

IMPLEMENTING ARRANGEMENT
BETWEEN
THE DEPARTMENT OF ENERGY OF THE
UNITED STATES OF AMERICA

AND

THE MINISTRY OF ENERGY, INDUSTRY AND TRADE OF THE
REPUBLIC OF KAZAKHSTAN

CONCERNING
DECOMMISSIONING OF THE BN-350 REACTOR

The Department of Energy of the United States of America (DOE) and the Ministry of Energy, Industry and Trade of the Republic of **Kazakhstan (MEIT)**, hereinafter referred to as the Parties,

Recalling the **Agreement** Between the United States of America and the Republic of Kazakhstan Concerning the Destruction of Silo Launchers of Intercontinental **Ballistic** Missiles, Emergency Response, and the Prevention of Proliferation of Nuclear Weapons signed December 13, 1993, (the “Umbrella Agreement”);

Recalling the Agreement between **the** Department of Defense of the United States of America and the Ministry of Defense of the Republic of **Kazakhstan** Concerning Control, Accounting, and **Physical** Protection of Nuclear Material to **Promote** the Prevention of Nuclear Weapons Proliferation signed December **13**, 1993, as amended (the “**MPC&A** Agreement”);

Noting that, pursuant to Article II(1) of the **MPC&A** Agreement, the **Department of** Defense of the United States of America and the Ministry of Defense of the Republic of **Kazakhstan** have designated the DOE and the **MEIT** as their respective agents for this Implementing Arrangement; and

Noting that Article 5 of **the** DECREE of **the** Republic of Kazakhstan: “On the Decommissioning of the BN-350 Reactor in **Aktau, Mangyshlak Oblast**”, signed April 22, 1999, assigns to the Ministry of Science, whose responsibilities have been assumed by **MEIT**, the coordination of work, implementation and **fulfillment** for **the** BN-350 **decommissioning**,

Agree to the following arrangements:

ARTICLE I

- 1.1 The Parties shall engage in a cooperative program (the “Program”) to shut down the BN-350 reactor in **Aktau**, Kazakhstan safely and to place it into a stable condition where restart and use of the facility to produce weapons grade **fissile** materials is not practical (this process is henceforth referred to as ‘shutdown’).
- I.2 This Program shall include appropriate upgrades for **safety** and radiation monitoring systems at **the** facility intended to operate during the interim period that the reactor is shutdown prior to its final dismantlement and decommissioning, planning the work involved with the shutdown, conditioning and draining the sodium coolant, processing the sodium coolant to an **environmentally** safe material, and deactivating residual sodium coolant remaining in the BN-350 piping systems and components to a point where such piping systems and components may be safely stored until **final dismantlement** and reuse of such piping systems and components is precluded.
- 1.3 This Program is not intended to duplicate those activities necessary to implement the undertaking to dispose of the BN-350 spent **fuel** included in the “Implementing Arrangements between the Department of Energy of the United **States** of America and the Ministry of Science-Academy of Sciences of the Republic of Kazakhstan Concerning Long-Term Disposition of BN-350 Nuclear Material”, signed November **18**, 1997. However, the Parties **agree** to assure appropriate coordination of activities between these programs, to promote efficiency and **mutual** cooperation.
- 1.4 This Implementing Arrangement and all activities undertaken hereunder are subject to and shall be governed by the **MPC&A** Agreement.

ARTICLE II

- 2.1 The DOE and **MEIT** may mutually arrange, as appropriate, for the participation of other participants in the execution of this Implementing Arrangement. The principal Program participants and their roles are **specified**, but not limited to, as follows:
 - a. DOE will ensure that Argonne National Laboratory will provide technology, project management for DOE activities, engineering, materials; and safety analyses support, and general **planning assistance** either directly or through **subcontractors** to the appropriate **Kazakhstan** participants;
 - b. The Kazakhstan **Atomic Energy Committee (KAEC)** will provide independent regulatory oversight and safety approvals for the Republic of Kazakhstan;

- c. The **Kazakhstan** Nuclear Enterprises Corporation (**KATEP**) will provide overall planning and project management for the shutdown of the RN-350 for the Republic of **Kazakhstan**;
- d. The **Mangyshlak** Atomic Energy Complex (**MAEC**) has overall responsibility for the operation of the RN-350 and is responsible for the safe implementation of all activities at the plant for the Republic of Kazakhstan;
- e. The **Kazakhstan** Nuclear Technology **Safety** Center (**NTSC**) and **the** National Nuclear Center (**NNC**) of the Republic of Kazakhstan may provide safety analysis, regulatory, technical, coordination, administrative, and subcontracting support for the Program for all participants.

The Parties shall provide general guidance for the coordination of **the** work of all participating entities.

2.2 The DOE, in consultation with the **MEIT**, shall provide assistance for, but not limited to, some or all of the following activities:

- a. Planning the shutdown of the reactor to a stable condition including establishing regulatory guidance and requirements to govern the shutdown.
- b. Upgrading safety systems including **fire** protection systems and radiation monitoring systems.
- c. Conditioning **the** reactor's sodium coolant for draining, including reducing the cesium concentration of the coolant.
- d. Development and operation of the systems required to drain and process **the** reactor's sodium to an environmentally safe material.
- e. Development and operation of systems to deactivate **residual** quantities of sodium remaining in the plant piping and Components. The end-point reached after such deactivation shall ensure that the plant is acceptably safe from nuclear, radiological, industrial, and environmental perspectives for **the** shutdown period, and that the capability to restart the reactor or otherwise produce nuclear material **is** not practical.
- f. Development of **safety** analyses and methods as necessary to **complete the above tasks**.

2.3 The tasks identified in paragraph 2.2 **above** are necessary either **to achieve** the stable condition or **technically** preclude the plant from restart and producing weapons-grade **fissile materials**.

- 2.4 It is understood that there are **many** other tasks necessary **to** place the reactor in a stable configuration. The **MEIT shall obtain funding** within Kazakhstan and **from** other international donors as necessary to complete these tasks. The DOE, in **consultation** with the Department of State of the United States of America, may assist the **MEIT** as practicable to identify sources of funding from other international donors. The Parties agree to coordinate activities sponsored by the various funding entities to promote efficiency and preclude duplication,
- 2.5 It is understood **that** the DOE role is focused on providing support for technical integration, **technology**, technical oversight, engineering, materials, safety analyses, and project management (including Quality Assurance, planning, and procurement). Kazakhstan shall retain full responsibility for **technical** and **safety** approval, and implementation of all activities affecting the plant and **shall** provide such support services as are required to implement **all** tasks for the shutdown (such as utilities, plant operations and maintenance support, and health physics support).
- 2.6 Under direction of the DOE or its designated agents, and in accordance with **the** respective laws of the countries of the Parties, private fabricators and constructors may be used in order to achieve the most cost-efficient implementation of the Program. **Subject** to Article XII of the Umbrella Agreement, qualified Kazakhstan fabricators and constructors, including MAEC personnel, shall be used whenever possible, if **they are** cost- and schedule-effective for Program implementation, the determination of which shall be made by the DOE or its designated agent. **The** DOE or its designated agent shall **inform** the **MEIT** of the selection of any private fabricators or constructors in Kazakhstan.

ARTICLE III

- 3.1 All assistance provided by the DOE pursuant to this Implementing Arrangement shall be allocated through contracts awarded by the DOE or its designated agent.
- 3.2 All contract procurement by **the** DOE or its designated agent for purposes of the Program shall be in accordance with US. Federal Acquisition Regulations. This will require **full** participation by appropriate Contracting Officer's Representatives and technical officials **of** the DOE.
- 3.3 **The MEIT** shall monitor funding that the Kazakhstan side provides for the **Program**. .
- 3.4 Notwithstanding any other provisions in **this** Implementing **Arrangement**, DOE's performance of the activities contemplated under 'this Implementing Arrangement is subject to the availability of appropriated funds.

ARTICLE XV

For purposes of activities undertaken under this Implementing Arrangement, the **MEIT** shall provide for the adequate defense of and indemnify the DOE and its personnel or its contractors, subcontractors, consultants, suppliers or sub-suppliers of equipment or services and **their** personnel in connection **with** third-party claims **in** any court or forum arising from activities undertaken pursuant to this **Implementing** Arrangement for **injury** or **damage** occurring within or outside the territory of Kazakhstan that **results from** a **nuclear** incident **occurring within** the territory of the Republic of **Kazakhstan**. Nothing in this paragraph shall be construed as acknowledging the jurisdiction **of** any court or forum over third-party claims to **which** this paragraph applies.

ARTICLE V

The cost of contracts awarded by DOE or its designated agent shall be denominated in U.S. dollars. Exchange of currency for financial **transactions** shall be effected according to the current exchange rate of the bank providing the service.

ARTICLE VI

Disputes between the Parties concerning the implementation of the Program shall be resolved through negotiation and **consultations**.

ARTICLE VII

For the purposes of this Implementing Arrangement the following **definitions** shall **apply**:

- Stable condition shall mean the desired condition of the **plant** for an interim storage period of 50 years or longer whereby the plant is nuclear safe (& fueled and unable to be restarted to produce power or nuclear material), **radiologically** safe (sodium drained and processed to an environmentally safe end-point, residual sodium deactivated, **and contaminated/activated** areas suitably decontaminated, **passivated**, or controlled), **industrially** safe (plant poses **minimal** hazard to workers or **the** public), and environmentally safe (hazardous materials or contaminated areas are suitably **remediated**, or controlled).

“Sodium coolant” or “sodium” refer to **all forms** of sodium or sodium-potassium eutectic (**NaK**) that are used or stored at the BN-350.

ARTICLE VIII

- 8.1 This Implementing Arrangement **shall** enter into **force** upon signature and shall **remain** in force until all tasks covered by this Program are completed provided the Umbrella Agreement **remains** in force.
- 8.2 This Implementing Arrangement may be amended by written agreement of the Parties, and may be terminated by either Party upon **ninety** days' written notification to the other Party.
- 8.3 **The** respective rights and responsibilities of the **Parties** under Article IV **and** VI shall continue **notwithstanding termination** or **expiry** of this Implementing Arrangement.

'Done at Washington D.C. this 19th **day** of December 1999, in duplicate **in** the English language, which shall be the authentic text. A translation of the Amendment into the Kazakh **and** Russian languages shall be prepared by **MEIT**, which shall be considered **equally** authentic upon **an** exchange of letters between the Parties **confirming** their conformity with the English text.

FOR **THE** DEPARTMENT OF ENERGY
OF THE UNITED **STATES**
OF AMERICA:

Handwritten signature of Bill Richardson in black ink.

FOR THE MINISTRY OF ENERGY
INDUSTRY **AND** TRADE OF THE
REPUBLIC OF K A Z A K H S T A N :

Handwritten signature in black ink.