

PROGRAMME OF ACTION

between The Department of Atomic Energy of the Government of India and The State Atomic Energy Corporation "Rosatom" for Localization of Manufacturing in India for Russian-Designed Nuclear Power Plants

1. Preamble

1.1. **NOTING** the longstanding cooperation between the Republic of India and the Russian Federation, and its future development, in the field of peaceful uses of nuclear energy, including the construction of Nuclear Power Plants (NPPs) and supply of equipment and components, nuclear fuel and services thereto;

1.2. **RECOGNISING** that the objective of localization of manufacturing in India of major equipment, major spares and fuel assemblies for Russian-designed NPPs is reiterated in all major agreements and understandings concerning peaceful uses of nuclear energy reached between the Republic of India and the Russian Federation, in particular:

The Strategic Vision for Strengthening Cooperation in Peaceful Uses of Atomic Energy Between the Republic of India and the Russian Federation signed on December 11, 2014 (hereinafter referred to as "the Strategic Vision") which calls upon both sides to strive to complete the construction and commissioning of not less than 12 units of Russian-designed reactor units in India in the next two decades and, in tandem, to progressively and significantly enhance the scope of orders for materials and equipment from Indian suppliers and establish joint ventures, including by transfer of technology, as mutually agreed, which includes manufacturing of main equipment and spares, with special priority for spares, for Russian-designed nuclear power units in the Republic of India, as well as to work on necessary arrangements for the fabrication in the Republic of India of the nuclear fuel assemblies and their elements to be used in Russian-designed units;

The Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the use of Atomic Energy for Peaceful Purposes signed on March 12, 2010 which provides for collaboration in industrial production of components and material for use in nuclear reactors; and

The Agreement between the Government of the Republic of India and the Government of the Russian Federation on cooperation in the construction of additional nuclear power plant units at Kudankulam site as well as in the construction of Russian designed nuclear power plants at new sites in the

Republic of India signed on December 5, 2008 (hereinafter referred to as "the Agreement of 2008"), which enables supply of equipment and material from India on the basis of technical specifications of Russian organizations in accordance with the division of obligations between the authorized organizations, and contains the agreement to investigate the possibility of establishing a joint venture for nuclear fuel assemblies fabrication in the Republic of India;

1.3. **CONFIDENT** that such localization of manufacturing in India, in the context of an expanding India-Russia civil nuclear cooperation, fulfills the objective of Government of India's "Make in India" initiative;

1.4. **AFFIRMING** that the number of Russian-designed nuclear reactor units in India envisaged under the "Strategic Vision" provides the necessary economy of scale to enable cost effective, large-scale localization of major equipment, major spares and nuclear fuel assemblies in India for Russian-designed nuclear reactors;

1.5. **ACKNOWLEDGING** that India's nuclear manufacturing industry, which has supported the country's nuclear power programme for past nearly forty years, has strong potential to undertake an ambitious localization programme in India in collaboration with Russian manufacturers;

1.6. **MINDFUL** that efforts towards building localization capabilities of major equipment and major spares in India for Russian-designed NPPs could prove useful for Russian-assisted nuclear power projects in third countries as well;

The Department of Atomic Energy of India (hereinafter referred to as "the Indian Party") and the State Atomic Energy Corporation "Rosatom" of Russian Federation (hereinafter referred to as "the Russian Party"), both hereinafter collectively referred to as "the Parties", have agreed to develop cooperation in accordance with the programme of action contained in this document (hereinafter referred to as "the Programme of Action") towards localization of production in India of major equipment, major spares and nuclear fuel assemblies for Russian designed NPPs in India.

2. Approach to localization

2.1. The Parties agree on the following priority areas of cooperation in the framework of this Programme of Action:

- i. Localization of the industrial and technological base of power engineering industry for the fabrication of Russian designed NPP equipment and increasing the share of local

Indian suppliers and/or of Indian-Russian joint ventures in India being established for engagement in the construction of Russian designed NPPs in India and in third countries. The current list of major equipment of Kudankulam Units-3&4, including all Long Manufacturing Cycle Equipment, First Priority Equipment and Other Major Equipment in the primary and secondary systems, which are currently within the scope of Russian manufacturing, should be used as a reference list for the purpose of identifying specific equipment whose manufacturing are proposed to be localized in India under this Programme of Action. This reference list may be modified by the Parties based on the outcome of the steps taken in the Initial Stage of Localization stages stipulated in paragraph 4.1(a) of this Programme of Action.

- ii. Fabrication of major spares in Indian production facilities and/or by Russian-Indian joint ventures in India in order to ensure their availability for the entire life cycle of Russian-designed NPPs in India;
- iii. Localization of production and technological base of fabrication of nuclear fuel assemblies for the Russian designed NPPs in India. Localization of fuel assemblies fabrication in India should be subject to supply of enriched uranium product from Russia.

3. Principles of Localization

3.1. During the implementation of this Programme of Action, the Parties agree to adhere to the following main principles when deciding on possibilities, scope, timing, format, participating organizations and other parameters for localization of production of major equipment, major spares and nuclear fuel assemblies for the Russian designed NPPs in India:

3.1.1. *Principle of ensuring nuclear and radiation safety.* The Parties should proceed from the priority of ensuring nuclear and radiation safety for the entire life cycle of the Russian designed NPPs in India.

3.1.2. *Principle of economic feasibility.* The Parties should take into account the financial resources required for such localization, as well as assess the impact of localization on the financial and economic parameters of the Russian designed nuclear power projects in India. This principle is consistent with the decision of the Parties to join their expertise and resources to minimize the total cost and time of construction of nuclear power units set out in paragraph 3.1(1) of the "Strategic Vision".

3.1.3. *Principle of risk management for nuclear damage.* Matters relating to supplier's risk exposure to civil nuclear liability for supplies made through localization for Russian-designed nuclear units in India under this Programme of Action should be as agreed upon by the Parties and the participating organizations prior to the Implementation Stage identified in paragraph 4.1(c) of this Programme of Action.

3.1.4. *Principle of compliance with the programme for construction of the Russian designed NPPs in India.* This Programme of Action should be implemented in tandem with the programme of construction of Russian designed NPPs in India, and in accordance with the selected NPP design solutions.

3.1.5. *Principle of respect of intellectual property (as defined in the Agreement of 2008) of the participating organizations involved in the implementation of the Programme of Action.* The Parties and the participating organizations should respect intellectual property rights during the implementation of the Programme of Action. All the issues relating to intellectual property and tangible form in which such intellectual property may be embodied, should be regulated in contracts and agreements signed by the Parties and the participating organizations, prior to the transfer of such tangible form and using its intellectual property.

4. Localization Stages and Their Timelines

4.1. The Parties agree on the following main stages of this Programme of Action for localization of production of major equipment and major spares in India:

(a) *Initial Stage.* In the Initial Stage, the Russian side should work closely with Indian industries, both from the public and private sectors, which are extensively engaged in nuclear manufacturing and capable of supporting the localization process, in order to analyze the existing potential and identify the gap areas for localization of production of major equipment and major spares for Russian designed NPPs in India. Based on this analysis, the Parties should prepare a general financial-economic model which should inter alia serve as the basis for the Parties to reach an agreement on the scope, timing, stages, format and conditions of localization. Specific steps for achieving such localization, along with their indicative implementation timelines, should also be delineated at this Initial Stage, along with identification by the Parties of the list of major equipment referred to in paragraph 2.1 (i) of this Programme of Action for localization in collaboration with potential Indian manufacturers, or Indian-Russian joint ventures in India. This stage should be completed within 12 months from the date of signing of this Programme of Action subject to

agreements reached between the Parties on project parameters and timeline of construction of Kudankulam Units – 5&6 and 6 more units at the second site.

(b) *Preparatory Stage.* The Preparatory Stage should cover arrangements relevant for implementation of localization, including but not limited to providing appropriate regulatory and legal basis for the implementation of the selected localization format. This stage should be completed within 12 months from the completion of the Initial Stage.

(c) *Implementation Stage.* The Implementation Stage should include specific actions for the purposes of localization of major equipment and major spares for the Russian designed NPPs in India. The Parties should outline the scope of the Implementation Stage based on the steps carried out in the above two stages, in order to ensure that localization so agreed upon is implemented in tandem with the finalisation of supply arrangements for new Russian-designed NPP units, namely Kudankulam Units – 5&6 and 6 more units at the second site.

4.2. The list of equipment and specific steps for the proposed localization, as identified in the Initial Stage, may be modified by mutual written agreement between the Parties in the event of:

a) Amendments in plans of the Indian Party with regard to construction of the Russian designed NPPs in India;

b) Update in timeframes and parameters for implementation of the Russian designed NPP construction projects in India, including selection of the site and NPP design solutions;

4.3 The Parties agree that the various stages and timeline for the implementation of localization of production of nuclear fuel assemblies in India under this Programme of Action should be initiated in tandem with the progress in construction and connection to the grid of Kudankulam Units – 5&6 and 6 more units at the second site. The details of stages for the implementation of localization of production of fuel assemblies in India should accordingly be delineated by the Central Working Group on Localization constituted under paragraph 5.3 of this Programme of Action, within 12 months from the date of signing of this Programme of Action.

5. General.

5.1. Relevant policy incentives offered by the Government of the Republic of India for manufacturing under “Make in India” initiative, and other relevant initiatives, should extend to collaborations, as applicable, under this Programme of Action.

5.2. Necessary coordination of works for implementation of this Programme of Action should be carried out by the following authorized organizations on the Indian and the Russian side:

On behalf of the Indian side –

Nuclear Power Corporation of India Ltd. (for major equipment and spares) and **Nuclear Fuel Complex** (for fuel assemblies);

On behalf of the Russian side –

JSC Rusatom Overseas.

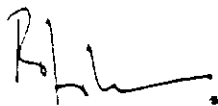
5.3. This Programme of Action, and the tasks identified under it, should be implemented by a Central Working Group on Localization (hereinafter referred to as "the CWG") to be created by assignment from the existing Joint Working Groups on Nuclear Power and on Nuclear Fuel Cycle established in pursuance of the "Strategic Vision". Within the CWG framework, subgroups for cooperation in different areas may be formed. The CWG and its subgroups should be appointed by the authorized organizations of the Parties. The CWG may, as required, engage representatives of the organizations relevant for implementing this Programme of Action for resolving issues within their competence, including but not limited to technical, design, engineering and regulatory issues.

5.4. This Programme of Action does not on its own create any legal, contractual or financial obligations for either side pursuant to national and international law.

Done on 24th of December 2015 in Moscow

On behalf of Department of Atomic
Energy of the Government of India

On behalf of The State Atomic Energy
Corporation "Rosatom"



Ambassador of India to the Russian
Federation



Director General