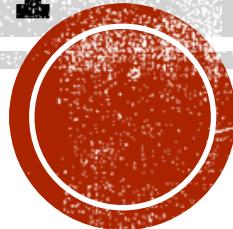
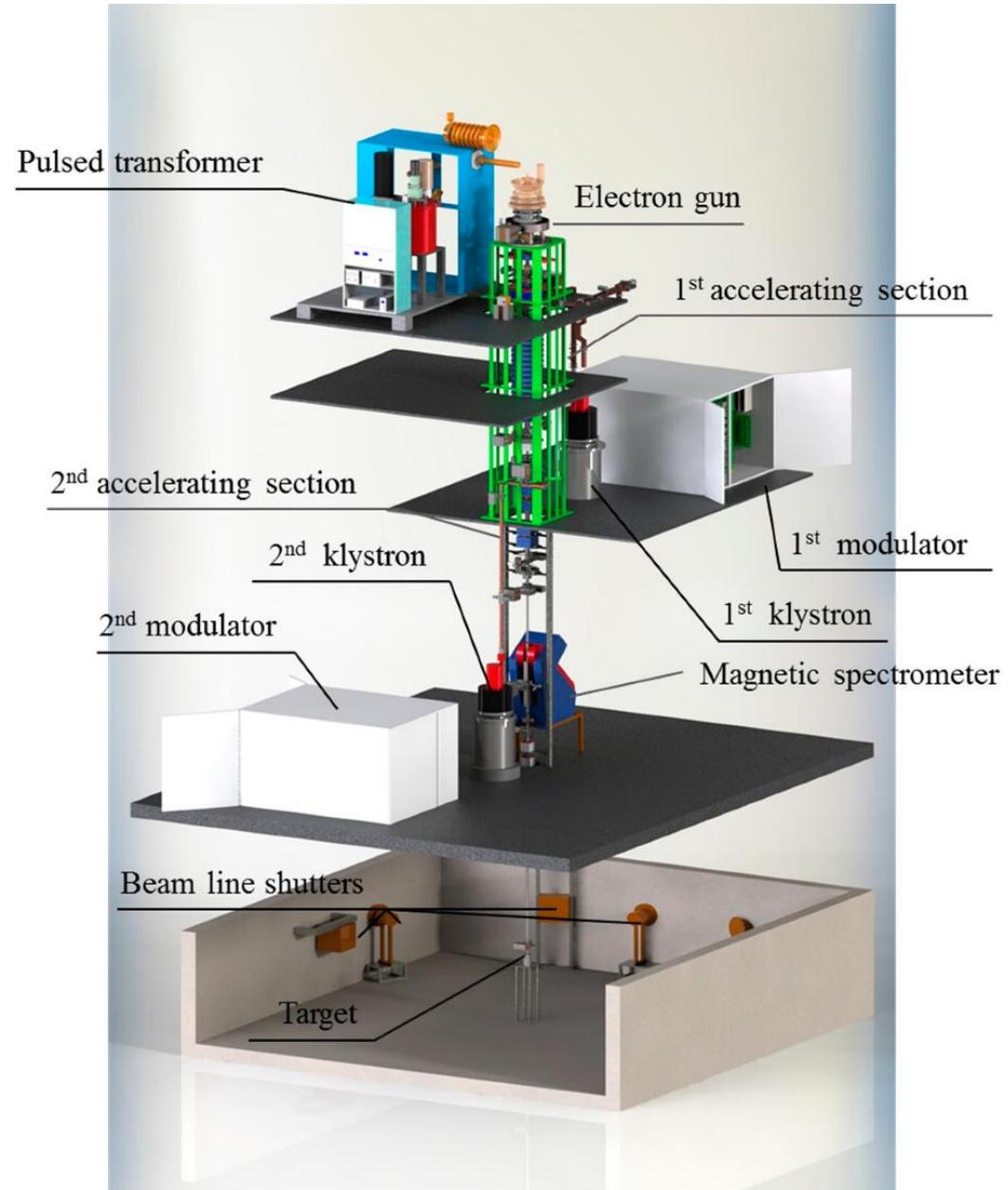


IMPLEMENTATION OF THE REGATA-2 PNEUMATIC TRANSPORT SYSTEM AT THE IREN RESEARCH FACILITY



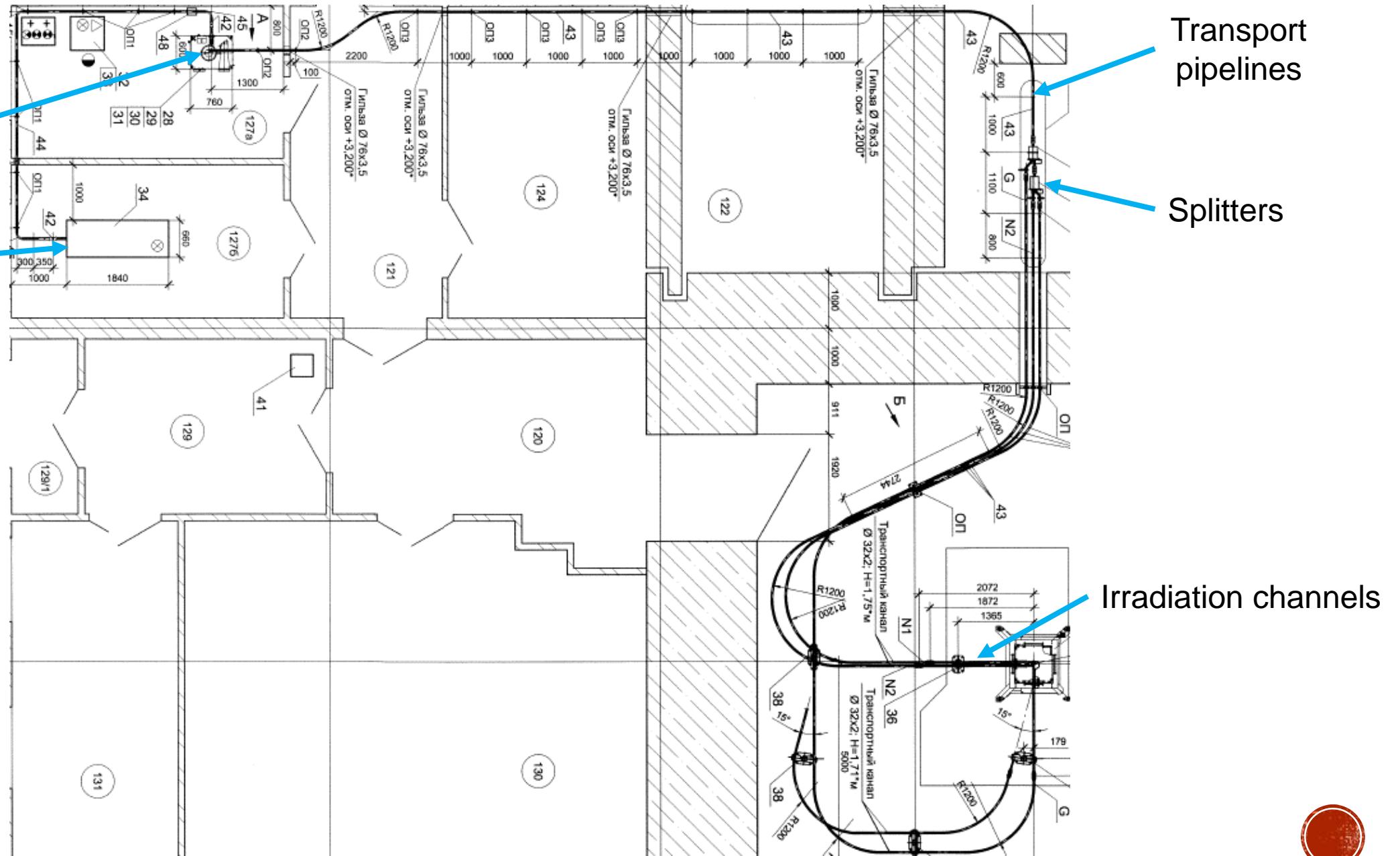
IREN FACILITY



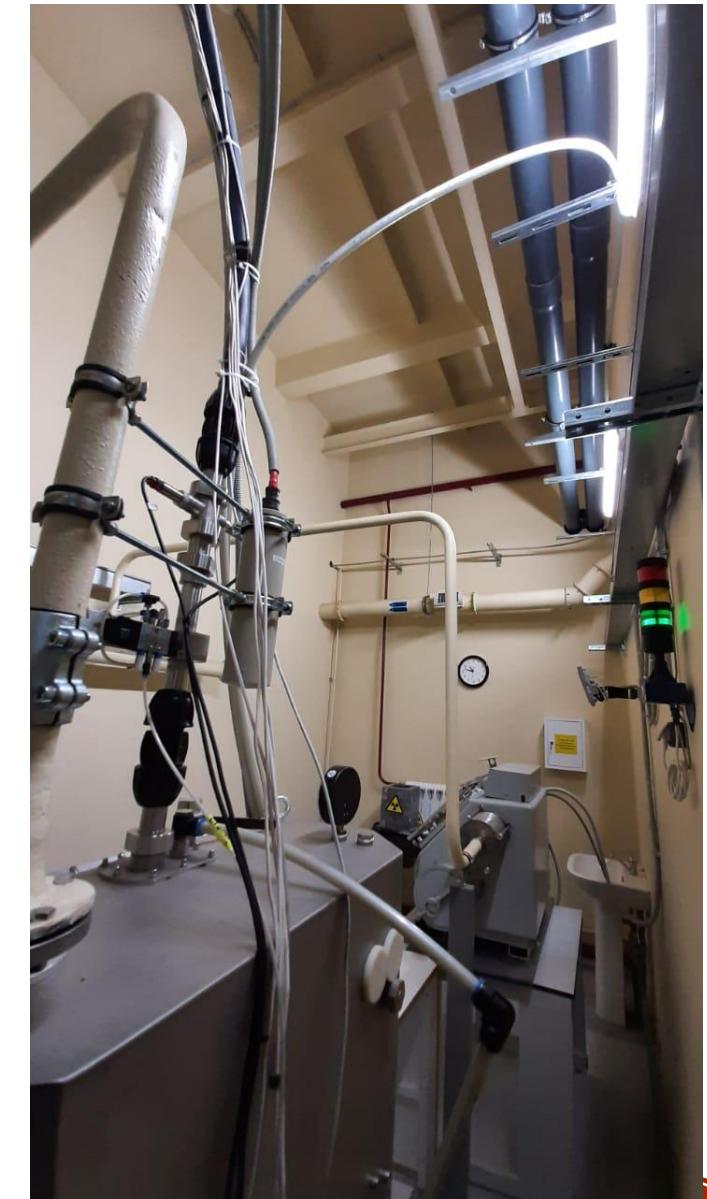
GENERAL SCHEMA OF THE PNEUMATIC TRANSPORT SYSTEM REGATTA 2

Box with a loading
and unloading
station

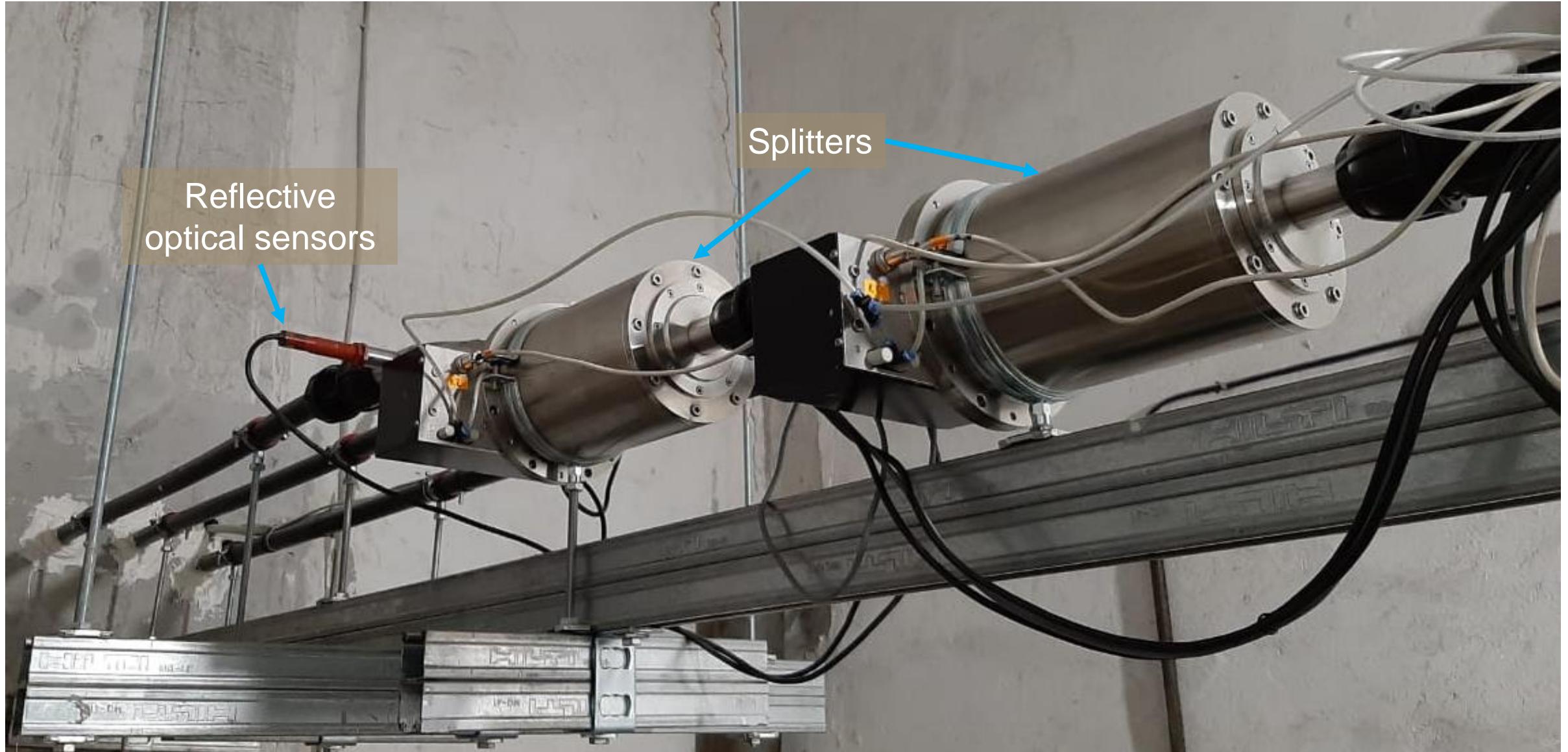
Compressor



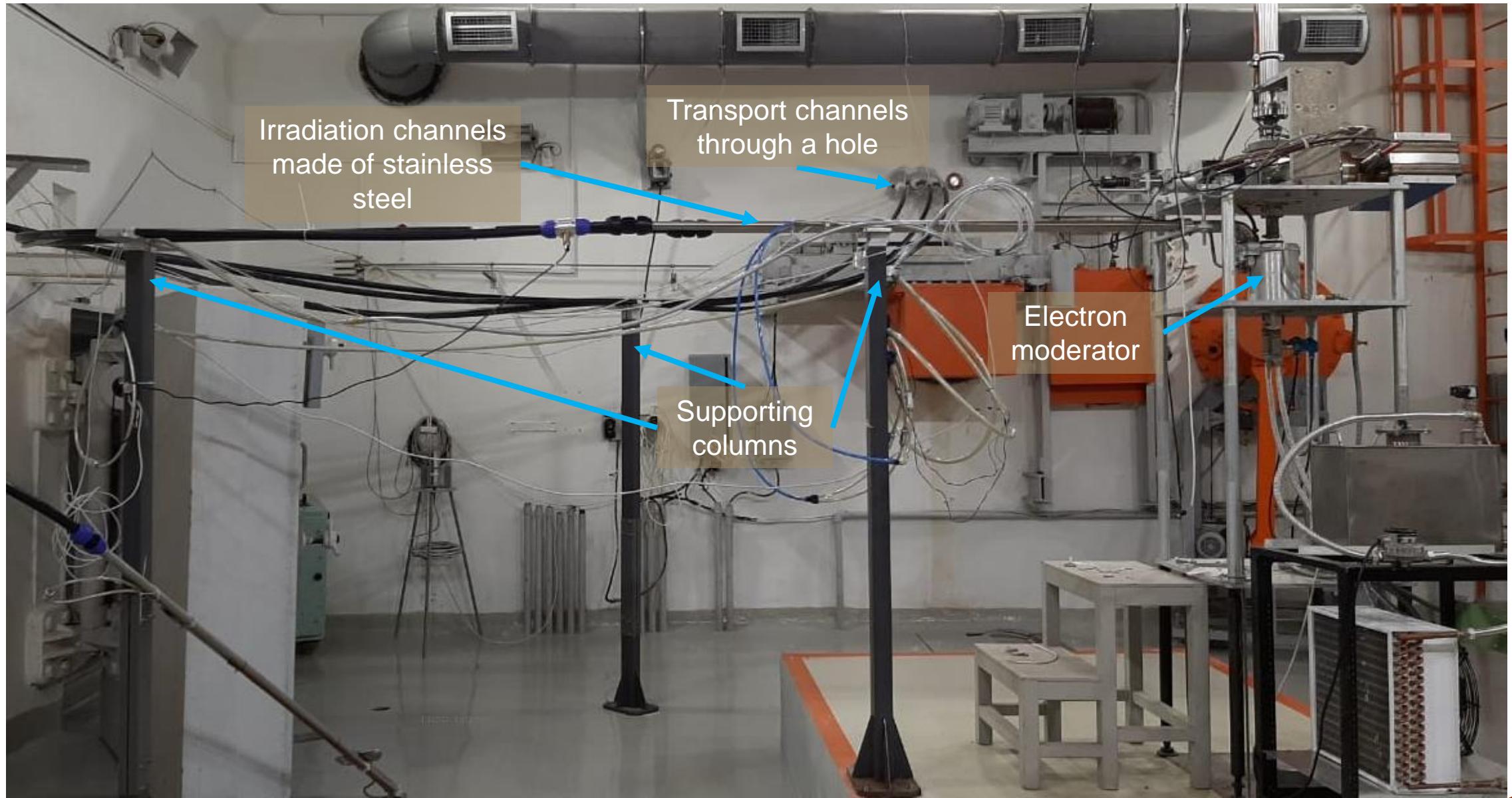
BOX WITH LOADING AND UNLOADING STATION



SPLITTERS



TARGET HALL

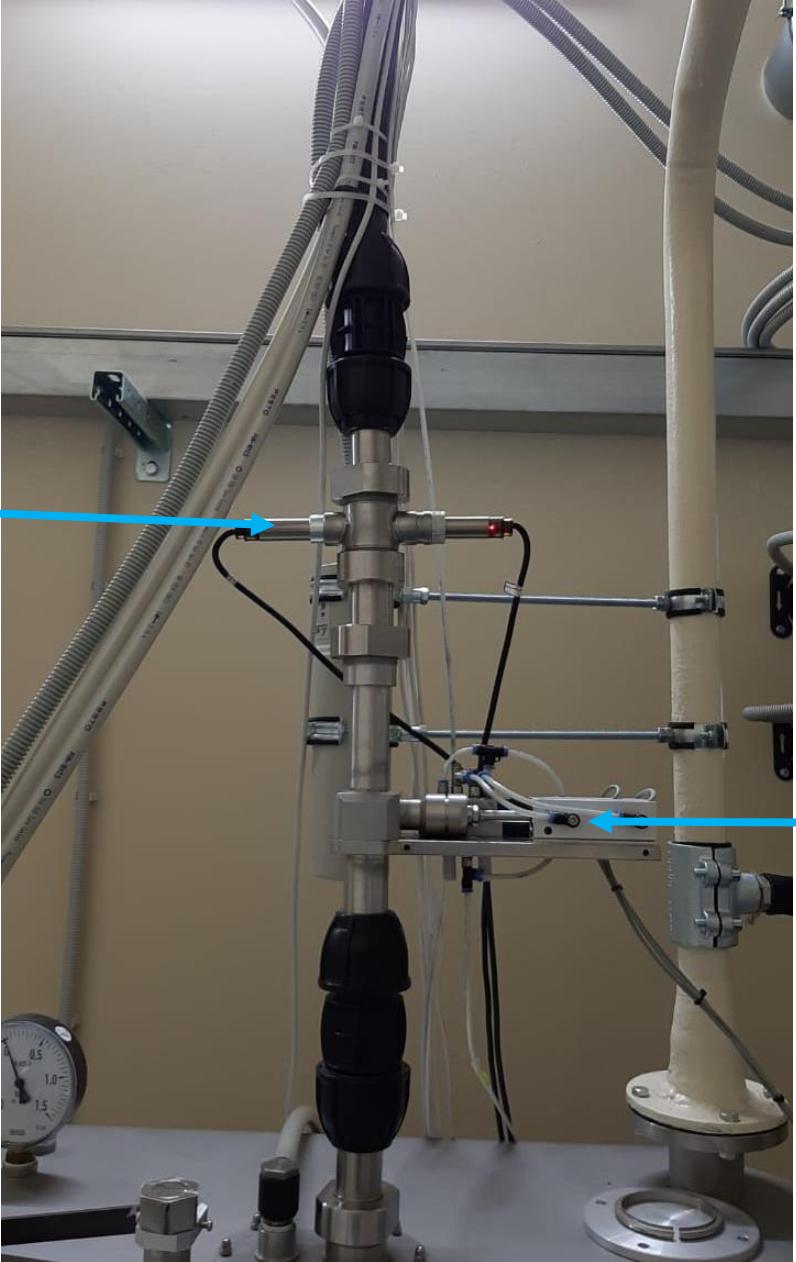


DEMONSTRATION OF AN OPERATOR WORK



CONTROL OF SAMPLE ACTIVITY NEAR THE BOX

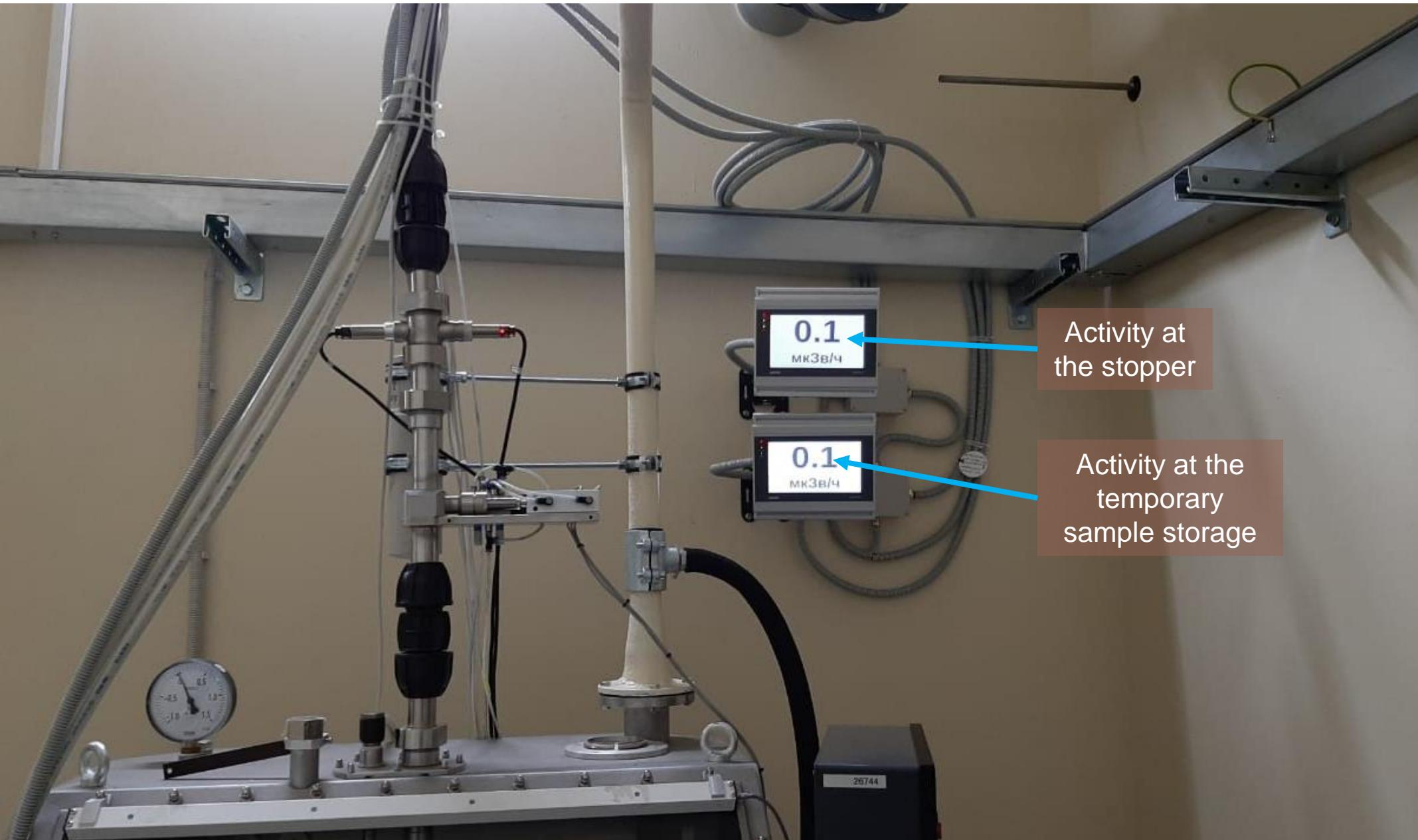
Barrier sensor



Dosimeter



DISPLAYS FOR DISPLAYING DOSIMETER DATA



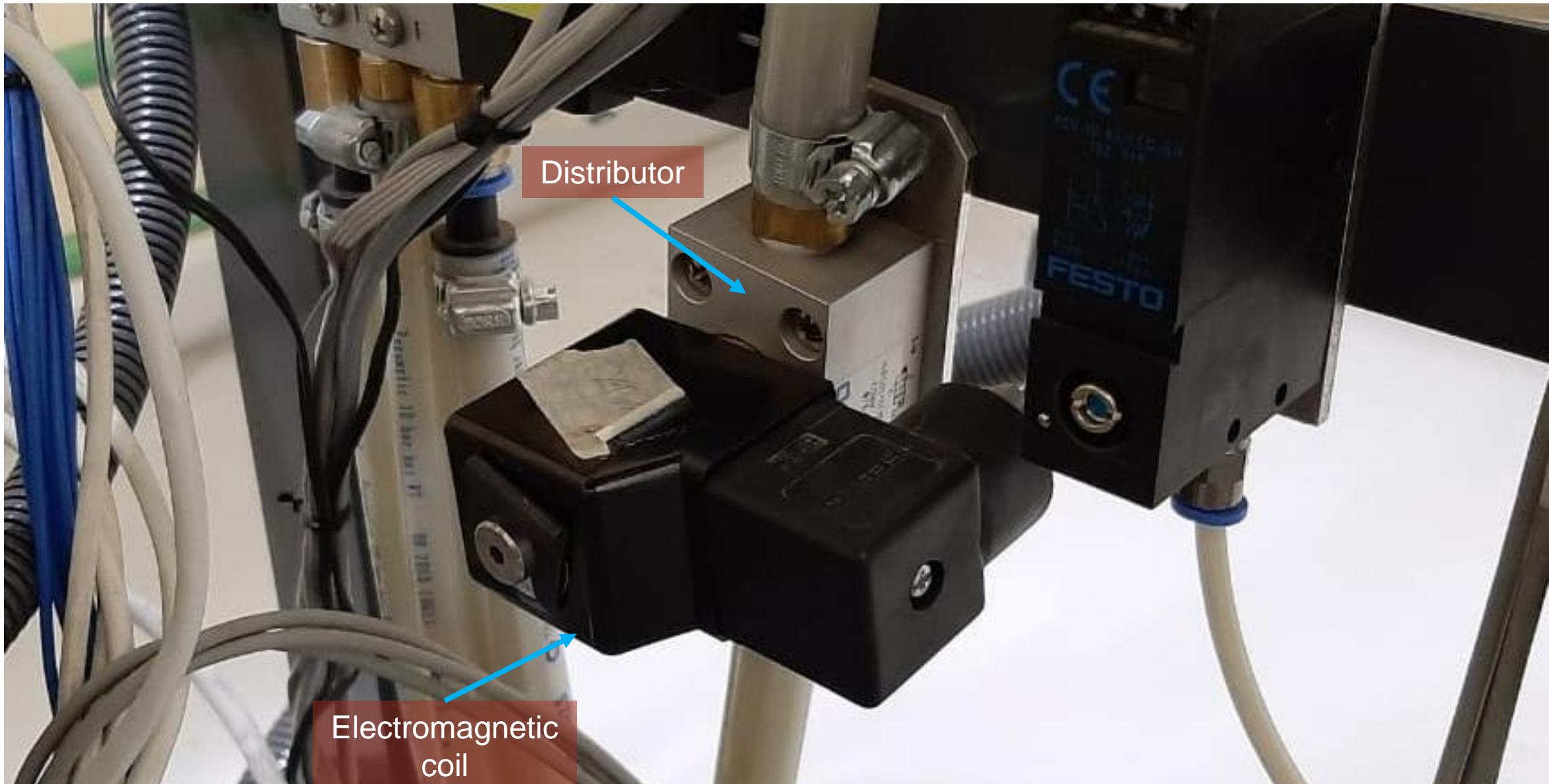
SAMPLE CONTROL AT THE IRRADIATION POSITION



IRRADIATION CHANNELS



DISCHARGING SOLENOID VALVE



MEASUREMENTS OF NEUTRON FLUXES IN IRRADIATION CHANNELS N1 AND N2

At a frequency of 25 Hz

Fluxes in channel N1:

thermal neutrons $3.3 \cdot 10^7$ n / cm² s;

resonance neutrons $7.3 \cdot 10^6$ n / cm² s

Fluxes in channel N2:

thermal neutrons $2.1 \cdot 10^7$ n / cm² s;

resonance neutrons $5.4 \cdot 10^6$ n / cm² s



SEARCH FOR OPTIMAL PARAMETERS OF SAMPLES IRRADIATION



RESULTS OF QUALITATIVE DETERMINATION OF TEST SAMPLES

ELEMENTAL COMPOSITION

M/T	10 min	20 min	30 min	40 min	50 min
3 gr.	6 SLI + 1 LLI	8 SLI + 1 LLI	8 SLI + 1 LLI	9 SLI + 2 LLI	9 SLI + 2 LLI
5 gr.	6 SLI + 1 LLI	6 SLI + 1 LLI	8 SLI + 1 LLI	9 SLI + 2 LLI	9 SLI + 2 LLI
7 gr.	6 SLI + 1 LLI	8 SLI + 1 LLI	8 SLI + 1 LLI	9 SLI + 2 LLI	10 SLI + 2 LLI



RESULTS OF QUANTITATIVE DETERMINATION OF KAZAKHSTAN SAMPLES

ELEMENTAL COMPOSITION

	Mg		Si		V		Mn		Sr		Dy		U			
sample	mg/kg	%	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg	MDC, mg/kg	mg/kg
e-01	14500	6.9	199	276000	4.2	8300	39.1	15	19.6	138	6	5.17	604	16	404	15.5
e-02	12200	7.1	215	287000	4.2	8200	35.5	16	18.3	95	6.1	4.91	624	16	385	15
e-03	9260	6.9	179	249000	4.1	6400	105	13	15.6	592	5.8	5.52			494	15.7
e-04	9160	7.1	200	247000	4.3	7000	106	13	15.2	622	5.8	5.34			485	15.4
e-05	9400	6.9	194	272000	4.2	7610	86.2	13	17.6	472	5.8	5.34			492	15.7
e-06	8710	7	208	309000	4.2	7520	98.7	13	21.3	469	5.8	5.01			486	15.5
e-07	10200	7.2	225	289000	4.4	10100	140	14	29	533	5.8	4.39			456	14.5
z-03	7990	7.2	136	233000	4.5	9260	92.5	14	16.3	252	5.9	3.12	281	15	120	5.67
z-04	9730	6.9	172	280000	4.2	8450	143	13	21.1	566	5.8	3.95	254	15	114	1.5
															43	2.83
															2.16	27
															1.47	

The set of NIST standards: 1633C, 2710A, 2586, 1635A



SUMMARY

1. Short-lived isotope neutron activation analysis;
2. Automatic delivery of the sample to the irradiation target;
3. Simplification of the experimental process



MODERNIZATION OF THE PNEUMATIC TRANSPORT SYSTEM

- Installation of the channel for gamma irradiation on the existing target rack
- Improvement of software for realizing the possibility of parallel use of irradiation channels
- Change control panel



THANK YOU FOR YOUR ATTENTION!

