



LNGS_FUTURE

WP5 - General and safety plants upgrading

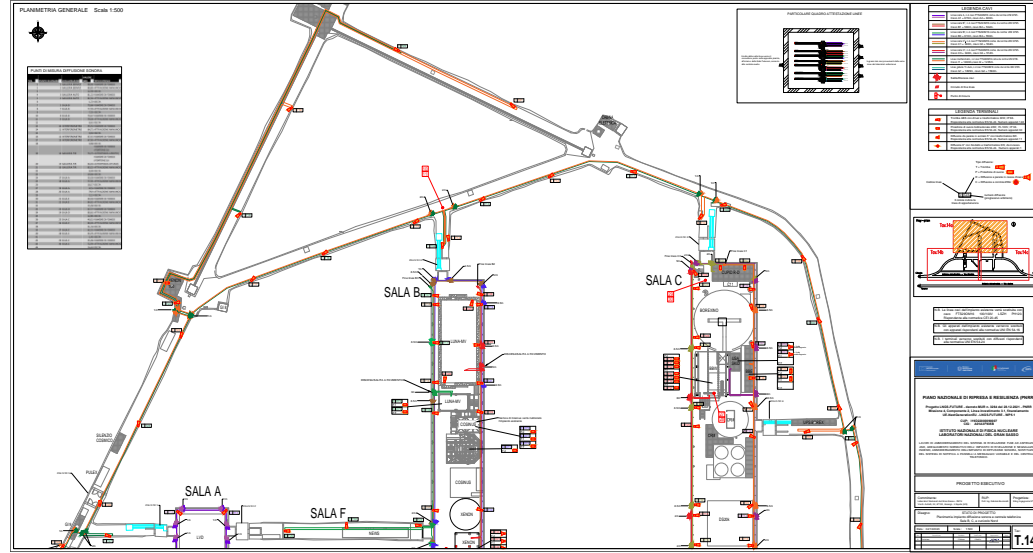
October 18th, 2024

Ing. Gabriele Bucciarelli

- This Working package is divided in 4 activities
 - ▶ 5.1 – Upgrade of safety plants;
 - ▶ 5.2 - Upgrade of the fire prevention system of Hall C
 - ▶ 5.3 - Monitoring system of the vaults of the underground laboratories
 - ▶ 5.4 – Upgrade of ventilation plants

Aims:

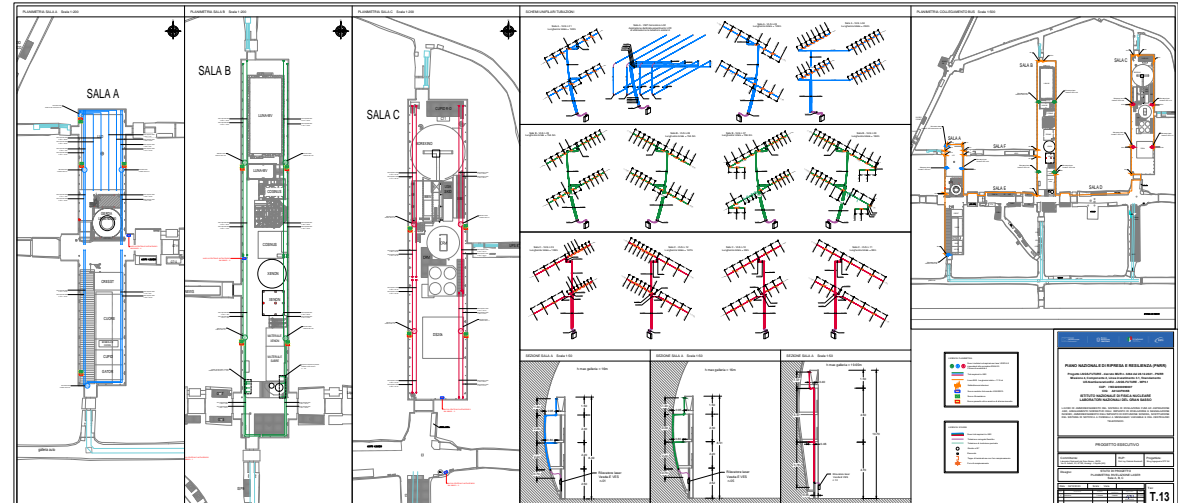
- Upgrade of control units for safety and cryogenic gas management ;
- Upgrade of the fire-fighting control panels using laser technology;
- New broadcasting system of alarm messages and emergency management system
- Upgrade of the variable message boards in the underground laboratories



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- COMPANY

ELETTRICA CICIRELLI S.r.l.

- PROJECT COST FRAMEWORK:

Amount of work	622.798,01 €
Technical costs	82.862,40 €
I.V.A. work (22%)	155.905,29 €
TOTAL COST OF THE PROJECT	861.565,70 €

- TIME SCHEDULE

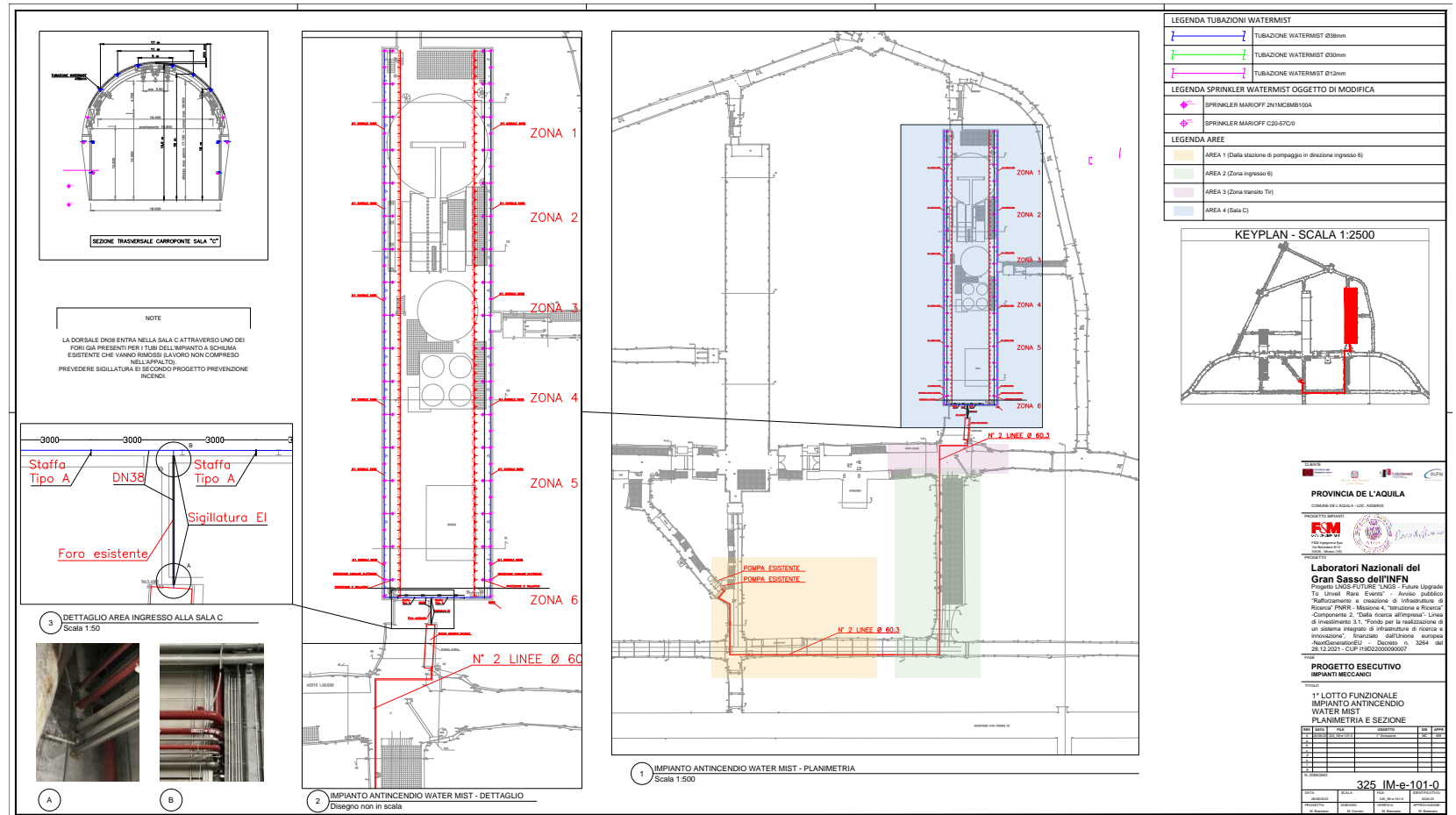
Start of work:	22/04/2024
Estimated end of work:	20/12/2024



WP_5.2 Upgrade of the fire prevention system of Hall C

The aim of the project is to replace the water-foam system with a high-pressure water mist extinguishing system.

In this first step we'll install also sprinklers on walkway floors located at the Hall C.



- COMPANY

ELETTRA S.r.l.

- PROJECT COST FRAMEWORK:

Amount of work	356.672,01 €
Technical costs	43.926,80 €
I.V.A. work (22%)	88.131,74 €
TOTAL COST OF THE PROJECT	488.730,55 €

- TIME SCHEDULE

Estimated start of work:	15/11/2024
Estimated end of work:	14/02/2025



STRUCTURAL MONITORING

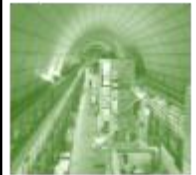


- n. 30 load cells
- n. 51 martinetti piatti e barrette estensimetriche
- n. 12 clinometers
- n. 24 strain gauges
- n. 5 accelerometers (force balance)
- n. 3 accelerometers (piezoelectric)
- n. 11 laser



HYDRAULIC MONITORING

- n. 2 flow meters

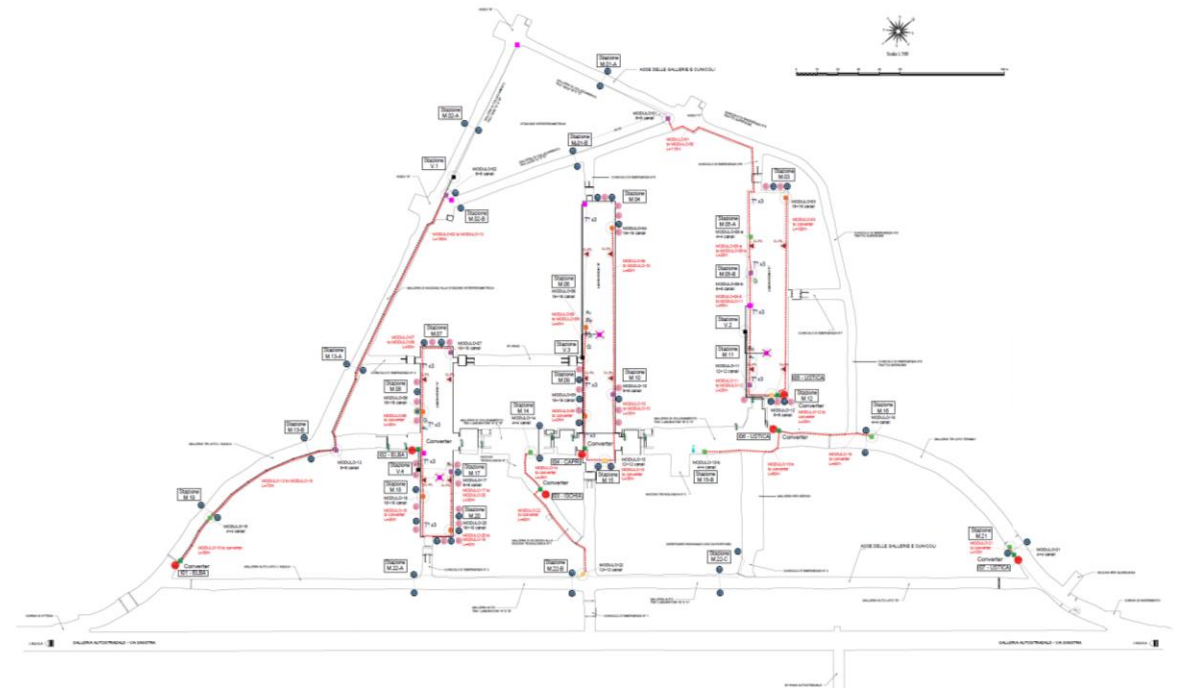


ENVIRONMENTAL MONITORING

- n. 36 humidity and temperature sensors
- n. 3 electromagnetic field sensors
- n. 3 radon gas sensors
- n. 3 phonometers
- n. 1 infrared camera

Goals

- Continuous Monitoring
- Management of maintenance interventions
- Digital platform for sharing data and information



- COMPANY

RTI: COCOTEC S.r.l. – I.M.G. S.r.l.

- PROJECT COST FRAMEWORK:

Amount of work	558.454,93 €
Technical costs.	58.781,24 €
Unexpected	22.840,90 €
I.V.A. work (22%)	135.791,96 €
TOTAL COST OF THE PROJECT	775.869,03 €

- TIME SCHEDULE

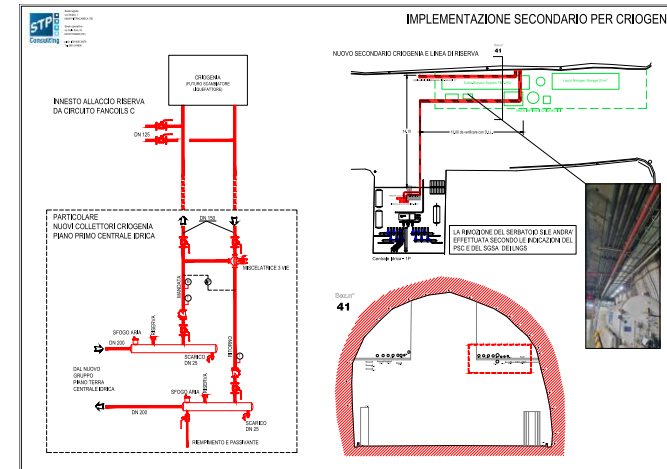
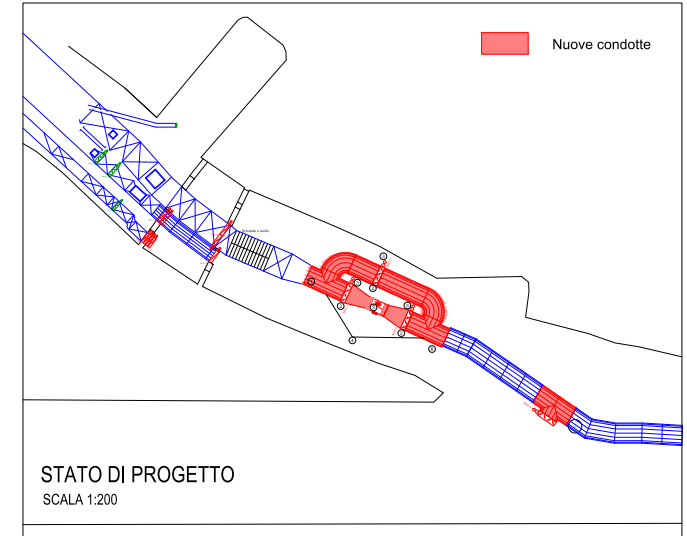
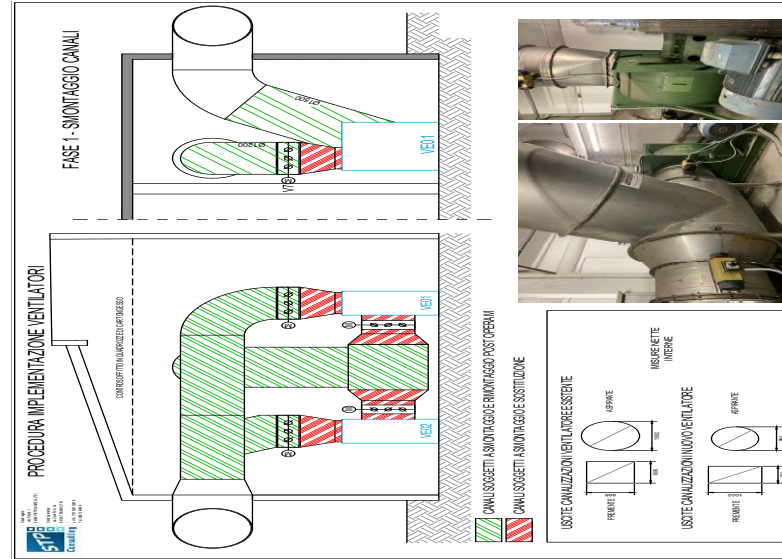
Estimated start of work: 02/12/2024

Estimated end of work: 20/05/2025



The underground laboratories are equipped with a complex air duct network and related plants for air distribution, capable to work in both normal and emergency conditions.

The main aim of the project is to increase ventilation and extraction capacity to enable the installation of new cryogenic systems inside the underground laboratories



- COMPANY

AFA SOCIETY. S.r.l.

- PROJECT COST FRAMEWORK:

Amount of work	676.534,52 €
Technical costs	87.000,00 €
Unexpected	5.802,97 €
I.V.A. work (22%)	167.977,59 €
TOTAL COST OF THE PROJECT	937.315,08 €

- TIME SCHEDULE

Start of work: 13/05/2024

Estimated end of work: 20/01/2025

