



State Corporation «ROSATOM»
Federal State Unitary Enterprise
FEDERAL CENTER FOR
NUCLEAR AND RADIATION SAFETY

PROSPECTS FOR SPENT NUCLEAR FUEL AND RADIOACTIVE WASTE MANAGEMENT, LEGAL AND REGULATORY ISSUES

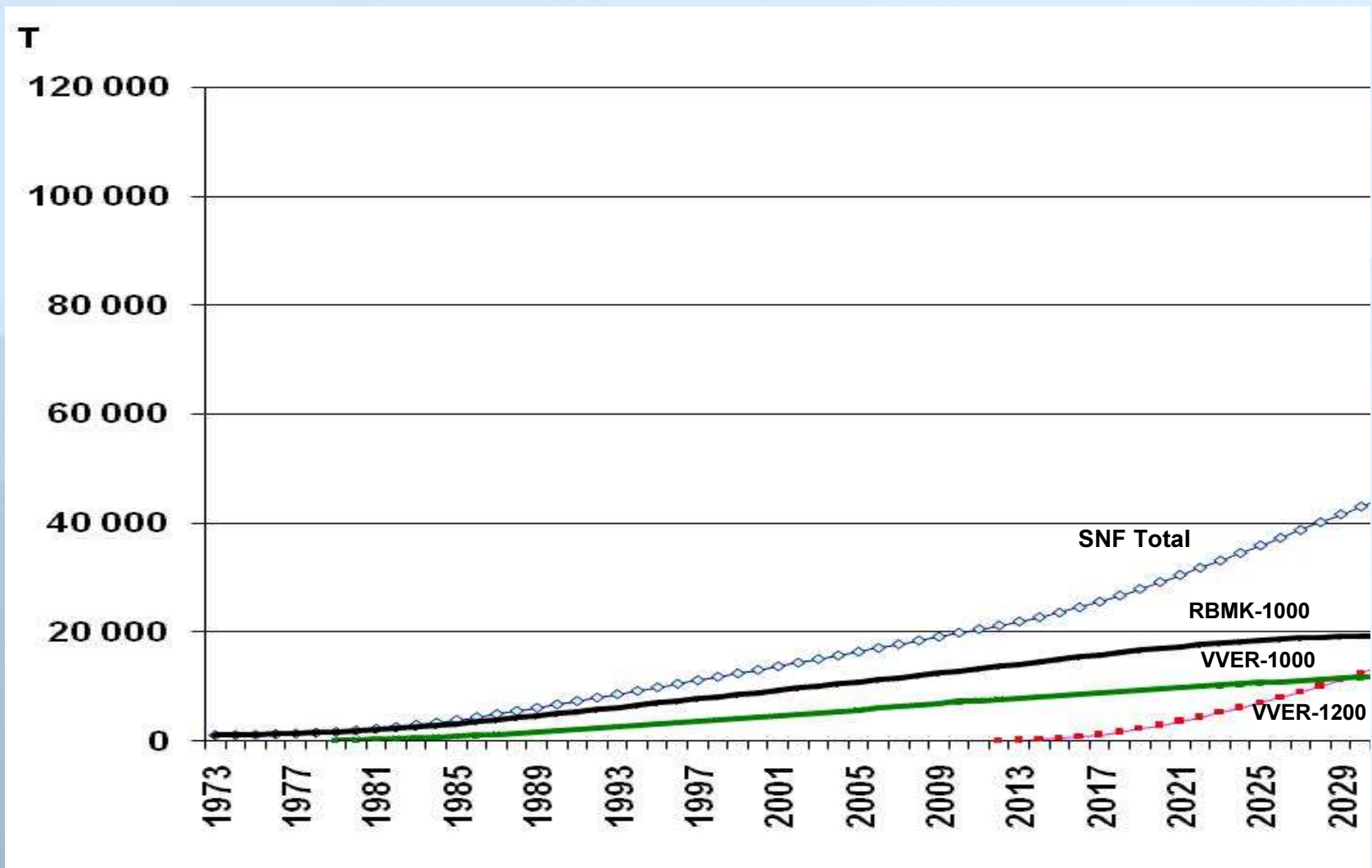
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Concept for SC “ROSATOM” Spent Nuclear Fuel Management

Strategies for the SNF management :

- **establish a reliable system for SNF long-term, monitored storage**
- **develop SNF reprocessing technologies**
- **maintain a balanced involvement of SNF recycled products in the nuclear fuel cycle**
- **provide final disposal of radioactive waste arisen from SNF reprocessing**

SNF Projected Accumulation up to 2030



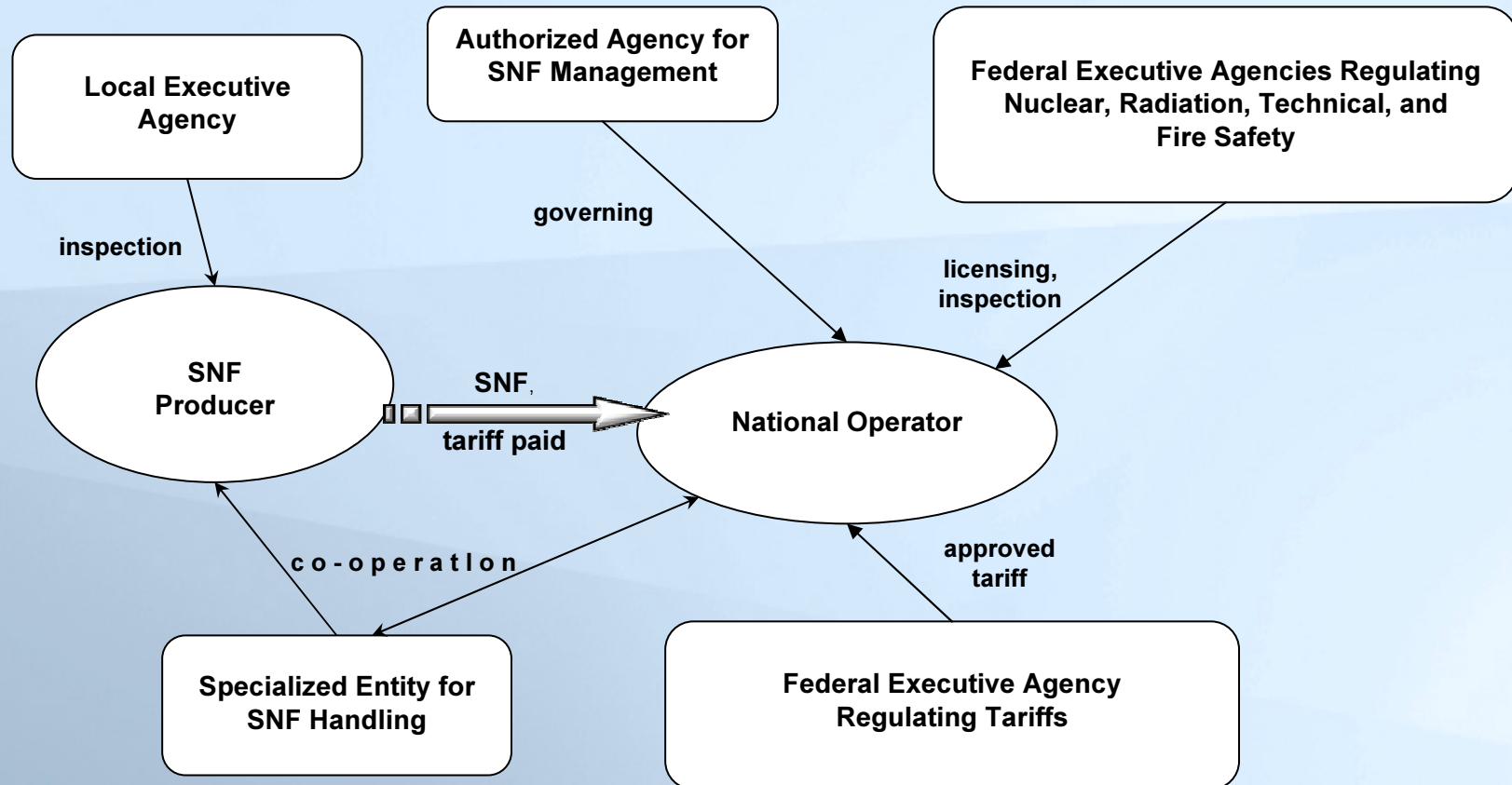
Unified State System for SNF Management

- **protect human health and environment**
- **impose no excessive burden on future generations**
- **prevent accidents leading to radiological consequences**
- **reduce risk of non-authorized use of spent nuclear fuel including its involvement in terrorist attacks**
- **provide steady financing of SNF handling**

SNF Draft Law Concept

- **regulate the SNF ownership institute**
- **SNF owner to finance the full cycle of the SNF management**
- **national operator to obtain ownership for the legacy SNF**
- **services for SNF handling are guaranteed to the SNF owner**
- **onerous transfer of ownership for nuclear materials resulted from SNF reprocessing to the government**

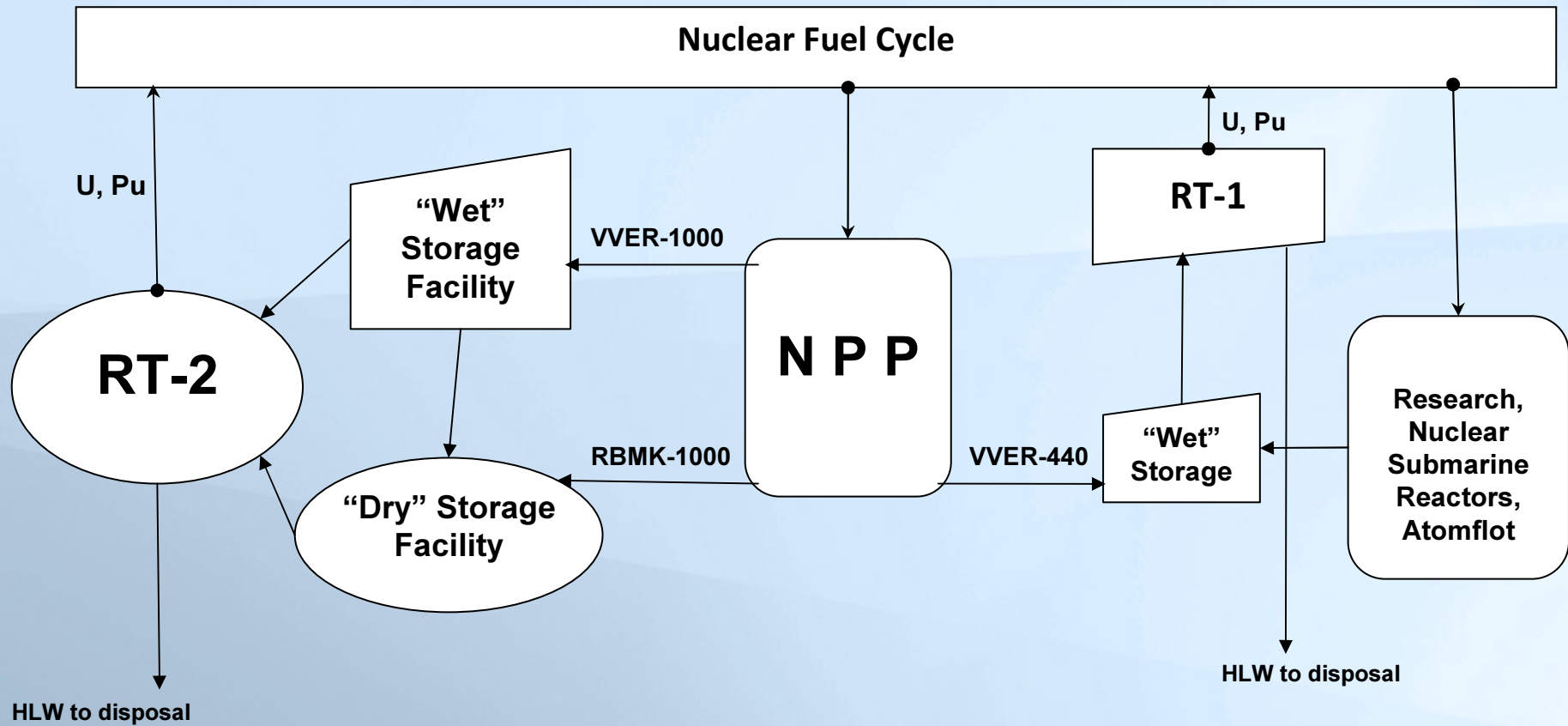
Cooperation in SNF Management



SNF Logistics

- **SNF transportation using TUK-6, TUK-13, TUK-13/1, TUK-11**
- **“wet” storage of SNF VVER-1000, RBMK-1000**
- **radiochemical reprocessing of SNF VVER-440, BN-600, Nuclear Submarines, Research Reactors**

SNF Logistics



SNF Management System Development

- **SNF RBMK-1000 cutting facilities at NPPs**
- **buffer sites at NPPs for SNF RBMK-1000 “dry” storage in TUK-109**
- **SNF RBMK-1000 and VVER-1000 “dry” storage facility at MCC**
- **modification of the existing “wet” storage facility at MCC**

SNF Management System Development

- **trial and demonstration center at MCC for spent fuel reprocessing using innovative technologies**
- **final disposal of various types of spent nuclear fuel and/or radioactive waste at MCC's underground facilities (estimate)**
- **provision of RT-1 Plant operation at Mayak**
- **facilities for managing AMB reactor spent nuclear fuel at Mayak**
- **modification of the facility for vitrification of high level waste at Mayak**

HLW Return

- **services for importation for temporary storage and subsequent reprocessing of SNF from research reactors in Ukraine, Bulgaria, Poland, Romania, Hungary, Kazakhstan, etc.**
- **SNF is shipped from research reactors to Mayak RT-1 Plant for reprocessing**
- **some international treaties of Russian Federation provide for HLW return**
- **amount of HLW to be re-imported is calculated as an equivalent of radionuclides activity consistent in value to radiotoxicity of HLW**

SNF Management Business Model

- **financial plans for handling SNF of basic types covering the period of up to 2050**
- **basic financial and economic figures showing the activity of the spent nuclear fuel national operator**

SNF Management Business Model

