

Decommissioning Project of Maišiagala Radioactive Waste Storage Facility and Planned Procurements

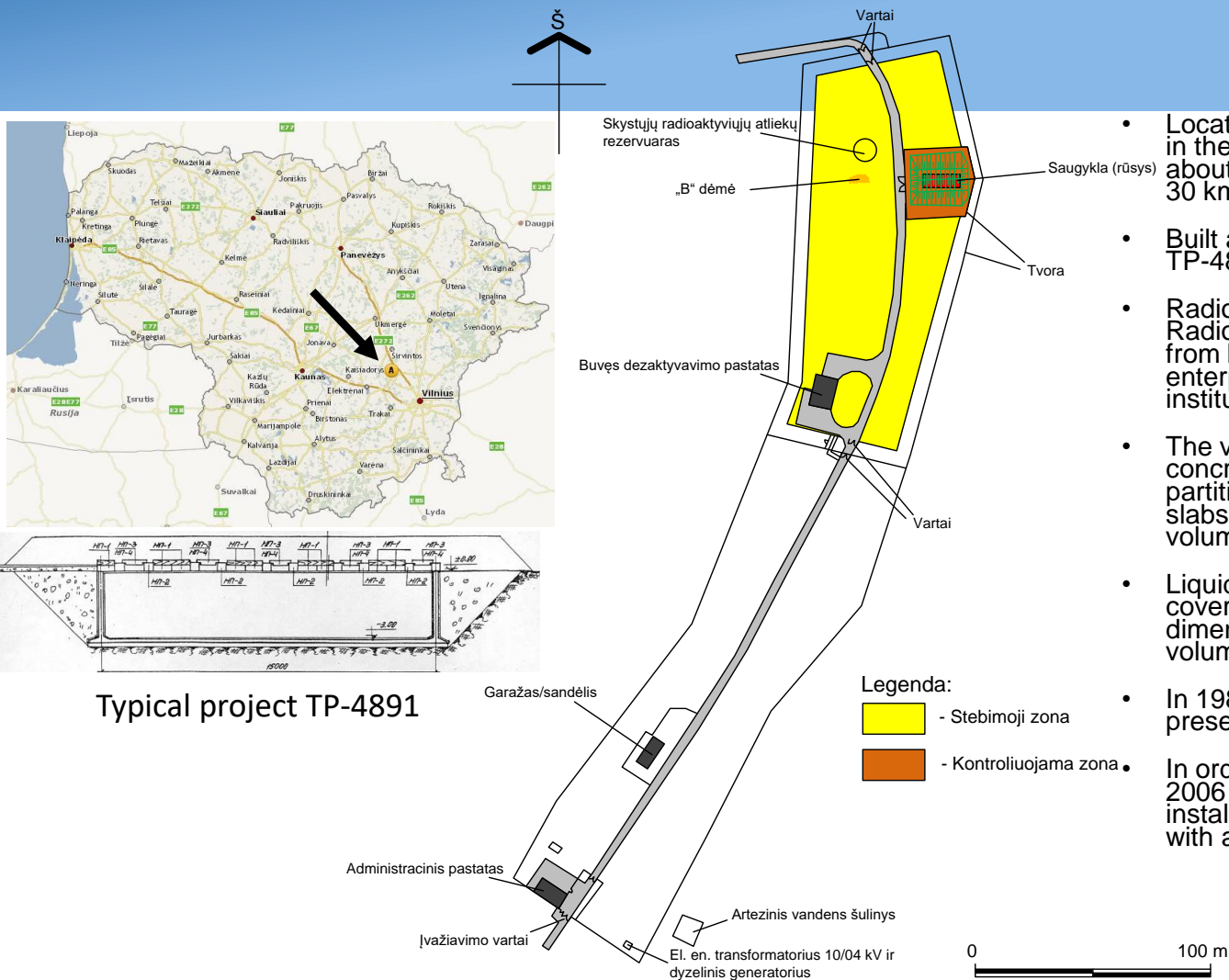
Supplier's Day

September 15, 2020

Visaginas



Maišiagala storage: Overview



- Located in Širvintų district, in Bartkuškio forest, in the 53rd quarter of the Zalosios forestry, about 7 km north-west of Maišiagala and about 30 km in the same direction from Vilnius
- Built according to the typical project of that time TP-4891, the area of the site is 2.7 ha
- Radioactive Waste (RW) and Disused Spent Radioactive Sources (DSRS) were transported from Lithuanian, Belarusian, Russian industrial enterprises, health care institutions, scientific institutions and military units
- The vault of solid RAW and DSRS is reinforced concrete, divided into 6 sections by wooden partitions, covered with reinforced concrete slabs. Dimensions: 5m×15m, depth is 3 m, volume is 200 m³
- Liquid RAW reservoir is made from steel, covered with reinforced concrete slabs, dimensions: depth is 3 m, diameter is 9,05 m, volume is 200 m³
- In 1989 the storage facility was closed and preserved
- In order to stop the leakage of radionuclides, in 2006 additional engineering barriers were installed above the vault - the vault was covered with a membrane system.

Typical project TP-4891

Maišiagala RWSF decommissioning purpose, activities and conditions

Purpose- to release MRWSF (Maišiagala radioactive waste storage facility) from radioactive waste, soil and construction which are contaminated with radionuclides and to remove the radiation control of the territory



Activities:

Infrastructure installment works required to perform demolition works

RW and contaminated soil removal

Transportation of RW and contaminated soil to INPP

Carrying out radiological survey of the territory

To determine if the territory meets the levels of radioactivity required to remove radiation control

To remove the radiation control of the territory and its NF status

Conditions:

Environmental impact assessment

Decommissioning technical documents

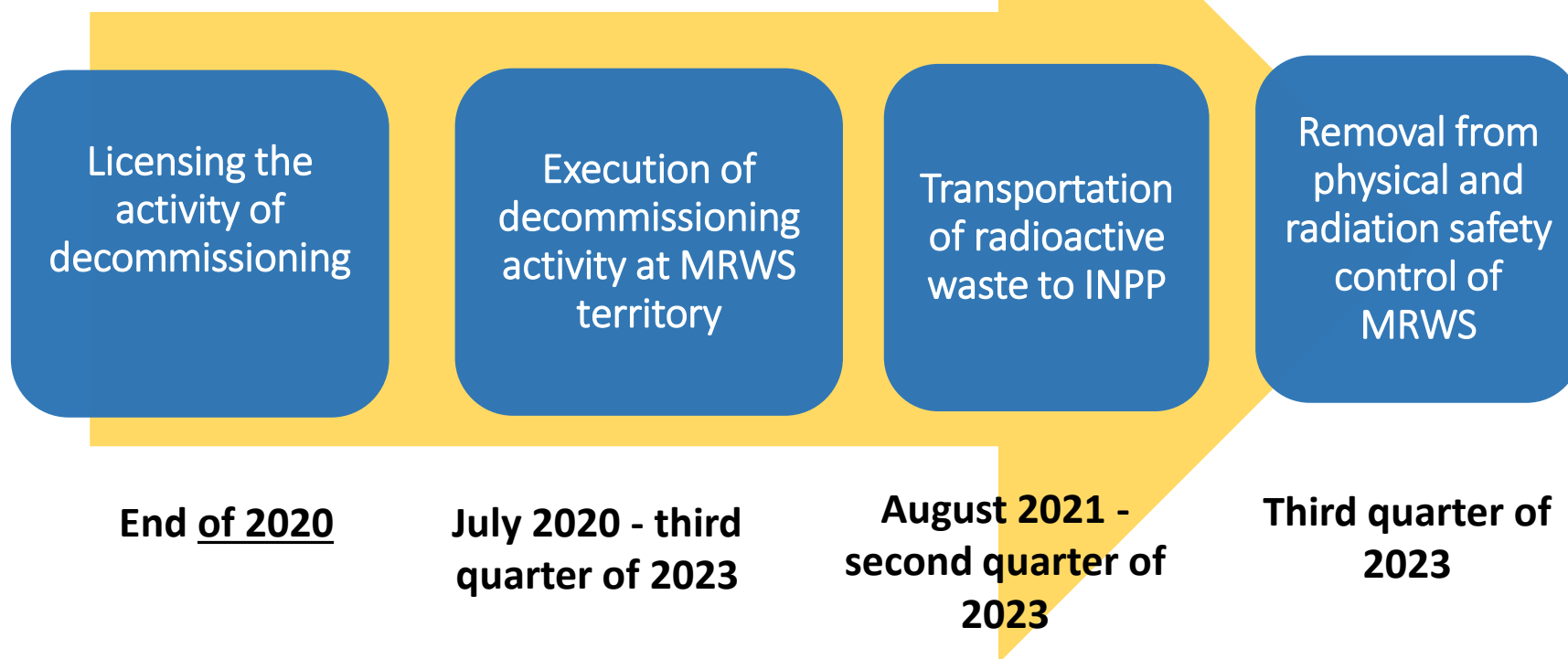
VATESI decommissioning license

Main Maišiagala RWSF decommissioning stages

Following main Maišiagala RWSF decommissioning stages are foreseen:

1. VATESI license to perform decommissioning works at NF (Maišiagala RWS) is obtained;
2. Procurement of equipment and services required to perform decommissioning of Maišiagala RWSF;
3. Preparation of Maišiagala RWSF decommissioning;
4. Decommissioning of Maišiagala RWSF vault;
5. Decommissioning of Maišiagala RWSF liquid RW vault;
6. Transportation of radioactive waste to INPP;
7. Final radiological survey of Maišiagala RWSF;
8. Recultivation of the territory;
9. Final NF (Maišiagala RWS) decommissioning report preparation and NF (Maišiagala RWSF) decommissioning license cancellation.

Main stages of MRWS Decommissioning activities

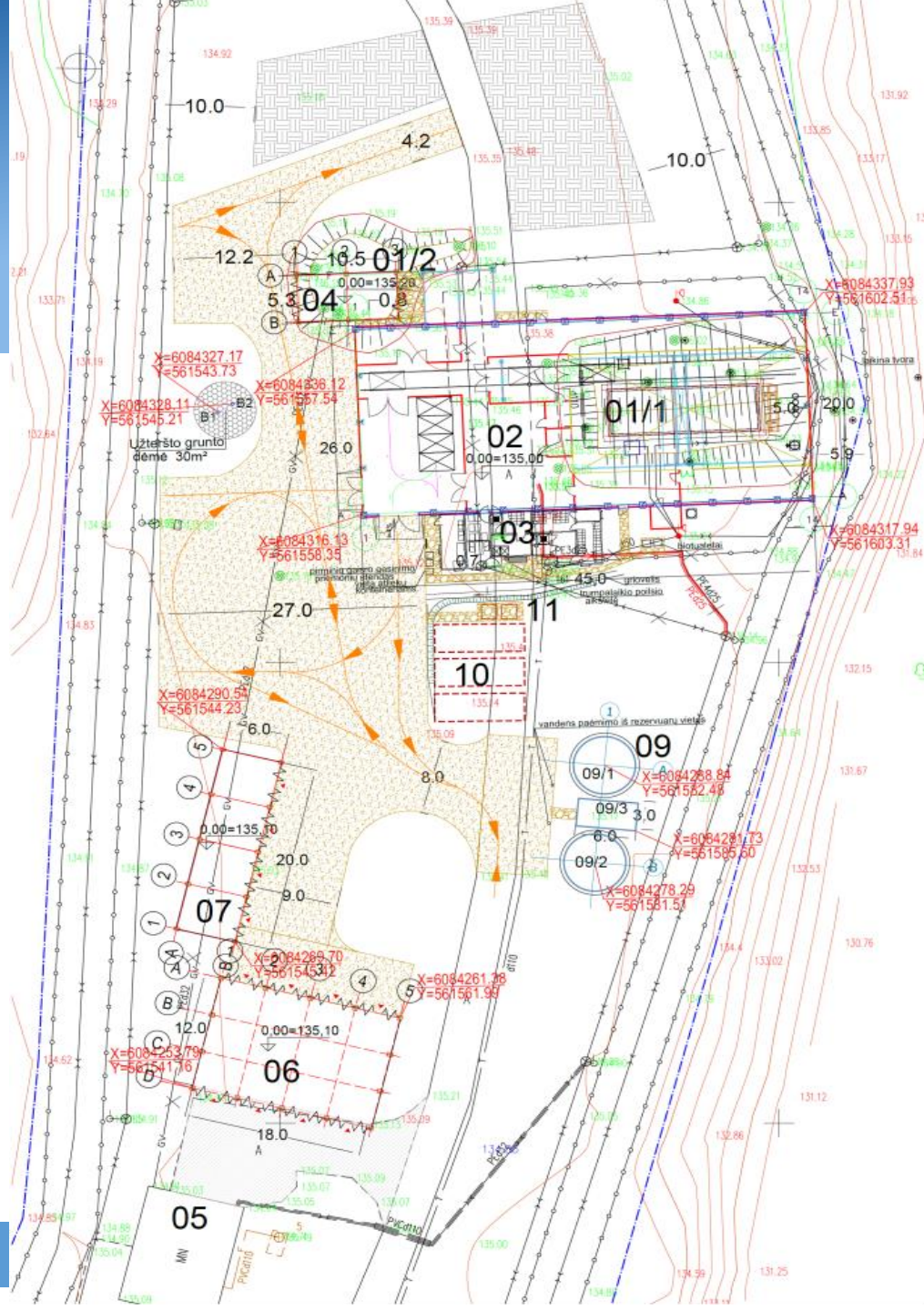


Project start: accomplished activities required for MRWSF decommissioning

- **Approved** MRWS decommissioning Environmental Impact Assessment
- **Approved** Final MRWS decommissioning plan
- **Approved** MRWS decommissioning General radiological survey program, main radiological survey and assessment is **performed**
- **Procured** and **mounted** MRWS meteorological station
- **Approved** by VATESI - Analysis of the possible consequences of nuclear and radiological accidents at MRWS
- **Approved** by VATESI Decommissioning project plan
- **Approved** by VATESI Decommissioning safety analysis report
- **Approved** by Ministry of Health and VATESI Plan for Radionuclide Emission Into The Environment
- **Approved** by VATESI Radiation safety program
- **Under preparation** Demolition project
- **Prepared and approved by RSC, AAA, VATESI** and sent to European Commission Common data compendium about MRWS decommissioning in accordance with Euratom contractual provisions
- **To prepare and submit** for VATESI approval Others decommissioning license (**majority of documents is approved**)

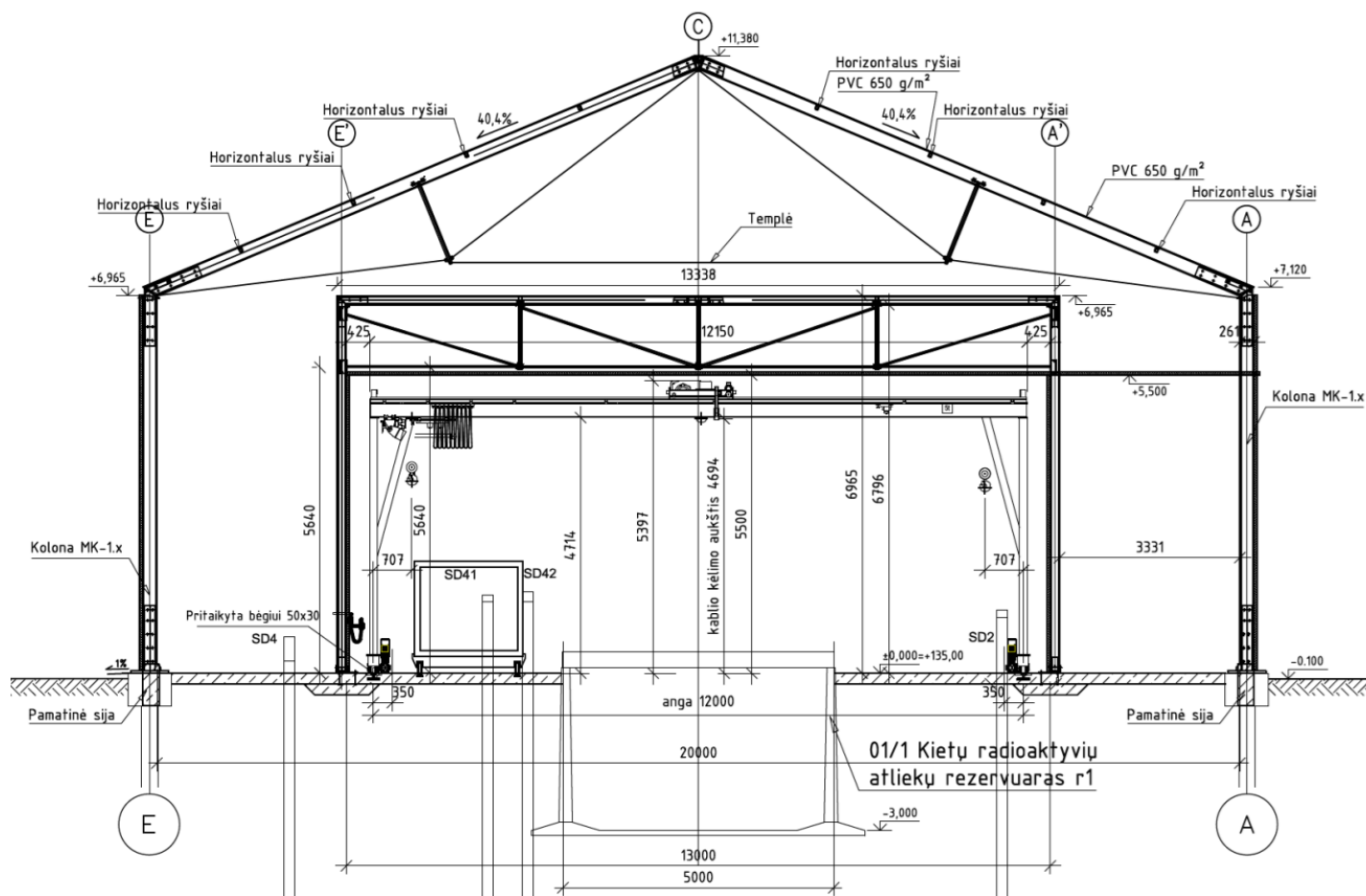
Project start: demolition project solutions – building site plan*

*Solutions – in
Demolition project



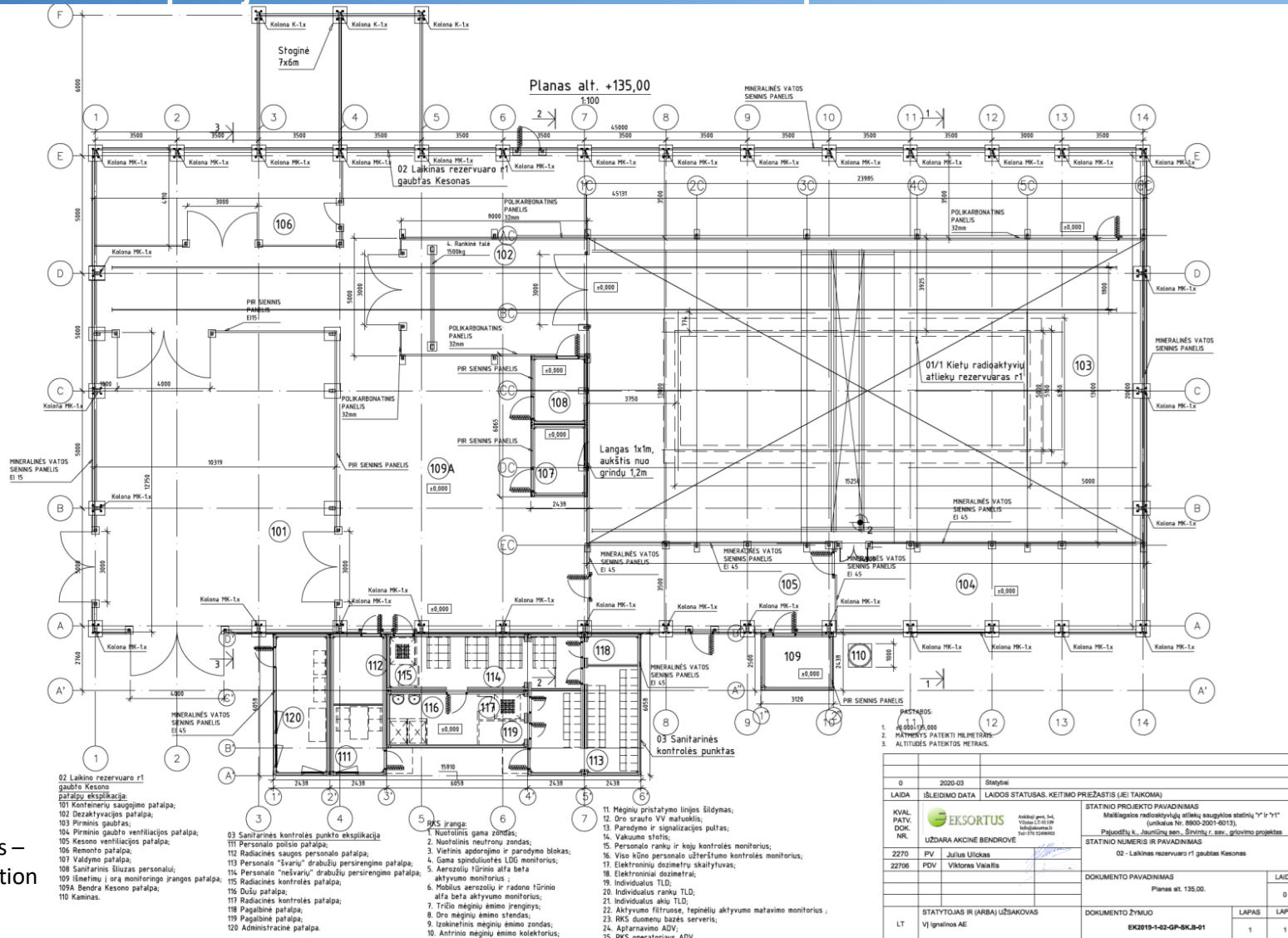
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Project start: demolition project solutions – caisson cross-section*



*Solutions – in
Demolition project

Project start: demolition project solutions– Caisson plan*



*Solutions –
in Demolition
project



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Maišiagala RWSF decommissioning public Procurement information



- Maišiagala RWSF demolition of the buildings and preparations with engineering design services (Detailed design preparation) public Procurement will be held
- RW removal out of Maišiagala RWSF vault, vault, liquid RW vault demolition, territory recultivation, and RW transportation to INPP – INPP is planning to perform by means of its own capacities
- Personal protective equipment (PPE) public Procurement will be held



Maišiagala RWSF building demolition preparations and Detailed design preparation public Procurement information 1-2



Public procurement will be carried out in accordance with Demolition project. Maišiagala RWSF preparations consist of:

- Preparation of Maišiagala RWSF roads/platforms;
- Dismantling of fences around the vault;
- Dismantling of security system around the vault;
- Dismantling of electric and communication lines around r1 reservoir vault;
- Construction and installment of temporary building (Caisson) required for demolition works;
- Vault removal about concrete layer of r1 reservoir;
- Installation of floor in Caisson;
- Building of primary hood above reservoir r1 inside of Caisson.

*Planned date to held the Procurement – end of 2020
Planned work start– spring of 2021*



Maišiagala RWSF building demolition preparations and Detailed design preparation public Procurement information 2-2



Public procurement will be carried out in accordance with Demolition project. Maišiagala RWSF preparations consist of:

- Preparations in liquid RW in reservoir r;
- Preparations in ex-deactivation building;
- Building of shelters and support facilities;
- Fire reservoir and pumping station;
- Building staff control and sanitary control container;
- Mounting sewage system containers;
- Water and electric supply lines in the site;
- Performing “cold” trials

This public Procurement foresees purchase of all required equipment to perform Maišiagala RWSF decommissioning works – demolition remotely controlled robot, other mechanisms and equipment, radiation control equipment and its installation. Packages and containers required for placing RW into constrainers and further transportation to INPP, however RW transportation will not be included to the scope of this public Procurement.

Planned date to held the Procurement – end of 2020

Planned work start– spring of 2021



Preliminary information about Maišiagala RWSF demolition of buildings preparation and Detailed design preparation

POSSIBLE PROCURED EQUIPMENT EXAMPLES



1



2



3



4



5



7

1. Demolition remotely controlled robot, 2. multifunctional grippers, 3. concrete shredder, 4. vacuum pump, 5. FIBC, 6. mobile filtering device
7. 200 l barrel



Preliminary information about Maišiagala RWSF demolition of buildings preparation and Detailed design preparation



General facility characteristics

Facilities	Total area	Description of facility	Notes
Temporary reservoir r1 Caisson hood	915,12 m2	<ul style="list-style-type: none"> One stored building Structural building's scheme– carcass: aluminum profile column, roof beam, communications Outer building's walls– multilayer panels with mineral wool filling Gable roof, tent made of polyurethane with vinyl coating (PVC). 	Temporary building caisson mounted above the reservoir r1 in order to protect air environment from air pollutants which form during the demolition process
Sanitary control point	74,02 m2	<ul style="list-style-type: none"> Amount of modular containers which for the building – 6 pcs. Factory-made structure of modular container – support structure – metal frame; outer walls –multilayer panel 	The building is meant for personnel and household needs
Temporary reservoir r1 tent	52,2 m2	<ul style="list-style-type: none"> Hood's structural scheme– framework: aluminum profile columns, beam, connectors Walls and roof - tent made of polyurethane with vinyl coating (PVC). 	Tent hood is meant for personnel and technical equipment protection from precipitation and wind
Potentially non-radioactive waste roofed storage platform	221,5 m2	<ul style="list-style-type: none"> Roof structural scheme– framework: aluminum profile columns, beam, connectors Walls and roof - tent made of polyurethane with vinyl coating (PVC). 	Roof is meant for temporary storage of containers with potentially non-radioactive waste in order to protect them from precipitation
Barrel storage roofed platform	24,0 m2	<ul style="list-style-type: none"> Roof structural scheme– framework: aluminum profile columns, beam, connectors Walls and roof - tent made of polyurethane with vinyl coating (PVC). 	Roof is meant for storage in order to protect them from precipitation
Personnel check point	4,44 m2	<ul style="list-style-type: none"> Factory-made building consisting of modular container Structure of modular container – support structure – metal frame; outer walls – multilayer panel 	Check point for personnel to enter/exit to the controlled zone of the area
Fire reservoir No. 1, No.2		<ul style="list-style-type: none"> Overground insulated cylindric reservoirs made of metal Volume– (2x170) m3. 	
Fire pump house		<ul style="list-style-type: none"> Total area– 18,0 m2 Factory-made container 	
Sewage system container		<ul style="list-style-type: none"> Volume– (2x3,0) m3. Reservoir's structure – stainless steel 	Inside waste disposal after fire reservoir
Site layout (utilities networks)		<ul style="list-style-type: none"> Site layout foresees: Drinking water network– 370 m. sewerage network– 25 m. waste disposal after fire network -60 m. 0,4 kV electricity network– 1000 m. Control cable networks – 60 m. roads and platforms-2000 m2. 	

Maišiagala RWS PPE required for demolition works preliminary information for public Procurement



No.	PPE Name	PPE purpose	PPE type	Time of total usage, working day	Foreseen amount for two work shifts
1.	Disposable respirator FFP-3	Protection of breathing organs from radioactive dust and liquid aerosol, effect of solid and liquid aerosol particles	Disposable	1	7254
2.	Protective half mask set	Protection of breathing organs from radioactive dust and liquid aerosol, effect of solid and liquid aerosol particles	Reusable	130	26
3.	Full-face protective mask	Face and breathing organs protection from harmful gases and particles	Reusable	130	26
4.	High efficiency P3R type filter (R-reusable)	Exchangeable element of a filter for 2 and 3 items		3	1437
5.	Long rubber boots	Feet and main PPE protection			
5.1	Disposable overshoes		Disposable	1	5803
5.2	Disposable short overshoes		Disposable	1	2902
5.3	Reusable overshoes		Reusable	130	156
6.	Disposable overalls	Protective overalls from radioactivity contamination and chemical splashes			
6.1	Clothes for item 6	Limited protection clothes from chemical liquid mist for item 6	Disposable	1	2902
6.2	Clothes for item 5	Protective clothes from solid chemical particles and dusts for item 5	Disposable	1	17410
6.3	Clothes for item 4	Protective clothes from aerosols for item 4	Disposable	1	8705
7.	Reusable overalls	Body and main PPE protection	Reusable	130	26
8.	Isolating overalls	Body and main PPE protection	Reusable	260	13
9.	Air supply block	Fresh air supply to isolating PPE	Reusable	260	2
9.1	Gas filter, not lower than A1B1E1 level efficiency class	Exchangeable element of a filter for item 8	Disposable	260	2
9.2	Primary filter	Exchangeable element of a filter for item 8	Disposable	260	2
9.3	Air filter, not lower than TH2 level efficiency class	Exchangeable element of a filter for item 8	Disposable	260	2
10.	Gloves with separate openings for each finger and the thumb	Protects from chemicals and contact with radioactive materials (protection level not lower than X010 level)	Disposable	1	14508
11.	Main PPE	Body protection from radioactive contamination	Reusable	130	112



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Thank you for your attention!



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