



The international scientific and technical conference
**«NUCLEAR POWER ENGINEERING
OF THE REPUBLIC OF KAZAKHSTAN. NP-2008»**
June, 11-13, 2008, Kurchatov city

D E C I S I O N

The international scientific and technical conference
«NUCLEAR POWER ENGINEERING OF THE REPUBLIC OF KAZAKHSTAN»
June, 11-13, 2008, Kurchatov city,
RSE «National Nuclear Centre of the Republic of Kazakhstan»

In June, 11-13 2008 the International Scientific-Practical Conference «Nuclear power engineering of the Republic of Kazakhstan», dedicated the 50th anniversary of Institute of Atomic Energy NNC RK was held in Kurchatov.

Heads and experts of government agencies, enterprises, centres of science and the organizations of Kazakhstan, and also scientists and experts from Russia and Japan took part in Conference. Conferees were welcomed by

K.K. Kadyrzhanov, Director General RSE NNC RK;

R.R.Musin, the Major of Kurchatov;

Professor Y Fuji-ie, Ex-chairman of the Commission on atomic energy of Japan;

S.V.Kushnarev, Executive vice-president of the Nuclear society of Russia;

Yu.S.Cherepnin, Assistant Director General of FSUE NIKIET;

Sh. T. Tukhvatulin - Deputy Director General FSUE SRI SPA “Luch”, Russia.

During the Conference 21 plenary and 28 stand reports on the most urgent problems such as development of atomic Energetics in the Republic of Kazakhstan and all over the world, the most significant research results conducted in the National Nuclear Center and Russian and Japanese Scientific Centers in the fields of nuclear Energetics safety; research of materials of nuclear and thermonuclear reactors and creations of radioisotopes production technologies were presented. The 150 Conferees were registered.

Within the conference framework:

- the Session of Nuclear Society of Kazakhstan dedicated to the 15th anniversary of the society creation, where the theme «Through the Nuclear society - to kindly relationship to atomic engineering», was discussed. Representatives of Nuclear societies of Russia and Japan took part there;

- the Press conference with the assistance of K.K. Kadyrzhanov, Director General RSE NNC RK, T.M. Zhanitkin, Chairman of the RK Committee on atomic energy, Professor Y Fuji-ie, Ex-chairman of the Commission on atomic energy of Japan, S.V.Kushnarev, Executive vice-president of the Nuclear society of Russia, Yu.S.Cherepnin, Assistant Director General of FSUE NIKIET, Ye. A. Kenzhin, Director of ASE IAE RSE NNC RK and representative of Kazakhstan mass-media were carried out.

For Conferees the following tours were offered: “Atomic Lake”, “Test Field” of the former

Semipalatinsk test site, Complexes of research reactors "Baikal-1" and IGR, non-reactor Test Benches of IAE NNC RK, and also excursion to the Museum of the former Semipalatinsk test site.

The papers presented innovative projects of nuclear reactors, and views to the basic lines of the development of Atomic Energetics in the world. The papers reflected the current opinions to the space nuclear energetics and issues on development of advanced reactor technologies. Problems of development and testing of nuclear fuel, results of experiment-calculated researches of reactor fuel behavior in transitive and emergency modes were discussed concerning reactors of different types and for various operational conditions. Issues on the practical decision of NPP decommissioning were not stood aside. Some reports were devoted to creation of high-temperature gas-cooled reactors for Energetics and industry including large-scale hydrogen production. The current papers reflected the main achievements of IAE NNC RK for the fifty years' experience period; prospect of the institute development, and also results and prospects of Kazakhstan and Japan cooperation in the field of nuclear Energetics.

Conference underlines:

The fact that the nuclear power engineering can bring the important contribution to satisfaction of energy needs and maintenance of steady social and economic development of mankind in XXI century is universally recognized. World experience shows, without nuclear energetics it is difficult to solve power problems as in the nearest, and the long-term future. At the same time, for creation of technical base for nuclear technics development and technology enormous financial and intellectual investments, which the Republic of Kazakhstan can provide having, powerful reserve and all preconditions for nuclear and thermonuclear power development are required.

In the modern world efforts of one side is not sufficient for solving of problems connected with creation and development of atomic power engineering, quite the contrary, generation of consolidate position of all the countries experts understanding importance of the problem of energy production development with the help of nuclear energy sources, is necessary.

Now the project of the State Program on nuclear-power branch development in the Republic of Kazakhstan and the project of the Program of nuclear power engineering development in Kazakhstan are prepared. Participants of the conference consider that it is necessary to accelerate discussion, completion and acceptance of these programs directed on an intensification of works on nuclear energetics development and concerning to it industrial productions and scientific and technical developments.

Conference marks:

The 50th anniversary of the Institute of Atomic Energy of the National Nuclear Center of the Republic of Kazakhstan marks the achievement of the big successes in development of applied scientific researches in the field of peaceful use of atomic energy and nuclear technologies development which will be claimed for national economy development. In the field of substantiation of atomic engineering safety the most significant results were received together with the Japanese experts for light-water reactors and reactors on fast neutrons.

Some perspective innovative projects connected with development of nuclear technologies and nuclear-power branch of Kazakhstan are being realized by the institutes of NNC RK. Since 2006 NNC RK experts performed technical and economic researches in a NPP construction substantiation in Kazakhstan. Package of requirements on economic efficiency and technical safety to the future Kazakhstan NPPs (KURD) is being developed jointly with Japanese experts.

As the first stage of practical realization of development of atomic engineering in Kazakhstan the creation of nuclear heat power plant (NHPP) with small-size reactor facility in Kurchatov is

considered. Realization of this project will allow to provide Kurchatov with electric and heat energy and to get operating experience of referential (pilot) blocks of the perspective NPPs. Experts of NNC RK institutes carried out the great volume of preparation works on NHPP creation including a substantiation of choice of the NHPP building site in Kurchatov city. Today NNC RK experts are deal with the choice of the type of reactor facility for the future NHPP. Possibility and technical and economic efficiency of light-water and gas-cooling reactors use is considered. Acceptance of the Governmental decree about building of nuclear station in Kurchatov city can essentially accelerate works under the given project.

For maintenance of scientific and technical support and successful development of nuclear-power branch of the country the necessity to continue the state target financing of existent available large base nuclear-physical facilities of NNC RK at the level providing their effective and safe operation. For the purpose of expansion of technical possibilities of NNC RK experimental base with participation of Russian experts the technical and economic substantiation of project «Research Reactors' updating» that allows conducting research works in the field of atomic engineering and nuclear technologies at the level meeting modern requirements, is developed. Owing to updating of research reactors it is possible to continue development and tests of new kinds of nuclear fuel, materials for the nuclear and thermonuclear technics, for reactors of space appointment and, as a whole, for created nuclear-power branch at the new qualitative level.

Works on material testing tokamak KTM creation in Kazakhstan are performed along with reactor researches of TNR candidate materials will allow NNC RK to strengthen the position as the full participant of the international projects of thermonuclear power engineering creation.

Updating of operating nuclear reactors of NNC RK and creation of Kazakhstan material testing tokamak KTM allows to Kazakhstan to strengthen the prestige as the country owning nuclear reactor technologies.

Further development of NNC RK is considered as a part of systematic process of stable condition maintenance of the country nuclear competence and commercialization of domestic scientist's developments in the field of atomic engineering and nuclear technologies development.

Conference considers:

Creation of nuclear-power branch and atomic engineering development in Kazakhstan will allow to participate actively in the decision of global problems of the mankind connected with necessity of reduction of hotbed gases emissions, and also to realize the national programs focused on maintenance of energy needs of national economy. It will allow using ecologically existent fuel and mineral resources, to raise an export potential of Kazakhstan.

Purposeful and system development of nuclear-power branch of Republic of Kazakhstan will be based on the following principles:

- Practical demand and economic feasibility of solving problems;
- The international cooperation in the field of development of reactor engineering and nuclear energetics objects including space appointment, carrying out of researches in substantiation of its safety, creation of systems of the closed fuel cycle;
- The forced formation of native scientific-technological potential and nuclear energetics development means based on the further development of the professional training systems
- Maintenance of transparency of works and researches on nuclear-power branch development.

In interests of the international safety the developed countries of the world possessing

technologies of peaceful use of atomic energy, should pursue a policy of rendering of all-round assistance to power branches development of the countries with insufficient production of energy. Carrying out of joint technical and economic researches concerns effective directions of such interaction in a substantiation of possibility of NPPs building in the interested countries, cooperation in formation of legislative basis of atomic engineering development, in working out and realization of perspective projects of NPP, in preparation of profile technical and scientific personnel.

A lot of world countries plan to develop atomic engineering based on reactors of small and average capacity. Reactor blocks of small and average capacity are optimum for development of regional power. At the same time, the market of such facilities is presented by individual projects that cause necessity of expansion of large-scale development of projects and building of pilot blocks of small-and-medium size NPP.

It is necessary to expand information interchange on the developed projects of NPP with reactors of new generation and to develop the international cooperation in their joint realization which includes projects of reactors of «Generation IV», for example, first of all:

- Fast reactors with sodium, lead, lead-bismuth coolant;
- high-temperature gas-cooling reactors allowing to lift heat efficiency of NPP in the gas turbine cycle up to 50 %, and also to create large-scale production of hydrogen.

It is necessary to consider interest of many companies of the world to development and tests new fuel and materials for power reactors which can be used for production of heat and electric energy in the near future. To increase efficiency of such developments and introduction of new kinds of fuel in atomic engineering it is expediently to join efforts of the interested countries and organizations with creation prospect in the near future of the International centre on development and testing of new kinds of fuel. Owing to the fact that Kazakhstan possesses considerable stocks of uranium, capacities on its extraction and processing including reactor fuel production, and also research reactor facilities for fuel testing in NNC RK, can be considered as the country of possible basing of such Center.

For successful realization of plans on nuclear-energy branch of Kazakhstan it is necessary to develop interaction with wide sociability, to propagandize atomic power engineering and nuclear technologies, to involve mass media.

Now atomic power engineering is growing branch, which actively assists to social-economic progress of many countries. And its future considerably depends on efficient collaboration, development of innovative technologies allowing to solve fully problems of energy supply and ecological safety.

PROGRAM COMMITTEE