

KINS-IAEA Workshop on Safety Review and Assessment for Licensing NPPs

Republic of Kazakhstan

Presented by: Nurzhanov Ardak, head of Licensing Division

**Regulatory Body Name: Committee of Atomic and Energy Supervision and Control
of Ministry of Energy of the Republic of Kazakhstan**

Daejeon, Republic of Korea

Future nuclear power plant in the Republic of Kazakhstan

- In 2006, in the framework of the joint statement of the Presidents of the Republic of Kazakhstan and the Russian Federation on cooperation in the field of peaceful use of atomic energy, the statement was made on the prospects for the construction of the first nuclear power plant in the western region of the Republic of Kazakhstan. In the same year, a joint venture, JSC “Kazakhstan – Russian Company “Atomic Stations”, was established as a specialized organization for management of the developing projects of nuclear power plants.

Future nuclear power plant in the Republic of Kazakhstan

- During the period from 2007 to 2010 the technical specifications were developed for the reactor facility project and its main systems; the original data on engineering survey for the proposed construction site were collected and systematized; document package of the Declaration about intent on construction of nuclear power plant with reactor facility WBER-300 in Mangistau region was developed and agreed, after which the feasibility report of the investment project "Construction of NPP with RF WBER-300 in Mangistau region" was developed and agreed. However, the further development of this project was not implemented.

Future nuclear power plant in the Republic of Kazakhstan

- In 2011, the works on designing of nuclear power plant in the Republic of Kazakhstan were continued within the framework of the “Program of Atomic Industry Development in the Republic of Kazakhstan for 2011-2014 with the Prospect of Prolongation up to 2020”. The final decision on the construction of nuclear power plant in Kazakhstan is currently pending. In beginning of 2016, the implementation of the Program in a part relating to decision of the Government of the Republic of Kazakhstan on NPP construction was postponed on one year, till the beginning of 2017.

Fast Breeder reactor BN-350



Technical characteristics of the BN-350

Thermal power, 1000 MW	
Fuel	UO ₂
Loading ²³⁵ U, kg	Fuel has been removed, transported to the long-term storage
Enrichment ²³⁵ U, %	17, 21, 26

The reactor site is located near Aktau city, West region of Kazakhstan. Operator – LLP MAEC-Kazatomprom. Reactor facility (RF) BN- 350 is the experimental-industrial installation of the loop type. The heat-removal circuit of RF BN-350 is three-loop one. The coolant of the first and second circuits is sodium; the third circuit is steam water.

The design thermal power of the reactor was 1000 MW, the equivalent electrical power – 350 MW. RF had not been operated at the maximal design parameters. For the whole time of operation the maximum thermal power was 750 MW. The reactor was in operation from 1972 to 1999.

WWR-K Reactor Complex

Technical characteristics of the WWR-K

Thermal power, MW 100 W (limited by biological shielding)

Fuel UAl_4

It varies depending on the experiment

Loading ^{235}U , kg

Enrichment ^{235}U , % 36 (19,7)

The research reactor WWR-K is located in Alatau settlement near Almaty, Almaty region.



WWR-K research water-cooled pool-type reactor with nominal power 10 MW was commissioned at KazSSR AoS Institute of Nuclear Physics in November 1967.

Moderator is desalinated water. Side reflector is desalinated water or beryllium. The upper and lower end reflectors are water.

IGR Pulse Graphite Reactor



Technical characteristics

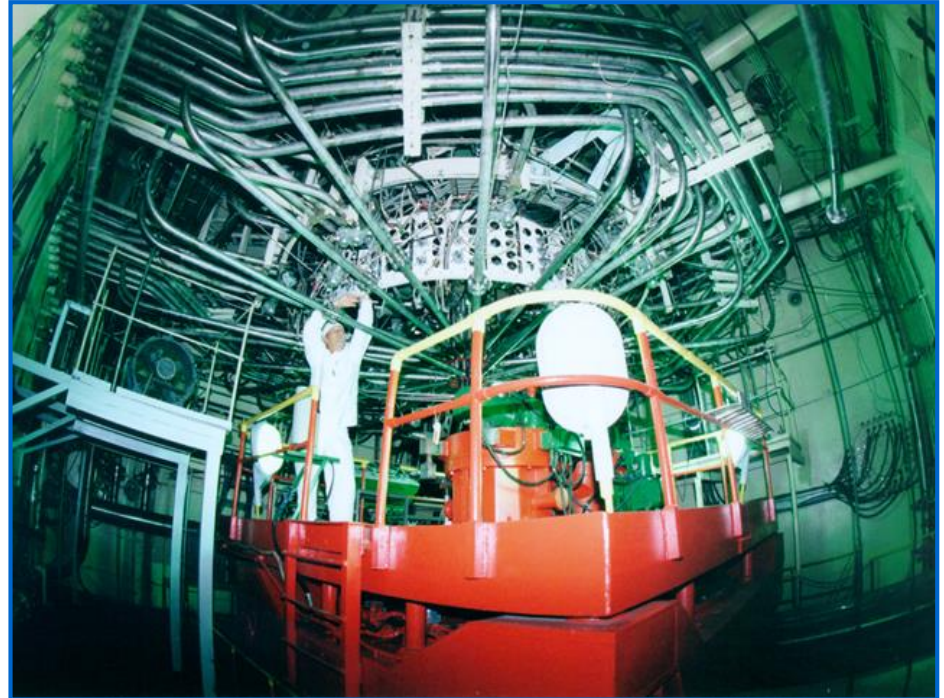
Thermal power, 10 MW	10 GW unregulated impulse	–
	1 GW – regulating mode	
Fuel	Graphite infiltrated with uranyl nitrate	
Loading ^{235}U , kg	9,056	
Enrichment ^{235}U , %	90	

- One of the world's oldest research reactors (commissioned in 1961), the reactor IGR is a unique source of neutron and gamma radiation, which differentiates by high dynamics of power variation.
- IGR reactor was constructed and started-up at the Semipalatinsk Test-Site. First criticality was achieved on June 07, 1960. The reactor was commissioned in 1961.
- Preliminary works on transition to low enrichment uranium are carrying out.

IVG.1M Research reactor

Technical characteristics of the IVG.1M

Thermal power	72 MW
Fuel	Uranium-zirconium alloy
Loading ^{235}U , kg	4,6 kg
Enrichment ^{235}U , %	90

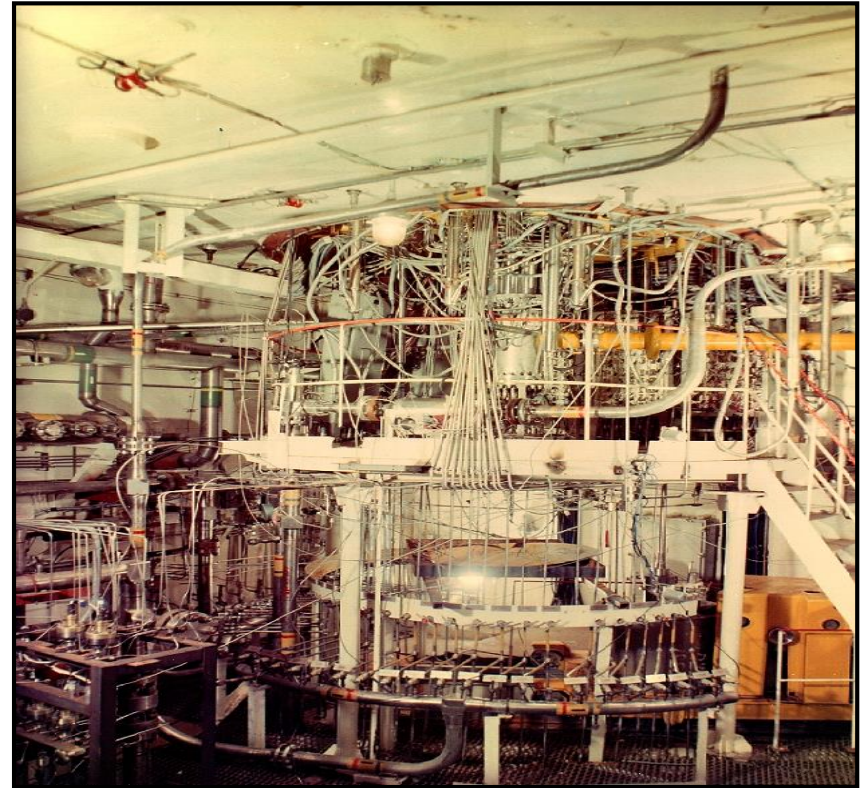


- IVG.1M research reactor is located in the territory of the former Semipalatinsk nuclear test area, the site "Baikal -1" near the town of Kurchatov, East Kazakhstan oblast.
- The water-cooled reactor IVG.1M is an upgrade of the gas-cooled reactor IVG.1, which was used for testing the fuel assemblies and the cores of high temperature gas-cooled reactors, including reactors of nuclear rocket engines and nuclear engineering power systems. IVG.1 reactor fuel was exported to Russia during its upgrade into IVG.1M.

RA Research Reactor (permanent shutdown)

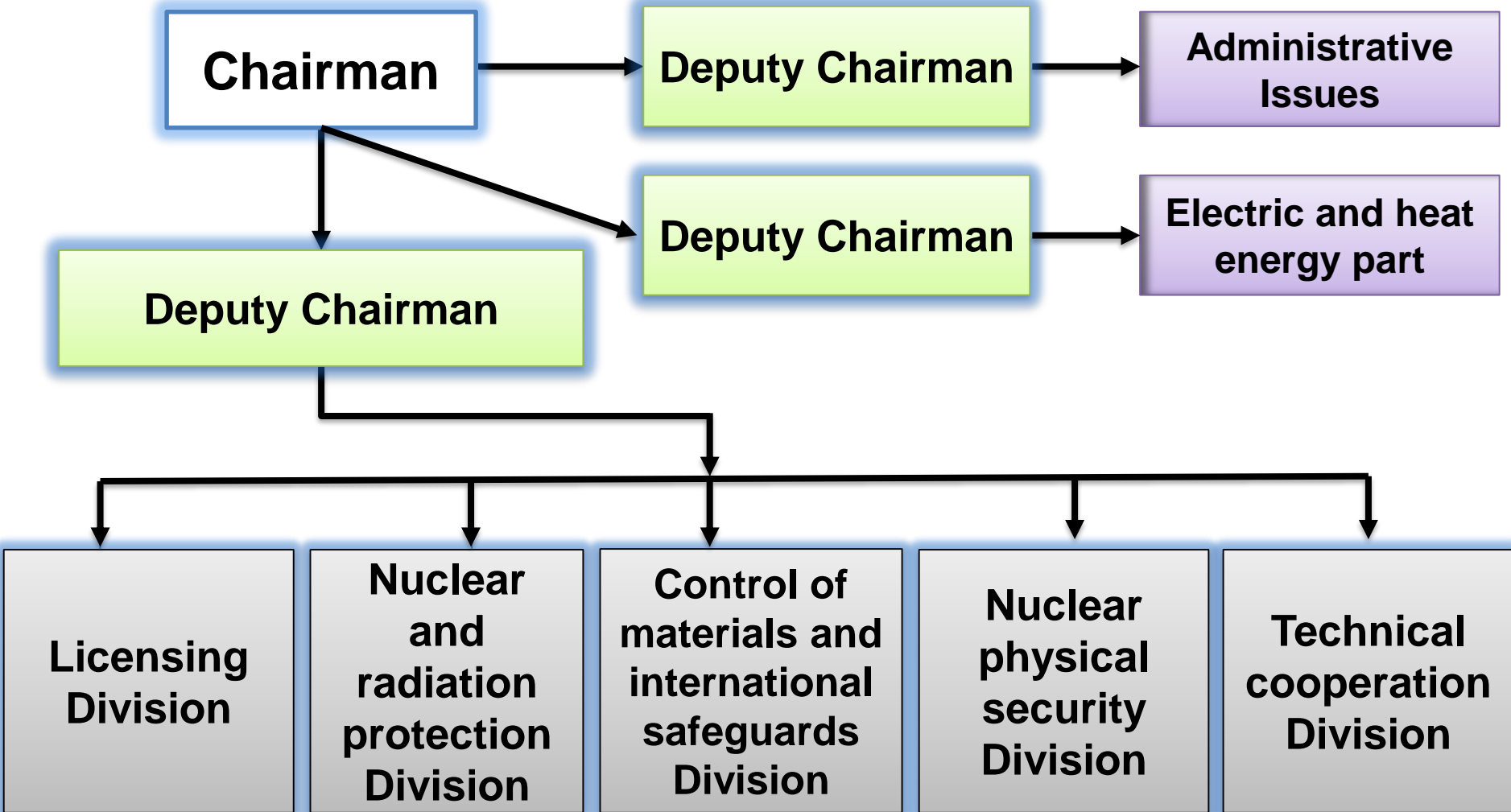
Technical characteristics of the RA

Thermal power, MW	Depends on fuel	
Fuel		
Loading ^{235}U , kg	No	fuel since 1998
Enrichment ^{235}U , %	-	

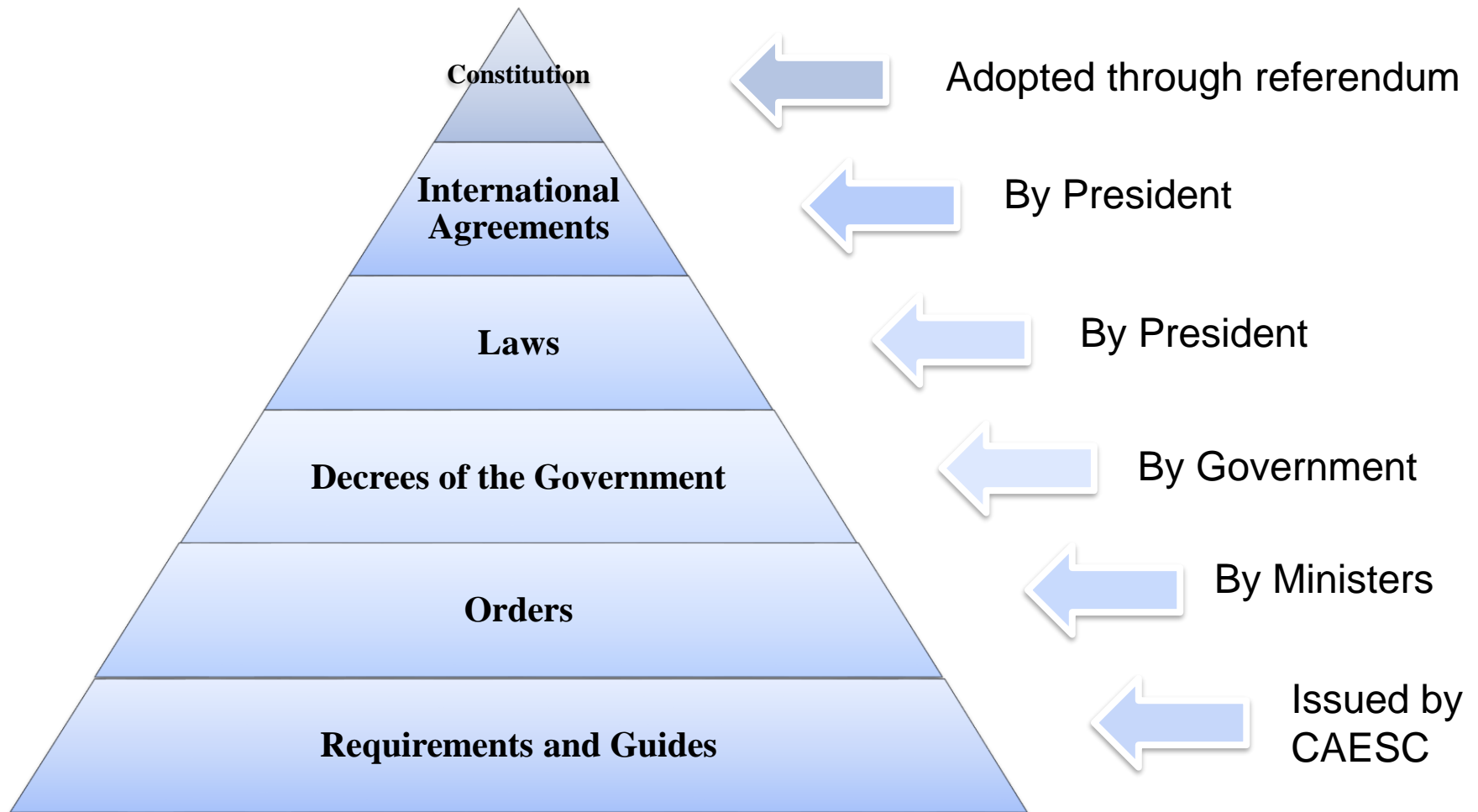


RA research reactor is located on the territory of the former Semipalatinsk Nuclear Test Site, the site "Baikal-1" near Kurchatov, East Kazakhstan region. All of the RA reactor systems are in operating conditions. The restart of operation of the reactor is not planned, but within the IAEA classification the RA reactor is considered to be functional as the plan for its decommissioning is not developed and approved. The design lifetime of the reactor is not set, the measures to prolong its lifetime are not conducted as its establishment is not supposed.

The Regulatory Body



National legal hierarchy



Main Laws of the Republic of Kazakhstan

- Law of Republic of Kazakhstan dated on May 16, 2014 No. 202-V “On Permissions and Notifications”
- Law of Republic of Kazakhstan dated on October 19, 2000 No. 85 “On Security Activities”
- Law of Republic of Kazakhstan dated on April 11, 2014 No. 188-V “On Civil Protection”
- Law of Republic of Kazakhstan dated on January No. 442-V “On Atomic Energy Use” 12, 2016
- Law of Republic of Kazakhstan dated on April 23, 1998 No. 219 “On Radiation Safety of Population»

Principal Decrees of the Government of Republic of Kazakhstan

- Decree of the Government of Republic of Kazakhstan on April 23, 2015 No. 274 “On Determination of Licensor in Field of Atomic Energy Use”
- Decree of the Government of Republic of Kazakhstan on February 24, 1998 No. 130 “On Some Issues of Regulation of Export of Uranium Products”
- Decree of the Government of Republic of Kazakhstan on June 29, 2011 No. 728 “On Approval of Program of Nuclear Industry Development in the Republic of Kazakhstan for 2011-2014 with the Prospects of up to 2020”
- Decree of the Government of Republic of Kazakhstan on July 30, 2010 No. 768 “On Approval of Technical Regulations “Nuclear and Radiation Safety”
- Decree of the Government of Republic of Kazakhstan dated in July 1, 2010 № 684 “Nuclear and Radiation Safety of Research Nuclear Facilities”.
- Decree of the Government of Republic of Kazakhstan dated in July 1, 2010 № 683 “Nuclear and radiation safety of nuclear power plants”

Orders of Ministries and Authorities

- Order of acting Minister of Investment and Development of Republic of Kazakhstan dated on December 26, 2014 № 297 “On approval of Rules for Ensuring Industrial Safety while Geological Exploration, Mining and Processing of Uranium”.
- Order of acting Minister of Investment and Development of Republic of Kazakhstan dated on December 26, 2014 № 301 « On approval of Rules for Ensuring Industrial Safety while Handling Ionizing Radiation Sources”.
- Order of Minister of Energy Of Republic of Kazakhstan dated on February 8, 2016 № 39 “On approval of Rules for Organization of Collection, Storage and Disposal of Radioactive Sources and Nuclear Spent Fuel”.
- Order of Minister of Energy Of Republic of Kazakhstan dated on January 20, 2016 № 12. “On Approval of Attestation of the Personnel of Atomic Energy Use Facilities”.
- Order of Minister of Energy Of Republic of Kazakhstan dated on February 9 2016 № 44. “On Approval of the Rules for State Accounting of Nuclear Material”.

- Order of Minister of Energy Of Republic of Kazakhstan dated on November 13, 2014 № 123. “On Approval of Rules for State Register of Disposal of Hazardous Substances, Radioactive Waste and Sewage Discharge into the Subsoil”.
- Order of Minister of National Economy Of Republic of Kazakhstan dated on February 27, 2015 № 155. «On Approval of Hygienic standards “Sanitary requirements for radiation safety”.
- Order of acting Minister of National Economy Of Republic of Kazakhstan dated on March 27, 2015 № 261. «On Approval of Sanitary Rules "Sanitary-epidemiological requirements for ensuring radiation safety”.
- Order of Minister of Investment and Development Of Republic of Kazakhstan dated on April 30, 2015 № 548. «On Approval of Regulations for Transportation of Dangerous Goods”.
- Order of acting Minister of National Economy Of Republic of Kazakhstan dated on March 27, 2015 № 259 “On Approval of Regulations for Control and Accounting of Individual Doses of Persons during Work with Ionizing Radiation Sources, Medical X-ray Procedures, as well as Obtained due to artificial radiation background”.

- Order of the Minister of Energy of the Republic of Kazakhstan of **February 20, 2017** No. 58 “On Approval of Technical Regulations “Nuclear and Radiation Safety”. Registered in Ministry of Justice of Republic of Kazakhstan on April 11, 2017 № 15005.
- Order of the Minister of Energy of the Republic of Kazakhstan of **February 20, 2017** No. 60 “On Approval of Technical Regulations “Nuclear and Radiation Safety of Nuclear Power Plants”. Registered in Ministry of Justice of Republic of Kazakhstan on April 11, 2017 № 15007.



18008510



Лицензия на объект

26.04.2018 года

18008510

Выдана

Корпоративный фонд "University Medical Center"
Республика Казахстан, г.Астана, г.Астана, ул.Керей Жанибек хандары, 5/1,
БИН: 151040018391

(полное наименование, местонахождение, бизнес-идентификационный номер
юридического лица (в том числе иностранного юридического лица), бизнес-
идентификационный номер филиала или представительства иностранного
юридического лица – в случае отсутствия бизнес-идентификационного номера у
юридического лица/полностью фамилия, имя, отчество (в случае наличия),
индивидуальный идентификационный номер физического лица)

На осуществление

Обращение с радиоактивными веществами, приборами и установками,
содержащими радиоактивные вещества

(наименование лицензируемого вида деятельности в соответствии с Законом
Республики Казахстан «О разрешениях и уведомлениях»)

Адрес объекта
осуществления
деятельности или
действий (операций)

(почтовый индекс, область, город, район, населенный пункт, наименование улицы,
номер дома/здания (стандартного помещения))

Особые условия

Типы приборов, установок, материалов, веществ, с которыми
лицензиат проводит работы, указаны в подпунктах деятельности.

(в соответствии со статьей 36 Закона Республики Казахстан «О разрешениях и
уведомлениях»)

Лицензиар

Государственное учреждение "Комитет атомного и энергетического
надзора и контроля"

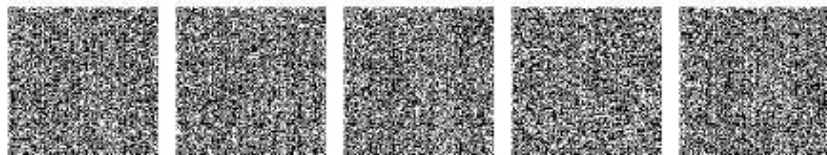
(полное наименование лицензиара)

Руководитель
(уполномоченное лицо)

СЕРГАЗИН ГУМАР ЕКПИНОВИЧ
(Ф. И. О. руководителя (уполномоченного лица))

Место выдачи

г.Астана



18008510



Страница 1 из 2

Приложение к лицензии на объект

Номер лицензии 18008510

Дата выдачи лицензии 26.04.2018 года

Подвид(ы) лицензируемого вида деятельности

- Хранение радиоактивных веществ, приборов и установок, содержащих радиоактивные вещества
 - Хранение радиоактивных веществ
 - Радиофармпрепаратов
 - Закрывать радиоактивных источников
- Реализация радиоактивных веществ, приборов и установок, содержащих радиоактивные вещества
- Изготовление радиоактивных веществ, приборов и установок, содержащих радиоактивные вещества
 - Изготовление радиоактивных веществ
 - Радиофармпрепаратов
- Использование радиоактивных веществ, приборов и установок, содержащих радиоактивные вещества
 - Использование радиоактивных веществ
 - Радиофармпрепаратов

(наименование подвида лицензируемого вида деятельности в соответствии с Законом Республики Казахстан «О
разрешениях и уведомлениях»)

Лицензиат

Корпоративный фонд "University Medical Center"

010000, Республика Казахстан, г.Астана, г.Астана, ул.Керей Жанибек
хандары, дом № 5/1, БИН: 151040018391

(полное наименование, местонахождение, бизнес-идентификационный номер
юридического лица (в том числе иностранного юридического лица), бизнес-
идентификационный номер филиала или представительства иностранного
юридического лица – в случае отсутствия бизнес-идентификационного номера у
юридического лица / полностью фамилия, имя, отчество (в случае наличия),
индивидуальный идентификационный номер физического лица)

г. Астана, ул. Сығанақ, 2

Адрес объекта
осуществления
деятельности или
действий (операций)

(почтовый индекс, область, город, район, населенный пункт, наименование улицы,
номер дома/здания (стандартного помещения))

Особые условия
действия лицензии

Типы приборов, установок, материалов, веществ, с которыми
лицензиат проводит работы, указаны в подпунктах деятельности.

(в соответствии со статьей 36 Закона Республики Казахстан «О разрешениях и
уведомлениях»)



Thank you for your kind attention!

