be able to offer more sophisticated required solutions in line with the needs of customers, to optimize their segmentation and reveal weak points in the domain of service offer to customers, and in turn to bring real profit to the firm. Each previous result is for us only a pause on the way towards knowledge.

The market requires quality and we are able to offer it.

HUMAN RESOURCES

If we speak about accomplishments achieved by the firm in the past, it should be said that they have not been delivered incidentally. There are our employees behind them, and that is why we pay so much emphasis on the selection of employees, their growth and other education.

The primary task of our personal strategy is to create as favorable working conditions as possible for our staff and to support their congruousness with the VUJE mark, and to strengthen their joint liability for the firm’s activities.

Our efforts are oriented on making our employees more able to master the requirements on jobs in the best possible way, to be ready for changes and first of all, to be able to meet all the requirements of our business partners.

The company has tried sustainably to improve the level and quality of its human resources. In the long term, it has focused on the following:

- Competency and professional skills of employees;
- Work environment and conditions in which our employees work.

As regards the balance and development of personal indicators, the situation has been stabilized for a long time.
VUJE is an active member of the Association of Industrial Research and Development Organizations, of the Centre for Energy Sector Development, of the Slovak nuclear forum, of the Republic union of employees, of the Slovak nuclear society, of the Slovak Commercial and Industrial Chamber, its section for energy and of the HALDEN Reactor Project.

VUJE is a successful firm, however it is not isolated from problems in our country, and that is why it conveys its positive attitudes to social phenomena from a position of large and powerful company. Indeed, it is a privilege of large and strong ones to assist those who need support. Our company has traditionally shared its achievements. It tries to assist in the development of humanitarian activities in its neighbourhood to support social and cultural relations on the local level as well as in the Slovak republic. In the field of social and cultural relations we support the development of educational and art facilities. Charity and sponsor activities give a third dimension to our business.

**FIRM CULTURE**

The basis of company commercial achievement is a connection of effective teamwork with high professionalism and individuality of employees. Advanced firm culture is not only our idea. It is evidenced enjoyable, above-standard and motivating work surroundings.

The employees are given many advantages, as well as there are organizing many regular company enterprises to support team cooperation.
ORGANIZATIONAL STRUCTURE

DEPARTMENT OF DIRECTOR GENERAL

0100

0200
DIVISION OF NUCLEAR SAFETY

0300
DIVISION FOR DIAGNOSTIC
OF NUCLEAR POWER COMPONENTS

0400
DIVISION FOR PREPARATION OF NPP OPERATION

0500
DIVISION FOR SUPPORT OF NPP OPERATION

0600
DIVISION FOR NPP PERSONNEL TRAINING CENTRE

0700
DIVISION FOR RADIATION SAFETY,
NPP DECOMMISSIONING AND RADWASTE
MANAGEMENT

0800
DIVISION FOR INFORMATION TECHNOLOGIES

0900
DIVISION FOR COMMERCE,
ENGINEERING ACTIVITIES AND SERVICES

1000
DIVISION FOR ECONOMY

1200
DIVISION FOR SUPPORT OF CONTROL
AND OPERATION OF ELECTRIC GRID
HISTORY OF VUJE

1977 - The Nuclear Power Plant Research Institute (VUJE) was established by the Czechoslovak Federal Ministry of Fuel and Power on January 1, 1977. The Institute was situated in Jaslovské Bohunice. VUJE was created by a delimitation of a research and development section from the Bohunice nuclear power plant. It was incorporated into the utility Slovak Power Enterprises. The average age of its employees was 30.

1978 - From January 1, VUJE was moved under the Federal Ministry of Fuel and Power as an independent and directly controlled organization.

1983 - VUJE Training Center for NPP personnel in Trnava was completed and started its activities.

1984 - A full-scope VVER-440/213 reactor simulator was commissioned in the Training Center.

1985 - VUJE headquarter was moved to Trnava.

1989 - The number of employees reached the peak level of 759.

1990 - A new model of organizational structure was developed and gradually implemented. The following sections were created:

- Section for nuclear safety
- Section for plant component diagnostics
- Section for economy
- Section for preparation of plant operation
- Section for training of plant personnel
- Section for ecology, chemistry and radiation control
- Section for commerce, marketing and professional services

1994 - On November 1, VUJE was transformed into an employee owned shareholding company.

1995 - The year of stabilization. The organization structure was modified. Sections were transformed into divisions headed by directors.

1996 - The year of company development, main activities change into engineering services. The Institute convinced its customers that it maintains and develops the quality standards of the former organization. The Institute won projects the implementation of which represented the major part of activities for few next years.

1996/99 - Due to increase of project extent the number of employees raised up to 456 in 1996, 586 employees in 1997 and 613 employees in 1998. The company, besides dealing with operational problems, started to focus on the implementation of investment projects in the power sector. The most significant is the project of reconstruction and safety upgrading of two units of NPP Bohunice V-1.

2000/2005 - VUJE proceeds in diversification of its activities. It establishes consortia with foreign companies and undertakes activities in non-nuclear fields. It finds its customer not only in the Slovak republic, but also abroad, e.g. in Hungary, the Netherlands, Sweden, France and Spain. It carries out first projects in China and establishes promising business contracts with a number of other customers. VUJE continues spending effort to be successful on international scale. It participates actively in the solution of the tasks within 5th EU Framework Programme, in IAEA projects and in international tenders. It gradually increases the number of power projects outside nuclear sector.
Gradual reconstruction with safety upgrading of Bohunice V-1

The Nuclear Regulatory Authority (ÚJD) of the Slovak Republic (SR) by its Decision No. 1/1994 specified the conditions for future operation of the two Bohunice V-1 nuclear units. VÚJE developed a specification project the implementation of which ensured that these conditions were met. During the period 1996 to 2000, VÚJE carried out the gradual reconstruction of Bohunice V-1 in cooperation with the SIEMENS KWU company with which VÚJE established the REKON consortium. The total costs of the reconstruction were 8.5 billion Slovak crowns (about USD 230 million). The objective of the reconstruction was to assure an internationally accepted safety level for the operation of Bohunice V-1 with VVER-440 reactors of the V-230 type.

Modernization of Bohunice V-2

VÚJE developed a proposal for the modernization program of the two Bohunice V-2 units with VVER-440 reactors of the V-213 type. The objective of the proposed program is to assure reliable, safe, and economic operation of Bohunice V-2 till the end of its design lifetime and to create conditions for lifetime extension up to 40 years of operation. Within the modernization program, VÚJE developed the concepts of modernization and since 2002 it performs the activities of “general designer” in the scope of the modernization concepts approved. The implementation program for the modernization is planned till 2008.

Completion of the National Repository of Radioactive Waste in Mochovce

In line with the conditions stated in a decision of the Nuclear Regulatory Authority of SR, VÚJE performed design work, implemented the National Repository of Radioactive Waste Mochovce, and commissioned it at the end of 1999. In the repository, medium- and low-level radioactive waste can be disposed in special fiber-concrete containers.

Seismic strengthening and extension of storage capacity of the Interim Spent Fuel Storage Facility in Bohunice VYZ

VÚJE in the position of general supplier ensured seismic strengthening of the Interim Spent Fuel Storage Facility and extension of its storage capacity in the Bohunice VYZ plant without interrupting its operation. By demanding modifications of both civil construction and process parts of the building, a seismic strengthening complying with the conditions specified by the Slovak Nuclear Regulatory Authority was provided. The total storage capacity of the Interim Spent Fuel Storage Facility in Bohunice VYZ was increased by a factor of 2.8.

Decommission of Bohunice A-1

The aim of this project planned for the period 1999 - 2007 is to ensure safe decommissioning of the Bohunice A-1 plant. The implementation of the project provided by VÚJE requires to develop and use dedicated manipulators, robots and to develop technologies for radioactive waste disposal.

Treatment of liquid radioactive waste for Mochovice

VÚJE as the general supplier of technology implements the delivery of systems for the treatment of liquid radioactive waste for disposal for the Mochovice plant in 2003-2006. The waste following its treatment will be capable for storing in “The National Repository of Radioactive Waste” on Mochovice site.

Post-accident monitoring system for Mochovice

VÚJE as the general supplier has provided the delivery of a special post-accident monitoring system (PAMS) for units 1 and 2 of the Mochovice plant in 2003-2004. The delivered systems make it possible to perform a detailed analysis of failure history and in turn to perform relevant failure localization, and in this way these systems help in nuclear safety enhancement in the case of an occurrence of serious events in reactor coolant system.
Nuclear power plant commissioning
VUJE provided preparation, implementation and evaluation of the physics and power start-up tests at all units VVER-440 type reactor in the Czech Republic and Slovak Republic. In 2002, VUJE participated in the physical and power commissioning of the VVER-1000 units in Temelín in Czech Republic.
VUJE carried out the function of the scientific management of commissioning as an independent support for the operating organizations in the field of nuclear safety assurance in the process of preparation and implementation of commissioning of nuclear units.

Development of simulators
In a PHARE program, VUJE in cooperation with the French firm CORYS developed a multifunctional simulator for VVER-440 V-230 reactors, which is run for the training of NPP personnel in the VUJE Training Center in Trnava. Gradual modifications of the simulator in relation to newly installed control systems were parts of the development and implementation, in line with the progressing reconstruction of Bohunice V-1. For electric distribution stations, VUJE developed a simulator serving for the training of operators in electric stations.

Integrated information system of SE utility
Within this project, VUJE develops the following modules:
- care about material investment property
- management and evaluation of operation of power installations
- radiation safety
- radioactive waste

Comprehensive Environmental Impact Assessment for SE plant sites
Within this project, comparative studies with the assessment of conditions and the impact of SE power plants on health conditions of the population and on conditions of the environment (atmosphere, soil, agricultural production, forest production, demography and selected characteristics of health conditions of the population) on selected sites were developed. Results from the sites of Bohunice, Močovce nuclear power plants, of Nováky and Vojany coal-burning power plants and of Košice thermal power plant are available since 1993, as well as summary results from the last 5 years.

Construction of high voltage line Varín - Sučany
VUJE provided and coordinated the construction of a high voltage line 400 kV between the switching stations Varín and Sučany that replaced the original line built 40 years ago. The first phase of the construction completed in November 1999 was carried out in an extremely demanding mountain terrain with multiple crossings over Váh river, roads and railways. The action was completed in 2001.

Hydro power plant Yeghesis - Armenia
VUJE has delivered and commissioned the first turbine with the capacity of 6.2 MW in the hydro plant Yeghesis in Armenia in April 2004. The second turbine with the same capacity of 6.2 MW will be commissioned by the end of 2004. The plant operates under demanding mountain conditions with the elevation head of 250 m.

Reconstruction of energy system in the Smrečina Holding, Inc.
The reconstruction was carried out in the form of general supply, which included the delivery and commissioning of a boiler for burning wood waste with the capacity of 1.6 t/hr, fuel system, piping distribution and information and control system of the boiler plant. The delivery was implemented including design, engineering activities and construction part.

New site of the Slovak power dispatching centre in Žilina
VUJE made a building and on March 01, 2006 it handed up into operation the technology of new power dispatching centre in Žilina through a general supply for Slovak electricity transmission system, inc. (SEPS, a.s.). This dispatching centre has fully retrieved previous one, which was placed in the areas of the Central Slovak Energy, a.s. and has provided a significant modernization of the electric system management.
VUJE develops safety concepts, feasibility studies and other safety documentation for upgrading the nuclear safety and operational reliability of power installations. From these activities, design, supply and installation activities then follow under the general coordination of VUJE. In the field of reconstruction and modernization, VUJE offers a comprehensive provision of technically demanding investment actions in the form of turnkey deliveries.
Performance in the field of the reconstruction and modernization of power installations is focused on the following areas:

**Concepts for safety upgrading**

For NPP units, VUJE develops conceptual proposals for the upgrading of nuclear safety and operational reliability. Particular safety problems are identified in the concepts developed with both deterministic and probabilistic assessments of their impact on the assurance of nuclear safety. The output documentation has the form of conceptual proposals for modifications in the structure of safety systems, for the provision of independence and seismic strengthening and for the fire resistance of individual systems and equipment.

In the documentation, proposals for process parts, instrumentation and control systems, electric part and civil construction part are elaborated. Safety and economic benefits from the implementation are evaluated and priorities for implementation are determined. The safety concepts provide a fundamental material for the development of subsequent parts of design documentation.

**Design documentation**

VUJE develops and provides design documentation in the scope of the design for civil construction permission and the design for construction implementation. VUJE carries out general coordination among the individual parts of the design in such a way that interrelations among the designs of the particular systems, professions and the progress of implementation are ensured.

The design documentation consists of analyses, calculations, quality documentation and safety documentation in line with the requirements from investor, authorities and administrative bodies.

**Delivery, assembly and commissioning**

VUJE ensures deliveries needed for equipment reconstruction and modernization, installation and testing prior to commissioning.

For equipment commissioning, VUJE provides the development of test programs for pre-complex and complex testing, the execution of testing and the evaluation of tests. For new equipment, VUJE provides personnel training and updating of operating and safety documentation.

VUJE provides general installation coordination and equipment commissioning coordination under demanding conditions and operational constrains valid in nuclear power plants.

**Conventional power sector and industrial sphere**

VUJE offers and provides all the above-mentioned design, supply and installation activities also for conventional power sector and industrial sphere.

To meet demanding technical and time requirements, VUJE has available experts with extensive theoretical knowledge and practical skills from the operation of power plants, from the implementation of extensive projects and from the commissioning of power plants. This experienced team of specialists provides guarantees for project implementation in the time and quality required.
VUJE proposes, develops and supplies specific methods and dedicated single-purpose equipment for the needs of power facility operators and provides services in the field of material integrity testing, machinery diagnostics, material degradation, etc. Due to the quality of its work, VUJE is successful not only in Slovakia, but also abroad, e.g. in Hungary, the Netherlands, Sweden, France, and Spain. In the implementation of professional tasks, VUJE combines the first class technical equipment with the professional knowledge of its staff.
VUJE performance in the field of diagnostics, in-service inspections and equipment qualification is focused on the following areas:

**In-service inspections**

VUJE develops and produces modern remotely controlled manipulators and mechanized tools for material in-service inspections of selected equipment and for equipment repairs in nuclear power plants. Remotely controlled manipulators are used for non-destructive inspections of all major facilities, such as main sealing planes in reactor pressure vessels, mechanical parts of reactor coolant pumps, main circulation piping, pressurizers, and primary manifolds and heat transfer tubes in steam generators. VUJE develops methods for non-destructive inspections and test probes for the Eddy current method.

VUJE carries out in-service inspections of NPP component material integrity, designs test procedures and methods for non-destructive testing, develops and manufactures test probes for Eddy-current method. Within research and engineering activities, VUJE verifies the effectiveness of non-destructive method applications during the monitoring of material degradation processes.

In the field of in-service inspections of material integrity in nuclear plant components in Sweden, the Netherlands and Hungary, VUJE cooperates with renowned international companies. Outside the field of nuclear power, VUJE exercises its experience with non-destructive material inspections also in the field of petrochemistry, chemistry and conventional machinery. The quality of these activities is ensured by the European qualification of its staff and by state accreditation in the field given.

**Equipment for maintenance, repair and decontamination**

VUJE develops and produces modern, remotely controlled manipulators and mechanized tools that provide major aid for the control of material integrity in selected components and for their repairs. Excellent results are achieved in the development and production of single-purpose manipulators for manipulations with dangerous, health detrimental materials and agents (e.g., for handling with spent fuel assemblies from nuclear reactors in the space of wet storage pools) and in the development and production of decontamination and cleaning equipment for reactor coolant system components of nuclear power plants.

**Diagnostic systems**

VUJE develops and supplies a broad spectrum of diagnostic systems for monitoring the status of components in nuclear power plants. These are for example comprehensive facilities for the monitoring of vibrations of rotating machinery and of total systems, diagnosis of the presence of free parts in selected sections of nuclear units, monitoring of humidity and leaks, assessment of fatigue life time in piping systems and of neutronic noise.

The measurement part of diagnostic systems consists of the state-of-the-art components available on markets worldwide. The evaluation modules of diagnostic systems are based on industrial personal computers using multitask operating systems. The delivered diagnostic systems (including measurement circuits) are certified internationally and comply with challenging criteria on electromagnetic compatibility, seismic resistance and environmental resistance (performance at high temperature and humidity of the environment).
Within its accredited activities, VUJE carries out the measurements of mechanical vibrations, the support and balancing of rotating machines, the tests of resistance and vibration stability of electric and electronic equipment. Within its non-accredited activities, VUJE is able to implement the diagnostic of fluid leaks from pressurized components, the measurement of excitation dynamic forces of both hydraulic and acoustic origin, and the experimental analysis of stress in structural elements of machines, components and structures.

**Assessment of equipment lifetime**

To assure further reliable operation, VUJE performs the evaluations of component lifetime. The analyses of stress and strain, the calculations of nuclear unit lifetime, or possibly the professional assessments of structural modifications on components using state-of-the-art computer codes (ADINA, CAEPIPE, PIPESTRESS etc.) are carried out. VUJE performs the analyses of reactor pressure vessel integrity, using current procedures recommended internationally. Significant analyses deal with high-energy piping systems. For these piping systems, LBB analyses, the analyses of postulated breaks and the proposals of possible anti-whip provisions, as well as the analyses of seismic resistance are carried out. These activities are performed separately for the operators of nuclear power plants, and separately for regulatory authorities. VUJE assesses the acceptability of defects revealed in nuclear power plant components, develops limiting curves for temperature and pressure in reactor coolant system in normal and accident conditions, and evaluates periodically the remaining fraction of the lifetime of pressurized components.

**Structural analyses of structures and materials**

An important domain of company’s activities are structural analyses of structures during both static and dynamic loadings. These analyses include the analysis of causes and mechanisms of material degradation, particularly:

- monitoring of radiation embrittlement of reactor pressure vessels due to irradiation by means of specimens
- monitoring of corrosion and erosion impact on materials in selected systems of nuclear power plant primary and secondary systems, and
- monitoring of ageing processes of structural materials in nuclear installations.

A very important domain are also reviews of operational failures of equipment by means of evaluating the material conditions on samples taken, or possibly on-site by means of off-prints and replicas. At the same time VUJE develops also the use of new test methods not requiring taking material samples – in contrast to the standard used methodologies – using the following methods: assessment of material corrosion resistance by means of, potentiodynamic methods, analyses of material chemical composition by portable emission optical spectroscope,
or possibly – sampling only a minimum amount of material – by means of SPT penetration
method – assessment of material mechanical properties.

Evaluation of the degree of material damage is done by means of the state-of-the-art methods:

- optical microscopy,
- image analysis,
- scanning electron microscopy,
- X-ray microanalysis.

VUJE carries out examinations of events in equipment operation by evaluating material conditions
in specimens taken, or directly in-situ by means of imprints and replicas. It develops
simultaneously also the use of new testing methods that – in contrast to the methods used in a
standard way – do not need taking material specimens (Electrochemical Potential Kinetic
Reactivation - EPR - method for the evaluation of corrosion resistance), or only a minimum amount
(Small Punch Test - SPT - method for the evaluation of mechanical properties).

**Equipment qualification**

VUJE carries out equipment qualification with the aim to demonstrate and document a reliable
compliance with the functions required by the selected equipment during normal and accident
operational conditions. Another task with regard to the qualified lifetime is to assess the real
conditions of equipment and to develop for the plant operator proposals and recommendations
how to ensure reliable and safe operation and to maintain equipment qualification during the
whole lifetime.

VUJE performs qualification tests in a newly built laboratory for the simulation of LOCA type
accidents. For the performance of seismic tests, VUJE has available an accredited laboratory for
seismic tests.

A system of neutron noise diagnostics using signals from operational detectors of the IN-CORE
neutron flux system (DPZ) together with thermometers, accelerometers and ?P and EX-CORE
(ionization chambers) was developed in VUJE. The system is used for monitoring the vibrations of
in-reactor components and of a part of reactor coolant system, for long term monitoring of their
conditions for the needs of plant operation and prospects for extension of their lifetime. This
system is installed at all Bohunice units. For the needs of operational measurements in the field of
neutron noise diagnostics in Mochovce, mobile 16-channel system RVMS was developed. The
mobile system is used during physical and power start-up of Temelin-1 to generate basic database
of neutron noise characteristics for the needs of identification of anomalies in the course of plant
operation.
NUCLEAR SAFETY

By means of state-of-the-art computer codes, VUJE performs thermo-hydraulic analyses of NPP transients and accidents, probabilistic safety assessments and neutronic core calculations, it analyzes beyond design basis accidents and severe accidents with core damage. On nuclear units and on a number of other nuclear and non-nuclear installations, VUJE performs thermo-hydraulic measurements. Results of analyses are used for proposal and evaluation of safety improvements, for safety assessment, for development of operating procedures and emergency operating procedures. VUJE elaborates conceptual issues of nuclear safety, performs analyses of safety relevant events in plant operation. It develops drafts of safety procedures and guidelines for the Slovak Nuclear Regulatory Authority.
Work in the field of nuclear safety focuses on the following areas:

**Thermo-hydraulic computer analyses**

VUJE has available a comprehensive set of tools and know-how for the assurance of needs of nuclear power in the field of thermo-hydraulic analyses and evaluation of nuclear safety. Extensive experience is used with modeling thermo-hydraulic processes by state-of-the-art computer codes such as TRANSURANUS and CALOPEA for detailed process modeling in fuel assemblies, KING and SPACPOV for unit balance analyses, RELAP5, CATHARE and TRAC-P for the analysis of system behavior in the whole spectrum of transients and accidents, DYN3D for the analysis of reactivity changes, MELCOR and MAAP for the analysis of beyond design basis accidents, severe accidents with core melt down and the propagation of radionuclides in reactor coolant system and plant rooms, CONTAIN and TRAC0 for process simulation in plant confinement rooms, FLUENT for the 3D analysis in special thermo-hydraulic tasks. Models of NPP components created for the computer codes are verified by sets of experimental data.

The results of solution of various safety issues are used for the demonstration of adequate safety of operated units (Safety Analysis Report for Bohunice V-1 following its gradual reconstruction, Safety Analysis Report for Bohunice V-2, verification of parts of Mochovce safety documentation), as well as for continual safety upgrading of plant operation, and also for operative addressing of current needs of the operators.

Capabilities of VUJE in this area are reviewed in details and used within broad international cooperation. VUJE participates in programs of the International Atomic Energy Agency (projects of computer code validation, preparation of guides and recommendations valid internationally), it participates in such projects as PHARE, PECO etc.

**Neutronics**

VUJE carries out the calculations of core neutronic characteristics for the purposes of unit start-up and operation. It designs fuel loading schemes and analyzes the impact of fuel structural modifications on power distribution in the core and on the authorized operational modes. For this, VUJE uses diffusion computer codes BIPR-7, PERMAK, KASSETA and HELIOS.

VUJE has developed and introduced in practice the advanced in-reactor monitoring system TOPRE that monitors on-line power distribution in VVER 440 core. VUJE specialists innovated the method for monitoring fast neutrons fluency when the original set of neutron detectors was extended by fission detectors of 238U, 237Np. The monitoring is used in the specimen program for investigating the conditions of reactor pressure vessels. Codes ANSIN, TORT-DORT for combined transport calculations of neutron and photon shielding, library of transport cross sections BUGLE 96, VITAMIN B6 and also code SCAMPI for library generation were adapted in VUJE. These codes are used for safety analysis of interim spent fuel storage facilities.

**Thermo-physical measurements**

VUJE carries out the measurements of thermo-hydraulic parameters and designs automatic evaluation of technical and economical operational indicators. It performs metrology activities...
of a calibration center for pressure gauges and thermometers. After refueling outages, it calibrates standard temperature measurements in reactor. For accident resistant instrumentation, VUJE proposes, designs and installs devices for temperature measurements and for reactor level measurement.

**Instrumentation and control system**

VUJE proposes, designs, delivers and provides the installation of instrumentation and control devices in both nuclear and conventional power plants. With the objective to improve nuclear and operational safety during manipulations with nuclear fuels, VUJE developed and installed a modernized control system for refueling machines. The system was brought in operation at Bohunice V-1 and V-2, where it made possible to reduce the refueling period by about 30%. Innovated SIPPING control system for checking the leaktightness of fuel cladding was developed. In the Siemens/VUJE consortium, the instrumentation and control system (SKR) at Bohunice V-1 was reconstructed (VUJE provided concept, design, installation, test programs, installation, evaluation and operating procedures). In the modernization project of Bohunice V-2, VUJE prepares concepts of the solution. In the field of SKR, VUJE addresses and implements safety measures, including tests during unit start-up. VUJE performs measurements of dynamic properties of instrumentation and control systems.

**Probabilistic assessment**

VUJE carries out the reliability analyses of NPP systems, equipment and process modules and develops comprehensive studies of Probabilistic Safety Assessment (PSA) levels 1 and 2, for all operating modes of NPP units performance (normal operation, operation with decreased power, operation during refueling). The analyses results estimate the reactor core melting frequency and radioactive matters escape to environment. In the field of probabilistic assessment VUJE render the broad spectra of accompanying activities, from project and quality plan of PSA elaboration to the application of the PSA results in practice. The results are used to the support of the nuclear operators for decision making at risk-oriented applications (for example: risk monitoring system implementation) and also to the Nuclear Authority needs. All these activities are done in the environment of internationally accepted software and methodological tools.

VUJE also has at its disposal a database of events in plant operation, based on a comprehensive operating experience from Bohunice units. The database enables to calculate reliability characteristics in line with the requirements of PSA (this database was used also by the US Department of Energy for its activities in the field of PSA in Russia and Ukraine).

**Analyses of events in NPP operation**

VUJE performs analyses of safety related events in the operation of both domestic and foreign plants with the aim to improve the effectiveness of feedback from operating experience. It develops reports on safety significant events into the Incident Reporting System (IRS) of IAEA/OECD NEA and for WANO.
Nuclear safety concepts and upgrading

VUJE elaborates knowledge from the international evolution of conceptual issues in nuclear safety with regard to their application in Slovakia. Based on this knowledge, VUJE develops safety concepts for VVER 440 plants. VUJE developed safety concepts for the reconstruction of Bohunice V-1 and currently develops safety concepts for the modernization of Bohunice V-2. To inform the public about nuclear safety problems, VUJE develops background materials for the presentation of nuclear safety level achieved according to the criteria accepted internationally. It distributes information from the nuclear worldwide press agency NucNet in Slovakia and contributes by inputs from Slovakia into NucNet.

VUJE in cooperation with SIEMENS in the REKON consortium provided the coordination and implementation of the project for gradual reconstruction of Bohunice V-1 focused on safety upgrading. The measures were oriented on the areas of core cooling during accident, accident mitigation, improvements in instrumentation and control systems, electric systems, on seismic strengthening and on updating of operating documentation. VUJE also coordinated the preparation and implementation of the projects for seismic strengthening and capacity extension of the Interim Spent Fuel Storage Facility in Bohunice and for the completion of the National Repository of Radioactive Waste in Mochovce. It provided support during the completion of construction of Mochovce units 1 and 2, and for their safety upgrading, for the operator, general supplier Škoda Prague and for the international consortium EUCOM consisting of Siemens and Framatom.
Personnel training is an inseparable part of each production process. It is a decisive element as in long-term horizon it affects safety, quality, continuity and other significant aspects of equipment operation and processes. This question is especially sensitive in nuclear power field where safety issues are closely related to the level of personnel. One of the decisive impacts on this level is just the training of personnel.
The training center of NPP personnel (ŠVS) performs a broad scope of activities in the field of personnel training - from the analysis of training needs, through the proposals of training programs, the development of training tools, up to the implementation and evaluation of both theoretical and practical training. VUJE applies the SAT methodology (Systematic Approach to Training). Our activities can be split into the following groups:

- personnel training in nuclear power sector
- personnel training in conventional power sector
- other activities in the field of personnel training
- technical support

**Personnel training in nuclear power sector**

ŠVS is a supplier of training according to legislation requirements in the nuclear safety field.

We provide:

- theoretical training of personnel for all Slovak nuclear installations - all personnel from nuclear installations pass through it, from operators up to regular employees of the operation and its support. Due to diversity and scope of individual working positions, the theoretical training is split into 6 categories,
- simulator training for control room personnel at the Bohunice V-1 and V-2 plants - by means of training on full-scale simulators, the operating personnel have a possibility to obtain basic skills in servicing nuclear power plants and a possibility to train for the management of accident situations,
- examinations for obtaining certificate - checking the knowledge obtained by nuclear installation personnel and awarding certificates,
- theoretical training of third persons for entry and activities carried out in nuclear installations.

For these activities, ŠVS - in line with legislative requirements - has an authorization from the Slovak Nuclear Regulatory Authority.

**Personnel training in conventional power sector**

Within these activities, training of personnel in conventional power sectors is implemented with the focus on:

- training of operators in electric stations
- training of employees in dispatching stations of electric grid,
- training of activities under voltage,
- training of activities on free markets with electric energy
- professional skills of electric technicians.

**Other activities in the field of personnel training**

The major scope of activities has been implemented in the following areas:

- organization of international courses related to nuclear safety courses of IAEA and EU,
- production of multimedia training systems for training implementation by means of computers,
- implementation of courses in computer-based control from basic skills through work with computers, up to professional control of the tools of the CorelDraw type etc.
• development of training systems according to consumer’s requirements, from the analysis of training needs up to the evaluation of the training systems established in both national and international scales,
• leasing of training rooms.

**Technical support**

For the performance of the above-mentioned activities, VUJE has a broad technical basis that consists of:
- simulators:
  - full-scale simulator for Bohunice V-1,
  - full-scale simulator for Bohunice V-2,
  - multifunctional simulator for Bohunice V-1,
  - simulator for the training of operators in electric stations,
  - simulator for Slovak electric grid,
  - simulator for stock exchanges with electric energy,
  - simulator of virtual field in electric distribution stations;
- film study: it ensures the operation of TV circuits in rooms and the production of training tools on audiovisual base,
- rooms with the capacity from 16 to 40 persons with audiovisual equipment including LCD projectors (fix installed or mobile) and with air conditioning.
NPP COMMISSIONING

VUJE carries out commissioning of nuclear units and creates a scientific background for their reliable and safe operation. It has also participated in the safety upgrading of nuclear units and developed background materials for the execution of inspection activities of the Nuclear Regulatory Authority of the Slovak Republic.
**NPP commissioning**

VUJE participates in the verification and evaluation of readiness for operation of the unit under commissioning. It provides the preparation, implementation and evaluation of non-active tests (cold and hot) and active tests (physics and power start-up). In the phase of commissioning preparation, it proposes the schedule and scope of commissioning testing, and develops methodologies and operating procedures for implementation of commissioning tests. It develops theoretical background materials for the particular tests and determines tests acceptance criteria. In the course of commissioning, VUJE provides the execution of physics and power start-up tests and carries out their preliminary and final evaluation. Based on the results of the tests, it gives recommendations for the subsequent operation of the unit under commissioning. VUJE also performs re-starts following refueling outages, as well as following significant upgrading activities of nuclear units in operation.

The systems and facilities developed in VUJE have a non-negligible share in the successful commissioning of nuclear units. They are used for monitoring of the reactor conditions in the course of implementation of the commissioning tests, as well as they provide the collection of data needed for their evaluation. They are Panel for physical start-up, Reactimeter and Analytical measurement system for start-up. VUJE provides their development, installation and continual service at nuclear units.

In the course of nuclear unit commissioning, VUJE experts also perform the scientific management of commissioning as an independent support for the plant operator in assuring nuclear safety during the process of preparation and implementation of nuclear unit commissioning.

**NPP Operation**

VUJE develops and updates operating and safety documentation, cooperates in the development of emergency operating procedures, in the optimization of operating modes from the point of neutronics, thermo-technics and thermo-hydraulics. It analyses steady state and dynamic phenomena and failures of electric equipment, applies programmable equipment in safety control systems, and develops special measurements for instrumentation and control systems.

**Measurement of electric parameters**

VUJE develops, performs and evaluates the measurements of electric parameters. For the evaluation of measured parameters, it uses the own developed CALDEQ product that enables to carry out the electric diagnosis and monitoring of performance of electric systems, the automatic identification of the output data format of A/D transmitters, the display of current values and of time histories of the parameters measured regardless the duration of records, the searching for extreme values of measured and calculated parameters, and the determination of mutual phase shifts in currents and voltages.
Reliability of electric system operation

Reliability of electric system operation is an objective for the assurance of Electromagnetic Compatibility /EMC/. Due to the introduction of new advanced control and safety systems into equipment operation, and in line with European legislation, the electromagnetic compatibility has become in addition to safety the most important feature of electric equipment.

VUJE carries out the tests of equipment resistance against EMC, measurements of the parameters of disturbing environment, analyses the impact of magnetic fields on electric systems and based on the knowledge of parameters of the disturbing environment and of the actual equipment resistance, VUJE designs and implements modifications according to actual conditions.

Measurement, diagnostics and evaluation of conditions of cable routes and electric circuits

VUJE prepares and carries out measurements, diagnostics and long-term assessment of the conditions of cable routes and electric circuits in all Slovak nuclear units. For the measurement and diagnostics, it uses a modern integrated measurement system ECAD 1100 that provides automatic collection and recording of the data measured.
VUJE analyzes and evaluates the efficiency of system for the assurance of radiation protection of personnel and for the implementation of ALARA principles in the operation and decommissioning of nuclear installations, in the management of radioactive waste, and proposes and implements measures how to reduce radiation exposure of the personnel and the environment. VUJE contributes to ensuring modernization of means for the radiation control of nuclear installation operation, as well as to the evaluation of their impact on the environment. It provides testing and verification of filtration stations for the absorption of aerosols and iodine in ventilation systems of nuclear installations and verification of monitoring systems for gaseous discharges from these installations. It contributes to the provision of modernization of tools for the radiation control of nuclear installation operation, as well as for the monitoring of their impact on the environment.
Environmental protection

VUJE develops programs for monitoring the vicinity of nuclear installations including repositories of radioactive waste and cooperates in their commissioning. It also develops reports on the assessment of the environmental impact of nuclear installations in the EIA process during their commissioning and decommissioning. It participates in addressing the international project SPARTACUS and develops spatial methods for the assessment of wash-out and redistribution of deposited radionuclides on the level of river basin using GIS systems for the purposes of evaluating vulnerability of the particular elementary river basins and of the efficiency of the corrective measures proposed in the field of propagation of secondary contamination in the affected river basin. It further develops and verifies new methods of in-situ measurement and mapping of terrain contamination and based on the revealed sources and exposure routes, it proposes relevant corrective actions for the subsequent use of contaminated areas.

Emergency planning

VUJE develops procedures for accident evaluation and recommendations for implementing measures to protect the public in the case of radioactive material releases into nuclear installation rooms or into the environment. It provides development of systems to support decision making during radiation accidents and their implementation into the state and departmental structures of emergency preparedness and for the needs of authorities and operators of nuclear installations in the Slovak and Czech republics. VUJE carries out the development of its own systems RTARC and of the geographical information system ArcINFO and participates in international projects of the European Union related to the development, adaptation and implementation of the SEAME and RODOS systems. For these systems, VUJE ensures necessary databases and hardware and software provisions for on-line data transmission from the measurements of teledosimetry systems around nuclear power plants, from local and forecast meteorology data and of data from Slovak radiation monitoring network. Within the international ECHO project, VUJE installed and commissioned into trial operation the RODOS system. Within the EVITA project, VUJE participates in the development of the integral European code ASTEC for the analysis of beyond design basis accidents in nuclear power plants and in its adaptation for VVER reactors. For the needs of authorities and operators of nuclear power plants, VUJE develops hardware and provides the expert system ESPRO for accident evaluation, for the support in decision-making and for measures designed to protect the public.

Decommissioning of nuclear installations

VUJE develops and applies technology procedures, technical and planning tools and drafts legislative standards for nuclear installation decommissioning. VUJE is a general supplier of the project „Decommissioning of NPP Bohunice A-1 Phase I“, that represents the most important action in the field of nuclear installation decommissioning in Central Europe. In this project, VUJE develops and implements technologies for the safe processing of specific types of radioactive waste (acid chromium-sulphur, chrompik, dowtherm and sludge with high content of salt and transuraniums) and for the decontamination of construction surfaces, storage tanks and technology equipment. VUJE develops conceptual and technical solutions and provides deliveries of remotely controlled manipulators for the decommissioning of Bohunice A-1. Using advanced CAD/CAM technologies, laser methods, reverse engineering and 3D simulations in the environment of virtual reality, VUJE develops working procedures for the decontamination and disassembly of tanks and equipment in the rooms of technology buildings. Creation of a databank of nuclear installations for the purposes of decommissioning, and cost estimates and evaluation of economic effectiveness of the fuel cycle back-end are other parts of VUJE activities.
Radioactive waste management

VUJE develops and applies technologies for conditioning, treatment and disposal of radioactive waste. For the development of technologies for radioactive waste conditioning, VUJE ensures the operation of an experimental bitumination and cementation facility and of an experimental incineration facility. It carries out non-active tests of a facility for vitrification of chrompik from the storage of damaged fuel assemblies from the closed Bohunice A-1 plant. It performs experimental incineration of solid radioactive waste from NPPs and cementation of its ashes. It carried out procedures and tests of dowtherm bitumination with radioactive concentrates from Bohunice A-1. It evaluates the operation of experimental facilities for radioactive waste management. It supplies investment units for the removal and transport of liquid radioactive waste from the place of its storage to the processing center. It develops manipulators for taking samples of radioactive waste. VUJE deals with the evaluation of performance and safety of surface and deep underground radioactive waste repositories by modeling the process of propagation and transport of radionuclides in the field of close and remote interactions and in biosphere. It prepared and implements a monitoring program around the National Repository of Radioactive Waste in Mochovce. It generates databases for computer codes modeling the propagation of radionuclides in geosphere and hydrosphere and prepares background materials for the safety analysis of radioactive waste repositories in Slovakia.

VUJE as a general supplier provided the design and implementation of the completion of construction of the National Repository of Radioactive Waste in Mochovce and the design and delivery of equipment for non-manipulable spent nuclear fuel from Bohunice A-1 for its transport to ultimate processing and disposal including implementation of the transport itself.

Chemistry

In the field of chemistry, based on experimental measurements in NPP and on laboratory work, VUJE carries out the research of corrosion and erosion phenomena in primary and secondary systems. In laboratories, it carries out research and proposes technology procedures for the treatment and conditioning of liquid and solid radioactive waste to minimize its amount (separation of boron compounds in waste water) or to transform the stored radioactive waste (sludge, ionexes, ash) into a form suitable for disposal in repositories using bitumination and cementation methods. It develops safety and technology documentation for the area of chemistry modes and develops documentation related to the chemical aspects of technologies for radwaste management.

VUJE provides services to the operators of facilities for radioactive waste processing in the scope:
- quality control of fixation media (asphalt, cement),
- determination of physical and chemical properties of the radioactive waste processed (concentrates, dowtherm, ionexes, sludge, ash),
- checking and verification of the progress of technology processes for radioactive waste processing (bitumination, cementation),
- checking of radioactive waste properties following its transformation into an appropriate form (strength, leachability, point of ignition, point of softening, penetration),
- determination of boric acid concentration in the coolant of reactor system in the course of commissioning of VVER units.
VUJE provides to its customers the implementation of state-of-the-art information technologies for the control of technology, production and economy processes.
VUJE applies modern tendencies and trends in informatics in all areas of its activities.

Integrated information systems

VUJE designs, addresses and implements comprehensive integrated information systems focused on the control of power companies in the field of operation control and monitoring, equipment maintenance, safety monitoring and evaluating, personal dosimetry, dosimetry of internal rooms and plant vicinity, monitoring and evaluating of chemistry modes, planning and evaluating of in-service inspections and surveillance controls, management and monitoring of plant decommissioning procedures and radwaste management. These applications are developed using the CASE technology on the ORACLE platform.

Technology information systems

VUJE designs, implements and innovates technology information systems and emergency centers for power companies. It participates in the innovation and reconstruction of these systems with the focus on nuclear units and on technology modules. A part of the solution is system and functional analysis of technology processes, design of HW and SW, installation and commissioning of the comprehensive system.

For this tasks solution, there are used the procedures complying with the methodology of quality control and assurance of SW projects, such as the control of SW project configuration, testing, verification and validation.

Management information systems

In the field of management information systems, VUJE uses methods of artificial intelligence (neuron networks, heuristic expert systems, fuzzy sets, genetic algorithms, modeling of cognitive capabilities and decision making based on cognitive engineering) with the objective to apply these methods in the process of improving man-machine communication during the activities of service personnel and their permanent training.

Information for monitoring and evaluating environmental conditions around industrial plants

VUJE deals with the collection and long-term statistical review of the impact of industrial plants on the environment with the focus on power sector. In these projects, statistical methods and graphical presentations are used predominantly.

Information systems for crisis management

In this field, VUJE performs analyses and designs information systems for the solution of crisis accident conditions and emergency conditions in power sector, by designing systems for early indication of accident conditions, reporting and notifying in extensive computer networks and by developing crisis and accident plans for the needs to resolve extraordinary situations and emergency conditions.
**Virtual reality and 3D animations**

VUJE uses virtual reality and 3D animations mainly for developing proposals of solutions for the needs of reconstruction and modernization of power installations, for designing and implementing simulators, for training operating personnel of power installations, or for simulating technology procedures during the preparation of NPP decommissioning.

**Support for project management**

VUJE has experience in the use of different project management systems. It offers its services for the preparation of incorporation and for the incorporation itself for the needs of project management in all phases of the project life cycle.
CONSTRUCTION AND OPERATION OF ELECTRIC GRID

The incorporation of the Electric grid of the Slovak Republic into the CENTREL (Association of Electric Utilities in Central Europe - Slovakia, Hungary, Czech and Polish republics) and into the UCTE (West European Union for Coordination and Transfer of Electric Energy) increased the demands on the quality and level of reliable transfer and supply of electric energy to consumers.
VUJEE in cooperation with the operator of the electric grid provides an independent analysis of the security of supply of electric energy by the Slovak electric grid. A part of this work is mainly the data collection and processing of failures and interruptions in the supply of electric energy with the aim to provide technical support to the operators.

VUJE develops and produces special equipment for the evaluation of individual elements of the grids and for the monitoring of the system of its operation.

Power companies now focus on reducing operating costs and failure rates of their facilities by optimizing their maintenance. VUJE proposes and implements comprehensive methods for failure rate monitoring and maintenance optimization in all facilities and lines in the Slovak electric grid.

VUJE ensures and coordinates the construction of new lines with high and very high voltage together with the design of protections, and carries out reconstructions of distribution stations. For the control of power sources and operation of the transfer grid, VUJE designs and executes the collection, record keeping and evaluation of data from fast transients.
VUJE works in the field of conventional power sector and renewable energy sources, starting with research, development and engineering activities, through design up to implementation of power installations, their operation, maintenance and service. It performs comprehensive evaluations of power source operation with the production of heat and electric energy.

**Construction and reconstruction of power installations**

VUJE proposes the use of renewable energy sources and their application in both regional and municipal agglomerations and companies where these new sources have not only ecological, but also economical justification. In relation to the above-mentioned activities, VUJE prepares designs and implements these projects.
VUJE implements constructions and reconstructions of power installations and of environmental technologies (design, delivery and installation, assembly, equipment testing, trial operation) also in the form of general supply (delivery, installation and reconstruction of boilers for burning wooden waste, boilers for fossil fuels, heat exchange stations, back-up sources of electric energy, small hydro power plants, steam turbines, cogeneration units etc.). For the constructions implemented, VUJE provides guarantee and post-guarantee services.

VUJE prepares and implements engineering networks for intelligent buildings in the field of heating, ventilation, air conditioning, warm utility water, and information systems.

VUJE develops and implements progressive methods of local and remote control of power installations in accordance with current legislation in power sector business. By introducing state-of-the-art instrumentation and control systems of power installation operation, VUJE makes energy production, distribution and consumption more rational and effective.

**Design and civil construction activities**

VUJE designs power constructions and technologies and provides their implementation in line with investor’s requirements. In the course of construction implementation, VUJE utilizes the different project management systems for power and supporting systems and facilities (heating, high-voltage and low-voltage networks etc.) construction control according to the consumer needs. VUJE carries out the function of construction oversight.

**Engineering activities**

Within engineering activities, VUJE assesses and evaluates power facilities with regard to the production of emissions and waste from power installations and environmental technologies. It designs and implements the technical and economical measurements of power installations and environmental technologies. It evaluates and proposes applications of enhancements in practice (for steady-state operation, or for experimental purposes).

**Energy audits and technical and economical reviews**

VUJE carries out analyses of the technical, economical and environmental aspects of energy production, distribution and consumption. It evaluates proposals for the implementation of projects using waste for power purposes, reviews the economy and effectiveness of power installations and develops proposals for optimizing operation of power installations. VUJE develops feasibility studies, technical and energy audits, technical and economical analyses and evaluation of power projects, including the method of their financing.

**Operation of power installations**

VUJE operates both own and outside power sources, situated in various locations in Slovakia. VUJE makes business in the power sector in line with the Act No. 70/1998 and associated rules in the field of production and distribution of heat and electric energy. Heat exchange stations, transformation stations, small hydro power plants and boiler stations with boilers burning wood waste and fissile fuels are the sources operated by VUJE. Using progressive methods of both local and remote control of technology processes, VUJE makes energy production more rationale and effective.

**Applied research**

In the field of conventional power sector and renewable energy sources, VUJE address projects of applied research, designs, develops and produces parts, or the whole facilities in power complexes in relation to the target area of use of the thermal and electric energy generated.

Within its research and development activities, VUJE elaborates background materials for Slovak or regional energy policies, in the area of the production and distribution of electric energy and heat. It focuses its efforts on technical and economical analyses with the objective to evaluate energy, ecology and economy aspects in the implementation of new technologies of power facilities for the systems of supply of heat and electric energy, in relation to meeting the obligations resulting from international agreements.

VUJE supports rational development of the supply of heat and electric energy under the conditions of market economy, by intensifying cogeneration production of energy sources, and prefers environmental solutions. VUJE analyses safety and reliability of supplies of heat and electric energy.
INTEGRATED MANAGEMENT SYSTEM, ACCREDITATION AND SECURITY CERTIFICATE


The quality system was certificated by Lloyd's Register Quality Assurance (LRQA) in 1999 and recertificated in 2005.

The environmental management system was certificated by LRQA in 2003.

VUJE has several laboratories accredited according to the STN EN ISO/IEC 17 025:2005 standards:

- Calibration laboratory of pressure gauges
- Calibration laboratory of temperature
- Calibration laboratory department of diagnostic tools development and application
- Testing laboratory - department of diagnostic tools development and application
- Testing laboratory department of in-service inspection
- Testing laboratory department of structural analyses
- Testing laboratory of chemical modes and physical chemic analyses
- Testing laboratory of division management department, reliability and operation of ES assessment

VUJE operates the authorized center (authorized person) in line with the law 142/2000 of the Metrology act as amended by the law 431/2004 of the Act on verification of assigned measures specified combined temperature sensors designed for nuclear power plants with VVER 440 reactors. The authorization is valid till 2008.

VUJE is a holder of the security certificate of the Slovak National security authority.
CERTIFICATE OF APPROVAL

This is to certify that the Management System of:

VIJE, a. s.
Trnava
Slovak Republic

has been approved by Lloyd’s Register Quality Assurance to the following Environmental and Quality Management System Standards:

ISO 9001: 2000
ISO 14001:2004
The TickIT Guide Issue 5

The scope of this approval is applicable to:

Provision of research and development, design, project management and training support services relating to preparation, construction, operation, maintenance and decommissioning of nuclear power plants and radioactive waste management.

Development of other energy sources including renewable energy sources, construction of electric systems, manufacture of technological non-pressure equipment and instruments and development of associated software in accordance with TickIT.

Approval
Certificate No: PRA 280083

Original QMS Approval: 11 February 1999
Original EMS Approval: 8 December 2003
Current Certificate: 28 August 2005
Certificate Expiry: 28 August 2008

Issued by: Lloyd’s Register EMEA on behalf of Lloyd’s Register Quality Assurance Limited
CONCLUSION

The basis for sustainable life on the Earth is energy and resources that are able to supply it for us. One of the fundamental conditions for maintaining and developing our economy and the civilization itself is a sufficient amount of electric energy produced safely with a minimum impact on the environment.

Our company realizes these attributes and during all our activities up to now, our main goal has been to ensure the safe and reliable operation of both nuclear and other energy sources. The supply of electric energy is considered worldwide as a basic prerequisite for the development of the economy and of the whole society.

In the Slovak energy sector, nuclear power plants cover more than 50% of the demand on electric energy.

In the current period of the development of Slovak economy, the sources in operation meet our demand, while our small surplus is used for export.

The operation of the first unit of NPP V1 in Jaslovské Bohunice will have been finished by January 01, 2007. In connection with this fact, the supply of 440 MW electric energy to the Slovak distribution network will be finished too.

The shutdown of the other unit of V1 NPP is being planned on January 2009. There will be necessary to solve the electric energy needs through import.

In this so oppressive energy situation there will be very significant the decision of the Slovenské elektrárne, a.s. (Slovak electric, a.s.) majority owner about the completion of the Mochovce units 3 and 4 which is supposed to be done in the first half-year of 2007.

Our mission is thus to convince the public that we in Slovakia operate reliable power plants and that the development of nuclear power is now the basic option for the power sector development.
POTVRDEJIE
o priemyselnej bezpečnosti podnikateľa
vydané v súlade s § 50 ods. 1 zákona č. 215/2004 Z. z. o ochrane utajovaných skutočností a o zmene a doplnení niektorých zákonov.

VÚJE, a.s.

IDENTIFIKÁCIE Číslo: 31450474
Sídlo: Okružná 5

STUPÉŇ UTÁJENIA:

DÔVERNÉ - pre postúpenie a vznik utajovanej skutočnosti
DÔVERNÉ - na oboznámenie sa s utajovanou skutočnosťou

DOBA PLATNOSTI:
do 31. decembra 2006

Bratislava 30.marca 2005