

Annex 2

Annual Work Programme
Ignalina Programme 2019

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LIST OF ABBREVIATIONS AND DEFINITIONS

Baseline	The baseline is the schedule annexed to Commission Decision C(2014)5449
Budget at completion	Total budget for that particular project in the DDP and AWP (calculated from 2014-01-01)
“Cold” trials	equipment testing without the use of radioactive materials
CPI	Cost Performance Index. A measure of the value of work accomplished as a percentage of the actual costs (calculated from 2014-01-01)
CPMA	Central Project Management Agency
Critical path	the longest succession of main activities within respective projects start till finish identifying and taking into account the activities of interrelation
DD	Detail Design
D&D	Decommissioning and Decontamination
DFHS	Damaged Fuel Handling System
EIAR	Environmental Impact Assessment Report
EBRD	European Bank of Reconstruction and Development
FIDIC	International Federation of Consulting Engineers
FIHC	Fuel inspection hot cell
General design	Contains the following sections: 1) Implementation of radiometric measurement of conditionally non-radioactive waste; 2) Implementation of a site for additional shot blasting of conditionally non-radioactive waste; 3) Implementation of a site for class A radiological measurements and waste packaging; 4) Implementation of a site for initial treatment of waste in densely packed rooms; 5) Implementation of transport routes and a temporary waste storage area; 6) Implementation of staff accommodation
IAEA	International Atomic Energy Agency
IIDSF	Ignalina International Decommissioning Support Fund
INES	International Nuclear and Radiological Event Scale
INPP	Ignalina Nuclear Power Plant
ISFSF	Interim Spent Fuel Storage Facility
“Hot” trials	equipment testing with the use of radioactive materials
LRW	Liquid Radioactive Waste
Major changes in cost	budget change > 15 % or > 0.5 MEUR
Major changes in time	delay, which is possible to compensate, but project is in (or may get into) the critical path, or delay, which cannot be compensated
MCC	Main Circulation Circuit
Megaproject Schedule	measure for all-levels planning and control of the decommissioning process, using the unified system of various levels and interconnected schedules
MTF	Metal Treatment Facility
NDAP	Nuclear Decommissioning Assistance Programme
PV	The portion of the baseline total cost of the project that is scheduled to be completed as of the project data date (calculated from 2014-01-01)
SAR	Safety Analysis Report
SFAs	Spent Nuclear Fuel Assemblies
SPI	Schedule Performance Index. A measure of the work accomplished as a percentage of the work scheduled (calculated from 2014-01-01)
SRW	Solid Radioactive Waste
TD	Technical Design
Technical Design Documentation (TDD)	Includes: Technical Solution for performance of INPP equipment dismantling and decontamination, Plan of Activities on project development, Project Management Procedure, Technological Design, D&D Safety Analysis Report, D&D Environmental Impact Assessment Report, Construction Design of simple repair, Detailed Design documents (Method Statement)
TS	Technical Specification
TSO	Technical Support Organizations
VATESI	State Nuclear Power Safety Inspectorate
SRW 3 group (G3 waste)	High active non-combustible solid radioactive waste (according to the old waste classification during INPP operational, still used at INPP for waste treatment and storage)

1 INTRODUCTION

1.1 Main achievements in last year

New Interim Spent Fuel Storage Facility, Project B1 (P.1.2.1201)

Industrial operation of the B1 Interim Spent Fuel Storage Facility (ISFSF) continues with no disruptions. As at 3 October 2018, **6,613** spent fuel assemblies (SFA) had been safely removed from Units 1 and 2 spent fuel ponds, loaded into **73** casks and transported to the new ISFSF. The Unit 2 reactor was completely defueled by 25 February 2018 - 9 months earlier than initially planned by INPP. The manufacturing of the last casks has continued and the casks' delivery to INPP is underway: as at 1 October 2018, 103 re-machined casks (of 157 to be delivered) and 6 new manufactured casks (of 33 to be manufactured) were delivered to INPP. According to the schedule, the final batch of casks will be delivered to INPP in February 2021.

The contractor has been progressing with the detailed design, procurement and manufacturing of the Damaged Fuel Handling System (DFHS). The DFHS Detailed Design Documentation was prepared and submitted to INPP in March 2018. DFHS equipment manufacturing and Factory Acceptance tests (FAT) started in April 2018 and are scheduled to be completed in 2018/Q4. In September 2018 the INPP personnel training regarding DFHS has been completed. The Site Acceptance Tests and delivery of the DFHS equipment to INPP should be completed by the end of 2019.

The leaking SFAs in INPP are classified into two categories: "K" category (gas leaking SFAs¹) and "M" category (fissile material leaking SFAs²). The classification of non-hermetic fuel in Unit 1 was carried out in December 2016. On 3 August 2018 the classification of non-hermetic fuel in Unit 2 is completed. In total, 248 damaged nuclear fuel assemblies were classified in Unit 2. According to the currently known results, it has become evident that the ratio of 90% "K" category and 10% "M" category SFAs initially established in 2003-2004 has now changed to about 50% "K" category and 50% "M" category SFAs. This updated ratio and INPP updated knowledge of heavily damaged fuel require the manufacturing and supply of the following additional equipment: 495 overpack cartridges CAN 160, 1 overpack cartridge CAN 1200) 13 type-A baskets and 1 additional cask. The additional overpack cartridges will be funded by the IIDSF under the related Contract Amendment No 14 as part of Section D1 of the B1 contract which was signed on this basis, in January 2018. The Contract Amendment No 15 for the purchase of 1 additional cask @RBMK-1500M was agreed with the Contractor. INPP and the Contractor continue discussion in regard to excluding Section D2 as part of Contract Section D from the scope of agreement, i.e. to manufacture 8 baskets of type A and 1 basket of type B specified in Section D2 and 13 additional baskets of type A in-house by INPP. Following a series of meetings, outline agreement between the Contractor and INPP has been reached. It is anticipated that a respective Contract Amendment should be in place in December 2018 following approval of Grant Agreements allocations at the IIDSF Assembly meeting in November 2018.

Consideration is also being given to provide support through IIDSF for equipment for fuel debris survey, recovery and safe storage, in continuation of activities undertaken through the B1 contract. This is essential work that must be completed in advance of draining down, decontamination and dismantling of the fuel ponds themselves. Discussions are ongoing on potential scope, approach and associated funding implications.

On 23 October 2017, INPP - supported by the consultants of the NNC-led Consortium and its legal advisor DLA Piper - responded to the contractor's claim documentation dated 28 July 2017 for additional costs associated with the design of the DFHS. The hearing procedure took place in May 2018 in London. The Arbitrators decision on the disputed contractor's claim was obtained in October 2018, for the benefit of the INPP. This lengthy process will, however, not affect implementation of the DFHS.

Modification of the existing Fuel Inspection Hot Cell (FIHC) at ISFSF to handle with three types casks, Project P.1.2.1225

According to VATESI Nuclear Safety Requirements BSR-1.4.1-2016, INPP shall ensure that during operation of a storage facility spent fuel can be removed from a loaded cask in case of cask damage and reloaded to a new cask. There was no such requirement in 2000 when VATESI issued the operating license for INPP's storage facility which accommodates INPP's old-design CONSTOR@RBMK-1500 and CASTOR@RBMK casks. Therefore, INPP is considering modification of

¹ Fuel rod cladding damage (cracks).

² Broken fuel rod or fuel rod with missing or damaged end plug.

the B1 fuel inspection hot cell as the preferred option for handling of old-design casks. INPP has prepared the Project Identification Sheet and submitted it to EBRD; the documents for procurement of part of the required equipment (justification of the new ISFSF shock-absorbers for old-design casks) are being prepared by INPP in accordance with the approved procedure. The received proposal of ISFSF FIHC design from Nuvia is currently being evaluated by INPP. Negotiations with EBRD on the allocation of the funds for the support of this project are ongoing. A decision to take forward funding for the work through the IIDSF was taken at the July IIDSF Assembly meeting. It is anticipated that contract signature will take place following confirmation of contractual arrangements and finalisation of additional allocations to the IIDSF Grant Agreements to be prepared for the IIDSF Assembly meeting in November.

New Solid Waste Treatment and Storage Facilities, Projects B2/3/4 (P.1.2.1202, P.1.2.1203)

The B2/3/4 facilities are in use for management of solid radioactive waste since the start of the commissioning ("hot" trials) on 9 June 2017 under VATESI operating license.

The "hot" trials of the new "Solid Waste Management and Storage Facility" (B2) retrieval unit RU1 and landfill sorting facility (B2-1) continued under VATESI permission to retrieve and sort from INPP waste vault 270 m³ of very low level operating waste, pending the start of industrial operation of this facility. The documentation for obtaining VATESI permission of B2 RU1 industrial operation is under preparation: on 4 July 2018 an INPP independent expertise (by the Audit, Safety and Quality Management Division) of the B2 RU1 Final SAR has been carried out and on 11 July submitted to VATESI for agreement. According to the updated schedule, the B2 RU1 industrial operational is planned to begin in January 2019.

B2 RU2 and RU3 (B2-2) commissioning tests ("hot" trials) were suspended on 29 December 2017 due to equipment failures. After completing the measures for elimination of deficiencies, the report was submitted to VATESI, and on 24 May 2018, VATESI permission was received to continue the RU2/RU3 "hot" trials. On 26 April 2018, the Operational Acceptance Certificate for B2 RU2/RU3 (B2-2) (and for project B3/4) was issued to the Contractor in accordance with the terms of contract.

The commissioning ("hot" trials) of the new "Solid Waste Treatment and Storage Facility" (project B3/4), launched in October 2017, have been completed in the planned contract volume and the Operational Acceptance Certificate was issued to the Contractor on 26 April 2018, in accordance with the terms of contract. The solving of the issues raised during the B3/4 "hot" trials and elimination of the deficiencies is currently underway. "Hot" trials have revealed a problem due to the higher activity of SRW group 3 (G3). The additional protective measures for decreasing activity of SRW G3 were agreed with the Contractor and the corresponding Contract Amendment No. 23 was signed in September 2018, in the frame of the RACA procedure without exceeding the overall B2/3/4 Contract budget. Implementation of the additional protective measures is planned to be completed in 2018/Q4. Preparation of documents to obtain VATESI permission for B3/4 operational is ongoing: B3/4 "hot" trials completion report is in progress and the B3/4 Final SAR preparation was started. VATESI permission for B3/4 industrial operation was moved from previously planned November 2018 to April 2019, due to the SRW G3 higher activity issue.

On 15 July 2018, VATESI approved the short-lived, large-dimension, SRW measurement methodology MST 7.2, on the basis of which the radiological characterization of the short-lived SRW in the B3 measuring station No. 7.2 will be carried out before the short-lived SRW group 2 loading in reinforced concrete containers KTZ-3.6 for temporarily storage in the B4 facility. The methodology MST 11 has been prepared and on 17 May 2018, for measurement of the long-lived SRW in the B3 measuring station No. 11 before the long-lived SRW G3 loading in metal containers. This methodology has been approved by VATESI on 7 September 2018. The radiological characterization of the ash of incinerated SWR was carried out, and the report on the ash nuclide vector was approved by VATESI on 31 May 2018.

Landfill Facility for Short-Lived Very Low Level Waste, Project B19-2 (P.1.2.1206)

The Contractor's Detailed Programme for Landfill Facility construction was agreed, and on 19 September 2017, the Facility construction site was handed over to the Contractor. In November 2017, the permission for earthworks was given to the Contractor and the pre-construction works started. On 23 October 2017, the contract was signed for the Detailed Design update services and correction of the Detailed Design for the Landfill Facility (DD) was started. The Detailed Design correction works and pre-construction activities were carried out sequentially according to the completed parts of the DD. On 5 March 2018, VATESI submitted the Report on Soft Soil Replacement Inspection (carried out on 6 February 2018), where it was stated that 4 violations had been identified during the inspection. VATESI

also submitted a mandatory directive for resolution of these violations by 30 August 2018. In this case, the DD correction took more time than was planned. The summarized DD, revised according to the FIDIC engineer's and INPP comments was submitted to INPP on 30 May 2018, but not all parts have been approved for construction yet, mainly due increased requirements of the Designer for the soil parameters in the DD in comparison with the approved TDD. Due to the delay in submission of the updated DD, the construction activities on site were temporarily suspended on 7 May 2018. On 21 September 2018, the Lithuanian Geological Survey conclusions regarding assessment of the Landfill Facility foundation arrangement were received, highlighting that geotechnical parameters of the Landfill Facility foundation soils in some areas are not in line with the design requirements. The meetings with INPP top management, FIDIC engineers, Contractors and Designers on the Detailed Design submission and work resumption on site were held in order to accelerate resolution of the main issues. All participants agreed on execution of the additional works (part of the work to be done again) for changing the soft soil. As a consequence of the above, the finish of Landfill Facility construction was moved from February 2019 to June 2019.

On 25 June 2018, the Contractor submitted the Technical and Detailed Design Documentation (TDDD) for construction of infrastructure, revised according to the FIDIC engineer's and Employer's comments. The expertise of the TDDD was completed in November 2018. Preparation of the TS for procurement of the "first campaign" services (waste transportation and loading into landfill Facility, installation of barriers, final sealing) is ongoing under project P.4.2.4202 "Solid radioactive waste handling".

The delay in construction of the disposal facility leads to a shortage of buffer storage capacity. The Landfill Buffer Storage Facility (B19-1) has already been filled, and the Landfill facility (B19-2) planned to be available for first disposal campaign of Class A radioactive waste in 2019/Q4. Therefore, to avoid disruption to radioactive waste management, dismantled areas of the turbine hall have been adapted for the temporary storage of Class A SRW.

New Near Surface Repository (NSR) for Low and Intermediate Level Short-Lived Radioactive Waste, Project B25 (P.1.2.1207)

After EC approval of the Near Surface Repository for low and intermediate level short-lived radioactive waste detailed design and construction (NSR.02) Fiche, in October 2017, a Financing Agreement for the construction and putting into operation of the NSR was signed. The procurement of the NSR detailed design and construction services is taking more time than planned due to delayed approval of the TD and PSAR in 2017 and partitioning of the object into separate procurements in accordance with the changed Public Procurement Law. During the procurement planning process, it was decided to carry out the main construction works together for both (1st and 2nd) vaults groups within the first stage of overall construction. The preparation of procurement documents for construction of the first stage is in progress: TS for main construction works, TS for technological road, TS for power supply utilities and telecommunications also TS for FIDIC engineer and technical supervision are being agreed with CPMA; the draft contract for main construction works is already agreed with CPMA. On 3 August 2018, the tender for procurement of the FIDIC engineer was announced. The tender for procurement of construction services is planned to be announced by the end of 2018.

Metal Waste Treatment Facility in Building 130/2, Project B27-1 (P.1.2.1219)

This facility was established under project B27-1/MTF.01, primarily in order to decontaminate for free-release materials that were already in storage. Under a follow-up project, MTF.02, it is planned to expand the capacity of the facility in order to complement in the in-unit decontamination facility (project LED.01) which is not keeping pace with the rate of dismantling.

The fragmentation, decontamination and monitoring facilities procured under MTF.01 are in operation. Completion of works to upgrade the building is now expected in 2018/Q4 after a delay related to replacing the contractor.

Project MTF.02 expands on the above by increasing the capacity of the Metal Waste Treatment Facility in order to enhance overall throughput of waste decontamination thereby avoiding the build-up of backlogs and providing greater flexibility and security in decontamination. The procurement of equipment according to the MTF.02 Fiche (total according to 7 TS) is ongoing - the contracts were signed for all seven positions, the equipments of 5 positions (contracts) were delivered to INPP. The delivery of remaining two positions' equipment is expected at the end of 2018.

Interim Storage Facility for Reactor Graphite Waste, Project B38 (P.1.2.1218)

Since the capacity of the first constructed module of the new B4, interim storage facility for high-level long-lived solid waste, is sufficient to place the radioactive graphite rings and bushings retrieved from operational waste storage Bldg. 157/1 only, the possibility to adapt the existing Cemented Radioactive

Waste Storage Facility (Bldg. 158/2) for temporary storage of radioactive graphite rings and bushings, produced from the reactor channels (zones R1/R2) dismantling, was studied by INPP as an alternative to the construction of another module of the B4 interim storage facility.

In December 2017, the SAR for the temporary storage of radioactive graphite rings and bushings in Building 158/2 was prepared, and on 29 June 2018, was approved by VATESI. In October 2018, the project was closed.

Transformation of Bituminized Waste Storage Facility into a Surface Repository, Project B20 (P.1.2.1222)

The plan of measures related to the upgrade of the bituminized waste storage facility was prepared and agreed with VATESI in March 2015. In September 2016, the Ignalina Programme project Fiche for performance of the 1st stage activities (development under contract of the environmental impact assessment, TD and SAR) was approved by the European Commission. In February 2017, VATESI approved the TS for development of design documentation of the repository. All procurement documents were agreed by CPMA and the tender for procurement of the services for the bituminized waste storage facility transformation was launched in December 2017. Upon evaluation of the proposal for the design, at the end of May 2018, the winner of the tender was determined and a draft contract was submitted to the CPMA. The procurement of services was suspended upon receipt of one participant's complaint, but after resolving the dispute, on 20 June 2018, the signature procedure is continued and on 4 October 2018, the contract was signed.

Ensuring the preconditions of decommissioning (P.1.1)

During 2018, the engineering inventory and the radiological characterization of INPP systems and equipment are ongoing.

In accordance with FDP, the Decommissioning License must be obtained by INPP as soon as both units are defueled (in 2021 according to FDP; as per current schedule, in 2022/Q3). It is a legal obligation to obtain the Decommissioning License but, in addition, there are expectations that such license would allow to carry on decommissioning activities in a more effective / simplified way compared to the current regulatory regime, which is inherited from the operational status of the plant. To get the Decommissioning License, a number of documents must be developed by INPP and agreed by VATESI, which reserves a 2-year period (from last document submittal) for documents review. In March 2018, the project P.1.1.1103 "Decommissioning Licensing" was initiated, with the objective of developing licensing documents and obtaining a Decommissioning License in time. In April 2018, the project implementation plan was prepared and approved also one of the main documents required for the license - the updated FDP was started. The application for INPP Decommissioning License has been prepared and submitted to VATESI on 26 June 2018. After revision according to VATESI's comments, the application was resubmitted to VATESI and on 21 September 2018 it was accepted by VATESI. The list of documents consists of 32 very different documents (from various fields - management, emergency preparedness, physical security, operations, safety justifications, etc.). The final list was agreed with VATESI in November 2018.

Modification of Infrastructure (P.1.2)

The INPP made an analysis of the INPP existing administrative buildings efficiency in the long-term perspective. At present, the administrative staff of INPP is located in 5 buildings, 2 of which have been in operation since 1983, the others started to operate a little later. In October 2017, the report on the analysis was prepared, and the estimated costs for the maintenance of these buildings were presented. Taking into account the increasing costs of the maintenance of the currently existing administrative buildings, it was decided to initiate a new project - the construction of a new administrative building (funded from INPP own resources) (P.1.2.1226), in order to reduce the consumption of energy resources, to concentrate administrative workplaces that meet all the needs and requirements. The INPP has developed the technical specification and signed the Contract with the Lithuanian Architects' Union, which will proceed on INPP's behalf with the tender procedure to get the most cost-effective solution.

In order to reduce the consumption of energy resources for the operation of Building 437/1, in October 2018 a decision was made to install an automated groundwater sewage pumping station and the new project P.1.2.1227 "Installation of automatic sewage pumping station in Building 437/1" was initiated.

Decontamination of systems and equipment (P.1.4)

As at 1 October 2018, **150 m³** of ion-exchange resins from the Condensate purification system of turbines No. 3 and 4 was decontaminated.

The 1st phase of Unit 2 MCC decontamination was carried out in April 2018 according to the Unit 2 MCC decontamination programme without reagent, as agreed by VATESI. Radiological measurements showed that the equivalent gamma radiation in the Unit 2 MCC some rooms, decreased 4.9 times. The 2nd phase – washing of the local Unit 2 MCC zones equipment (group distribution collectors, etc.) – is currently under implementation in accordance with the prepared programmes for the decontamination of separate MCC zones. This procedure is planned to be completed by the end of 2018.

Dismantling and Decontamination (D&D) and D&D Project Documentation (P.2)

D&D works were continued in Unit 1 and Unit 2. During the period January–September 2018, **3,988 tonnes** of equipment were dismantled and decontaminated; in total from 2014 to the end of June 2018, **34,292 tonnes** of equipment were dismantled in INPP. From 2014, 13,899.7 tonnes of Class A waste have been processed through the Free Release Measurement Unit (B10), of which 13,679.9 tonnes (98.4%) has been decontaminated to Class 0. Since 2014, 15,089 tonnes of metal waste (Class 0) has been sold for 6.16 MEUR in total.

D&D project documentation for dismantling projects in Block D2 (Unit 2), Block A1 (Unit 1) are developed in-house; the planned works are ongoing since 2010. The main set of the project "Block A1 Dismantling" documentation has been prepared by INPP. In July 2017, the Technological Design and SAR were submitted to VATESI, but after the recalculation of the nuclide vector, performed by the contractor, it will be necessary to include changes according to the results of the recalculation of the nuclide vector into the relevant document sections. Calculation of difficult-to-measure nuclide vectors was significantly delayed due to the complexity and unique nature of these works. The report on recalculated nuclide vectors for Block A1 also reactors zones R1/R2 and R3 was prepared and submitted to VATESI for approval in June 2018. Development of the project "D&D in Block A2" documentation using experience gained during the design process of Block A1 dismantling was started in June 2017 with the preparation of the EIAR. In April 2018, the decision was taken to merge projects "D&D in Block A2" and "D&D in Block V2" into single project "D&D in Blocks A2 and V2" (P.2.2.2210), to save time for the preparation and adjustment of project documentation. The D&D project documentation for dismantling in Block D2 is under preparation ahead of the Megaproject Schedule. The Technological Design and SAR were approved by VATESI on 5 July 2018. The VATESI permit for the dismantling in Block D2 was received on 9 July 2018.

In the course of development of the Unit 1 reactor dismantling project UP01, in solving new issues, the project concept has been continuously improved and, at the beginning of 2017, the project was divided into two, by separating the reactor zones R1/R2 and zone R3. Later, it was decided to supplement the dismantling of the Unit 1 reactor zone R3 with the dismantling of Unit 2 reactor zone R3 and with the installation of a reactor waste storage facility (about projects P.2.1.2101 and P.2.1.2103 see below).

Regarding building demolition: the final version of the Ignalina Programme project Fiche for the 1st stage demolition of no longer required buildings and other structures, with total area 76,000 m² (becoming redundant before 2026), was provided to CPMA in May 2018. On 3 September 2018, the Fiche was approved by European Commission. TD for design and reconstruction works of Gallery 174V was prepared and, after independent expertise, agreed with 6 of 8 State Institutions. Currently TD is under agreement with VATESI and Lithuanian Geological Survey.

Project P.2.2.2101 (UP01/R1,R2). Unit 1 reactor facilities dismantling in R1 and R2 areas

INPP is continuing to develop the design documentation for dismantling and decontamination of Unit 1 reactor zones R1/R2 (project P.2.2.2101). A General Data Set, which must be definite before dismantling of reactor boundary elements important for safety, was prepared in June 2018 and on 4 July 2018, without finalised nuclide vectors, submitted to VATESI, the Environmental Protection Agency and Radiation Protection Centre. Design of graphite waste handling, collection and loading, also preparatory works, are ongoing - electrical supply organization and infrastructure preparation are being carried out. The Technological Design and SAR have been prepared according to preliminary data on the difficult-to-measure nuclide vectors, and on 30 March 2018, submitted to VATESI. INPP is proceeding with a modification of the previously used graphite removal equipment (graphite removal facility – GRF) required for the dismantling works. The re-design of the GRF was finished; the testing of modified facility was carried out in September 2018, with non-radioactive graphite waste ("cold" trials).

Project P.2.2103 (UP01/R3+RWS). 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development

Project P.2.2103 covers dismantling in zone R3 of both reactor units and development of a reactor waste storage facility. Accelerated Unit 2 radiological sampling preparation is ongoing (to issue procedures, to obtain permissions, to check available tools, to procure or fabricate auxiliary parts); database of Unit 1 reactor engineering inventory and radiological characteristic was supplemented by

estimates for the entire period of dismantling. The new radioactive waste classification requirements BSR-3.1.2-2017 have been analyzed and relevant modifications to the design documentation to be performed are evaluated. The project is to be implemented in stages: the first stage will comprise optioneering, conceptual design, gap analysis and development of the EIAR – this stage will be performed by external consultants. The project fiche and technical specification are under development in parallel. In November 2018, INPP planned to organize a meeting for potential providers of design services for 1st stage, more than 40 companies have expressed their willingness to participate in it. The development of TS for procurement of project documentation development service based on the project fiche is ongoing behind time due to the changes of project scope; the TS development deadline was postponed to 2019/Q2.

Spent nuclear fuel management (P.3)

The safe storage of spent nuclear fuel has continued for the (as at 30 September 2018) 3,717 SFA in Unit 1 storage pool, 5,226 SFA in Unit 2 storage pool, also there is 1 fresh fuel assembly (experimental) in the room of spent fuel storage pools at Unit 2. Safe storage of spent nuclear fuel at the existing dry storage facility is ensured – 20 CASTOR and 98 CONSTOR casks (in total, 6,016 SFA are in these casks). 73 casks were placed and 6,613 SFA are stored in the new Interim Spent Fuel Storage Facility as at 3 October 2018. Safe storage of 74 fresh nuclear fuel assemblies is ensured in Building 165 (fresh fuel storage facility) at INPP site.

On 25 February 2018, the unloading of the remaining spent fuel from Unit 2 reactor core was finished.

On 3 August 2018, **all** 248 damaged SFAs in Unit 2 have been classified to identify between Class K (gas leaking) or M (fissile material leaking).

Waste treatment (P.4)

This programme includes the non-radioactive, solid radioactive waste (SRW) and liquid radioactive waste (LRW) management. During the period January–September 2018, **2,073** m³ of Class A SRW and **174** m³ LRW have been processed. **1003** m³ LRW with packages were transported to temporary storage facilities during this period. In total, from 2014 to the end of September 2018, **25,334** m³ radioactive waste before preparation package for disposal have been processed and **7,733** m³ radioactive waste (with packages) transported to storage facilities.

Contaminated sludges in the spent fuel pools has been identified as an issue to be resolved. INPP is exploring funding options for technical assistance in identifying the optimal solution for recovery, treatment and, as appropriate, storage or disposal of these sludges.

Post operation (P.5)

Safe operation of **254,156** elements and maintenance of **47,721** elements³ of INPP systems and facilities, as well as supervision of these elements has been performed during 2018 in accordance with Technological regulations of INPP Unit 1 and Unit 2 operation at the stage of nuclear spent fuel unloading from pools and operation procedures on safety related systems checks and tests.

There was neither any violations of the licensing terms, nor any violations of the limits and conditions of safe operation set by licences. The number of unusual events is 0. The number of accidents during operation and maintenance of INPP systems is 0.

Enterprise Activity Organizing (P.0)

In a view of the requirements of the United Nations Economic Commission for Europe Convention (ESPOO, 1991) concerning the assessment of new Nuclear Energy Facilities (NEF) environmental impact assessment in a transboundary context, and in order to ensure that the NEF exploited at the INPP site does not, and in the future, will not have a significant negative transboundary impact, INPP has prepared and agreed with State Institutions a "Post-projects Analysis Programme for new Nuclear Energy Facilities". On 9 May 2018, the Programme was sent to Ministry of the Environment. INPP has been informed that the Programme was transmitted to the Ministry of Foreign Affairs on 6 June 2018 for transfer to interested institutions of neighbouring countries.

In 2017, a list of 45 activities (out of 158) has been identified which will be analyzed for “make or buy” decision, including 3 activities made in 2016. INPP summarized the “make or buy” plan analysis and further procurement process for the rest of 39 activities⁴. A plan for procurement of the activities

³ Maintenance of activities implemented not only within the frames of Programme P.5 but of the whole Megaproject in P.0, P.1, P.2, P.3, P.4 programs

⁴ 3 activities related to maintenance and repair of B1, B2/3/4 equipment postponed

foreseen in this list has been prepared and agreed with the CPMA. INPP is currently implementing this plan with the intention of completion in 2019/Q1.

INPP continued risk management activities. After the risk analysis, the risks registers were prepared for the risks that could affect the implementation of INPP strategic objectives for 2018 and the Decommissioning Megaproject (hereinafter - strategic risks) and the report was released in January 2018. The strategic risks mitigation measures and those responsible for implementation were foreseen. 11 high-level strategic risks were identified, and the continuous attention of the INPP management was given to the control of the reduction measures. Renewal of projects risk assessment is constantly ongoing.

During the preparation of the INPP decommissioning baseline schedule in 2014, many project start dates have taken as from 2014 (along with the start of the earned value calculation), although in fact the projects started earlier. In 2018, the Megaproject schedule was revised and updated to be presented in the updated version of the FDP. The effect is that some start and finish dates of the projects have been revised. The dates of the start of some projects have been clarified, but this did not affect the continuity of data when calculating progress by earned value.

1.2 Main issues in last year

New Interim Spent Fuel Storage Facility, Project B1 (P.1.2.1201)

The main issue of the project is related to the Damaged Fuel Handling System (DFHS). Before the completion of the classification of leaking spent fuel, there was no clear indication of the number of casks needed for damaged fuel. The classification of damaged fuel for Unit 2 was completed on 3 August 2018. According to the currently known results, it has become evident that the ratio of 90% "K" (gas leaking) category and 10% "M" (fissile material leaking) category SFAs initially established in 2003-2004 has now changed to 50% "K" category and 50% "M" category SFAs. This updated ratio and INPP updated knowledge of heavily damaged fuel require the manufacturing and supply of the additional equipment: 495 overpack cartridges CAN 160, 1 overpack cartridge CAN 1200) 13 type A baskets and 1 additional cask. Currently INPP and Contractor continue discussion in regard to manufacturing 8 type A baskets and 1 type B basket specified in Section D2 and 13 additional type A baskets to be manufactured in-house by INPP.

In March 2017, the contractor addressed some questions related to heavily damaged fuel to the Arbitration, which could have raised a risk of additional INPP payments in case the Arbitrators ruled against INPP. The Arbitrators decision on the disputed contractor's claim was obtained in October 2018, it was in favour of the INPP.

New Solid Waste Treatment and Storage Facilities, Projects B2/3/4 (P.1.2.1202, P1.2.1203)

The solving of the issues raised during the B3/4 "hot" trials and elimination of the deficiencies is currently underway and may take more time than planned due to the complexity of the facilities. "Hot" trials have revealed a problem due to the higher SRW stream activity of the waste group 3 (G3). The additional protective measures for decrease activity of SRW G3 were agreed with Contractor. Implementation of the additional protective measures is planned to be completed in 2018/Q4. As a result, mainly because of the G3 high activity waste issue, VATESI permission for B3/4 industrial operation is now planned to be received later (in April 2019).

Landfill Facility for Short-Lived Very Low Level Waste, construction, Project B19-2 (P.1.2.1206)

On 7 May 2018, the contractor suspended construction activities on the B19-2 site due delay to in submission of the Detailed Design. Due to delay in construction activities and necessity to carry out additional work related to *soft soil replacement*, INPP had to postpone the dates of planned works and continued to adapt some areas inside the units for temporary storage of Class A solid radioactive waste.

New Near Surface Repository (NSR) for Low and Intermediate Level Short-Lived Radioactive Waste, Project B25 (P.1.2.1207)

There has been delay in finalising the technical specification for the main construction works in compliance with the Public Procurement Law as its requirements were not taken into account during preparation of the Technical Design. Tender of the FIDIC engineer services was announced on 3 August 2018, tendering of the main construction will nonetheless start in 2018/Q4.

Waste treatment (P.4)

Due to the protracted litigation on the procurement process for bitumen, bituminization of liquid radioactive waste has not been carried out in 2018. In 2018/Q3 the cementation of LRW was temporarily suspended due to issues on the procurement of capacity (barrels) for cemented LRW.

1.3 Programme status and next important steps

The next important steps in the INPP decommissioning process for the period 2019–2020 include:

- Continuation with activities to obtain INPP decommissioning licence: submittal of the updated FDP for approval to the Ministry of Energy, INPP decommissioning SAR preparation for submission to VATESI in 2020/Q1;
- Interim Spent Fuel Storage Facility (project B1): continuation of Units defueling and delivery of loaded spent fuel casks to the ISFSF, Damaged Fuel Handling System implementation and continuation of spent fuel casks delivery to INPP from the manufacturer;
- Solid Waste Management & Storage Facility (project B2/3/4): VATESI approval of B2 RU2/RU3 and B3/4 FSAR, obtaining permission from VATESI for SWTSF industrial operation;
- Landfill Facility for Short-lived Very Low Level Waste (project B19-2): Landfill Facility physical security system integration, construction of infrastructure, signing of contract for services during first campaign;
- Near Surface Repository (NSR) for Low and Intermediate Level Short-Lived Radioactive Waste (project B25): announcing and performance of the tender for main construction works, signing of contract and construction works, announcing and performance of the tender for external infrastructure construction, including technological road;
- Agreement of TDD for dismantling and decontamination of equipment in Unit 1 reactor zones R1 and R2 (project P.2.1.2101) and dismantling works in Unit 1 reactor zones R1, R2;
- Agreement of TDD for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Units 1 and 2 reactors area R3 equipment and development of dismantled graphite waste temporary storage. Procurement of consultancy services for preparation TDD for dismantling and decontamination of equipment in Units 1 and 2 reactors zones R3 (project P.2.1.2103);
- Signing of contract for modification of ISFSF fuel inspection hot cell (project P.1.2.1225 Establishing of spent nuclear fuel casks handling facility);
- Preparation of the technical design, obtain permission and start construction of a new administrative building (project P.1.2.1226 “New Building Construction”);
- Continuation of the INPP equipment isolation for further dismantling;
- Further dismantling and decontamination of equipment in Units 1 and 2, and development of documentation for dismantling projects (Blocks A2/V2);
- Continuation of measures (Stage 3) for the optimization of the ventilation systems and heat consumption in Buildings 101/1,2 and 150 in 2016-2020;
- Taking out of service diesel generators 9, 11, 12 (disconnection of power supply in diesel generators);
- Identifying an optimal solution for recovery, treatment and, as appropriate, storage or disposal for contaminated sludges in the spent fuel pools;
- Continuation of knowledge management activities in order to create a knowledge management system intended for the systemization of knowledge and facilitation of its dissemination (including the identification of INPP personnel’s critical implicit knowledge and experience, its conversion into explicit, formalization, collection and storage for further dissemination both internally for the new generation of INPP specialists and externally for the broader EU nuclear industry).

1.4 Financial overview

1.4.1 Planned contribution from EU to each implementing body (MEUR)

Ignalina Programme	2019	2020
IIDSF ⁵ (EBRD)	1.5	0
National Agency (CPMA)	65.45	68.29
Total	66.95	68.29

1.4.2 Actual and planned annual costs covered from all sources of the programme (MEUR)⁶

Funding source		Actual				Planned		
		2014	2015	2016	2017	2018 ⁷	2019	2020
Ignalina Programme	IIDSF	51.73	40.62	18.35	35.77	17.20	10.22	4.54
	National Agency	46.37	43.88	41.23	40.19	53.80	53.02	68.81
National Decommissioning Fund		6.16	2.45	3.07	2.81	3.00	4.29	1.78
State Budget Funds		7.13	13.41	12.40	12.51	13.40	13.35	13.01
INPP own financial resources		1.32	2.16	3.7	4.1	6.36	8.64	11.42
Total		112.71	102.52	78.75	95.38	93.76	89.52	99.56

⁵ The IIDSF is funded by the European Union as well as by the EU member states (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Poland, Spain, Sweden, United Kingdom), Norway and Switzerland.

⁶ Data on INPP actual costs is based on Progress Reports; planned INPP costs are indicated on the basis of the Megaproject data. Actual expenditure and planned allocations to other recipients carrying out activities related to INPP decommissioning are also included (on the basis of the Interinstitutional Action Plan). These figures do not correspond to payments made by the respective funding sources in the year shown.

⁷ As per the Annual Work Programme 2018 adopted by the EC implementing decision of 8 October 2018, C(2018) 6451 final, Ref. Ares(2018)5358084 - 18/10/2018

2 UPDATED DECOMMISSIONING SCHEDULE, INCLUDING DEVIATION FROM THE BASELINE PLAN

2.1 Updated WBS and schedule (GANNT chart) using DP as baseline

Please see Appendix 1 for charts

2.2 Table per activity

2.2.1 Baseline schedule, last AWP schedule, new AWP schedule

The projects on critical path are highlighted in this table.

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P. 0 Enterprise Activity Organizing Programme		January 2002	December 2038	January 2000	December 2038	January 2000	December 2038	None
P.1 Preparation for Decommissioning Programme								
P.1.1.1101	INPP equipment engineering inventory	December 2005	December 2016	December 2005	December 2020	December 2005	October 2021	None
P.1.1.1102	Radiological characterization	January 2006	December 2037	January 2006	December 2038	January 2006	December 2038	None
P.1.1.1103 ⁸	Decommissioning Licensing	-	-	-		March 2018	October 2022	See Table 2.2.3
P.1.2.1201	B1 - Interim spent fuel storage facility (ISFSF)	January 2005	October 2017	January 2005	February 2021 ⁹	January 2005	February 2021	None
P.1.2.1202	B2 – Solid waste management and Storage facility (SWMSF)	November 2005	November 2018	November 2005	November 2018	November 2005	July 2019 ¹⁰	See Table 2.2.3
P.1.2.1203	B3/4 - Solid waste treatment and storage facility	November 2005	November 2018	November 2005	November 2018	November 2005	July 2019 ¹¹	See Table 2.2.3
P.1.2.1206	B19-2 - Landfill facility for short-lived very low level waste	July 2008	September 2016	July 2008	July 2020	May 2008	May 2021	See Table 2.2.3

⁸ New project (initiated in March, 2018).

⁹ Modification, manufacturing and delivery of casks for spent nuclear fuel to B1 facilities.

¹⁰ B2 operational acceptance certificate was issued to Contractor in April 2018. The VATESI permission for industrial operation is planned to be received by the end of 2018. Additional time is required for the Contract closure.

¹¹ B3/4 operational acceptance certificate was issued to Contractor in April 2018. The VATESI permission for industrial operation is planned to be received in April 2019. Additional time is required for the Contract closure.

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	January 2009	November 2031	January 2009	August 2038 ¹²	January 2009	December ¹³ 2038	None
P.1.2.1208	Engineering study of the possibility of industrial waste disposal site conversion into a final repository	January 2014	June 2015	-	-	-	-	Closed in July 2016 ¹⁴
P.1.2.1209	Delivery of containers for D&D waste and new Grouting Facility	December 2013	November 2028	-	-	-	-	Closed in June 2014
P.1.2.1218	B38 - Interim storage buildings for reactor D&D waste	July 2015	March 2022	July 2015	July 2021	-	-	Completed in October 2018
P.1.2.1219	Installation of radioactive metal waste treatment facility in Building 130/2	January 2014	February 2015	January 2014	December 2019	September 2013 ¹⁵	December 2019	None
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	February 2013	December 2026	February 2013	December 2023	February 2013	December 2023	None
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	January 2014	December 2024	January 2014	November 2027	January 2011 ¹⁶	June 2027	See Table 2.2.3
P.1.2.1223	Erection and modification of communication lines and utilities	January 2004	December 2016	January 2004	November 2023	-	-	Closed in June 2017
P.1.2.1224	Construction of new temporary facilities for waste treatment	January 2029	December 2034	January 2029	December 2034	January 2029	December 2034	None
P.1.2.1225	Modification of the existing FIHC at ISFSF to handle with three types of casks	January 2014	December 2021	January 2017	July 2022	January 2017	July 2022	None
P.1.2.1226 ¹⁷	New Building Construction	-	-	-	-	May 2018	November 2021	See Table 2.2.3

¹² There was an mistake - the correct date is December, 2038

¹³ 1 stage (B25-1): detailed engineering and geological investigations and approval of the report on suitability for design of the site chosen for the repository, development of the TD, Preliminary SAR and Environment Monitoring Programme. 2 stage (B25-2): DD development, construction of the Repository and Licensing. The construction of the NSR 1 and 2 vaults group is planned to be performed in July 2023 (finalization of the 1 construction stage). The construction of NSR 3 vaults group is foreseen in 2034.

¹⁴ The final radiological survey of the site should be carried out in 2038. For more details see Monitoring Report 2016 /H2.

¹⁵ Project start date was revised. The date of the start of project have been clarified, but this did not affect the continuity of data when calculating progress by earned value

¹⁶ Project start date was revised. The date of the start of project have been clarified, but this did not affect the continuity of data when calculating progress by earned value

¹⁷ Project was initiated in May 2018, for the construction of a new Administrative Complex.

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P.1.2.1227 ¹⁸	Installation of automatic sewage pumping station in Building 437/1	-	-	-	-	December 2018	December 2019	See Table 2.2.3
P.1.3.	Isolation of other INPP facilities equipment	January 2014	June 2038	January 2014	August 2038	January 2005 ¹⁹	August 2038	None
P.1.4	Decontamination of process systems, equipment and facilities	January 2010	July 2025	January 2010	April 2029	August 2009 ²⁰	April 2029	None
P.2 Objects Dismantling/Demolition and Site Remediation Programme								
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	July 2010	September 2022	July 2010	February 2024	July 2010	January 2025	See Table 2.2.3
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	December 2018	January 2034	June 2019	August 2034	June 2019 ²¹	November 2027	See Table 2.2.3
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	January 2011	December 2031	January 2011	February 2033	July 2010 ²²	January 2035	See Table 2.2.3
P.2.2.2201	Dismantling within the surveillance area	January 2011	January 2034	January 2010	March 2034	January 2010	February 2034	None
P.2.2.2202	Dismantling of utilities outside the surveillance area	March 2021	July 2025	July 2020	July 2025	July 2020	July 2025	None
P.2.2.2203	D&D in Block A1	May 2013	June 2024	January 2012	June 2034	January 2012	January 2035	See Table 2.2.3
P.2.2.2204	D&D in Block B1	July 2022	September 2026	July 2022	September 2026	July 2022	September 2026	None
P.2.2.2205	D&D in Block V1 ²³	January 2009	September 2024	January 2009	September 2024	January 2009	September 2024	None

¹⁸ Project was initiated in October 2018

¹⁹ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value

²⁰ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value

²¹ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value

²² Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value

²³ According to the D&D design, the equipment to be dismantled in Block V1 was divided into 3 parts depending on the time of dismantling: phase D1 – equipment (ventilation systems, electrical systems, compressed air systems, etc.) not necessary for Block A1 operation, phase D2 – equipment, which can be dismantled after all works in Block A1 are completed and these systems are not needed any more, phase D3 – demolition of structures and building

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P.2.2.2206	D&D in Block G1	November 2007	June 2019	November 2007	June 2019	November 2007	June 2019	None
P.2.2.2207	D&D in Block D1	January 2011	February 2019	February 2010	February 2019	February 2010	February 2019	None
P.2.2.2208	D&D in Block D0	May 2015	June 2018	-	-	-	-	Completed in July 2015
<i>P.2.2.2210</i>	<i>D&D in Block A2</i>	<i>August 2016</i>	<i>December 2026</i>	<i>August 2017</i>	<i>October 2030</i>	-	-	<i>Closed in June 2018</i> <i>See Table 2.2.3</i>
P.2.2.2210	D&D in Blocks A2 and V2 ²⁴			June 2018	October 2030	June 2018	May 2035	See Table 2.2.3
P.2.2.2211	D&D in Block B2	February 2025	June 2029	May 2027	January 2031	May 2025	January 2031	None
<i>P.2.2.2212</i>	<i>D&D in Block V2</i>	<i>January 2018</i>	<i>November 2028</i>	<i>January 2018</i>	<i>November 2028</i>	-	-	<i>Closed in June 2018</i> <i>See Table 2.2.3</i>
P.2.2.2213	D&D in Block G2	June 2013	January 2023	July 2011	June 2021	July 2011	June 2021	None
P.2.2.2214	D&D in Block D2	August 2016	February 2024	August 2011	December 2022	August 2011	December 2022	None
P.2.2.2215	D&D in bld. 117/2	January 2013	August 2015	-	-	-	-	Completed in August 2015
P.2.2.2216	D&D in bld. 119	January 2009	July 2013	-	-	-	-	Completed in July 2013
P.2.2.2218	D&D in bld. 150, 157, 151/154	November 2029	September 2035	January 2028	November 2035	January 2028	November 2035	None
P.2.2.2219	D&D in bld. 135/1.2, 140/1, 152/2	January 2014	December 2030	January 2011	April 2036	January 2011	April 2036	None

²⁴ In June 2018, by the merging of projects P.2.2.2210 and P.2.2.2212, re-planning was made and the project name was changed

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P.2.3.2301	Demolition of Unit 1 facilities	March 2020	August 2036	January 2017	July 2038	January 2017	June 2038	None
P.2.3.2302	Demolition of Unit 2 facilities	June 2020	June 2038	January 2021	September 2038	January 2021	September 2038	None
P.2.3.2303	Demolition of other facilities within the controlled area	July 2029	June 2038	January 2021	December 2038	January 2021	December 2038	None
P.2.3.2304	Demolition of structures in the surveillance area	January 2015	July 2034	January 2011	December 2038	January 2011	December 2038	None
P.2.3.2305	Demolition of structures outside the surveillance area	January 2014	September 2033	January 2014	February 2036	December 2009	February 2036	None
P.2.3.2306	Demolition of Building 129	-	-	August 2015	February 2021	August 2015	October 2021	See Table 2.2.3
P.2.2.2401	Site Remediation	December 2032	December 2038	January 2033	December 2038	January 2033	December 2038	None
P.3 Spent Nuclear Fuel Handling Programme								
P.3.1.3101	Spent nuclear fuel handling in Unit 1	December 2006	April 2021	December 2006	June 2021	January 2005 ²⁵	June 2021	None
P.3.1.3102	Spent nuclear fuel handling in Unit 2	February 2010	November 2021	February 2010	July 2022	January 2010 ²⁶	July 2022	None
P.3.2.3200	Spent nuclear fuel transportation to storage sites	November 2016	November 2021	May 2017	July 2022	May 2017	July 2022	None
P.3.3.3300	Spent nuclear fuel management in storage sites	December 2006	December 2038	December 2006	December 2038	December 2006	December 2038	None
P.4 Waste Treatment Programme (except for the initial processing of solid radioactive waste)								
P.4.1.4100	Non-radioactive waste handling	January 2014	May 2037	January 2014	December 2038	January 2011 ²⁷	December 2038	None

²⁵ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value.

²⁶ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value.

²⁷ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value.

Project Number	Projects by FDP-7 (chapter 5)	Baseline		AWP 2018		AWP 2019		Major changes in scope or time
		Start	Finish	Start	Finish	Start	Finish	
P.4.2.4202	Solid radioactive waste handling	June 2010	December 2038	June 2010	December 2038	June 2010	December 2038	None
P.4.2.4204	Disposal of radioactive waste	July 2011	December 2038	July 2011	December 2038	July 2011	December 2038	None
P.4.3.4300	Liquid radioactive waste handling	January 2005	December 2038	January 2005	December 2038	January 2005	December 2038	None
P.5 Post-Operation Programme								
P.5.1.	Operation of facilities remaining in operation throughout the entire decommissioning	January 2014	December 2038	January 2014	December 2038	January 2010 ²⁸	December 2038	None
P.5.2	Maintenance of to be decommissioned facilities up to their dismantling/demolition	January 2014	December 2038	January 2005	December 2038	January 2005	December 2038	None
P.5.3	Energy saving	January 2010	December 2038	January 2010	December 2038	January 2010	December 2038	None

²⁸ Project start date was revised. The date of the start of project has been clarified, but this did not affect the continuity of data when calculating progress by earned value.

2.2.2 Budget at Completion

There are slippages of some project budgets (variation exceeding 15 % or EUR 500,000) in comparison to the FDP, but the total INPP decommissioning budget has not been increased. The overall budget changes are presented in Table 2.5.

Project Number	Projects by FDP-7 (chapter 5)	Budget at completion (chapter 15 FDP-7), MEUR	AWP 2018, MEUR	AWP 2019, MEUR	Major changes in cost
Total:		1,874.14	1,857.97	1,863.28	
P. 0 Enterprise Activity Organizing Programme		252.54	217.7	217.7	None
P.1 Preparation for Decommissioning Programme		342.94	330.85	330.68	See below
P.1.1.1101	INPP equipment engineering inventory	0.65	1.41	1.54	None (less than 15%)
P.1.1.1102	Radiological characterization	11.36	11.36	11.36	None
P.1.1.1103	Decommissioning Licensing	-	-	0.49	See Table 2.2.3
P.1.2.1201	B1 - Interim spent fuel storage facility (ISFSF) (construction)	53.93	51.36	51.39	None (less than 15%)
P.1.2.1202	B2 – Solid waste management and Storage facility (SWMSF)	31.59	35.37	35.34	None (less than 15%)
P.1.2.1203	B3/4 - Solid waste treatment and storage facility (construction)	87.13	74.49	74.49	None
P.1.2.1206	B19-2 - Landfill facility for short-lived very low level waste (construction)	8.25	9.24	9.66	None (less than 15%)
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	102.52	102.7	104.85	See Table 2.2.3
P.1.2.1208	Engineering study of the possibility of industrial waste disposal site conversion into a final repository	1.39	-	-	Closed in 2016
P.1.2.1209	Delivery of containers for D&D waste and new Grouting Facility	0.00	-	-	Closed in 2014
P.1.2.1218	B38 - Interim storage buildings for reactor D&D waste	5.15	1.84	-	Completed in October 2018

Project Number	Projects by FDP-7 (chapter 5)	Budget at completion (chapter 15 FDP-7), MEUR	AWP 2018, MEUR	AWP 2019, MEUR	Major changes in cost
P.1.2.1219	Installation of radioactive metal waste treatment facility in Building 130/2	1.23	4.04	4.04	None
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	3.83	4.89	4.89	None
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	5.54	5.88	5.88	None
P.1.2.1223	Erection and modification of communication lines and utilities	2.29	-	-	Closed in June 2017
P.1.2.1224	Construction of temporary facilities for waste treatment	7.50	6.50	6.50	None
P.1.2.1225	Modification of the existing FIHC at ISFSF to handle with three types of casks	4.33	4.33	4.33	None
P.1.2.1226	New Building Construction	-	-	2.45	See Table 2.2.3
P.1.2.1227	Installation of automatic sewage pumping station in Building 437/1	-	-	0.20	See Table 2.2.3
P.1.3.	Isolation of other INPP facilities equipment	14.57	15.66	12.84	See Table 2.2.3
P.1.4	Decontamination of process systems, equipment and facilities	1.67	1.78	0.63	See Table 2.2.3
P.2 Objects Dismantling/Demolition and Site Remediation Programme		562.01	544.02	541.61	See below
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	81.32	7.93	7.93	None
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	-	70.62	132,00	See Table 2.2.3
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	73.04	68.96	7.58	See Table 2.2.3
P.2.2.2201	Dismantling within the surveillance area	7.57	7.16	7.16	None

Project Number	Projects by FDP-7 (chapter 5)	Budget at completion (chapter 15 FDP-7), MEUR	AWP 2018, MEUR	AWP 2019, MEUR	Major changes in cost
P.2.2.2202	Dismantling outside the surveillance area	2.47	2.27	2.27	None
P.2.2.2203	D&D in Block A1	28.85	28.56	28.56	None
P.2.2.2204	D&D in Block B1	3.61	3.46	3.46	None
P.2.2.2205	D&D in Block V1	2.21	2.11	2.11	None
P.2.2.2206	D&D in Block G1	17.41	14.50	14.50	None
P.2.2.2207	D&D in Block D1	12.61	8.36	7.24	See Table 2.2.3
P.2.2.2208	D&D in Block D0	0.46	-	-	Completed in July 2015
<i>P.2.2.2210</i>	<i>D&D in Block A2</i>	<i>24.75</i>	<i>24.51</i>	-	<i>Closed in June 2018 See Table 2.2.3</i>
P.2.2.2210	D&D in Blocks A2 and V2	-	-	26.35	See Table 2.2.3
P.2.2.2211	D&D in Block B2	3.18	3.05	3.05	None
<i>P.2.2.2212</i>	<i>D&D in Block V2</i>	<i>3.56</i>	<i>3.10</i>	-	<i>Closed in June 2018 See Table 2.2.3</i>
P.2.2.2213	D&D in Block G2	24.46	20.49	20.49	None
P.2.2.2214	D&D in Block D2	12.45	9.77	9.77	None
P.2.2.2215	D&D in bld. 117/2	0.69	-	-	Completed in August 2015
P.2.2.2218	D&D in bld. 150, 157, 151/154	20.46	19.95	19.95	None
P.2.2.2219	D&D in bld. 135/1.2, 140/1, 152/2	3.56	3.20	3.20	None
P.2.3.2301	Demolition of Unit 1 facilities	83.32	86.41	86.41	None

Project Number	Projects by FDP-7 (chapter 5)	Budget at completion (chapter 15 FDP-7), MEUR	AWP 2018, MEUR	AWP 2019, MEUR	Major changes in cost
P.2.3.2302	Demolition of Unit 2 facilities	73.87	77.06	77.06	None
P.2.3.2303	Demolition of other facilities within the controlled area	33.83	33.73	33.73	None
P.2.3.2304	Demolition of structures in the surveillance area	34.80	32.13	32.13	None
P.2.3.2305	Demolition of structures outside the surveillance area	3.22	3.85	3.82	None (less than 15%)
P.2.3.2306	Demolition of Building 129	-	2.55	2.55	None
P.2.4.2401	Site Remediation	10.29	10.29	10.29	None
P.3 Spent Nuclear Fuel Handling Programme		11.78	19.14	19.14	None
P.3.1.3101	Spent nuclear fuel handling in Unit 1	2.16	4.98	4.98	None
P.3.1.3102	Spent nuclear fuel handling in Unit 2	2.58	5.59	5.59	None
P.3.2.3200	Spent nuclear fuel transportation to a storage sites	0.15	0.15	0.15	None
P.3.3.3300	Spent nuclear fuel management in storage sites	6.90	8.42	8.42	None
P.4 Waste Treatment Programme (except for the initial processing of solid radioactive waste)		322.28	345.67	350.03	See below
P.4.1.4100	Non-radioactive waste handling	5.40	16.19	16.58	None
P.4.2.4202	Solid radioactive waste handling	216.92	221.31	224.78	See Table 2.2.3
P.4.2.4204	Disposal of radioactive waste	56.06	44.16	44.16	None
P.4.3.4300	Liquid radioactive waste handling	43.90	64.01	64.51	See Table 2.2.3
P.5 Post-Operation Programme		382.6	400.59	401.15	See below
P.5.1.	Operation of facilities remaining in operation throughout the entire decommissioning	18.15	20.75	20.75	None

Project Number	Projects by FDP-7 (chapter 5)	Budget at completion (chapter 15 FDP-7), MEUR	AWP 2018, MEUR	AWP 2019, MEUR	Major changes in cost
P.5.2	Maintenance of to be decommissioned facilities up to their dismantling/demolition	122.15	146.93	147.61	See Table 2.2.3
P.5.3	Energy saving	242.30	232.91	232.79	None

2.2.3 Major changes in scope, time or cost identified (FDP vs. AWP 2019)

The major changes in cost (variation exceeding 15% or EUR 500,000), duration changes of any length for projects on the critical path, duration changes exceeding 3 months for other projects, NDAP milestones with a delay exceeding 3 months and any changes in scope are included in this table, which have been not explained in the Table 2.2.3 AWP 2018.

Project Number	Projects by FDP-7 (chapter 5)	Change in scope	Change in time	Change in cost	Corrective measures
Total cost				The changes of the projects actual values (described below in this table) determine the change of total cost	
P.1 Preparation for Decommissioning Programme					
P.1.1.1101	INPP equipment engineering inventory	The project volume increase by including engineering inventory of reinforced concrete constructions of INPP buildings and structures in controlled area	The finish date moved from Dec. 2020 to Oct 2021, due to increase of project volume	The project budget increase by 0.13 MEUR due to increase of project volume	No corrective measures needed
P.1.1.1103	Decommissioning Licensing	The new project was created for obtaining INPP decommissioning licence, including preparation and agreement with VATESI of the list of related documents (application for decommissioning licence, updated FDP and decommissioning SAR).	Project schedule was set according to the project scope	Project budget was calculated according to the project scope	No corrective measures needed
P.1.2.1202	B2 – Solid waste management and storage facility (SWMSF)	None	The finish date moved from Nov. 2018 to July 2019 (delay by 7.3 months): the additional time need for preparation of different documentation for the Contract closure, archive, accountants and other divisions to account for the result of the project.	None	Extension of the “hot” trials programme with increased number of loaded containers to treat operational waste

Project Number	Projects by FDP-7 (chapter 5)	Change in scope	Change in time	Change in cost	Corrective measures
P.1.2.1203	B3/4 - Solid waste treatment and storage facility	None	The finish date moved from Nov. 2018 to July 2019 (delay by 7.3 months): the receipt of VATESI permissions for B3/4 industrial operation moved to a later date due the issues of G3 waste activity. The additional time needed for preparation of different documentation for the Contract closure, archive, accountants and other divisions to account for the result of the project.	None	Extension of the "hot" trials program with increase number of loaded containers to treat operational waste
P.1.2.1206	B19-2 - Landfill facility for short-lived very low level waste	None	Delay in tender procedure due to complaint of one the tender participants and delay of Detail design preparation by Designer. violation found by VATESI in respect of ground exchange works by the Contractors	None	Creation of buffer places for waste A packages in Block G1. Improve the contractor's works monitoring.
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	The works remained after the closing of the project P.1.2.1223 project were included in the project scope	The sequence of procurements was optimised to ensure FIDIC involvement from the initial tender stage and to give priority for the main construction contract against external infrastructure contracts	The project budget was optimized according to the changes in the project scope and increase by 2.15 MEUR	No corrective measures needed
P.1.2.1219	Installation of radioactive metal waste treatment facility in Building 130/2	None	The project start date was revised	None	No corrective measures needed
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	None	The project duration was changed due to the revised project start and finish dates	None	No corrective measures needed

Project Number	Projects by FDP-7 (chapter 5)	Change in scope	Change in time	Change in cost	Corrective measures
P.1.2.1226	New Building Construction	The new project was created to implement the most effective model of administrative staff workplaces layout	Project schedule was set according to the project scope	Project budget was calculated according to the project scope	No corrective measures needed
P.1.2.1227	Installation of automatic sewage pumping station in Building 437/1	The new project was created to design, construct and commission an automatic sewage pumping station	Project schedule under preparation according to the project scope	Project budget was calculated according to the project scope	No corrective measures needed
P.1.3.	Isolation of other INPP facilities equipment	The part of the equipment isolation works is transferred to the scope of project P.5.2. The maintenance of key equipment and system components, function of which remains in operational, must remain under project P.5.2 in accordance with the requirements of the respective technical documents and procedures.	None	The budget of INPP isolation process was optimized according to the changes in the project scope and decrease by 2.84 MEUR	No corrective measures needed
P.2 Objects Dismantling/Demolition and Site Remediation Programme					
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	None	The project duration increase by 9 months due to delay of nuclide vectors determination by TSO	None	Preparation of Technological Design and SAR using data of not approved report on nuclide vectors determination
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	In 2016 - 2017 INPP the scope of project UP01 was changed with regard to merging of projects P.2.1.2103 "Dismantling of Reactor Facility (R3 area) of Unit 1" and project P.1.2.1218 (B38) "Establishment of temporary storage for reactor waste" section which concerns to storage area development for the radioactive graphite wastes after dismantling (RWS – reactor waste storage) of both Units. In 2017-2018, the activities related with Unit 2 reactor zone R3 dismantling have been included in the scope of the project.	The project duration increase by 9 months due to the changes in project scope and delay of nuclide vectors determination by TSO	The project budget increase to 132 MEUR due to the changes of project scope	Provision and assurance of support in preparation of Fiche and Technical specification for consultancy services procurement

Project Number	Projects by FDP-7 (chapter 5)	Change in scope	Change in time	Change in cost	Corrective measures
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	The Unit 2 reactor zone R3 dismantling activities were excluded from the project scope and moved to the scope of project P.2.1.2103	The project finish date changed due the change of project scope	The project budget decrease by 61.38 MEUR, because Unit 2 reactor zone R3 dismantling activities are included in project P.2.1.2103 scope	No corrective measures needed
P.2.2.2203	D&D in Block A1	None	The project duration increase by 6.3 months due to delay of nuclide vectors determination by TSO	None	Preparation of Technological Design and SAR using data of not approved report on nuclide vectors determination
P.2.2.2207	D&D in Block D1	None	None	The project budget decrease by 1.12 MEUR because it was refused to procurement of equipment	No corrective measures needed
P.2.2.2210	D&D in Block V2	<i>In June 2018, the projects were merged (project P.2.2.2210 and P.2.2.2212) and this project was closed</i>	<i>Closed in June 2018</i>	<i>The project budget was moved to new merged project</i>	<i>No corrective measures needed</i>
P.2.2.2210	D&D in Blocks A2 and V2	In June 2018, by the merging of projects P.2.2.2210 and P.2.2.2212, re-planning was made and the project scope was changed. The installation of the dismantling waste initial processing facility was included in project scope	The re-planning of the project was made due to the changes of project scope	The project budget was recalculated due to the change of project scope	No corrective measures needed
P.2.2.2212	D&D in Block V2	<i>The activities under project are included in the project P.2.2.2210 scope</i>	<i>Closed in June 2018</i>	<i>The recalculated budget merged with the budget of project P.2.2.2210 in June 2018</i>	<i>No corrective measures needed</i>
P.2.3.2306	Demolition of Building 129	None	The preparation of project documentation requires more time. On the direction of the State Construction Inspectorate, the project TD must undergo an expertise and to conform the requirements in accordance with the rules for a nuclear object.	None	The discussion with VATESI about reconsideration of the definition of a "nuclear object" is in progress. To accelerate the implementation of the project, INPP considers carrying out part of works related to Building 129 demolition by own staff instead of initiating public procurement.

Project Number	Projects by FDP-7 (chapter 5)	Change in scope	Change in time	Change in cost	Corrective measures
P.4 Waste Treatment Programme (except for the initial processing of solid radioactive waste)					
P.4.2.4202	Solid radioactive waste handling	Works related to modifications of B2 RU2 / RU3 and B3/4 are included in the scope of the project	None	The project budget increase by 3.47 MEUR due to the changes of project scope	No corrective measures needed
P.4.3.4300	Liquid radioactive waste handling	None	None	The project budget increase by 0.5 MEUR due to the cost of updating the spectrometer	
P.5 Post-Operation Programme					
P.5.2	Maintenance of to be decommissioned facilities up to their dismantling/demolition	The part of the equipment isolation works is transferred from the project P.1.3. The scope and procedures of the main inspections, tests and maintenance of equipment and components (under project P.5.2) must ensure the functionality of the equipment. If a function remains in operation, the maintenance of key equipment and system components must remain in accordance with the requirements of the respective technical documents and procedures. Repairs, checks and tests of equipment and components, which are no longer necessary, must not be performed, this equipment must be insulated (under project P.1.3) and the necessary changes determining isolation must be included in the respective documents / procedures for checks and tests.	None	The budget was optimized according to the changes in the project scope and increase by 0.86 MEUR	No corrective measures needed

2.2.4. Contribution to detailed objectives

This subchapter presents the progress relative to the detailed objectives for the Ignalina Programme.

i - Defueling of the reactor core of unit 2 and the reactor fuel ponds of units 1 and 2 into the dry spent fuel storage facility, to be measured by the number of unloaded fuel assemblies

Objectives	Project	Target	FDP date	AWP date	FDP Indicator	Situation at 30-09-2018	Planned situation at 31-12-2019
Removal of spent fuel assemblies from Units 1 and 2 spent fuel ponds	P.3.1.3101 P.3.1.3102	Defueling at maximum unloading capacity into the Interim Spent Fuel Storage Facility (B1)	Fully unloaded by Nov. 2021 and Jun 2022	Fully unloaded by June 2021 and July 2022	12,345 items removed	6,613 SFA were loaded from pools of Units 1 and 2 into 73 casks and transported to the new interim storage Facility	11,436 SFA loaded from pools of Unit 1 and 2 in total
Removal of spent fuel assemblies from Unit 2 reactor core	P.3.1.3102	Defueling at maximum unloading capacity	Jun 2019	Dec 2018	zero assemblies in core	Zero assemblies in core	Zero assemblies in core

ii - Safely maintaining the reactor units (to be measured by the number of registered incidents)

Objectives	Project	Target	FDP date	AWP date	FDP Indicator	Situation at 30-09-2018	Planned situation at 31-12-2019
Safely maintaining the reactor units 1 and 2	P.3, P.4, P.5	Safe maintenance without any major incident	2020	2020	0 (registered) incidents	0 (registered) incidents	0 (registered) incidents

iii - Performing dismantling in the turbine hall and other auxiliary buildings and safely managing the decommissioning waste in accordance with a detailed waste management plan (to be measured by the type and number of auxiliary systems dismantled, and the quantity and type of safely conditioned waste)

Objectives	Project	Target	FDP date	AWP date	FDP Indicator	Situation at 30-09-2018	Planned situation at 31-12-2019
Interim Spent Fuel Storage Facility (ISFSF), B1	P.1.2.1201	Into operation asap	2017/Q4	Oct 2017	B1 operational	B1 operational	B1 operational

Objectives	Project	Target	FDP date	AWP date	FDP Indicator	Situation at 30-09-2018	Planned situation at 31-12-2019
Solid Waste Management and Storage Facilities, B2/3/4	P.1.2.1202 P.1.2.1203	Into operation asap	2018/Q4	July 2019	B2/3/4 operational	Operational Acceptance Certificate was issued on 26 April 2018. Additional protective measures for increased activity of SRW G3 agreed with Contractor. Implementation of the additional protective measures is planned to completed in 2018/Q4	B2/3/4 industrial operational
Landfill Facility for Short-Lived Very Low Level Waste, B19-2	P.1.2.1206	Into operation asap	2018/Q3	May 2021	B19-2 operational	Updated DD is under agreement, TDDD for facility infrastructure is prepared, the TDDD expertise initiated (requirements for nuclear objects)	The Landfill facility infrastructure construction works performed. Integration of facility physical security system
Upgrade of Bituminised Waste Vaults, B20	P.1.2.1222	Upgrade works started	SAR for selected way of disposal of bitumen compound prepared 2018/Q4	SAR for selected way of disposal of bitumen compound prepared March 2023	Start of modernization	Tender for procurement of the design documentation for additional survey and Environmental Impact Assessment procedure service development completed by the end of May 2018. On 4 October 2018, the contract was signed	Implementation for additional survey and Environmental Impact Assessment

Objectives	Project	Target	FDP date	AWP date	FDP Indicator	Situation at 30-09-2018	Planned situation at 31-12-2019
Near Surface Repository for Low - and Intermediate Level Short-Lived Radioactive Waste, B25	P.1.2.1207	Into operation asap	Start of operation 1 st Vault Group 2020/Q4	Start of operation 1 st Vault Group September 2023	B25 operational	Procurement documentation for main construction activities and relates works being agreed with CPMA. The tender for procurement of construction services is planned to be announced in November 2018	Contract for NSR construction signed. Start to development of DD
Shutdown and isolation of process systems	P1.3	Systems being dismantled	2020	Dec 2029	35 systems	12 systems fully isolated	19 systems fully isolated
Dismantling of process equipment and components	P.1.2.1219 P.2.1.2103 P.2.2.2201 P.2.2.2203 P.2.2.2205 P.2.2.2206 P.2.2.2207 P.2.2.2208 P.2.2.2213 P.2.2.2214 P.2.2.2215 P.2.3.2305	Dismantling started	2020	Dec 2020	40,454 tonnes	34,292 tonnes	40,154 tonnes
Dismantling of Unit 1 reactor installation components	P.2.1.2101	Dismantling started	2020	Oct 2022	1,095 tonnes	Technological Design and SAR (without nuclide vectors) submitted to VATESI in March 2018	70 tonnes
Treatment (processing) of radioactive waste (since 2014)	P.4.1.4100 P.4.2.4202 P.4.2.4300	Processing ongoing	2020	2020	45,000 m ³	25,334 m ³	35,234 m ³
Radioactive waste transportation to storage facilities (with packages since 2014)	P.4.2.4202 P.4.2.4300	Transport on-going	2020	2020	13,000 m ³	7,772 m ³	9,417 m ³

2.3. Critical path (including projects nearly critical)

Critical path for the whole process of Ignalina NPP decommissioning is an important element of the risk management process. The critical path is represented by a succession of main activities and activities within respective projects the timely completion of which ensure meeting the scheduled deadline of the INPP overall decommissioning.

According to the specified schedule of Ignalina NPP decommissioning, the critical path has been identified through the following areas:

- P.2.1 Dismantling of Units 1 and 2 reactor installations
- P.2.3 Demolition of facilities
- P.2.4 Site remediation

The critical path analysis shows the activities of following projects being critical as at 30 September 2018:

- P.2.1.2103 Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS) (due to the replacement of the concept of the dismantling of the reactor, this project will have the greatest impact on the critical path and will be there until the end of the dismantling of both reactors)
- P.2.3.2302 Unit 2 facilities demolition (on the critical path from 2014 and depends on the date of completion of the dismantling of both reactors)
- P.2.4.2401 Site remediation (on the critical path from 2014 and depending on the date of the demolition of Unit 2 facilities).

The following projects exited the critical path:

- P.1.1.1102 Radiological characterization (due the changes of the projects P.2.1.2101 and P.2.1.2103 concept)
- P.1.4.1402 Unit 2 MCC decontamination (due the changes of the projects P.2.1.2101 and P.2.1.2103 concept)
- P.1.1.1201 Interim Spent Fuel Storage Facility (ISFSF), B1 (construction completed, facility in operation)
- P.3.1.3102 Spent nuclear fuel handling in Unit 2 (all spent fuel from Unit 2 reactor core unloaded)
- P.2.1.2102 Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2) (due the changes of the projects P.2.1.2101 and P.2.1.2103 concept)

Projects that have a risk to fall into the critical path as at 30 September 2018:

- P.1.1.1102 Radiological characterization
- P.1.2.1202 Solid waste management and storage facility (SWMSF) (B2)
- P.1.2.1203 Solid waste treatment and storage facilities (B3/4)
- P.1.2.1206 Landfill facility for short-lived very low level waste (B19-2)
- P.1.2.1207 Near surface repository for low and intermediate level short-lived radioactive waste (B25)
- P.1.2.1225 Modification of the existing FIHC at ISFSF to handle with three types of casks
- P.2.1.2101 Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)
- P.2.1.2102 Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)
- P.2.3.2303 Demolition of other structures in the controlled area
- P.3.1.3101 Spent nuclear fuel handling in Unit 1
- P.3.1.3102 Spent nuclear fuel handling in Unit 2

The time schedule of these projects is presented in a graphical form in the Oracle Primavera (Gantt chart) below.

2.3.1. Major changes on the critical path (including projects nearly critical)

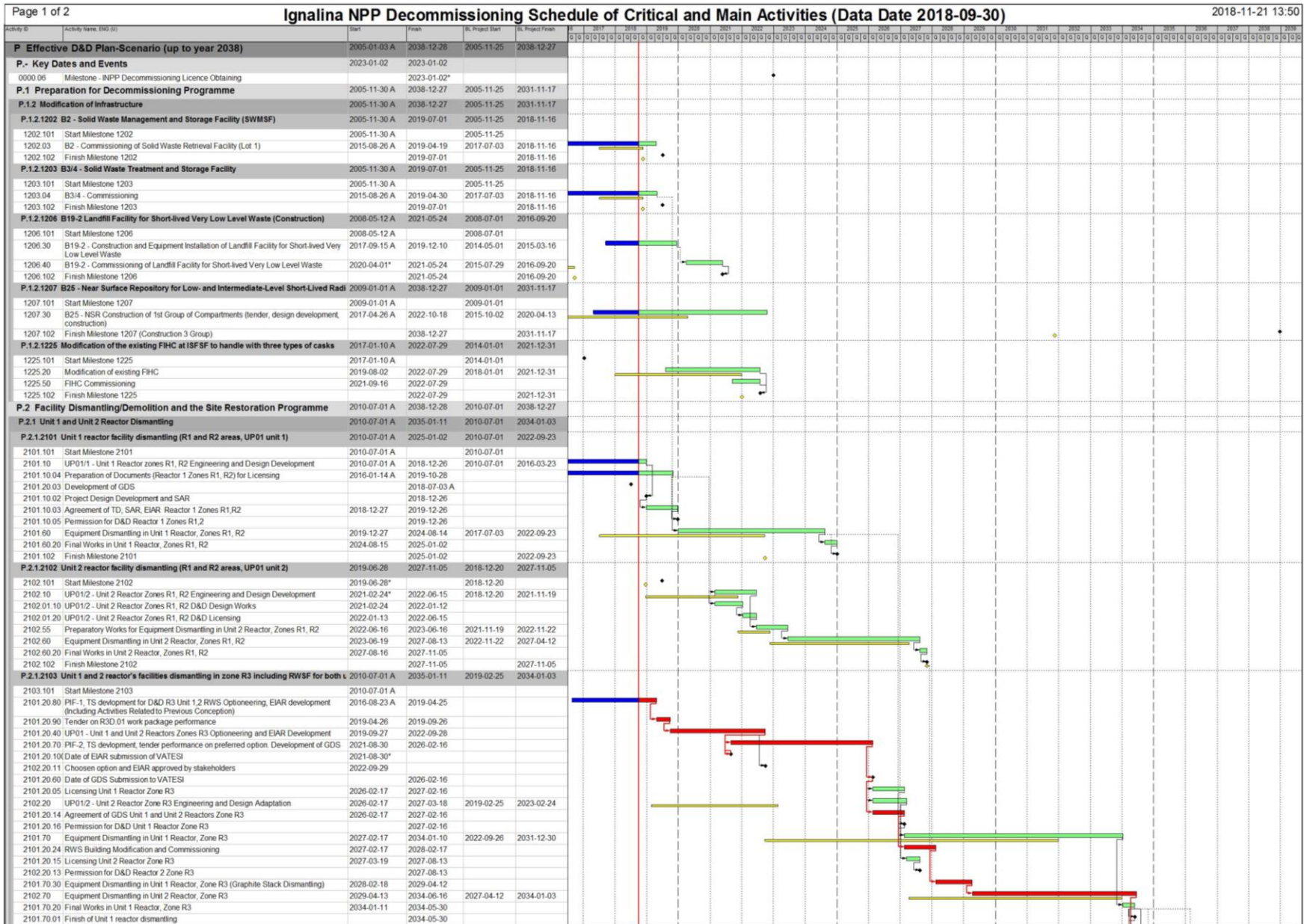
	Project No	Activity	AWP 2018 (finish)	Current (finish)	Reasons for delay	Impact on the completion of INPP decommissioning
1	P.1.2.1206.30	B19-2 - Construction and Equipment Installation of Landfill Facility for Short-lived Very Low Level Waste	2019-02-13	2019-12-10	Contractor suspended construction activities on B19-2 site due to the Detailed Design submission delay	No impact
2	P.1.2.1206.40	B19-2 - Technical Design approval (by VATESI)	2020-07-02	2021-05-24	VATESI comments for detailed design	
3	P.2.1.2101.10	UP01/1 - Unit 1 Reactor zones R1, R2 Engineering and Design Development	2018-02-01	2018-12-26	The delay in the completion of the Block A1 nuclide vector has affected the date of the project licensing documents finalization	
4	P.2.1.2101.60	Equipment Dismantling in Unit 1 Reactor, Zones R1, R2	2023-06-15	2024-08-14	Due to delay of the project licensing documents preparation	
5	P.2.1.2101.60.20	Final Works in Unit 1 Reactor, Zones R1, R2	2022-06-15	2025-01-02	Due to delay of the project licensing documents preparation	
6	P.2.1.2101.70.20 ²⁹	Final Works in Unit 1 Reactor, Zone R3	2033-02-15	2034-05-30	Due to changes of the project implementation strategy	
7	P.2.1.2102.70.20 ³⁰	Equipment Dismantling in Unit 2 Reactor, Zone R3	2034-07-31	2035-01-11	The change of the project implementation strategy has affected the date of the dismantling start: 1. The design of the dismantling of R3 zones of both energy unit reactors will be carried out simultaneously 2. The requirement for the procurement of preparation of documentation services in separate stages: to begin with selection of reactor R3 zone dismantling technology and preparation of EIAR, then the design of the dismantling of both reactor R3 zones and reactor waste storage	
8	P.2.1.2101.70 ³¹	Equipment Dismantling in Unit 1 Reactor, Zone R3	2032-08-31	2034-01-10		
9	P.2.2.2203.10.01	Technological Design Correction in Accordance with Nuclide Vector, Agreement with Governmental Authorities	2019-07-30	2020-02-14	The delay of the recalculation of the nuclide vector by TSO	
10	P.2.2.2203.30	Equipment D&D in Block A1 (Except the Ventilation Stack), Including Preparation of Dismantling Area	2034-06-28	2035-01-11	The part of equipment is necessary for dismantling in the Unit 1 reactor zones R1, R2 and R3 (until the removal of graphite from the reactor)	

²⁹ This activity belongs to the project P.2.1.2103 "Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)"

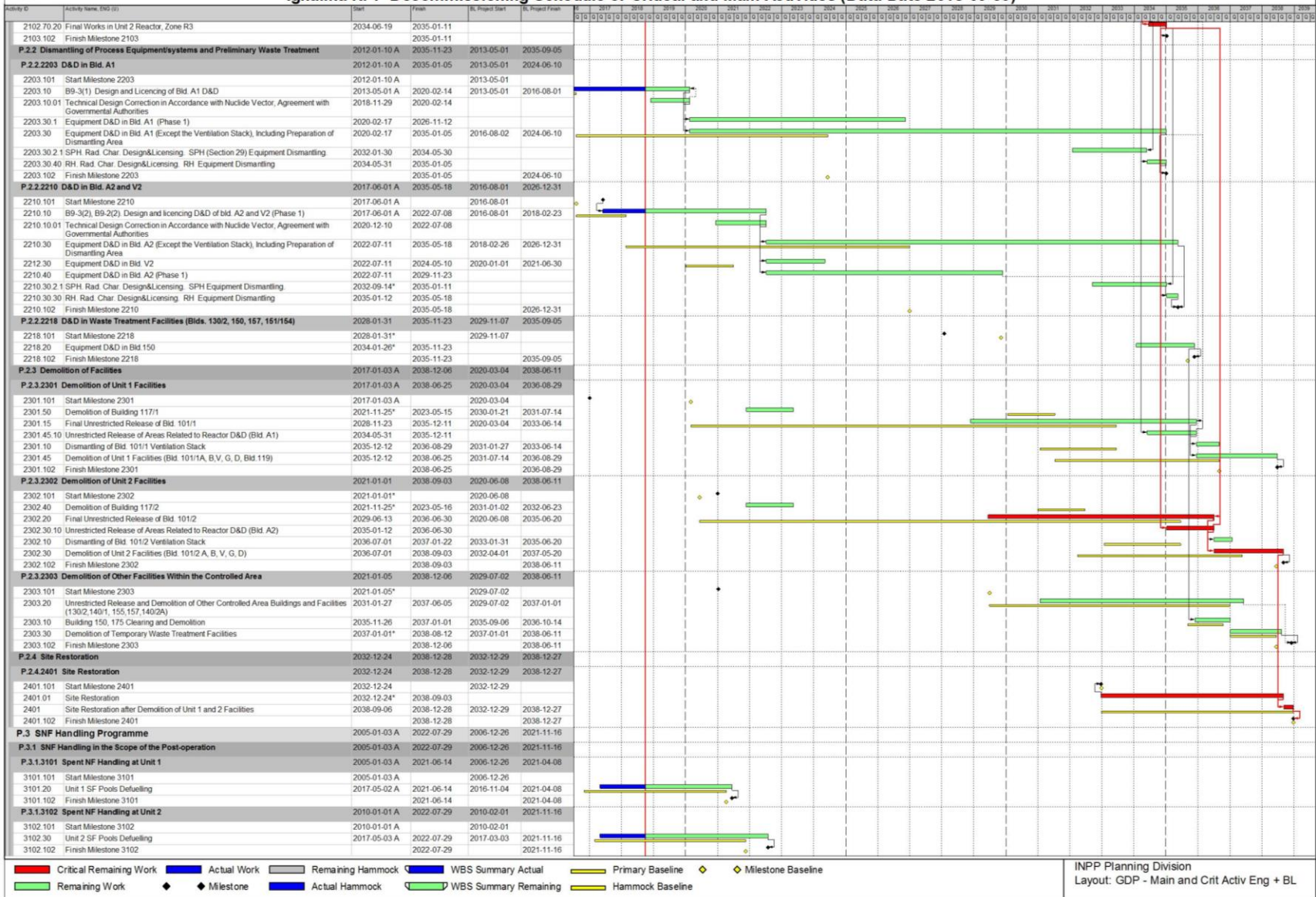
³⁰ This activity belongs to the project P.2.1.2103 "Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)"

³¹ This activity belongs to the project P.2.1.2103 "Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)"

	Project No	Activity	AWP 2018 (finish)	Current (finish)	Reasons for delay	Impact on the completion of INPP decommissioning
11	P.2.2.2203.30.01	Equipment D&D in Block A1 (Phase 1)	2025-10-15	2026-11-12	As above	
12	P.2.2.2210.30	Equipment D&D in Bld. A2 (Except the Ventilation Stack), Including Preparation of Dismantling Area	2026-12-31	2035-08-21	The part of equipment is necessary for dismantling in the Unit 2 reactor zones R1, R2 and R3 (until the removal of graphite from the reactor)	
13	P.2.3.2301.15	Final Unrestricted Release of Bld. 101/1	2034-11-15	2035-12-11	The part of equipment is necessary for dismantling in the Unit 1 reactor zones R1, R2 and R3 (until the removal of graphite from the reactor)	
14	P.2.3.2301.10	Dismantling of Bld. 101/1 Ventilation Stack	2035-08-06	2036-08-29	As above	
15	P.2.3.2302.20	Final Unrestricted Release of Bld. 101/2	2036-01-16	2036-06-30	The part of equipment is necessary for dismantling in the Unit 1 reactor zones R1, R2 and R3 (until the removal of graphite from the reactor)	
16	P.2.3.2302.30.10	Unrestricted Release of Areas Related to Reactor D&D (Bld. A2)	2036-01-16	2036-06-30	As above	
17	P.2.3.2302.10	Dismantling of Bld. 101/2 Ventilation Stack	2036-01-16	2037-01-22	As above	
18	P.1.2.1202.03	B2 – Commissioning of Solid Waste Retrieval Facility (Lot 1)	2018-11-16	2019-04-08	The elimination of the equipment defects will take longer than expected. The necessity to implement of the additional shielding for SRW G3	
19	P.1.2.1203.04	B3/4 – Commissioning	2018-11-16	2019-04-08		



Ignalina NPP Decommissioning Schedule of Critical and Main Activities (Data Date 2018-09-30)



2.4 Schedule updates

See Table 2.2.3

2.4.1 Causes and impact of the identified changes in scope, time or cost

See Table 2.2.3

2.4.2 Corrective measures

See Table 2.2.3

2.5 Updated budget / Planned Value schedule

	Baseline (Chapter 15 FDP-7) 2014-2038, MEUR												Current status (as of 01-10-2018) according INPP Decommissioning Megaproject Schedule, Gf 686, 2015-07-01, MEUR											
	2014	2015	2016	2017	2018	2019	2020	2014-2020	2021-2027	2028-2034	2035-2038	2014-2038	2014	2015	2016	2017	2018	2019	2020	2014-2020	2021-2027	2028-2034	2035-2038	2014-2038
Total for the Megaproject MEUR, including:	153.32	106.58	114.86	118.06	118.58	96.68	78.35	879.22	689.67	722.91	366.89	2658.68	112.57							694.52	690.18	783.16	396.9	2,572.34
Risks								30	30	20	10	90	0							30	30	20	10	90
Inflation								62.76	177.05	276.83	177.94	694.57	0							28.41	138.1	274.47	183.13	624.11
Taxes								0.52	0.52	0.52	0.29	1.859												
Undistributed budget																								7.58
Total for the Megaproject according to programs; inflation and risks excluded	153.32	106.58	114.86	118.06	118.58	96.68	78.35	786.46	482.62	426.08	178.95	1874.11	112.57	96.14	72.28	89.13	87.23	91.84	86.92	636.11	522.08	488.69	203.77	1850.65
According to P.0. Program	15.04	15.10	15.10	15.04	15.10	13.63	12.25	101.25	84.59	53.75	12.93	252.54	18.72	13.4	13.95	12.91	13.35	12.17	11.79	96.29	56.42	47.04	15.55	215.30
According to P.1. Program	79.45	36.42	44.19	47.04	43.32	21.08	5.96	277.46	34.17	29.49	1.82	342.94	52.0	42.17	19.43	38.41	28.2	28.93	22.27	231.41	68.76	29.77	2.31	332.25
According to P.2. Program	20.26	16.47	16.96	16.93	20.04	17.55	15.51	123.71	115.07	199.24	123.96	562.01	7.91	8.47	8.54	7.88	10.51	11.67	13.5	68.48	128.16	213.48	129.42	539.55
According to P.3. Program	0.66	0.67	0.67	0.77	1.11	1.11	1.11	6.10	2.87	1.79	1.02	11.57	1.17	1.22	1.43	2.22	2.63	2.21	2.22	13.10	3.56	1.63	0.93	19.22
According to P.4. Program	11.31	11.35	11.44	12.01	12.54	16.06	16.46	91.17	126.29	80.21	24.61	322.29	4.8	5.2	5.78	5.82	9.38	16.05	17.05	64.08	126.45	116.05	39.56	346.14
According to P.5. Program	26.61	26.58	26.51	26.27	26.47	27.25	27.06	186.75	119.65	61.60	14.61	382.57	27.97	25.68	23.15	21.89	23.16	20.81	20.09	162.75	138.73	80.72	16.00	398.20

3 PRIORITIES OF THE YEAR, MAIN ACTIVITIES TO BE PERFORMED

3.1 Detailed table per activity planned in the next 2 calendar years

Project Number	Projects by FDP-7 (chapter 5)	Start	Finish	Planned activity	Budget, €	
					Planned for 2019	Planned for 2020
Total:					91,834,095.36	86,927,528.98
P. 0 Enterprise Activity Organizing Programme		January 2000	December 2038	See the Table 3.1.1	12,166,354.52	11,794,776.96
P.1 Preparation for Decommissioning Programme					28,928,627.55	22,274,745.06
P.1.1.1101	INPP equipment engineering inventory	December 2005	October 2021	See the Table 3.1.1	119,141.30	156,655.00
P.1.1.1102	Radiological characterization	January 2006	December 2038	See the Table 3.1.1	464,628.12	466,408.30
P.1.1.1103	Decommissioning Licensing	March 2018	October 2022	See the Table 3.1.1	132,716.82	93,629.37
P.1.2.1201	B1 - Interim spent fuel storage facility (ISFSF)	January 2005	February 2021	See the Table 3.1.1	4,241,665.94	4,257,917.54
P.1.2.1202	B2 – Solid waste management and Storage facility (SWMSF)	November 2005	July 2019	See the Table 3.1.1	60,093.16	-
P.1.2.1203	B3/4 - Solid waste treatment and storage facility	November 2005	July 2019	See the Table 3.1.1	52,080.75	-
P.1.2.1206	B19-2 - Landfill facility for short-lived very low level waste	May 2008	May 2021	See the Table 3.1.1	7,712,000.00	159,907.05
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	January 2009	December 2038	See the Table 3.1.1	12,127,723.78	12,436,862.62
P.1.2.1219	Expansion of radioactive metal waste treatment facility in Building 130/2	September 2013	December 2019	See the Table 3.1.1	326,360.38	-
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	February 2013	December 2023	See the Table 3.1.1	1,228,296.48	1,228,945.02

Project Number	Projects by FDP-7 (chapter 5)	Start	Finish	Planned activity	Budget, €	
					Planned for 2019	Planned for 2020
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	January 2011	June 2027	See the Table 3.1.1	442,656.05	42,839.94
P.1.2.1225	Modification of the existing FIHC at ISFSF to handle with three types of casks	January 2017	July 2022	See the Table 3.1.1	650,000.00	850,000.00
P.1.2.1226	New Building Construction	May 2018	November 2021	See the Table 3.1.1	80,817.75	1,334,241.97
P.1.2.1227	Installation of automatic sewage pumping station in Building 437/1	December 2018	December 2019	See the Table 3.1.1	200,000.00	-
P.1.3.	Isolation of other INPP facilities equipment	January 2005	August 2038	See the Table 3.1.1	1,088,447.02	1,245,658.73
P.1.4.	Decontamination of process systems, equipment and facilities	August 2009	April 2029	See the Table 3.1.1	0.00	1,679.52
P.2 Objects Dismantling/Demolition and Site Remediation Programme					11,671,757.08	13,488,439.73
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	July 2010	January 2025	See the Table 3.1.1	1,325,536.04	1,185,839.21
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	June 2019	November 2027	See the Table 3.1.1	74,824.96	183,064.84
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	July 2010	January 2035	See the Table 3.1.1	769,352.09	2,069,286.16
P.2.2.2201	Dismantling within the surveillance area	January 2010	February 2034	See the Table 3.1.1	215,010.78	216,307.12
P.2.2.2203	D&D in Block A1	January 2012	January 2035	See the Table 3.1.1	3,036,266.70	3,522,730.13
P.2.2.2206	D&D in Block G1	November 2007	June 2019	See the Table 3.1.1	186,269.49	-
P.2.2.2207	D&D in Block D1	February 2010	February 2019	See the Table 3.1.1	80,000.17	-
P.2.2.2210	D&D in Blocks A2 and V2	June 2017	May 2035	See the Table 3.1.1	567,690.73	1,187,359.95
P.2.2.2213	D&D in Block G2	July 2011	June 2021	See the Table 3.1.1	2,668,238.64	2,682,212.98
P.2.2.2214	D&D in Block D2	July 2011	December 2022	See the Table 3.1.1	2,168,894.43	1,774,528.64
P.2.3.2301	Demolition of Unit 1 facilities	January 2017	June 2038	See the Table 3.1.1	226,440.94	340,636.35

Project Number	Projects by FDP-7 (chapter 5)	Start	Finish	Planned activity	Budget, €	
					Planned for 2019	Planned for 2020
P.2.3.2305	Demolition of structures outside the surveillance area	December 2009	February 2036	See the Table 3.1.1	136,595.71	148,539.55
P.2.3.2306	Demolition of Building 129	August 2015	October 2021	See the Table 3.1.1	216,636.4	177,934.8
P.3 Spent Nuclear Fuel Handling Programme					2,214,338.62	2,224,694.59
P.3.1.3101	Spent nuclear fuel handling in Unit 1	January 2005	June 2021	See the Table 3.1.1	760,073.40	763,857.47
P.3.1.3102	Spent nuclear fuel handling in Unit 2	January 2010	July 2022	See the Table 3.1.1	640,372.32	642,825.86
P.3.2.3200	Spent nuclear fuel transportation to a storage sites	May 2017	July 2022	See the Table 3.1.1	28,621.98	29,731.64
P.3.3.3300	Spent nuclear fuel handling in storage sites	December 2006	December 2038	See the Table 3.1.1	785,270.92	788,279.62
P.4 Waste Treatment Programme (except for the initial processing of solid radioactive waste)					16,046,209.79	17,053,845.22
P.4.1.4100	Non-radioactive waste handling	January 2011	December 2038	See the Table 3.1.1	665,695.62	668,246.18
P.4.2.4202	Solid radioactive waste handling	June 2010	December 2038	See the Table 3.1.1	12,444,683.12	12,492,363.90
P.4.2.4204	Disposal of radioactive waste	July 2011	December 2038	See the Table 3.1.1	-	946,155.70
P.4.3.4300	Liquid radioactive waste handling	January 2005	December 2038	See the Table 3.1.1	2,935,831.05	2,947,079.44
P.5 Post-Operation Programme					20,806,808.3	20,091,027.42
P.5.1	Operation of facilities remaining in operation throughout the entire decommissioning	January 2010	December 2038	See the Table 3.1.1	916,900.50	920,413.52
P.5.2	Maintenance of to be decommissioned facilities up to their dismantling/demolition	January 2005	December 2038	See the Table 3.1.1	8,397,169.00	8,366,312.00
P.5.3.	Energy saving	January 2010	December 2038	See the Table 3.1.1	11,492,738.80	10,804,301.90

3.1.1 Identifier, description and scope

The extensive project descriptions are available in INPP Decommissioning Megaproject Schedule, reference number DVSeD-0115-3. The scopes of works planned in 2019 under projects are presented in this table.

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.0	Enterprise Activity Organizing Programme		
		<ul style="list-style-type: none"> - Activity administration, legal services. Internal and external communication, planning, document and record management, procurement management, personal management, finance management, accounting. - Quality-management system implementation and supervision, technical safety assurance and supervision, emergency, preparedness assurance and supervision, fire safety assurance and supervision, occupational safety and health assurance and supervision. - Waste disposal, sale of goods and materials no longer necessary, leasing of objects to outside organizations, consultancy services on exchange of decommissioning experience. - Radiation safety assurance and supervision, environmental safety assurance and supervision. - Physical security assurance and supervision. - Workplaces arrangement, IT maintenance, telecommunications maintenance, general transport maintenance, warehouses maintenance and stock management. - Consultancy and legal support for INPP decommissioning. 	<ol style="list-style-type: none"> 1. Enterprise Management, Legal Activity, Internal and External Communication, Economic Activities 2. Planning 3. Financial Management 4. Enterprise Cost and Management Accounting 5. Personnel Management 6. Documents and Records Management 7. Procurement (goods, services, works) Management 8. Material Resources Warehousing 9. Metrology Provision 10. Supervising Activity: Environmental Safety Assurance and Supervision, Radiation Supervision, Employees Safety and Health Assurance and Supervision, Physical Safety Assurance and Supervision, Fire Safety Assurance and Supervision, Technical Safety Assurance and Supervision, Quality Management System Implementation and Support 11. Commercial Activity 12. Risk Management
P.1	Preparation for Decommissioning Programme		
P.1.1.1101	INPP equipment engineering inventory	Engineering inventory is to obtain the information regarding the setting of all INPP facilities, buildings, structures and the territory	Engineering inventory of 1,910 tonnes of equipment in controlled and surveillance areas
P.1.1.1102	Radiological characterization	Radiological characterization to obtain the information regarding the radiological condition of all INPP facilities, buildings, structures and the territory	<ol style="list-style-type: none"> 1. Radiological surveys of the equipment of Block A2 and structures and elements of Unit 2 reactor 2. Determination of nuclide vector in Block V2 2. Radiological surveys of the Building 117/1

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.1.1.1103	Decommissioning Licensing	Preparation and agreement with VATESI of list related documents, including application for decommissioning licence, updated FDP and decommissioning SAR. To obtain INPP decommissioning licence.	<ol style="list-style-type: none"> 1. Updated FDP submitted for approval to Ministry of Energy 2. INPP decommissioning SAR preparation
P.1.2.1201	B1 - Interim spent fuel storage facility (ISFSF)	Design and construction of Interim Spent Fuel Storage Facility (ISFSF) for 17,000 spent nuclear fuel assemblies, including damaged assemblies. Design, manufacture, delivery and installation of all related equipment, including new-type CONSTOR®RBMK 1500/M2 casks with 80% increased capacity. Development of technologies for fuel loading into casks and transportation to ISFSF (<i>B1 contract</i>). Upgrading of INPP Spent Fuel Storage Pool Hall cranes (<i>B1-5 contract</i>). Supply of 10 old-design CONSTOR casks.	<ol style="list-style-type: none"> 1. To receive 66 new spent fuel casks during 2019 2. Start of DFHS equipment installation at Unit 1
P.1.2.1202	B2 – Solid waste retrieval facility (SWRF)	Design, construction and commissioning of the New Solid Waste Retrieval Facilities for retrieval, initial characterization, sorting and removal of INPP accumulated solid radioactive waste from the B2 facilities to the new B3/4 Waste Treatment and Storage Facilities or to the future B19-2 Landfill Facility.	<ol style="list-style-type: none"> 1. Implementation of works upon completion of the project B2 (Contract closure and archiving of projects documents) 2. VATESI approval of the B2 RU2/RU3 Final SAR
P.1.2.1203	B3/4 - Solid waste treatment and storage facility	Design, construction and commissioning of the New Solid Waste Management and Storage Facilities for sorting, treating, characterizing, conditioned and immobilized solid radioactive waste received from the B2 facilities and generated during decommissioning of INPP in the B3 facility, storing waste packages in the B4 facilities or disposing in the future repositories.	<ol style="list-style-type: none"> 1. Obtaining of VATESI permission for B3/4 industrial operation 2. Implementation of works upon completion of the project B3/4 (Contract closure and archiving of projects documents)
P.1.2.1206	B19-2 - Landfill Facility for short-lived very low level waste (construction)	Construction and commissioning of the Landfill Facility for short lived very low level waste and infrastructure required; procurement and installation of the equipment; carrying out of necessary tests and putting the Landfill Facility into operation.	<ol style="list-style-type: none"> 1. Construction of Landfill Facility completion 2. Landfill B19-2 physical security system integration completion 3. Construction of infrastructure of Landfill Facility for Short-lived Very Low Level Waste (B19-2) completion
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	Detailed engineering and geological investigations and approval of the report on suitability for design of the site chosen for the repository TD, Preliminary SAR (PSAR) and Environment Monitoring Programme. Design supervision during future first stage construction of the NSR, preparation of updated SAR and preparation of Final SAR.	<ol style="list-style-type: none"> 1. A tender for construction works completed 2. Signing of the contract for NSR construction

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.1.2.1219	Expansion of radioactive metal waste treatment facility in Building 130/2	The establishment of a radioactive metal-waste treatment facility (RMTF) in the former main workshop (bld. 130/2) making use, where possible, of available equipment and support systems, as well as installation of additional new equipment for radioactive metallic waste fragmentation and decontamination. The completed facility will serve for transfer of the maximum possible amount of metallic waste from class "A", intended for landfill disposal, to class "0" for free release.	<ol style="list-style-type: none"> 1. Installation, setup and testing of new equipment under Fiche MTF.02 2. Building repair works completed
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	Design, construction and commissioning of new electric power supply line 110 kV, new 110/6 kV substation and its connection to the relevant INPP consumers and new facilities B1, B2, B3, B4, B19/2, and B25.	Transformer substation and transmission line design services contract signing
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	Design, safety justification and construction works on transformation of bituminized waste storage into final repository.	<ol style="list-style-type: none"> 1. Repository Concept development and approval, TS approval by VATESI 2. Provision of services by the contractor for the implementation of the 1 design stage (constructions and site reliability analysis)
P.1.2.1223	Erection and modification of communication lines and other infrastructure systems	Design and modification of the electricity supply line to new objects; arrangement of new facilities infrastructure.	Closed in June 2017
P.1.2.1225	Modification of the existing FIHC at ISFSF to handle with three types of casks	Implementation of modification of ISFSF fuel inspection hot cell	<ol style="list-style-type: none"> 1. Completion of ISFSF Shock-absorbers justification calculation for all 3 type of SF casks 2. Preparation of documents for procurement of services of design development and upgrade of FIHC, procurement procedure, contract award 3. Development of Design and Safety Case
P.1.2.1226	New Building Construction	The project aims: <ol style="list-style-type: none"> 1. To minimize energy resources consumption. 2. Concentrate the workplaces of the INPP staff, free up buildings 	<ol style="list-style-type: none"> 1. Development of a technical design for the construction of a new building 2. Preparation of the TS for the development of a TDDD and construction work
P.1.2.1227	Installation of automatic sewage pumping station in Building 437/1	Design, construction and commissioning of automatic sewage pumping station	<ol style="list-style-type: none"> 1. Development of a TDDD for construction and installation of automatic sewage pumping station 2. Completion of construction and installation new sewage pumping station

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.1.3.	Isolation of other INPP facilities equipment	Preparation of technological equipment for dismantling carrying out the shutdown of systems, radiological measurements and isolation	Full isolation of 3 systems, partial isolation of 7 systems
P.2	Objects Dismantling/Demolition and Site Remediation Programme		
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	To develop the dismantling technologies for structures and equipment from INPP Unit 1 reactor shafts in zones R1 and R2; to dismantle the reactor structures and equipment from INPP Unit 1 reactor shafts in zones R1 and R2 applying the developed technologies	<ol style="list-style-type: none"> 1. Agreed to VATESI of Technological Design and SAR, for Unit 1 reactor zones R1, R2 2. Execution tests of equipment for handling graphite wastes from the dismantlement of channels of reactor 3. Dismantle equipment of Unit 1 reactor in R1 and R2 zones - 70 tonnes
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	To develop the dismantling technologies for structures and equipment from INPP Unit 2 reactor shafts in zones R1 and R2; to dismantle the reactor structures and equipment from INPP Unit 2 reactor shafts in zones R1 and R2 applying the developed technologies	<ol style="list-style-type: none"> 1. Development of TDD (finish 2022) 2. Obtaining initial data for the nuclide vector of zones R1, R2: <ul style="list-style-type: none"> • Sampling from the pipelines • Sampling of activated parts
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	To develop the dismantling technologies for structures and equipment from INPP Unit 1 reactor shaft (in the R3 area); to develop the technologies for radioactive waste management generated as a result of both units graphite stacks dismantling (in the context of modification of the Building 158/2 for storage of long-lived radioactive waste); to dismantle the reactor structures and equipment from INPP Unit 1 reactor shaft applying the developed technologies.	<ol style="list-style-type: none"> 1. Agreement of TS for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Unit 1 RBMK-1500 reactor area R3 equipment and dismantled graphite waste management services procurement 2. Start of procurement procedure for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Unit 1 RBMK-1500 reactor area R3 equipment and dismantled graphite waste management
P.2.2.2201	Dismantling within in the surveillance area	Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling	Dismantling 335 tonnes of equipment in the surveillance area

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.2.2.2203	D&D in Block A1	Same as above	<ol style="list-style-type: none"> 1. Obtaining permission of VATESI for dismantling of refuelling machine 2. Updating and submission to VATESI of Technological Design and SAR with nuclide vector data 3. Dismantling 171 tonnes of equipment in Block A1
P.2.2.2206	D&D in Block G1	Same as above	Dismantling 297 tonnes of equipment in Block G1 ³²
P.2.2.2210	D&D in Block A2 &V2	Same as above	Development of the project documentation for preparatory works on the Blocks A2, V2
P.2.2.2213	D&D in Block G2	Same as above	Dismantling 3,512 tonnes of equipment in Block G2
P.2.2.2214	D&D in Block D2	Same as above	Dismantling 875 tonnes of equipment in Block D2
P.2.3.2301	Demolition of Unit 1 facilities	<p>Realization the works in the following directions of activity should be performed:</p> <ol style="list-style-type: none"> 1. Development of the TDDD documentation; 2. Agreement of the documentation with State Institutions of the Republic of Lithuania; 3. Unit 1 facilities demolition and dismantling according to design solutions; 4. Final works. <p>INPP tasks: general control of project implementation, control of design, and other activities under the project acceptance. Interaction with Lithuanian institutions, funding administrators etc. Review and verification of Contractor documentation, development of technical and commercial documentation, reports etc.</p>	<ol style="list-style-type: none"> 1. Engineering survey and development of production and design-construction technical documentation on decontrol of Unit 1 buildings (finish 2027) 2. Dismantling of Unit 1 Infrastructure equipment - 64 tonnes

³² Electrical equipment which was not included in the scope of Project B9-1 "INPP Unit 1 turbine hall equipment decontamination and dismantling".

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.2.3.2305	Demolition of structures outside the surveillance area	<p>During the first stage of the project implementation, 51 objects in 33 groups (of 150 INPP identifiable buildings and Structures) to be demolished by the end of 2026. The latest stages include demolition of the remains building and other structures</p> <p>Realization the works in the following directions of the activity under first stage should be performed:</p> <ol style="list-style-type: none"> 1. Development of the TDDD documentation; 2. Agreement of the documentation with State Institutions of the Republic of Lithuania; 3. Structures outside the surveillance area demolition according to design solutions; 4. Removal of all waste ensuring its appropriate treatment; 5. Final works. <p>INPP tasks: general control of project implementation, control of design, and other activities under the project acceptance. Interaction with Lithuanian institutions, funding administrators etc. Review and verification of Contractor documentation, development of technical and commercial documentation, reports etc.</p>	<ol style="list-style-type: none"> 1. Preparatory work for the demolition of 02, 03, 31G, 77 building and heat point 22 2. Signed of contract for develop demolition design of 02, 03, 31G, 77 building and heat point 22
P.2.3.2306	Demolition of Building 129	Preparatory works and demolition of the Building 129 and reconstruction works of Gallery 174V	<ol style="list-style-type: none"> 1. Signing the contract for development of design and reconstruction works of Gallery 174V 2. Development of Bld.129 demolition design documentation
P.3	Spent Nuclear Fuel Handling Programme		
P.3.1.3101	Spent nuclear fuel handling in Unit 1	Safe operation of spent nuclear fuel transport and handling part; unloading of reactor core from reactor; classification of uptight spent nuclear fuel; preparation works of spent nuclear fuel to be loaded into the shielding containers for departure to the ISFSF; procurement of spare parts and materials; removing of debris and other activated elements from SF pool in Unit 1.	1,820 SFA from Unit 1 spent fuel pool unloaded in casks
P.3.1.3102	Spent nuclear fuel handling in Unit 2	Safe operation of spent nuclear fuel transport and handling part; unloading of reactor core from reactor; classification of uptight spent nuclear fuel; preparation works of spent nuclear fuel to be loaded into the shielding containers for departure to the ISFSF; procurement of spare parts and materials; removing of debris and other activated elements from SF pool at Unit 2	1,820 SFA from Unit 2 spent fuel pool unloaded in casks
P.3.2.3200	Spent nuclear fuel transportation to a storage sites	Removal and transportation of spent nuclear fuel to a storage sites. Removal of all spent nuclear fuel from Unit 1 (start in October 2016, scheduled to be finished in June 2021). Removal of all spent nuclear fuel from Unit 2 (start in October 2016), scheduled to be finished in July 2022).	Transportation of 40 casks to ISFSF

Project Identifier		Description	Scope
ID	Name by FDP-7 (Chapter 5)		
P.3.3.3300	Spent nuclear fuel handling in storage sites	Storage and handling of shielding containers within the conditions for safe operation of spent fuel Dry Storage and Interim spent fuel storage facility (ISFSF); periodic control of tightness of CASTOR-RBMK cask; control and monitoring of radiation safety and effect on the environment operations of spent fuel dry storage systems and equipment; procurement of repair parts and materials.	<ol style="list-style-type: none"> 1. Ensure safe storage of spent fuel casks loaded into Spent Fuel Dry Storage Facility and Interim spent fuel storage facility (ISFSF) 2. Keep violation of safe conditions at zero
P.4	Waste Treatment Programme (except for the initial processing of solid radioactive waste)		
P.4.1.4100	Non-radioactive waste handling	Collection and segregation, inventory and characterization, treatment of the waste	<ol style="list-style-type: none"> 1. Free release of Class 0 waste from INPP territory - 4,000 m³ 2. Safe maintenance of facilities B10 and Bld. 159B
P.4.2.4202	Solid radioactive waste handling	Collection and segregation, inventory and characterization, treatment of the waste, interim storage of the conditioned waste	<ol style="list-style-type: none"> 1. Class A waste – 3,405³³ m³. Classes B/C waste- 523 m³ 2. Safe maintenance of facilities B2/3/4, B19-1, Bld. 155, 155/1, 157, 157A, 157/1, facilities in Bld.155/2-4 and other facilities
P.4.3.4300	Liquid radioactive waste handling	Collection and segregation, inventory and characterization, treatment of the waste, interim storage of the conditioned waste	<p>Liquid radioactive waste treatment:</p> <ol style="list-style-type: none"> 1. Bituminization of liquid radioactive waste³⁴: <ol style="list-style-type: none"> 1.1 Amount of LRW for treatment by bituminization – 250 m³ 2. Cementation of liquid radioactive waste: <ol style="list-style-type: none"> 2.1 Amount of LRW for treatment by cementation – 187.5 m³ 2.2 Amount of F-ANP containers – 250 pcs. 2.3. Classes B and C waste volume for disposal – 1,237.5 m³
P.5	Post-Operation Programme		
P.5.1	Operation of facilities remaining in operation throughout the entire decommissioning	Operation and maintenance of the existing facilities, systems and equipment which are left in operation	Safe operation of 255,667 elements of INPP systems and facilities
P.5.2	Maintenance of to be decommissioned facilities up to their dismantling/demolition	Care, maintenance and supervisory control of the designed characteristics of equipment decommissioning of which is envisaged in the FDP	Maintenance of 72,838 elements ³⁵ of INPP systems and facilities
P.5.3.	Energy saving	Optimization and saving of energy and other resources consumption	<ol style="list-style-type: none"> 1. Energy resources saving: heat saving – 1,900 MWh, Electrical energy – 2,450 MWh 2. Continue performed the measures (Stage 3) regarding optimization of the ventilation systems and heat consumption in Buildings 101/1, 2 and 150 in 2016-2020. 3. Discontinue operation of diesel generators 9, 11, 12 (disconnection of power supply in diesel generator)

³³ Before preparation packages for disposal

³⁴ Performance of the indicator depends on the procurement of the bitumen with the required properties

³⁵ Maintenance of activities implemented not only within the frames of Programme P.5 but of the whole Megaproject in P.0, P.1, P.2, P.3, P.4 programs

3.1.2 Milestones and Planned Value schedule

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
P.1	Preparation for Decommissioning Programme			17,349,050.71	28,928,627.55
P.1.1.1101	INPP equipment engineering inventory	Engineering Inventory of controlling and surveillance areas 995 tonnes	2019/Q2	77,759.70	119,141.30
		Engineering Inventory of controlling and surveillance areas 1,910 tonnes	2019/Q4		
P.1.1.1102	Radiological characterization	Radiological surveys of the equipment of bl.A2 and structures and elements of Unit 2 reactor	2019/Q3	229,643.78	464,628.12
		Determination of nuclide vector in Block V2	2019/Q3		
		Radiological surveys of the Building 117/1	2019/Q3		
P.1.1.1103	Decommissioning Licensing	Submittal of the updated FDP for approval to the Ministry of Energy	2019/Q4	80,530.33	132,716.82
		Preparation of INPP decommissioning SAR	2019/Q4		
P.1.2.1201	B1 - Interim spent fuel storage facility (ISFSF)	To receive 66 new spent fuel casks at INPP from the manufacturer	2019/Q4	2,096,455.58	4,241,665.94
		Start of DFHS equipment installation at Unit 1	2019/Q3		
P.1.2.1202	B2 – Solid waste management and Storage facility (SWMSF)	VATESI approval of the B2 RU2/RU3 Final SAR	2019/Q1	60,093.16	60,093.16
P.1.2.1203	B3/4 - Solid waste treatment and storage facility	VATESI approval of B3/4 Hot Trial Completion Report	2019/Q1	52,080.75	52,080.75
		VATESI approval of Final SAR	2019/Q2		
		VATESI permission for B3/4 industrial operation	2019/Q2		
P.1.2.1206	B19-2 Landfill Facility for short-lived very low level waste	Integration of Landfill B19-2 physical security system completed	2019/Q4	3,856,000.00	7,712,000.00
		Construction of Landfill Facility for Short-lived Very Low Level Waste (B19-2) completed	2019/Q4		

³⁶ According to Megaproject schedule presented in Annex 1

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	Signing contract for construction of NSR	2019/Q2	6,211,691.06	12,127,723.78
P.1.2.1219	Expansion of radioactive metal waste treatment facility in Building 130/2	Installation, commissioning and testing of the new equipment (Stage 2)	2019/Q4	184,219.16	326,360.38
		Development and agreement final of modification report in Building 130/2	2019/Q4		
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	Transformer substation and transmission line design services contract signing	2019/Q1	607,089.06	1,228,296.48
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	Development and agreement with VATESI repository concept	2019/Q3	21,077.75	442,656.05
P.1.2.1225	Modification of the existing FIHC at ISFSF to handle with three types of casks	Completion of ISFSF Shock-absorbers justification calculations for all 3 type of casks	2019/Q2	229,939.74	650,000.00
		Preparation of documents for procurement of services for design development and upgrade of FIHC, procurement procedure, contract award	2019/Q3		
		Development of Design and Safety Case	2019/Q4		
P.1.2.1226	New Building Construction	Development of a technical design for the construction of a new building	2019/Q2	54,329.00	80,817.75
		Development of the TS for the development of a TDDD and construction work	2019/Q2		
P.1.2.1227	Installation of automatic sewage pumping station in Building 437/1	Development of a TDDD for construction and installation of automatic sewage pumping station	2019/Q4	-	200,000.00
		Completion of construction and installation new sewage pumping station			
P.1.3.	Isolation of other INPP facilities equipment	3 systems fully isolated, 7 systems – partly isolated	2019/Q4	526,240.76	1,088,447.02
P.2	Objects Dismantling/Demolition and Site Remediation Programme			5,256,848.51	11,671,757.08

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	Execution tests of equipment for handling graphite wastes from the dismantlement of channels of reactor	2019/Q2	678,543.58	1,325,536.04
		Agreement VATESI of TD and SAR for Unit 1 reactor zones R1, R2	2019/Q4		
		Equipment dismantling 70 (tonnes)	2019/Q4		
P.2.1.2102	Unit 2 reactor facilities dismantling (zones R1 and R2, UP01, Unit 2)	Obtaining initial data to preparation of the nuclide vector	2019/Q4	415.83	74,824.96
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	Agreement of TS for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Unit 1 RBMK-1500 reactor area R3 equipment and dismantled graphite waste management services procurement	2019/Q2	155,258.15	769,352.09
		Started of procurement procedure for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Unit 1 RBMK-1500 reactor area R3 equipment and dismantled graphite waste management	2019/Q3		
P.2.2.2201	Dismantling within in the surveillance area	Equipment dismantling in the surveillance area 85 (tonnes)	2019/Q2	106,050.98	215,010.78
		Equipment dismantling in the surveillance area 335 (tonnes)	2019/Q4		
P.2.2.2203	D&D in Block A1	Obtaining permission of VATESI for dismantling of refuelling machine	2019/Q1	1,260,923.54	3,036,266.70
		Update D&D Technological Design and SAR (with nuclide vector data) submission to VATESI for review	2019/Q4		
		Block A1 equipment dismantling 171 (tonnes)	2019/Q4		
P.2.2.2206	D&D in Block G1	Block G1 equipment dismantling ³⁷ 297 (tonnes)	2019/Q2	186,269.49	186,269.49
P.2.2.2210	D&D in Blocks A2 and V2	Development of project documentation for preparatory works	2019/Q4	280,728.53	567,690.73
P.2.2.2213	D&D in Block G2	Block G2 equipment dismantling 1,700 (tonnes)	2019/Q2	1,340,184.92	2,668,238.64

³⁷ Electrical equipment which was not included in the scope of Project B9/1 "INPP Unit 1 turbine hall equipment decontamination and dismantling".

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
		Block G2 equipment dismantling 3,512 (tonnes)	2019/Q4		
P.2.2.2214	D&D in Block D2	Block D2 equipment dismantling 300 (tonnes)	2019/Q2	1,148,095.26	2,168,894.43
		Block D2 equipment dismantling 875 (tonnes)	2019/Q4		
P.2.3.2301	Demolition of Unit 1 facilities	Engineering survey and development of production and design-construction technical documentation on remaining equipment dismantling of Unit 1 buildings	2019/Q4	111,218.28	226,440.94
		Dismantling of Unit 1 Infrastructure equipments - 64 tonnes	2019/Q4		
P.2.3.2305	Demolition of structures outside the surveillance area	Signed of contract for develop demolition design. of 02, 03, 31G, 77 building and heat point 22	2019/Q4	10,744.14	136,595.71
P.2.3.2306	Demolition of Building 129	Development of Bld.129 demolition design documentation	2019/Q2	118,693.3	216,636.4
		Signing the contract for development of design and reconstruction works of Gallery 174V	2019/Q2		
P.3	Spent Nuclear Fuel Handling Programme			1,314,775.93	2,214,338.62
P.3.1.3101	Spent nuclear fuel handling in Unit 1	Ensure safe storage of remaining SFA in Unit 1 spent fuel pool	2019/Q4	375,668.46	760,073.40
		910 SFA will be unloaded from Unit 1	2019/Q2		
		1,820 SFA will be unloaded from Unit 1	2019/Q4		
		There will be no incidents according to INES	2019/Q4		
P.3.1.3102	Spent nuclear fuel handling in Unit 2	Ensure safe storage of remaining SFA in Unit 2 spent fuel pool	2019/Q4	316,505.86	640,372.32
		910 SFA will be unloaded from Unit 2 spent fuel pool	2019/Q2		
		1,820 SFA will be unloaded from Unit 2 spent fuel pool	2019/Q4		
		There will be no incidents according to INES	2019/Q4		
P.3.2.3200	Spent nuclear fuel transportation to a storage sites	20 casks transportation	2019/Q2	14,146.50	28,621.98
		40 casks transportation	2019/Q4		

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
P.3.3.3300	Spent nuclear fuel handling in storage sites	Ensure safe storage of 20 CASTOR casks and 98 CONSTOR casks with 6,016 SFAs loaded into Spent Fuel Dry Storage Facility (SFDSF) and casks loaded into Interim spent fuel storage facility (ISFSF)	2019/Q4	388,122.40	785,270.92
		Keep violation of safe conditions at zero	2019/Q4		
P.4	Waste Treatment Programme (except for the initial processing of solid radioactive waste)			4,338,964.15	16,046,209.79
P.4.1.4100	Non-radioactive waste handling	Solid waste treatment, class 0 - 1,200 m ³	2019/Q2	329,021.98	665,695.62
		Solid waste treatment, class 0 - 4,000 m ³	2019/Q4		
P.4.2.4202	Solid radioactive waste handling	Solid waste treatment, class A - 1,400 ³⁸ m ³	2019/Q2	6,150,820.40	12,444,683.12
		Solid waste treatment, class A - 3,405 ³⁹ m ³ , classes B/C - 523 m ³	2019/Q4		
P.4.3.4300	Liquid radioactive waste handling	Bituminization of liquid radioactive waste ⁴⁰ - 125 m ³	2019/Q2	1,451,042.93	2,935,831.05
		Bituminization of liquid radioactive waste - 250 m ³	2019/Q4		
		Cementation of liquid radioactive waste – 62.75 m ³	2019/Q2		
		Cementation of liquid radioactive waste - 187.5 m ³	2019/Q4		
		Placed into Liquid Radioactive Waste Storage Facility 362.5 m ³	2019/Q2		
		Placed into Liquid Radioactive Waste Storage Facility 1,237.5 m ³	2019/Q4		
P.5	Post-Operation Programme			11,582,457.03	20,806,808.3
P.5.1	Operation of facilities remaining in operation throughout the entire decommissioning	Operation and maintenance of equipment and systems remaining in operation – 255,667 elements (Units 1&2)	2019/Q4	453,180.70	916,900.50
P.5.2	Maintenance of to-	Maintenance of INPP elements, systems and facilities – 48,526 ⁴¹ pcs	2019/Q2	4,158,572.00	8,397,169.00

³⁸ Prepared packages before disposal

³⁹ Prepared packages before disposal

⁴⁰ Performance of the indicator depends on purchase of bitumen with the required properties

⁴¹ Maintenance of activities implemented not only within the frames of Programme P.5 but of the whole Megaproject in P0,P1,P2,P3,P4 programs.

ID	Project	Milestone or Task		Planned value at 1 July 2019, Eur	Planned value at 31 Dec 2019, Eur
		ID, name	Achievement Date ³⁶		
	be-decommissioned facilities up to their dismantling / demolition	Maintenance of INPP elements, systems and facilities – 72,838 ⁴² pcs	2019/Q4		
P.5.3.	Energy saving	Electrical power saving 2,450 MWh and heat saving 1,900 MWh	2019/Q4	5,617,853.77	11,492,738.80
		Consumption of main energy resources heat energy – 80,229 MWh and electric power – 74,612 MWh	2019/Q4		

⁴² Maintenance of activities implemented not only within the frames of Programme P.5 but of the whole Megaproject in Programmes P0,P1,P2,P3,P4.

3.1.3 Planned progress on detailed objectives established during 2019

Objectives i	Project ID	Milestone	Date of achievement	Situation at 30 Jun 2019	Situation at 31 Dec 2019	FDP Indicator
Removal of spent fuel assemblies from Units 1 and 2 spent fuel ponds.	P.3.1.3101	11,436 SFA removed	2019/Q4	9,616 SFA	11,436 SFA	12,345 items removed
	P.3.1.3102					
Objectives ii	Project ID	Milestone	Date of achievement	Situation at 30 Jun 2019	Situation at 31 Dec 2019	FDP Indicator
Safely maintaining the reactor Units1 and 2	P.3, P.4, P.5	Safe maintenance without any major change	2019/Q4	0 (registered) incidents	0 (registered) incidents	0 (registered) incidents
Objectives iii	Project ID	Milestone	Date of achievement	Situation at 30 Jun 2019	Situation at 31 Dec 2019	FDP Indicator
Solid Waste Management and Storage Facilities, B2/3/4	P.1.2.1202 P.1.2.1203	Start of operation	2019/Q3	B2/3/4 hot trials completion	B2/3/4 industrial operational	B2/3/4 operational
Landfill Facility for Short-Lived Very Low Level Waste, B19-2	P.1.2.1206	See Table 3.1.2	2019/Q4	B19-2 construction works ongoing	B19-2 construction works completed	B19 operational
Near Surface Repository for Low - and Intermediate Level Short-Lived Radioactive Waste, B25	P.1.2.1207	See Table 3.1.2	2019/Q4	To sign the contract for the construction of NSR	Started development of the detail design documentation for construction works	B25 operational
Upgrade of Bituminised Waste Vaults, B20	P.1.2.1222	See Table 3.1.2	2019/Q3	Ongoing of development and agreement with VATESI repository concept	Development and agreed with VATESI repository concept	SAR prepared

Objectives iii	Project ID	Milestone	Date of achievement	Situation at 30 Jun 2019	Situation at 31 Dec 2019	FDP Indicator
Shutdown and isolation of process systems	P.1.3	See Table 3.1.2	2019/Q4	Ongoing	19 systems fully isolated	35 systems
Dismantling of process equipment and components	P.1.2.1219 P.2.1.2103 P.2.2.2201 P.2.2.2203 P.2.2.2205 P.2.2.2206 P.2.2.2207 P.2.2.2208 P.2.2.2213 P.2.2.2214 P.2.2.2215 P.2.3.2305	Dismantle equipment since 2014	2019/Q4	37,282 tonnes	40,154 tonnes	40,454 tonnes
Dismantling of Unit 1 reactor installation components	P.2.1.2101	See Table 3.1.2	2019/Q4	Not started	70 tonnes	1,095 tonnes
Treatment (processing) of radioactive waste	P.4.1.4100 P.4.2.4202 P.4.2.4300	Processing on-going since 2014	2019/Q4	30,641 m ³	35,234 m ³	45,000 m ³
Radioactive waste transportation to storage facilities	P.4.2.4202 P.4.2.4300	Transport on-going since 2014	2019/Q4	8,541 m ³	9,417 m ³	13,000 m ³

3.2 List of potential grant recipients

The Lithuanian Technical Support Organizations (TSO) which could be the potential grants recipients (or possibly contractors) are the Centre for Physical Sciences and Technology (FTMC) and the Lithuanian Energy Institute (LEI).

4 EXPECTED RESULTS AND PERFORMANCE INDICATORS

4.1 Table per detailed objective – expected result at year end

This subchapter presents the achievement indicators of objective ii) and the achievement indicators of objective iii) in 2019.

ID	Project	Milestone	Target	Expected results at 31 Dec 2019
P.3	Spent Nuclear Fuel Handling Programme	No incidents according to the INES	0	0
P.4	Waste Treatment Programme (except for the initial processing of solid radioactive waste)	No incidents according to the INES	0	0
P.5	Post-operation Programme	No incidents according to the INES	0	0
P.1.2.1202	B2 - Solid waste management and storage facility (SWMSF))	Permission for industrial operation SWRF (B2)	Start of industrial operation	performed
P1.2.1203	B3/4 - Solid Waste Treatment and Storage Facilities	Permission for industrial operation B3/4	Start of industrial operation	performed
P1.2.1206	B19-2 - Landfill Facility for short-lived very low level waste	Integration of Landfill B19-2 physical security system	Landfill B19-2 physical security system completed	performed
		Construction of Landfill Facility for Short-lived Very Low Level Waste (B19-2)	Construction of Landfill Facility for Short-lived Very Low Level Waste (B19-2) completed	performed
P.1.2.1207	B25 - Near surface repository for low and intermediate level short-lived radioactive waste	To complete the tender for NSR construction	Contract for the construction of NSR signed	performed
P.1.2.1222	B20 - Upgrade of bituminized waste vaults in Building 158	To sign of contract for additional survey and Environmental Impact Assessment procedure service	Contract signed	performed
P.1.3.	Isolation of other INPP facilities equipment	Isolation of systems	3 systems fully isolated	performed
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	Dismantle equipment of Unit 1 reactor in R1 and R2 zones	70 tonnes	performed

ID	Project	Milestone	Target	Expected results at 31 Dec 2019
P.2.2.2201	Dismantling within in the surveillance area	Dismantle structures in the supervisions area (from 2014 to the end of September 2018 completed 2,115 tonnes)	335 tonnes	performed
P.2.2.2203	D&D in Block. A1	Dismantle equipment in Block A1 (from 2014 to the end of September 2018 completed 445 tonnes)	171 tonnes	performed
P.2.2.2206	D&D in Block G1	Dismantle equipment in Block G1 (from 2014 to the end of September 2018 completed 11,415 tonnes)	297 ⁴³ tonnes	performed
P.2.2.2213	D&D in Block G2	Dismantle equipment in Block G2 (from 2014 to the end of September 2018 completed 15,067 tonnes)	3,512 tonnes	performed
P.2.2.2214	D&D in Block D2	Dismantle equipment in Block D2 (from 2014 to the end of September 2018 completed 319 tonnes)	875 tonnes	performed
P.2.3.2301	Demolition of Unit 1 facilities	Dismantle construction of Unit 1 facilities (from 2014 to the end of September 2018 completed 0 tonnes)	64 tonnes	performed
P.4.1.4100	Non-radioactive waste handling	Solid waste treatment, class 0 (from 2014 to the end of September 2018 completed 15,747 m ³)	4,000 m ³	performed
P.4.2.4202	Solid radioactive waste handling	Solid Waste Treatment (from 2014 to the end of September 2018 completed 8,501 m ³)	3,913 m ³	performed
P.4.2.4300	Liquid radioactive waste handling	Bituminization of liquid radioactive waste (from 2014 to the end of 2018 completed 286.2 m ³)	250 m ³	performed
P.4.2.4300	Liquid radioactive waste handling	Cementation of liquid radioactive waste (from 2014 to the end of September 2018, completed 778 m ³)	187.5 m ³	performed
P.4.2.4300	Liquid radioactive waste handling	Placed into Liquid Radioactive Waste Storage Facility (from 2014 to the end of September 2018 completed 4,915 m ³ with packages)	1,237.5 m ³	performed

⁴³ Electrical equipment which was not included in the scope of Project B9-1 "INPP Unit 1 turbine hall equipment decontamination and dismantling"

4.2 Other performance indicators – target values at year end

This table presents milestones and target values of other INPP performance indicators at the end of 2019.

ID	Project	Milestone	Deliverable	Schedule
P.1.1.1103	Decommissioning Licensing	FDP preparation and submittal to MoE for approval	FDP submittal (to MoE)	2019/Q4
P.1.1.1103	Decommissioning Licensing	INPP Decommissioning SAR preparation	Decommissioning SAR prepared	2019/Q4
P.1.2.1221	Optimization of electric power supply schemes for INPP consumers	Transformer substation and transmission line design services contract signing	Signed contract	2019/Q3
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	Execution tests of equipment for handling graphite wastes from the dismantlement of channels of reactor	Agreed report of test	2019/Q2
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	To prepare Technological Design for Unit 1 reactor in zones R1, R2 dismantling for agreement VATESI	Agreed to VATESI of Technological Design for Unit 1 reactor zones R1, R2	2019/Q4
P.2.1.2101	Unit 1 reactor facilities dismantling (zones R1 and R2, UP01, Unit 1)	To prepare SAR for Unit 1 reactor in zones R1, R2 for agreement VATESI	Agreed to VATESI of SAR for Unit 1 reactor zones R1, R2	2019/Q4
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	Development of TS for Optioneering and Environmental Impact Assessment on dismantling and decontamination activities of Unit 1 RBMK-1500 reactor area R3 equipment and dismantled graphite waste management	Agreed of TS with CPMA	2019/Q2
P.2.1.2103	Units 1 and 2 reactors facilities dismantling in zone R3 and reactor waste storage facility development (UP01/ R3 + RWS)	Start the procurement procedure for optioneering and environmental impact assessment in the area R3 (contracted in 2019)	Tender announced	2019/Q3
P.2.2.2203	D&D in Block A1	Start dismantling of refueling machine	Obtaining permission of VATESI for dismantling of refuelling machine	2019/Q1
P.2.2.2203	D&D in Block A1	Update D&D Technological Design and SAR (with nuclide vector data) submission to VATESI for review	Updated D&D Technological Design and SAR (with nuclide vector data) prepared and submitted to VATESI	2019/Q4
P.2.2.2210	D&D in Blocks A2 &V2	Development of project documentation for preparatory works	Project documentation prepared to review VATESI	2019/Q4
P.2.3.2306	Demolition of Building 129	Signing the contract for development of design and reconstruction works of Gallery 174V	Signed contract	2019/Q2
P.2.3.2306	Demolition of Building 129	Development of design for Bldg. 129 demolition project	Signed contract	2019/Q2

4.3 Overview table: funding by sector (% of total annual EU funding)

Sector		Allocated/planned to be allocated to Projects							
		< 2014	2014	2015	2016	2017	2018	2019	2020
1. Decommissioning		69.6	99.0	98.7	100.0	100.0	100.0	100.0	100.0
1A	Decontamination and dismantling	1.8	9.7 ¹	8.7 ¹	19.0 ¹	12.6 ¹	13.62 ¹	13.59 ¹	15.06 ¹
1B	Waste storage and disposal	33.6	59.1 ²	56.3 ²	32.0 ²	50.01 ²	46.71 ²	45.8 ²	45.64 ²
1C	Regulatory and administrative assistance	0.7	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1D	Pre-decommissioning activities	33.5	30.2 ³	33.7 ³	49.0 ³	37.39 ³	39.67 ³	40.61 ³	39.3 ³
2. Programme Administration		1.1	1.0	1.3	X	X	X	X	X
2A	Administrative overheads of the programme	1.0	1.0	1.3	X	X	X	X	X
2B	Technical assistance in programme administration	0.1	0.0	0,0	X	X	X	X	X
3. Energy Sector		29.3	X	X	X	X	X	X	X
3A	Energy infrastructure	26.5	X	X	X	X	X	X	X
3B	Energy efficiency	2.8	X	X	X	X	X	X	X
TOTAL		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Subsector 1A covers Objects Dismantling/Demolition and Site Remediation Programme (P2), ensuring of preliminary conditions for INPP decommissioning (P1.1), decontamination of technological systems, equipment and buildings (P1.4).

² Subsector 1B covers Spent Nuclear Fuel Management Programme (P3), Waste Management Programme (except for the initial processing of solid radioactive waste) (P4) and projects B1, B2/3/4, B19, B25 (P1).

³ Subsector 1D covers all activities that do not fall under Subsectors 1A and 1B. It covers programmes P0, P1 (except for projects B1, B2/3/4, B19, B25, sub-programmes P1.1 and P1.4), P5.

4.4 Overview table: staff allocation⁴⁵ (in full time equivalent)

Category		Staff						
		Actual				Planned (year average)		
		2014	2015	2016	2017	2018 ⁴⁶	2019	2020
01	Pre-decommissioning actions	12	12	7	6	12	14	8
02	Facility shutdown activities	297	237	237	200	226	120	120
03	Additional activities for safe enclosure or entombment	0	0	0	0	0	0	0
04	Dismantling activities within the controlled area	157	186	186	166	189	174	178
05	Waste processing, storage and disposal	395	398	352	354	375	509	532
06	Site infrastructure and operation	619	563	535	531	543	455	432
07	Conventional dismantling and demolition and site restoration	1	0	0	0	1	1	3
08	Project management, engineering and support	551	558	556	533	538	525	514
09	Research and development	29	28	33	37	60	20	17
10	Fuel and nuclear material	62	78	82	105	25	93	90
11	Other	0	0	0	0	0	0	0
TOTAL		2,073	2,068	1,988	1,932	1,969	1,910	1,894

⁴⁵ According to INPP Decommissioning Megaproject Schedule, Gf 686 dated 01-07-2015.

⁴⁶ According to AWP 2018 adopted by the EC implementing decision of 8 October 2018, C(2018) 6451 final, Ref. Ares(2018)5358084 - 18/10/2018