

Ministry of Fuel and Energy of Ukraine



**State Specialised Enterprise  
"CHORNOBYL NUCLEAR POWER PLANT"**



***Safety  
Effectiveness  
Social Progress***







# STATE SPECIALISED ENTERPRISE "CHORNOBYL NPP"

Chornobyl NPP was finally shutdown on 15 December, 2000. State Specialised Enterprise "Chornobyl NPP" (SSE ChNPP) was established on its basis.

The enterprise was registered in June 11, 2001.

It was established according to the Resolution of Cabinet of Ministers N 399, dated April 25, 2001, approved by the Decree of President of Ukraine N1084, dated September 25, 2000 "On measures, linked with the Act of Chornobyl NPP closure" and its purpose is effective management of Nuclear Power Plant Units decommissioning process and transformation of the Shelter object into an ecologically safe system.

The State Specialised Enterprise "Chornobyl NPP" was established upon the

separation of "Chornobyl NPP" from National Nuclear Energy Generating Company "Energoatom" and after this separation it was subordinated to Ministry of Fuel and Energy of Ukraine.

The Ministry of Fuel and Energy of Ukraine appointed Director of the State Specialised Enterprise "Chornobyl NPP", approved the Statute of SSE "Chornobyl NPP", provided the transfer of property by the National Company "Energoatom" according to the balance and submitted to Cabinet of Ministers proposals on the financial support for covering of SSE «Chornobyl NPP» responsibility for nuclear damage.

The Ministry of Financing of Ukraine by the presentation of Ministry of Fuel of Ukraine foresees, since 2001, in the projects of the State Budget of Ukraine has allocated funds for maintenance of SSE «Chornobyl NPP» and for works performance planned by the Comprehensive program of Chornobyl NPP decommissioning.

On 22 March, 2002 SSE «Chornobyl NPP» obtained the State License for ChNPP decommissioning.



*Industrial site of Chornobyl Nuclear Power Plant where the work is underway for decommissioning Units and transformation of the Shelter object into an ecologically safe system*



## TASKS AND DIRECTIONS OF SSE "CHORNOBYL NPP" ACTIVITY



*Discussion about Shelter Implementation Plan during the visit of Prime-Minister of Ukraine V.F. Yanukovich to Chornobyl NPP*



*ChNPP personnel provides the operation and maintenance of the shutdown Units and transformation of the Shelter object in a safe system*



*There are 2500m<sup>3</sup> of solid and 19000m<sup>3</sup> of liquid radioactive wastes in the territory of ChNPP, where the work is underway to collect, transport and store of radioactive wastes*

State Specialised Enterprise «Chornobyl NPP» is based on State ownership and is subordinated to the Ministry of Fuel and Energy of Ukraine.

SSE "Chornobyl NPP" is the operating organization (operator) of nuclear installations of this NPP during decommissioning and overcoming of beyond designed accident consequences, as well as radioactive wastes treatment plants and temporary storage facilities in compliance with the current legislation of Ukraine.

The main tasks of SSE "Chornobyl NPP" are:

- assurance of safe operation of nuclear installations, installations for radioactive wastes management and other equipment of this NPP;
- safe decommissioning of the first, second and third Units of Chornobyl NPP and Nuclear Power Plants of Ukraine;
- transformation of the Shelter object into an ecologically safe system;
- safe management of radioactive wastes, accumulated on the industrial site and in Exclusion Zone of Chornobyl NPP, and that wastes, which are producing during decommissioning and transformation of the Shelter object into an ecologically safe system;
- safe management of Chornobyl NPP's spent fuel;
- construction and operation of infrastructure, necessary for Chornobyl NPP decommissioning and for transformation of the Shelter object into an ecologically safe system;
- training and improvement of professional skills of the personnel;
- environmental monitoring in the area of Chornobyl NPP;
- development of technologies, accumulation and use of scientific and technical experience on nuclear installations decommissioning, overcoming of beyond designed accident consequences, and also construction and use of storage facilities for temporary and long-term storage of radioactive wastes;
- organization, co-ordination and implementation of scientific – applied



researches, application of scientific-technical and other developments, establishment of links with scientific institutions, including foreign ones;

- participation in co-ordination of works and implementation of international projects, on Chornobyl NPP decommissioning and transformation of the Shelter object into an ecologically safe system;

- ecological monitoring of environment in the location zone of Chornobyl NPP.

Scope of Chornobyl NPP activity is:

- design and research works to select the sites for the radioactive wastes and spent fuel management facilities;

- designing of the equipment and facilities for radioactive wastes and spent fuel management;

- usage of ionizing sources;

- removal, processing and storage of radioactive materials and spent nuclear fuel;

- commissioning and operation of radioactive wastes management facilities;

- decommissioning of radioactive wastes management nuclear installation and facilities;

- transportation of ionizing sources and radioactive wastes;

- accounting, monitoring and safeguards on non-proliferation of nuclear materials according to the norms and rules of nuclear and radiation safety in compliance with the "Agreement between Ukraine and IAEA on application of safeguards to all nuclear material, used in the whole peaceful nuclear activity of Ukraine";

- physical protection of nuclear installations, nuclear materials, radioactive wastes and other ionizing sources;

- preparation and hand over radioactive wastes for disposal;

- implementation and broad communication of results of scientific researches and developments;

- rendering of technical, consulting and expert services on the issues, which are in the competence of Chornobyl NPP;

- Chornobyl NPP carries out other activity, not forbidden by the current Ukrainian legislation.

## TASKS AND DIRECTIONS OF SSE "CHORNOBYL NPP" ACTIVITY



*Preparatory works are underway to stabilize building constructions and erect new safe confinement on the Shelter object*



*The personnel of Chornobyl NPP provides the continuous monitoring of radiation conditions in premises and on the industrial site*



## Verkhovna Rada (Parliament) of Ukraine ensures solution of Chornobyl NPP problems at Legislative Level



*Participants of the field meeting at Chornobyl NPP of the Verkhovna Rada Committee on the Fuel and Energy Complex, Nuclear Policy and Nuclear Safety*



*Participants of the field meeting at Chornobyl NPP of the Verkhovna Rada Committee on the Environment Policy, Nature Management and Chornobyl accident consequences liquidation*



## Ensuring of comprehensive solution of Chornobyl NPP problems



The Interdepartmental Working Group on coordination of actions of the unsolved problems after ChNPP shut-down was established according to the Decree of President of Ukraine. It was leaded by the First Vice-prime – minister of Ukraine O.Dubyna. Since December 18, 2002 the Interdepartmental Commission was established under the leadership of Vice-prime-minister on Fuel and Energy Complex V.Gayduk. Heads of Ministries and Institutions of Ukraine, local governing form part of this Commission.

### State Specialised Enterprise "Chornobyl NPP" Management

#### **Yuriy O. Neretin**

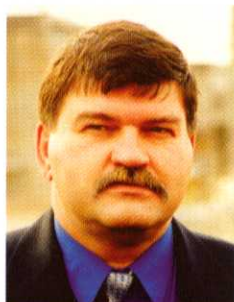
*Director of SSE "Chornobyl NPP"*



Y.Neretin was born in 1957 in Chernivtsy, Ukraine. He has higher education: Mechanical Engineer of generating engines and installations. Since 1980 he is working at Chornobyl NPP as Reactor Operator, Senior Reactor Operator, Shift Supervisor of Reactor Shop, Deputy Shift Supervisor and Shift Supervisor of the NPP, Deputy Chief Engineer on operation, the First Deputy General Director, Chief Engineer. In July 2001 he was appointed Chief Engineer of SSE "Chornobyl NPP". In January 2002 he was appointed Director of State Specialised Enterprise "Chornobyl NPP". In March 2002 he was elected the Deputy of Kyiv Regional Council, member of the Executive Committee of Slavutych town Council.

#### **Vyacheslav V.Fomin**

*First Deputy Director of SSE "Chornobyl NPP"*



V.Fomin was born in 1958 in Mezhdurietchensk, Kemerovo region, Russian Federation. He has higher education: heat and power Engineer of nuclear plants and installations.

During 1980 – 1984 he worked as the thermal physics Engineer, Senior Engineer of Setting-up and Testing Shop of Chornobyl NPP. During 1984 – 1988 he worked at the nuclear energy facilities in Desnogorsk (Russian Federation) and in Cuba. Since 1988 he is at Chornobyl NPP – Senior Engineer, Deputy Head of Setting-up and Testing Shop, Head of Setting-up and Reliability Control Shop, Deputy Chief Engineer for reconstruction. In July 2001 he was appointed Deputy Chief Engineer for facilities construction. Since February 2002 – the First Deputy Director of State Specialised Enterprise "Chornobyl NPP". In March 2002 he was elected the Deputy of Slavutych town Council.

#### **Olexander S. Antropov**

*Deputy Director for intercommunication with central and local authorities, Permanent Representative of the President of Ukraine at Chornobyl NPP*



O.Antropov was born in 1958 in Krasnoyarsk – 26, Russian Federation. He has higher education: heat and power Engineer of nuclear plants and installations.

During 1980 – 2001 (with interruption) he is working at Chornobyl NPP: as Engineer, Senior Reactor Operator, Shift Supervisor of Reactor Shop, Shift Supervisor of Unit, Head of Reactor Shop. During 1983 – 1988 he was Komsomol and Party functionary. In April 2001 he was appointed the Permanent Representative of President of Ukraine at Chornobyl NPP. In August 2001 he was appointed the Deputy Director of SSE "Chornobyl NPP" for intercommunication with central and local authorities.

#### **Valentina Y. Goloskokova**

*Deputy Director of SSE "ChNPP" for general issues*



V.Goloskokova was born in 1955 in Chornogorsk in Krasnoyarsk Land, Russian Federation.

Mrs. Goloskokova has higher education: Engineer – Electrician of electronic computer. During 1977 – 1989 she was working in Tomsk – 7 as an Engineer – electronic, Shift Supervisor of Information – Computer Centre. During 1989 – 1997 she worked at Chornobyl NPP as Shift Supervisor of Thermal Automatic and Instrumentation Shop, Head of Bureau, Head of Sector, Head of Department of Automated Systems for work management. During 1997 – 2000 – Commercial Director, Vice-president of "Monolith" corporation, General Director of "Arma" firm (Kyiv). Since 2000 – Deputy General Director of Chornobyl NPP for general issues. In July, 2001 she was appointed Deputy Director of SSE "Chornobyl NPP" for commercial work. Since February 2002 – Deputy Director for general issues.





**Yevguen I. Katunin**

*Deputy Director on Security and Physical Protection*

Y. Katunin was born in 1952 in Artemivsk, Donetsk region, Ukraine. He has higher education: heat and power Engineer.

He worked in the research institute, Energy Complex, military service. Since 1995 – Deputy General Director of Chornobyl NPP for Special Security and Physical Protection. In July 2001 he was appointed the Deputy Director of SSE "Chornobyl NPP" on Security and Physical Protection.



**Yekaterina B. Kotkova**

*Chief Economist of SSE ChNPP*

E. Kotkova was born in 1962 in Svetlogorsk, Leningrad region, Russian Federation. She has higher education: Engineer– economist on organisation of mechanized economical information processing. In the eighties he worked in Kalinin region. Since 1989 she is working at Chornobyl NPP as Senior Accountant, Chief Accountant of kinder gardens management, Head of Financial Department, Chief Accountant of ChNPP. In July 2001 she was appointed Chief Accountant of SSE ChNPP. Since March 2002 – Chief Economist of SSE "Chornobyl NPP".



**Irina M. Mitichkina**

*Deputy Director of SSE "Chornobyl NPP" for Personnel, Labour and Social Issues*

I. Mitichkina was born in 1960 in Kotovo, Volgograd region, Russian Federation. She has higher education: Mechanical Engineer of power machine building.

During 1983 – 1998 she worked at Chornobyl NPP as Laboratory Assistant of chemical analysis in Chemical Shop, Operator of compressor system, Senior Engineer of Reactor Shop, Engineer of Labour Protection Department, Deputy Head, Head of Labour Protection Department, Service.

During 1998 – 2001 Mrs. Mitichkina was a Head of Management improvement Department of the Quality Supervision Directorate, Head of Management system and programs modification Department of Quality Directorate of National Nuclear Energy Generating Company "Energoatom".

In May 2001 she was appointed Deputy General Director of Separate Subdivision ChNPP for Personnel, Labour and Social Issues. Since July 2001 – Deputy Director of SSE "Chornobyl NPP" for Personnel, Labour and Social Issues.



**Lyubov O. Medintsova**

*Chief Accountant of SSE "Chornobyl NPP"*

L. Medintsova was born in 1963 in Rostov region, Russian Federation. She has higher education: Economist. She began her labour activity in 1986 in companies of national economy in Russian Federation. Since July 1987 she is working at Chornobyl NPP as Accountant, Economist, Deputy Chief Accountant. In April 2002 she was appointed Chief Accountant of SSE "Chornobyl NPP".



**Andriy V. Shatsman**

*Chief Engineer of Units*

A. Shatsman was born in 1959 in Magnitogorsk, Chelyabinsk region, Russian Federation.

He has higher education, his profession is "Nuclear Power Plants and Installations" (Polytechnic Institute) and "Economy and business Management" (Interregional Academy of Personnel Management).

Since 1983 he is working at Chornobyl NPP (with interruption in one and a half year: during 1984 – 1985 he worked at the enterprise "Smolensk – nuclear adjustment") as the Engineer on Testing and Setting up Shop, Senior Shift Supervisor on operation of Reactor Shop, Shift Supervisor of Reactor Shop, Shift Supervisor of Unit, Shift Supervisor of NPP, Deputy Chief Engineer for operation.

In July 2001 he was appointed Deputy Chief Engineer of SSE ChNPP for operation and decommissioning. Since March 2002 – Chief Engineer of Units of SSE "Chornobyl NPP".



**Valeriy P. Saliy**

*Chief Engineer for Decommissioning Project*

V. Saliy was born in 1959 in Baley, Chita region, Russian Federation. He has higher education: Mechanical Engineer. He began his labour activity in 1977 in Dzheskazgan mine trust in Kazakhstan SSR.

During 1979 – 1982 he studied in Karaganda Polytechnic Institute. During 1982 – 1984 he served in the Soviet Army. During 1984 – 1985 he was foreman in association "Dzheskazganyazhstroy" in Kazakhstan SSR. During 1985 – 1988 he worked as Uadjuster of Kazakhstan specialised Repair Adjusting Department. Since October 1988 he is working at Chornobyl NPP as Electrician, Foreman, Senior Foreman, Head of Section, Head of Production and Technical Department, Service. Since April 2002 – Chief Engineer for Decommissioning Project.





### **Andriy O. Bilyk**

#### *Deputy Chief Engineer of Units Operation*

A.Bilyk was born in 1964 in Zlatoust, Chelyabinsk region, Russian Federation. He has higher education: Engineer-physicist of physico-power installations.

Since 1987 he is working at Chornobyl NPP as Reactor Operator, Unit Operator, Deputy Shift Supervisor of NPP, Shift Supervisor of NPP, Deputy Chief Engineer for Safety and Radiation Protection. In July 2001 he was appointed Deputy Chief Engineer of SSE "Chornobyl NPP" for Safety and Radiation Protection. Since March 2002 he is Deputy Chief Engineer of Units Operation.



### **Andriy I. Savin**

#### *Deputy Chief Engineer of Units Safety and Radiation Protection*

A.Savin was born in 1964 in Kaluga region, Russian Federation. He has higher education: heat and power Engineer. During 1981 – 1987 he studied in Nuclear Energy Institute in Obninsk.

Since 1987 he is working at Chornobyl NPP as Reactor Operator, Shift Supervisor of Reactor Shop, Deputy Head of Reactor Shop for operation, Shift Supervisor of Unit in the management operation group. In 2001 he was appointed Head of Reactor Shop. Since April 2002 he is Deputy Chief Engineer of Units Safety and Radiation Protection.



### **Anatoliy D. Gora**

#### *Chief Engineer on the Shelter object*

A.Gora was born in 1953 in Oktyabske, Bashkiria, Russian Federation. He has higher education: heat and power Engineer of nuclear plants and installations.

Since 1975 he is working at Chornobyl NPP as Engineer on assembling and adjusting, Operator-inspector, Operator of steam turbine of Turbine Shop, Senior Turbine Operator, Senior Reactor Operator, Shift Supervisor of Turbine Shop, Deputy Head, Head of Turbine Shop, Deputy Head of the Shelter object for execution, Chief Engineer of the Shelter object. In July 2001 he was appointed Deputy Chief Engineer of SSE "Chornobyl NPP" on the Shelter object – Shelter object Head. Since March 2002 he is Chief Engineer on the Shelter object.



### **Valeriy M. Kulishenko**

#### *Chief Engineer of Shelter Implementation Plan Project*

V.Kulishenko was born in 1961 in Rivne, Ukraine. He has an engineering education and Master's degree Diploma of State Management obtained in Ukrainian Academy of State Management.

He worked at Kursk NPP (Russian Federation). Since 1987 he is working at Chornobyl NPP as foreman, Deputy Head on external facilities of Turbine Shop, Deputy Head, Head of Technical Maintenance Shop of the Shelter object, Deputy Head of the Shelter object – PMU Co-Director. In July 2001 he was appointed Deputy Director of SSE ChNPP – PMU Co-Director. Since February 2002 he is Chief Engineer for the Shelter Implementation Plan Project.



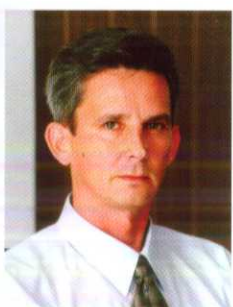
### **Volodymyr A. Lisnichenko**

#### *Deputy Chief Engineer of the Shelter object for operation*

V.Lisnichenko was born in 1961 in Mykolayiv region. He has higher education: heat-and-power engineer of nuclear plants and installations.

During 1983 – 1985 he was working as foreman of Pripyat assembly Directorate, trust "Yuzhteploenergmontazh". During 1986 – 1988 he worked as Senior engineer of Turbine shop, Senior operator of Turbine shop, Senior turbine operator of boiler-turbine Shop of Odesa Nuclear heating plant.

Since 1988 he worked at Chornobyl NPP as foreman, Senior foreman, Deputy head of Maintenance Shop, Head of Training Centre, Deputy Chief engineer of the Shelter Object for execution. Since April 2002 he was the Deputy Chief Engineer of the Shelter object for operation.



### **Volodymyr O. Kashtanov**

#### *Deputy Chief Engineer of the Shelter object for Shelter Implementation Plan*

V.Kashtanov was born in 1961 in Perm' region, Russian Federation. He has higher education: heat and power Engineer of nuclear plants and installations.

From 1978 to 1982 he worked as the metalworker at Moldavia Hydroelectric Power Plant. From 1982 to 1984 he served in the Soviet Army.

Since August 1988 he is working at Chornobyl NPP as Turbine Operator, Senior Engineer for operation, Deputy Head of Operation Shop, Deputy Head of the Operation Department at the Shelter object. Since April 2002 he is the Deputy Chief Engineer of the Shelter object for the Shelter Implementation Plan.



## The Personnel of the SSE "Chornobyl NPP"

The personnel of the State Specialised Enterprise "Chornobyl NPP" have the necessary skill and intellectual potential to perform their statutory activity. About 4000 people work at the enterprise, including industrial staff – 92,2%, non-industrial staff – 7,8%. Operational staff, is working in shifts comes to 16,6%. From the total amount of the personnel 24,5% are specialists, 58,6% – workers, 15,8% – management, 1,1% – employees. The personnel of enterprise has necessary level of education. 25% of employers have higher education, 22% – secondary and special education, 53% – secondary education. The personnel of the enterprise is very experienced. 42% of workers have industrial work record of more than 10 years, 41,6% – from 5 to 10 years, 16,4% – less than 5 years. Significant

amount of employees has a wide experience of work in radiation dangerous conditions, arisen from the accident at Chornobyl NPP.

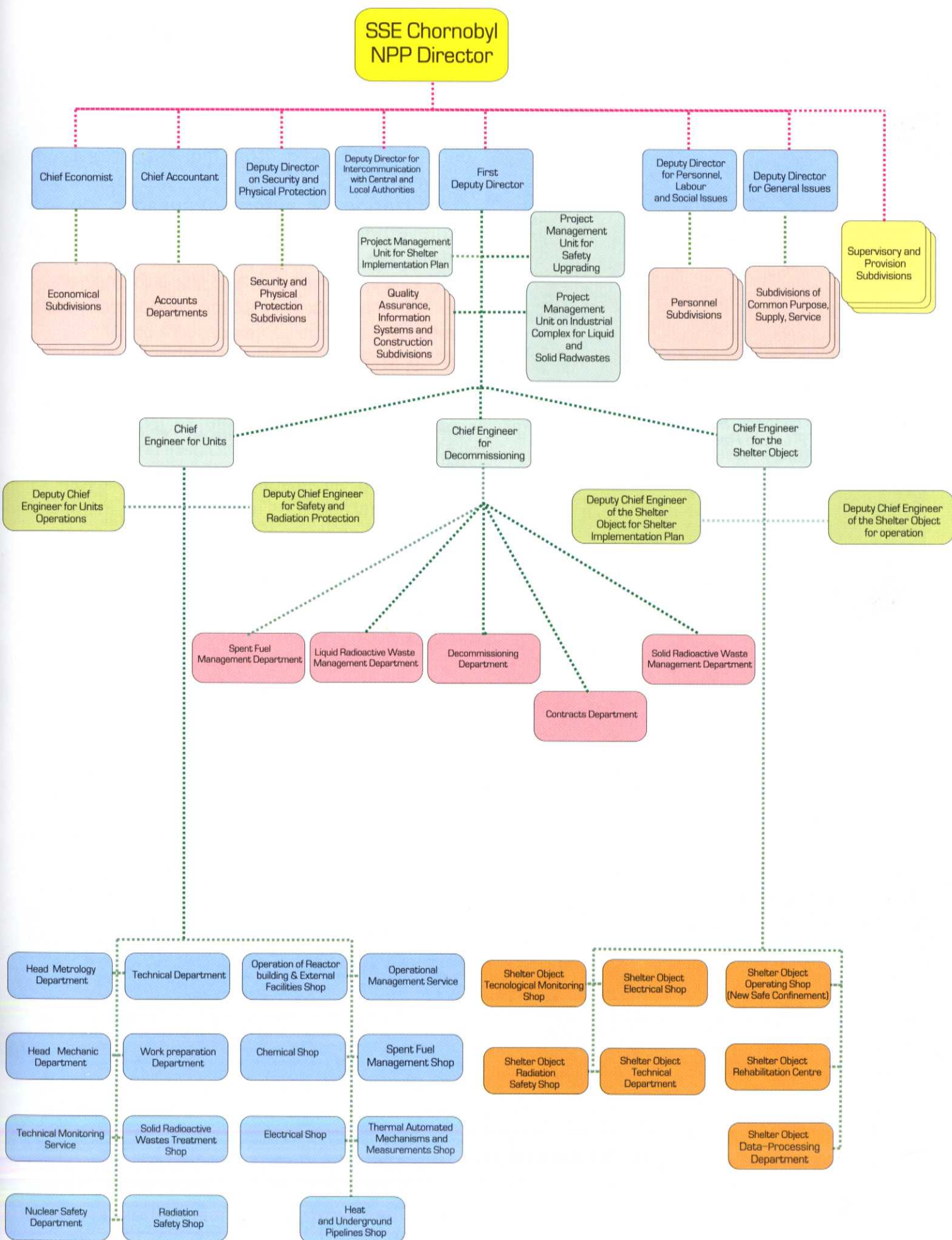
66,8% of personnel participated in liquidation of the Chornobyl accident consequences. Actually at Chornobyl NPP there are 27 liquidators of the first category, more than 1,4 thousands liquidators of second category, more than thousand – the third category and 600 persons are liquidators of forth category. 69% of employees are man and 31 % are women. The age structure of the personnel is as follows: 15% up to 30 years, 37,6% – between 31 and 40 years, 35,7% – between 41 and 50 years, 9,7% – between 51 and 60 years and 2% – older than 60 years. The average age of SSE "Chornobyl NPP" employers is 40 years. The employees of enterprise live: in Slavutych – 82,4%, in Kyiv and Kyiv region – 4,2%, in Chernigiv and Chernigiv region – 11,8%, in other settlements – 1,6%.



*Personnel of SSE ChNPP and veterans – participants of the commissioning of the first Chornobyl NPP Unit in September 26, 1977, initiated development of Nuclear Energy of Ukraine on the 25 anniversary of commissioning*



# Management structure scheme of Chornobyl NPP





## Statement of SSE "Chornobyl NPP" on the policy in the field of Safety and Quality



*The Deputy Secretary of Council of National Security and Defence S.Tulub on the construction site of ChNPP Liquid Radioactive Wastes Treatment Plant*



*Temporary Spent Fuel Storage Facility. There are 21284 Spent Fuel assemblies at the site of ChNPP*



*IAEA General Director M. ElBaradei at the site of the Shelter object*

Following the Resolution of Cabinet of Ministers of Ukraine dated April 25, 2001 № 399 "On establishment of the State Specialised Enterprise "Chornobyl NPP" and accepting the responsibility for plant run activity in compliance with the purposes and the tasks stipulated in the Statute of Enterprise, the Management of SSE ChNPP declares the next: the highest priority in activity of SSE ChNPP as the operating organization is safety assurance during achievement of the primary goals of the enterprise – decommissioning of Chornobyl NPP Units 1, 2 and 3 and transformation of the "Shelter" object into an ecologically safe system.

The solution of the primary goals of operating organization industrial activity is guaranteed by insuring of the maximal economic efficiency of available resources utilization.

During all stages of life-time cycle of nuclear installations and facilities, intended for the radioactive wastes management, and also during utilization of ionizing radiation, the Management undertakes obligations to adhere the following ways for achievement of the purposes in the field of quality:

- the operating organization provides centralized supervision of all works and allocation of functions, responsibility, empowerment between divisions and heads, all personnel of the enterprise and contract organizations, in their activity and relations follow the principles of safety culture;

- designers, manufacturers, suppliers of the equipment, builders and other organizations working at the enterprise, should comply with all requirements of current Ukrainian normative and legislative acts and normative documents;

- at the enterprise such organization of works is applied with which the prime attention is given to the prevention of quality problems by the means of continuous analysis and improvement of processes or production quality taking into account corrective measures;

- assessment of works quality, forecasting and prevention of probable problems should be the main principle in making decisions on safety.



The management assumes obligations to apply and improve quality system with the purpose of achieving assurance that the carried out aspects of activity meet Safety Norms, Rules and Standards.

The program of quality assurance is based on requirements of the International and National standards to Quality Systems.

With the purpose of achievement and permanent improvement of quality including safety increasing during development and implementation of the quality assurance program the management undertakes obligations:

- strictly adhere to requirements of the Ukrainian legislation, rules, norms and safety standards in nuclear energy;

- take into account recommendations of the International Atomic Energy Agency, stated in legal code regulations and guidance on safety of nuclear plants;

- make all efforts for implementation of decrees and instructions of the Ministry of Fuel and Energy of Ukraine, the State Regulatory Bodies of Nuclear and Radiation Safety. The Administration of enterprise makes aware of society requirements and accepts obligations concerning nuclear and radiation safety assurance, environment protection during implementation of activity at ChNPP site where the risk of dangerous influence on the personnel,

## Statement of SSE "Chornobyl NPP" on the policy in the field of Safety and Quality

the population, an environment is possible. Keeping of the terms of the issued licenses and sanctions in the field of nuclear energy utilization is an obligatory condition for heads of any level, personnel of the enterprise and contract organizations.

The safe conversion of Units at the decommissioning phase and transformation of the Shelter object into an ecologically safe system will be carried out on the basis of global and national experience by the method of consecutive transformations of facilities, technological systems, processes and optimization of management structure.

The effective Quality Assurance System should give confidence to the management of the operating organization, supervisory and inspection bodies, to the public, that all measures and works at the Chornobyl site are performed in compliance with the established requirements and in controlled conditions with documentary recording of the decisions and planned works.



*The participants of the ChNPP meeting of the Group of the Highest Level on consideration and realization of IAEA guarantees in Ukraine*



# Shelter Object Safety Assurance



*Shelter object is a protective construction around the destroyed Unit 4 as a result of the accident in April 26, 1986*



*The review of the destroyed compartments of Unit 4*



*Destroyed Unit 4 (reactor hall)*

The Shelter object, erected in 1986 around destroyed Chornobyl NPP Unit 4, currently serves as the main localising barrier to radioactive releases. The potential danger of the Shelter object is caused by the lack of safe physical barriers to halt the spread of contamination, presence of nuclear materials, and there are no effective means to actively affect their criticality, unstability of building structures.

All current and transformation activities at the Shelter object are performed in compliance with the Licence for the Shelter object operation, Work Comprehensive Program and Technological regulation and aimed at protecting personnel, population and environment from the impact of radioactive materials in the object and on the industrial site.

To maintain Shelter in control and safe state, the personnel annually provide:

- monitoring of the Shelter condition (radiation and technological, fuel containing materials, building constructions and environmental conditions);
- dust control in the reactor core "break-down" (on average 12 times per year) and in the Shelter premises, application of a chemical fixative to fuse the dust into a less-mobile crust (about 180 tons per year);
- decontamination of premises, equipment and territory (on average 10 mln. m<sup>2</sup> per year);
- monitoring of radio nuclide content in air, water and airflow (about 20000 samples per year);
- maintenance and repair of equipment;
- collection and treatment of liquid radioactive waste (about 3000 m<sup>3</sup> per year);
- collection and disposal of solid radioactive wastes (until 2002 the average volume of disposed SRAW was about 1000 m<sup>3</sup> per year, but in 2002 when the preparatory works for construction of infrastructure facilities started the volume of SRAW came to more than 8000 m<sup>3</sup>).



# Shelter Object Safety Assurance



*The personnel of SSE ChNPP is monitoring the state of nuclear materials in the Shelter object*



*The application of a chemical fixative to fuse the dust into a less mobile crust before starting to work*



*The radioactive water sampling in the Shelter object premises*



*The dosimetric investigation of the Shelter object premises*



*The investigation of dispersed air content in the Shelter object*



*The installation of detectors inside the Shelter object for nuclear materials monitoring*



# Shelter Object Safety Upgrading

The SIP program, approved in 1997 according to Memorandum of Understanding between Governments of G7 countries, Ukraine and Commission of European Union, is being implemented within the frame of International co-operation for the purpose of converting Shelter into ecologically safe system.

The total cost of the program is US\$ 768 mln. 28 countries and European Commission agreed to allocate almost the entire sum needed. Funds allocated to this program are accumulated in specially established Chornobyl Shelter Fund. EBRD is an Administrator of this Fund.

The engineering investigations, preparatory works, data collection were carried out, two of five urgent measures were implemented (Ventilation Stack of Units 3 and 4 was repaired and beams supports of the Shelter roof were reinforced) key decisions were made during implementation of the Program First Stage (1998 – 2000).

Today the program is at the Second Stage (2000 – 2008), which includes designing and procurement of equipment, construction and commissioning of facilities and systems. This Stage is characterized by project transition to the phase of practical application of the First Stage results. First of all, these works are connected with the stabilization of building constructions, erection and commissioning of facilities and monitoring systems, integrated data base, development and testing fuel containing material handling technology, implementation of engineering decisions for dust and water management, erection of the New Safe Confinement (NSC) and dismantling of unstable constructions under its encasement. The solution of above mentioned tasks is supported by radiation protection program, ensuring of engineering and fire safety and access control.

Technically sophisticated, unique, heterogeneous activities will be performed during implementation of the Second Stage.

Currently, at the Shelter site preparatory works are underway to establish the infrastructure for stabilisation and construction of the New Safe Confinement.



*The participants of Assembly of donor Chornobyl Safety Fund and Assembly of Nuclear Safety Account of EBRD*



# Works on Shelter Implementation Plan



*The construction of the new building for the sanitary cleaning and the personnel changing clothes*



*The construction of the administrative-technological complex building*



*The geodesic survey of the Shelter object site*



*The air sampling on the site of the Shelter object*



*The new building of the guard*



*The strengthening of the engineering structures of the Shelter object*



# COMPREHENSIVE PROGRAM OF CHORNOBYL NPP DECOMMISSIONING



*Industrial Heat Plant was built and put into operation*



*Dry Spent Fuel Storage construction*



*Liquid Radioactive Waste Treatment Plant construction*

In November 2000 the Government of Ukraine approved Comprehensive Program of Chornobyl NPP decommissioning. It was developed at the basis of Resolution of Cabinet of Ministers of Ukraine, dated March 29, 2000 "On ahead of schedule shutdown of Unit 3 and final Chornobyl NPP decommissioning". The main goal of the Program is assurance comprehensive solution of problems linked with ChNPP decommissioning. The Implementation of this Program is a new stage in Chornobyl NPP safety upgrading. The Comprehensive program stipulates implementation of Units 1,2,3 shutdown program (up to 2008), program of Units 1,2,3 decommissioning (up to 2013), safety assurance during the current operation of Units 1,2,3 and the Shelter object, Shelter Implementation Plan transformation of the Shelter into an ecologically safe system (SIP) (up to 2007), implementation of the program of social protection of Chornobyl NPP's employees and Slavutyich inhabitants in connection with ahead of schedule plant decommissioning.

For implementation of decommissioning works and transformation of the Shelter object into an ecologically safe system during 2001 – 2008 it is necessary for SSE Chornobyl NPP financing from the State Budget of Ukraine in the following amount:

- implementation of works, linked with the safe shutdown of Units 1,2,3 – **US \$369,859 mln.**

- maintenance of the Shelter object in safe system – **US \$59,5 mln.**

- transformation of the Shelter object into an ecologically safe system (Ukrainian contribution) – **US \$50 mln.**

- spent fuel management – **US \$25,959 mln.**

- radioactive wastes management – **US \$52,519mln.**

According to Safety requirements decommission of Unit consists of the following phases:

- operation shutdown (phase 0)
- ultimate shutdown (phase 1)
- isolation (phase 2)
- quotation (phase 3)
- dismantling (phase 4)

In the Comprehensive program is addressing technical measures of the first three phases till the start of quotation. The duration of operation shutdown phase is 5 – 7 years for each Unit. The duration of ultimate shutdown and isolation phases is 8 – 10 years.



# COMPREHENSIVE PROGRAM OF CHORNOBYL NPP DECOMMISSIONING



*The Industrial Complex of Solid Radwastes Treatment construction*



*The Experts of G7 countries are monitoring implementation of International Projects at Chornobyl NPP*



*The participants of WANO seminar at ChNPP on the topic « Decommissioning of NPP » on the site of Dry Spent Fuel Storage construction*



## MITIGATION OF SOCIAL CONSEQUENCES OF CHNPP SHUTDOWN

The work on mitigation of social consequences after ChNPP shutdown takes special place in SSE «Chornobyl NPP» Administration activity. According to the Program of social protection of ChNPP employees and Slavutych inhabitants, approved by Cabinet of Ministers of Ukraine, SSE ChNPP worked and works on solution of problems on creation of compensate workplaces, effective management of human resources, assurance of social payments to staff, released in connection to Plant shutdown, retention and development of town infrastructure. SSE «Chornobyl NPP» supports development of small and middle business in Slavutych and in special economic zone "Slavutych", assignation of habitation and life support facilities, which was earlier at ChNPP balance to public property. Chornobyl NPP under participation of management and SSE "Chornobyl NPP" trade union committee developed and approved Governmental Resolutions on assurance of additional State social guarantees to employers, released in connection with ahead of schedule ChNPP shutdown and on establishment of monthly additional payments to pensions to retired employees.

The construction of new Industrial Heating Plant was finished within the joint international Ukraine – USA project employed 106 workers. Another 300 working places will be created after Spent Fuel Storage Facility 2, Liquid Radioactive Wastes

Treatment Plant and Industrial Complex on Solid Radioactive Wastes Management commissioning.

The enterprise "Atomremontservice" was created in the structure of National Nuclear Energy Generating Company "Energoatom" at the basis of ChNPP repair service employed about five hundred workers. Chornobyl NPP transferred to this enterprise buildings, facilities, equipment, materials and tools on the total value of 40 mln. UA Grn. Mainly the former ChNPP staff filled up this enterprise.

The Emergency Training Centre of NNEGC "Energoatom", created at the basis of Chornobyl NPP Emergency Actions Centre, was also filled up mainly by the former ChNPP staff.

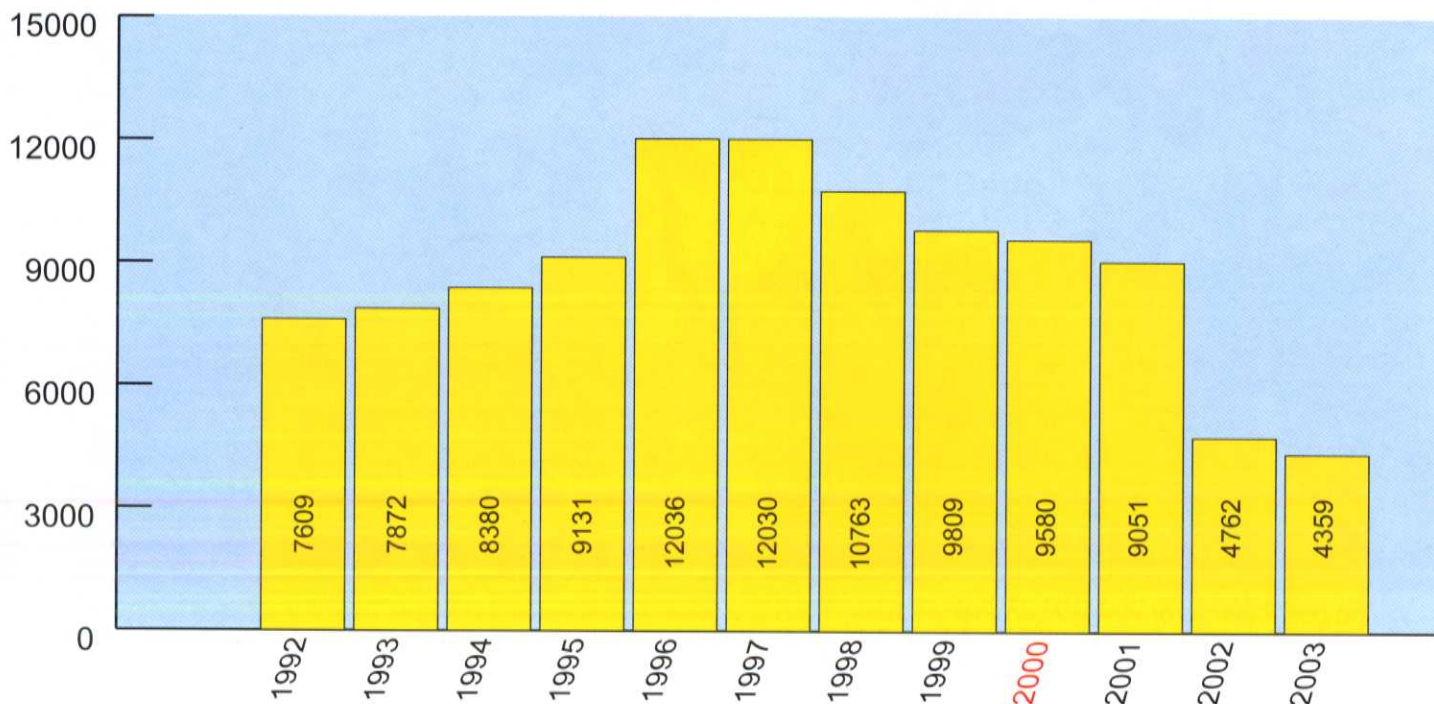
The problem of job placement for non-industrial ChNPP staff was solved mainly due to creation of life supporting utilities in Slavutych.

The work on mitigation of social consequences of Chornobyl NPP shutdown isn't yet finished.



Day of Slavutych town. The column of SSE "Chornobyl NPP's" marchers

The graph of Chornobyl NPP staff quantitative changes





# MITIGATION OF SOCIAL CONSEQUENCES OF CHNPP SHUTDOWN



The enterprise "Atomremontservice" was created in the structure of National Nuclear Energy Generating Company "Energoatom" at the basis of ChNPP repair service employed about five hundred workers



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Slavutych Laboratory of International Investigations and Technologies which was created by ChNPP and Department of Energy of the USA



Slavutych International Radioecologic Laboratory was created by Chornobyl NPP together with Department of Energy of the USA



The Municipal Enterprise on the service of dwelling-municipal economy in Slavutych was created after the closure of Chornobyl NPP. The problem of job placement for non-industrial staff was solved



The Municipal Trade Enterprise «Slavutych – Chornobyltrade» was created after the closure of Chornobyl NPP



# SLAVUTYCH – OUR TOWN

The inhabitants of Pripyat' were evacuated in April 1986 after Chornobyl accident. For the ChNPP staff the new town was built, inherited ancient name of Dnieper river – Slavutych. Slavutych is situated at the distance of 50 kilometres from Chornobyl Nuclear Power Plant and its history is closely linked with the destiny of Chornobyl NPP and its personnel. Slavutych is the town with original architecture. Its construction was begun in December 1986. The town was designed and built by the specialists from eight republics of the former USSR: Azerbaydjan, Armenia, Georgia, Latvia, Lithuania, Russia, Ukraine and Estonia.

The town construction was in complex and in quick rate and it was the reason why the town was rapidly populated already in 1988.

Since autumn 1989 Chornobyl NPP has been providing the construction and commissioning of the medical complex, polyclinic, secondary schools three and four, Lyceum, Palace of children's creation, Palace of culture "Energiya", public organisations building, stadium, market, hotel, two International Laboratories, Emergency Actions Centre. Chornobyl NPP made the significant contribution in the development of culture, education and medical service, physical culture and sport in Slavutych.



*Druzhby Narodiv avenue*



*Yerevanskiy block*



*Leningradskiy block*



*Kyivskiy block*



*Vilniuskiy block*



June 1, 2002 the town of Slavutych celebrated the fifteenth anniversary of its foundation. During all this time the personnel of Chornobyl NPP provided maintenance and development of Slavutych town. From the energy sales income Chornobyl NPP annually allocated US\$ 10 -15 mln for the town development. Since April 1, 2001 accommodation, life support facilities, infant schools, sport constructions, commercial and catering enterprises, which were at the balance of Chornobyl NPP were transferred in public property and are subordinated to Slavutych administration. The Plant was shutdown, but the life in Slavutych wasn't stopped. Slavutych social infrastructure is maintained and developed. The housing and social facilities are under construction. Today about 25 thousands inhabitants live in Slavutych, one third are children. 1370 young Slavutych inhabitants educate in 8 kinder gardens, 5476 pupils go to four schools and Lyceum. 778 boys and girls are engaged in 52 groups in Palace of children's creation, 890 senior pupils obtain professional skills in the Centre of Professional development.

## SLAVUTYCH – OUR TOWN



*There are four secondary schools and Lyceum in Slavutych*



*There are more than 6,5 thousand children*



*Veterans of World War -2 at the holiday streets*



*Tele- bridge Slavutych (Ukraine) – Richland (USA) during annual International children festival "Golden Slavutych's Autumn"*



*The guarantee of good health and sport achievements of Slavutych inhabitants is involving in sport in early childhood*



## CHORNOBYL NPP IS OPEN FOR PUBLIC

Information Representative Department receives every year more than two thousand visitors at Chornobyl NPP and in Slavutych. Visiting program includes: ChNPP's industrial site, information centre, control room, machine and reactor halls, Shelter object's site and observation pavilion, memorials to liquidators of Chornobyl accident, tour on Slavutych, Chornobyl, Prip'yat'. Chornobyl NPP secures safety and radiation protection of visitors.



## TOWN - SATELITE OF CHORNOBYL NPP - SLAVUTYCH

A tour on Slavutych town is called a journey through mini Soviet Union. Unique architecture and national colouring of Kyivskiy, Tallinskii, Rizhskii, Vilniusskii, Moskovskii, Leningradskii, Bilgorodskii, Tbilisskii, Bakinskii and Yerevanskii kvartals make an unforgettable impression. Pine forest, Dnieper beaches beautiful lakes enable to have a good rest. Comfortable hotel "Evropeyskii", restaurant "Slavutych" many bars, cafes and shops are available at the visitors service. Exposition in Information representative Centre of SSE ChNPP in Slavutych introduces the visitors to the history of Chornobyl NPP, Slavutych and Prip'yat' towns, gives information on decommissioning activities and conversion of the Shelter object into ecologically safe system.

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