

**KAZAKSTAN CENTER OF NUCLEAR TECHNOLOGY SAFETY.
APPROACH OF WORK, POSSIBILITIES, AND PLANS**

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**КАЗАХСТАНСКИЙ ЦЕНТР БЕЗОПАСНОСТИ ЯДЕРНЫХ ТЕХНОЛОГИЙ.
ОБЛАСТЬ ДЕЯТЕЛЬНОСТИ, ВОЗМОЖНОСТИ И ПЕРСПЕКТИВЫ**

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NTSC was created in November, 1997 as an association of experts in all the areas of nuclear and radiation safety and radioactive materials handling. The main goal of creation is investigation of safety aspects of nuclear power in the Republic of Kazakhstan, taking into account the interests of environment and human health protection in the regions of nuclear industry units allocation. The Center was created with support and special cooperation with the US, has grown and developed cooperative ties with several other countries.

THE MAIN DIRECTIONS OF NTSC ACTIVITY ARE THE FOLLOWING:

- Assessment and realization of safety analysis of technologies and units, connected with the utilization of nuclear power, examination of project and technical documentation in the area of nuclear power utilization.
- Development, examination and scientific-technical justification of law and regulation documentation in the area of peaceful utilization of nuclear power.
- Analytical support of safety of operating and future reactors and other nuclear units of Kazakhstan Republic.
- Scientific-technical support on reactor's physics and safety, radiation material science, nuclear fuel cycle, ecological aspects of nuclear energetic and nuclear fuel cycle (environment monitoring and radiation safety).
- Examination of uranium mining and processing.
- Technical cooperation, including the exchange of information and personnel in the field of nuclear power, reactor physics and radiation material science, radiation ecology, new conversion technologies, standardization of technologies and equipment.

GENERAL DIRECTIONS OF COOPERATION:

- Examination of technical projects, connected with the safety maintenance of nuclear units and technologies.
- Examination of technical, law and regulation documentation in the area of peaceful utilization of nuclear power.
- Science-technical cooperation in the field of nuclear power
- Developing of analytical capability to support safety analysis of current and future RK reactors

CURRENT AND COMPLETED ACTIVITY

1. Expertise of the Safety Analysis Report on the BN-350 spent fuel packaging (ANL).
2. Determination and evaluation of the options for installing and operating of cesium traps at the BN-350 in order to lower the existing cesium concentration in a liquid sodium coolant (ANL).
3. Creation of two high level planning documents in support of the BN-350 shutdown and decommissioning (Two Special Technical Requirements (STR): General provisions for BN-350 decommissioning and STR for the creation of BN-350 decommissioning Project (KATEP-ANL).
4. Delivery and installation of computer equipment and Y2K assessment (ANL).
5. An assessment of the existing software and hardware being used by KAE. Identification of system requirements for national/international reporting and oversight of Kazakhstan nuclear facilities that not being met by the current system (Lockheed Martin Energy Systems).
6. Material science investigations of the BN-350 materials (Application of Structural Materials Data from the BN-350 Fast Reactor to Life Extension of Light Water Reactors).

7. Student exchange in the main area of direction (ANL- KazGU).
8. Organization of four workshops on BN-350 decommissioning.(ANL, NRC, KAE, NNC, KATEP , NTSC , Ministry of natural resources and environment protection, Agency of emergency situations, Agency of health protection)
9. Investigation of operation experience at BN-350 reactor. (PESCO Co. Japan).

COOPERATION ON BN-350 DECOMMISSIONING

- Processing of liquid sodium coolant of BN-350 (It is planned to be supported by ANL).
- Transportation and storage of BN-350 spent fuel.
- Processing and storage of radioactive waste of BN-350.
- Equipment deactivation and conservation.
- Participation in the development of BN-350 decommissioning plan for international review.

PLANNING ACTIVITY.

1. Creation of BN-350 reactor decommissioning plan for international peer review (USA- ANL, KEC-TACIS, JAPAN- JNC,PESCO)
2. Application of computer codes relating to export control and account of materials and technologies with double using (intra-firm control at industrial enterprises of RK).
3. The Work of the problems of Nonproliferation of Nuclear Materials and Technologies.
4. The cooperation with American-Russian-Kazakhstan Center (USINSC/RINSC/KNTSC) in the following areas:
 - Exchange of computer experts to develop Computer Network and Database all three Center,
 - Investigation the properties of irradiated materials from reactors in Kazakhstan
 - Transfer and Training on Computer Codes.

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