Energy Formation

OUR TRAINING PACKAGE

TRANSPORT _ STORAGE

FEBRUARY 2024

Training courses in transport and storage

Nicolas Lelievre
Head of Transport Training,
Instructor-Developer.

Could you tell us about Energy Formation's gas transport training courses?

We initially created all our gas transport training courses for our long-standing customer GRTgaz, which means that our specific requirements, materials and teaching tools are tailored to this primary network operator.

Nevertheless, Energy Formation has full-scale gas facilities open to anyone working on the gas transmission network. Trainees acquire skills through practical experience, learning from mistakes, and engaging in hands-on activities, which is what sets us apart and makes us so effective.

> **become an operator capable of independently managing the entire system.**

What skills do gas transport trainees develop?

Trainees learn to operate and maintain network operator infrastructure such as pipelines and stations. They also gain expertise in overseeing construction work or repairs on gas infrastructure, while prioritizing the safety of people and property.

Trainees may also be tasked with operating metering systems or performing welding operations. The primary objective is to equip operator personnel with the capabilities to independently manage the entire system.

Prerequisites

Energy Formation offers a range of training courses to help our learners progressively build their skills. The training courses are built around learning objectives that **may have specific prerequisites or prior experiential learning requirements.**
It is important to be aware of these prerequisites, otherwise the employee may not be admitted to the training course.

TRANSPORT_ STORAGE

We offer both catalogue and stomised training courses, on our pus or at your site. r instructors adapt o your needs and r business context.

have a laboratory where ees get hands-on erience, co-designed and nced by four organizations: gy Formation, GRTgaz, gy and Storengy.

is the only lab of its kind urope, and it boasts all the pment used in the field:

volume converters and quality analysers (natural and biomethane) for gy metering.

Qualiopi certified.
pletion of our training courses, rded a certificate of achievement.

TRANSPORT_ STORAGE

Transport network operations

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(P) *open to GRTGaz service providers*

TRAINING COURSES

Transport network operations

Z124
Introduction to gas transport
IN-PERSON LEARNING
21 hours - 3 days

Z207
Operations under pressure: Level 1 operator
IN-PERSON LEARNING
35 hours - 5 days

Z208
Operations under pressure: Level 2 operator
IN-PERSON LEARNING
35 hours - 5 days

Z209
Operations under pressure: Level 1 operator - refresher course
IN-PERSON LEARNING
16 hours - 2 days

Z210
Operations under pressure: Skills maintenance for level 2 operators
IN-PERSON LEARNING
14 hours - 2 days

Z211
Fundamentals and environment of operations under pressure
IN-PERSON LEARNING
16 hours - 2 days

(P) **Z212**
Third-party construction work level 1
IN-PERSON LEARNING
21 hours - 3 days

(P) **Z219**
Welding safety techniques for connections
IN-PERSON LEARNING
16 hours - 2 days

Z221
Operate and maintain high-pressure gas transport infrastructure
IN-PERSON LEARNING
70 hours - 10 days

Z227
The fundamentals of an interconnection
IN-PERSON LEARNING
21 hours - 3 days

Z229
Connection engineering: Lockout/tagout technique with negative pressure airlock
IN-PERSON LEARNING
21 hours - 3 days

** Requires level 1 Operations under pressure (can be acquired with training course EFZ207)*

***In-person and distance learning*

(P) *open to service providers*

Z124
INTRODUCTION TO GAS TRANSPORT

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 21 hours - 3 days

TARGET AUDIENCE:
Reserved for the infrastructure branch of the gas industry.

PREREQUISITES:
No prerequisites.

Objectives of the training course

- List and identify the function of the infrastructure of the entities in the gas supply chain. Situate your activity in the gas supply chain,
- Summarize and produce a diagram corresponding to the natural gas transmission system. - Explain the role of each element and its geographical position on the gas networks,
- Describe the principles of natural gas transport and storage, the technical and financial benefits, and the constraints,
- List the different stakeholders, both internal and external to the Engie Group, involved in activities related to the production, sale, transport and distribution of natural gas.

Skills developed

- The characteristics of natural gas,
- The different producers, boundary points and links with Elengy and Storengy,
- The pressure levels, the materials used, the positioning of the various structures on the GRTgaz network, the GRDF network and the residential customer meter,
- The laws the companies concerned must comply with, the risks and hazards, fire drills,
- Shut-off, sectionalizing and pre-expansion stations,
- Diagram of a delivery substation, safety features, maintenance and commissioning,
- Pistons, pipeline detection (third-party construction work),
- The Gas System Department (roles of Network Monitoring Centres and Dispatching), transmitting customers, suppliers, network managers and operators, different types of contracts,
- The principles of corrosion, passive protection, electrically protected installations,
- Storage in natural aquifers or in salt caverns,
- Physical parameters and pressure drops, compressor location,
- Basic laws of physics, different types of meters,
- Gas liquefaction, transport and regasification (LNG terminals).

Z207
OPERATIONS UNDER PRESSURE: LEVEL 1 OPERATOR

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 35 hours - 5 days

TARGET AUDIENCE:
Operators in the Hot Tapping sector.

PREREQUISITES:
Know how to carry out hot tapping on a gas transport network.

Objectives of the training course

- As part of a team, carry out drilling and plugging operations on gas transport pipelines under pressure,
- Identify the key documents impacting an operation under pressure,
- Install the 3 types of drilling machines on the HP gas network,
- Install or replace a plug on a hot tap (TOR or LOR) up to DN 300.

Skills developed

- Presentation of the electronic documents governing the Hot Tapping sector (Safety review, gas-related hazards, Safety Directives Handbook),
- Implementation of operating procedures on benches equipped with 3 machines (T101, TM360, TM760): (operating procedure for drilling, installing a plug in a TOR fitting and installing a plug in a LOR fitting),
- Review and feedback from the sector.

Z208

OPERATIONS UNDER PRESSURE: LEVEL 2 OPERATOR

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 35 hours - 5 days

TARGET AUDIENCE:

Operators in the Hot Tapping sector.

PREREQUISITES:

Trainees must have Hot Tapping level 1 certification or be currently enrolled in the level 1 training course.

Objectives of the training course

- As part of a team, carry out complex plug installation/removal operations, drilling operations with stopple cutters and larger than DN 300, and plugging operations on live gas pipelines to ensure network availability, while complying with the latest safety regulations.

Skills developed

- Use all types of machines for safe performance of operations under pressure,
- Install or replace a complex plug (piston guide, with coupon, larger than DN 300) on a LOR fitting, using any type of machine,
- Perform a drilling operation with the TM 1200,
- Perform a drilling operation using a stopple cutter,
- Perform a plugging operation.

Z209

OPERATIONS UNDER PRESSURE: LEVEL 1 OPERATOR - REFRESHER COURSE

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 16 hours - 2 days

TARGET AUDIENCE:

Operators in the Hot Tapping sector.

PREREQUISITES:

Trainees must be Level 1-certified and have their gas certification.

Objectives of the training course

- As part of a team, carry out drilling and plugging operations on gas transport pipelines under pressure.

Skills developed

- Review of workshop safety (lifting - handling - pressure hazards - SDS/Local Utilization Sheets for chemical products),
- Implementation of operating procedures on benches equipped with 3 machines (operating procedure for drilling, installing/removing a plug in a TOR fitting and installing/removing a plug in a LOR fitting,
- Implementation of an operation at the trainees' request, based on problems encountered in the field,
- Review and feedback from the sector.

Z210

OPERATIONS UNDER PRESSURE: SKILLS MAINTENANCE FOR LEVEL 2 OPERATORS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 14 hours - 2 days

TARGET AUDIENCE:

Operators in the Hot Tapping sector.

PREREQUISITES:

Employees must have Level 2 certification, or be in the process of obtaining Level 2 certification, and have gas certification.

Objectives of the training course

- As part of a team, carry out plugging operations, piston-guide plug installation/removal, and any other operations performed with the TM1200 machine on gas pipelines,
- Explain the organization of an operation under pressure associated with a connection,
- Adapt worksite practices to regulatory changes and feedback from the Hot Tapping sector,
- Understand all documents impacting the activity.

Skills developed

- Feedback from the Hot Tapping sector and feedback from the participants,
- Presentation of new equipment: TDW, Tecpesa, Teemans and associated technical documentation,
- Worksite organization: Gas Safety Directives Handbook (CPP),
- Connection engineering,
- Operating procedures and forms: Feedback on their use,
- Workshop: using machines based on issues identified during the feedback from participants.

Z211

FUNDAMENTALS AND ENVIRONMENT OF OPERATIONS UNDER PRESSURE

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 16 hours - 2 days

TARGET AUDIENCE:

All employees in charge of managing any part of gas transmission projects, as well as employees with responsibility for operating, controlling or intervening on the gas transmission network.

PREREQUISITES:

Have 6 to 12 months' experience in their job.

Objectives of the training course

- Identify the different actions to be performed as part of your duties, and help perform operations under pressure in compliance with regulations,
- Study and prepare for an operation under pressure,
- Produce the documents needed to prepare an operation under pressure,
- Draw up a schedule for the operation, taking into account the various constraints.

Skills developed

- Knowledge of the GESIP PSM BSEI guide,
- Feedback from the Hot Tapping sector accident analysis,
- Structure of Hot Tapping documents and their implementation (chronology, calculations, locations, etc.),
- Basic techniques: drilling, plugging, tapping, LOR fittings, plug installation/removal,
- Physical presentation of equipment and performance of a drilling operation in the workshop,
- Possible types of hot tapping operations: new connection, isolation of a pipe, repair of a defect, creation of accessory tap,
- Presentation of the Safety Directives Handbook (CPP) - worksite phasing.

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Z212 (P)

THIRD-PARTY CONSTRUCTION WORK LEVEL 1

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 21 hours - 3 days

TARGET AUDIENCE:

GRTgaz employees working in the network operations sector (Operations Division), employees of GRTgaz subcontractors.

PREREQUISITES:

No prerequisites

Objectives of the training course

- Transmit and comment on the technical recommendations set out in GRTgaz documents (GRTgaz standards - technical documents for infrastructure). Analyse and supervise worksites near GRTgaz infrastructure.

Skills developed

On completion of the course, trainees will be able to:

- List the documents associated with construction work near GRTgaz infrastructure,
- Apply implementation procedures on a worksite,
- Describe all the steps involved in worksite supervision,
- Complete the multiple choice test so that the manager can issue the certification.

Z219 (P)

WELDING SAFETY TECHNIQUES FOR CONNECTIONS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 16 hours - 2 days

TARGET AUDIENCE:

Any employee working as a foreperson on gas transmission network connection operations while the pipeline remains in service.

PREREQUISITES:

Employees must have gas certification issued by their unit.

Objectives of the training course

- Identify and prevent worksite phases presenting a risk of an air-gas mixture. Coordinate the implementation of a system to ensure the protection of workers during the welding phase.

Skills developed

- Gas-related hazards (pressure - ATEX),
- The Safety Directives Handbook (CPP) - the organization of a GRTgaz worksite,
- Phasing,
- Connection engineering and related directives,
- Construction work analysis forms and related directives,
- The different operating procedures for welder protection and related directives,
- Exercises using operating procedures in the field.

Z221

OPERATE AND MAINTAIN HIGH-PRESSURE GAS TRANSPORT INFRASTRUCTURE

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 70 hours - 10 days

TARGET AUDIENCE:

All employees in the network and compression departments of a gas plant.

PREREQUISITES:

Employees entering technical professions at the Operational Infrastructure Pilot, particularly in network and compression operations.

Objectives of the training course

- Operate and maintain most types of facilities, guaranteeing the safety of people and property,
- Understand the essential technical fundamentals of on-call duties,
- Identify the equipment used in gas substations and explain the operating principles,
- Operate and maintain gas transport infrastructure,
- Comply with the procedures and operating methods of GRTgaz, be aware of the risks specific to the activity and the risk prevention and safety rules.

Skills developed

- Network module:

- Network architecture,
- Equipment,
- Gas-related hazards,
- A gas worksite,
- Third-party work,
- Pressure regulating stations.

- Pressure regulation module:

- Pressure reducing regulators,
- Safety systems,
- Gas-related hazards,
- Maintenance of a pressure regulating station.

Z227

THE FUNDAMENTALS OF AN INTERCONNECTION

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 21 hours - 3 days

TARGET AUDIENCE:

Employees operating a network or compressor station with an interconnection station within their scope, including operations managers.

PREREQUISITES:

Completion of training course Z221 or equivalent technical level recognized by management.

Objectives of the training course

- As part of their operator-related activities, this training course will enable employees working on interconnection stations to prepare routine operating manoeuvres and carry out basic maintenance tasks.

Skills developed

On completion of the course, trainees will be able to:

- Identify the types of workshops at an interconnection site,
- Adapt an interconnection grid according to operating constraints,
- Perform routine maintenance tasks.

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Z229

CONNECTION ENGINEERING: LOCKOUT/TAGOUT TECHNIQUE WITH NEGATIVE PRESSURE AIRLOCK

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 21 hours - 3 days

TARGET AUDIENCE:

Employees operating a gas transport network in charge of lockout/tagout procedures during a connection operation.

PREREQUISITES:

- Hold or be in the process of obtaining CE certification.
- Understand the organization and distribution of activities on a connection worksite.
- Previous experience in worksite preparation and writing operating instructions.

Objectives of the training course

- Study the characteristics of a connection in order to perform a lockout/tagout procedure to ensure a negative pressure airlock using specialized techniques. In this capacity, participate in drafting work and manoeuvre instructions, specifying how they are to be implemented,
- During the operational phases, coordinate the teams concerned, participate in the deployment of these techniques and ensure their proper implementation,
- Explain the basic principles of physics to predict gas flow dynamics during connection operations,
- Identify the best method for ensuring safe lockout/tagout of infrastructure, based on analysis of the elevation data available,
- Write instructions detailing the lockout/tagout procedure,
- Coordinate the implementation of equipment used for the procedure (vacuum pump and vacuum vessels in particular).

Skills developed

Theory / Basic laws of physics:

- Concepts of pressure (absolute, relative, atmospheric, etc.),
- Concepts of physics: density, mass density, fluid statics,
- The venturi effect,
- Concepts of gas purge/depressurization,
- Issues caused by low pressure, with a basic theoretical approach (e.g. chimney effect, why/how),
- Operation and use of a liquid column pressure gauge,
- Calculation exercises involving delta P and relative elevation of the infrastructure,
- Calculation of the volume of water in a pipeline. Worksite organization based on the Gas Safety Directives Handbook (CPP),
- Roles and responsibilities of all the people working on a connection worksite,
- Case study with breakdown of tasks (intervention/operator/contractors) The Directives,
- Connection engineering,
- The key principles: The risks and hazards associated with these operations and related directives,
- Methodology for choosing isolation techniques and related directives,
- Piston installation and related directives.

Analysis and preparation of instructions on a worksite (case study):

- Risk analysis,
- Choice of lockout/tagout technique based on elevation data,
- Drafting instructions in sub-groups on different cases,
- Implementation of instructions drawn up for the infrastructure,
- Practical exercises on the training facility network.

Equipment:

- Presentation and use of equipment (vacuum pump, vacuum vessel).

TRAINING COURSES

Pressure regulation

Z141
Monitor setups
IN-PERSON LEARNING
20 hours - 3 days

Z178
Pressure regulation: refresher course, station troubleshooting
IN-PERSON LEARNING
24 hours - 3 days

B127
Francel - Emerson equipment
BLENDED*
25.5 hours - 3 days

B129
Gazfio pressure regulators
BLENDED*
25.5 hours - 4 days

1STZ
Operating the ancillary infrastructure of an LNG terminal: pressure reducing regulators
IN-PERSON LEARNING
7 hours - 1 day

1WTZ
Camflex II relief valve
IN-PERSON LEARNING
7 hours - 1 day

** The distance learning part is similar for both courses.*

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Z141

MONITOR SETUPS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 20 hours - 3 days

TARGET AUDIENCE:

Employees who work (operation/ maintenance) on gas transport infrastructure equipped with a monitor setup.

PREREQUISITES:

Understand the operating principles of conventional pressure-reducing valves (spring loaded and pilot-operated) and the operation of a conventional pressure regulating station (commissioning, bypass operation).

Objectives of the training course

- Operate and maintain pressure regulating stations equipped with monitor setups to ensure optimal operation while complying with the latest safety regulations,
- Understand the operating principles and specific features of monitor setups,
- Check the settings and operation of a pressure regulating station equipped with a monitor setup,
- Perform maintenance on these stations.

Skills developed

- Operation of pilot-operated pressure reducers and regulators,
- Principles of monitor setups,
- Commissioning a station,
- Maintenance on a station.

Z178

TROUBLESHOOTING ON PRESSURE REGULATING STATIONS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 24 hours - 3 days

TARGET AUDIENCE:

Area agents involved in the operation and maintenance of pressure regulating stations.

PREREQUISITES:

- At least five years' experience in the operation and maintenance of gas transport infrastructure.
- Have completed the entire training program in the field of gas pressure regulation and transport.

Objectives of the training course

- Operate and maintain pressure regulating stations equipped with monitor setups to ensure optimal operation while complying with the latest safety regulations,
- Diagnose a malfunction on a pressure regulating station,
- Troubleshoot a faulty device.

Skills developed

- Operating principles of regulators,
- Operating principles of safety systems,
- New equipment introduced by manufacturers,
- Feedback about equipment malfunctions on the network,
- Procedure for commissioning a conventional station, with emphasis on leak-tightness,
- Procedure for commissioning a monitor setup, with emphasis on leak-tightness,
- Troubleshooting and consequences of faults (using a manufacturer's diagram).

B127

FRANCEL - EMERSON PRESSURE REGULATORS

INSTRUCTIONAL METHOD:
In-person and distance learning

DURATION: 25.5 hours - 3 days

TARGET AUDIENCE:

Operating sector employees.

Employees in maintenance and operation at sites equipped with Francel-Emerson pressure regulating equipment

PREREQUISITES:

- Completion of the e-learning course "The fundamentals of pressure reduction and regulation in gas transport"
- Must be completed within 6 months of completing the course EFZ221

Objectives of the training course

- Operate and maintain HP gas regulating stations,
- Operate and maintain HP gas regulating stations equipped with Francel-Emerson equipment.

Skills developed

- Explain the physical principle of expansion,
- Choose the right pressure gauge for the pressure to be measured,
- Describe a closed regulation loop,
- Explain the role and operating principle of safety systems used in gas transport,
- Explain the operating principle of spring-loaded pressure reducing regulators,
- Explain the operating principle of pilot-operated pressure reducing regulators,
- Describe the architecture of a delivery substation,
- Describe the operating principles and the specific features of Francel-Emerson equipment on a pressure regulating station,
- Validate the compliance of equipment with the regulatory and technical requirements of the pressure regulating station,
- Perform maintenance on pressure regulating stations.

B129

GAZFIO PRESSURE REGULATORS

INSTRUCTIONAL METHOD:
In-person and distance learning

DURATION: 25.5 hours - 4 days

TARGET AUDIENCE:

- Operating sector employees.
- Employees in maintenance and operation at sites equipped with Gazfio pressure regulating equipment (compression station, engineering).

PREREQUISITES:

Completion of the e-learning course (The fundamentals of pressure reduction and regulation in gas transport)

Objectives of the training course

- Operate and maintain HP gas regulating stations,
- Operate and maintain HP gas regulating stations equipped with Gazfio equipment.

Skills developed

- Explain the physical principle of expansion,
- Choose the right pressure gauge for the pressure to be measured,
- Describe a closed regulation loop,
- Explain the role and operating principle of safety systems used in gas transport,
- Explain the operating principle of spring-loaded pressure reducing regulators,
- Explain the operating principle of pilot-operated pressure reducing regulators,
- Describe the architecture of a delivery substation,
- Describe the operating principles and the specific features of Gazfio equipment on a pressure regulating station,
- Validate the compliance of equipment with the regulatory and technical requirements of the pressure regulating station,
- Perform maintenance on pressure regulating stations.

1STZ

OPERATING THE ANCILLARY INFRASTRUCTURE OF AN LNG TERMINAL: PRESSURE REDUCING REGULATORS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: **7 hours - 1 day**

TARGET AUDIENCE:

- Elengy employees
- Operations division agents
- "Patrol" agents.

PREREQUISITES:

Knowledge of gas, 3 months' on-the-job experience.

Objectives of the training course

Intervene safely on pressure-reducing lines following a malfunction to ensure the availability of ancillary infrastructure at an LNG terminal.

Skills developed

- Name and identify the functions of the devices used in a pressure regulating station,
- Name the gas risks and hazards associated with operating a pressure regulating station,
- Diagnose the root cause of simple faults on a pressure regulating station.

1WTZ

CAMFLEX II RELIEF VALVE

INSTRUCTIONAL METHOD:
In-person learning

DURATION: **7 hours - 1 day**

TARGET AUDIENCE:

Peca employees involved in the operation and maintenance of Camflex II relief valves.

PREREQUISITES:

Employees involved or likely to be involved in the operation and maintenance of Camflex II relief valves

Objectives of the training course

In work situations, the employees must:

- Perform maintenance on Camflex II relief valves.

Skills developed

- Carry out commissioning and preventive and corrective maintenance on Camflex II relief valves.

TRAINING COURSES

Prevention & Safety

Z164

"Extinguishing gas fires" training course

IN-PERSON LEARNING

3.5 hours - 0.5 day

Z156

The French decree of February 20, 1992

IN-PERSON LEARNING

7 hours - 1 day

Z164

"EXTINGUISHING GAS FIRES" TRAINING COURSE*

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 3.5 hours - 1/2 day

TARGET AUDIENCE:

Operational agents who, as part of their duties, may deal with gas fires resulting from very small-diameter holes or small cracks at low pressures.

PREREQUISITES:

Employees must have gas certification issued by their unit.

Z156

THE FRENCH DECREE OF FEBRUARY 20, 1992

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 7 hours - 1 day

TARGET AUDIENCE:

Any employee required to draw up a risk prevention plan for GRTgaz facilities and infrastructure.

PREREQUISITES:

- Have a minimum amount of work experience in implementing and drafting a risk prevention plan (formerly Decree 92-158),
- Be aware of gas-related hazards and ATEX issues.

Objectives of the training course

- Extinguish a gas fire safely and protect yourself from the risks by wearing the appropriate personal protective equipment (branded, double-layered clothing, safety shoes, leather gloves and IRIS 2 helmets).

Skills developed

- The characteristics, principles and risks involved in natural gas. Select an extinguisher based on the type of fire and extinguish a gas fire on horizontal and vertical flanges and in an open trench.

** Trainees must bring appropriate personal protective equipment (branded clothing, double layers, safety shoes, leather gloves and IRIS 2 helmets)*

Objectives of the training course

Following this training course, agents will be able to:

- Identify operations requiring a risk prevention plan.
- Draw up a risk prevention plan that complies with local laws and is consistent with the scope of the work and the risks identified.
- Monitor implementation of the risk prevention plan.

Skills developed

On completion of the course, trainees will be able to:

Knowledge:

- Explain the terms used in local laws relating to risk prevention plans (French Labour Code - art. R237, former decree 92-158).
- Identify the roles and responsibilities of all the people involved in an operation covered by a risk prevention plan.
- Identify the people to be informed when drawing up a risk prevention plan.

Know-how:

- Carry out a joint preliminary inspection.
- Identify co-activity risks and associated preventive measures during a joint inspection.
- Draw up a risk prevention plan in compliance with local laws, as well as the corresponding information documents.
- Coordinate the monitoring of the risk prevention plan and identified risk control measures.

TRAINING COURSES

Gas metering and quality

Z111V2
Gas metering in operation

IN-PERSON LEARNING

17.5 hours - 3 days

Z113
Metrology applied to gas metering

IN-PERSON LEARNING

28 hours - 4 days

Z149
Gas quality control

IN-PERSON LEARNING

35 hours - 5 days

Z150
Supervision of the Grands Comptages & Aconcagua systems

IN-PERSON LEARNING

28 hours - 4 days

Z151
Supervision and PLC of Morgana systems

IN-PERSON LEARNING

28 hours - 4 days

Z111 V2

GAS METERING IN OPERATION

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 17.5 hours - 3 days

TARGET AUDIENCE:

New employees in low-voltage departments (remote data transmission) and metering data processing departments,

Employees of industrial sites working on gas metering equipment,

Subcontractors working on gas transport metering equipment.

PREREQUISITES:

All employees in the fields of metering and metrology.

Objectives of the training course

- Check the correct operation and maintenance of a metering unit on a delivery station,
- Situate metering operations and data processing within the company's activities,
- Explain the role and function of metering station equipment (volume conversion chain),
- Apply and comply with current rules and procedures,
- Perform first-level maintenance on metering station equipment.

Skills developed

- General understanding of metering,
- Physics concepts applied to conversion, exercises,
- Presentation of the main metering components (rotary pistons, turbine, ultrasound),
- Transducers and standards,
- Manage metering data (exercises, principles and calculation of estimates), on transducers or converters,
- A tour of a metering station, a Network Monitoring Centre and a metrology laboratory at a natural gas transmission site, accompanied by discussion and feedback,
- Future trends in metering.

Z113

METROLOGY APPLIED TO GAS METERING

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 28 hours - 4 days

TARGET AUDIENCE:

Employees of metrology teams involved in the selection, installation and troubleshooting of gas metering systems,

Employees concerned by Certified Verification Organizations (OVA),

RICE metrology technicians.

PREREQUISITES:

Basic knowledge of gas metering.

Objectives of the training course

- Operate, maintain and check metering systems,
- Perform calculations applied to gas energy metrology and metering,
- Explain and describe metrology operations, such as verification, calibration and uncertainty calculations,
- Incorporate quality, regulatory, safety and environmental considerations into your actions,
- Explain the purpose, role and operation of the main types of equipment, including their metrological characteristics,
- Consistently use correct terminology specific to metrology,
- Specify the selection criteria for the equipment to be used,
- Apply the laws of physics and calculation methods used in metering and metrology,
- Carry out commissioning, maintenance and checking operations on a metering chain under quality assurance,
- Understand the importance of requirements in terms of compliance with regulations and legislation in force, quality procedures, as well as safety, risk prevention and environmental protection policies,
- Comply with safety and environmental protection rules.

Skills developed

- Review exercises (physics, meters, transducers, standards),
- The metrological characteristics of equipment (meters, transducers, converters, working and reference standards),
- Tutorials, hands-on exercises to carry out an initial verification,
- Uncertainty calculations, method and application,
- Regulations (metrology, safety and environment), organization, principles,
- The role of the metrology department in a business,
- Hands-on activities on the training facilities

Z149

GAS QUALITY ANALYSIS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 35 hours - 5 days

TARGET AUDIENCE:

Employees responsible for operating, maintaining and checking equipment measuring the characteristics of natural gas.

PREREQUISITES:

Basic knowledge of gas metrology and metering.

Objectives of the training course

- Maintaining the performance of gas quality measurement and control systems: operator-level maintenance operations on equipment, in line with the Measurement process policy and current French regulations,
- Explain the regulatory context in relation to the measurement process policy,
- Describe and quantify the parameters that determine natural gas quality,
- Describe the operation and functions of gas quality control equipment (installed on site),
- Use correct domain-specific terminology,
- Perform operator-level maintenance of gas quality control equipment: major constituents, H2S and H2O, limit values,
- Carry out checks on a chromatograph supplying transactional data, in compliance with French regulations,
- Manage a fleet of gas cylinders for calibration and operational maintenance of devices,
- Understand and apply the quality system and comply with safety, environmental and confidentiality rules.

Skills developed

- Gas quality and specifications, the general regulatory context and the key principles governing the use of data in applications that determine the energy delivered,
- Definitions of the physical quantities used,
- Sampling principles - laboratory organization,
- Ability to read an analysis, a certificate,
- Other devices and technologies (hygrometers, etc.),
- Operation of installed chromatographs,
- The regulatory context for metrological work to be carried out on these devices, the link with the measurement process, and details of sales contracts and maintenance contracts,
- Operator-level use and maintenance of chromatographs and other equipment,
- Metrological work on chromatographs used to determine the Higher Heating Value and other equipment.

Z150

SUPERVISION OF THE GRANDS COMPTAGES & ACONCAGUA SYSTEMS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 28 hours - 4 days

TARGET AUDIENCE:

Employees responsible for operating and maintaining the Grands Comptages & Aconcagua systems.

PREREQUISITES:

Basic knowledge of gas metrology and measuring, and gas metering and chromatography.

Objectives of the training course

- Perform hardware and software maintenance operations on equipment, up to operator maintenance level,
- Describe the operation of the devices used by the Grand Comptage & Aconcagua Systems and specify the risks in the event of malfunction (human, technical, legal),
- Navigate in the supervision application of the Grands Comptages & Aconcagua Systems to view and interpret the data collected,
- Perform operator-level maintenance on both hardware and software, and interpret alarms on Grands Comptages & Aconcagua supervision systems and PLCs and related equipment.

Skills developed

- The role of the Grands Comptages & Aconcagua Systems,
- Definitions of the physical quantities used,
- The basic principles of measurement and data acquisition, with applications to the Grands Comptages & Aconcagua Systems,
- Communication and data transmission systems and applications for the Grands Comptages & Aconcagua Systems. Other related devices and technologies (calculators and analysers),
- Alarm interpretation,
- Fault simulation and troubleshooting.

Z151

SUPERVISION AND PLC OF MORGANA SYSTEMS

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 28 hours - 4 days

TARGET AUDIENCE:

Employees in charge of natural gas odorization systems and related inspections.

PREREQUISITES:

Basic knowledge in the following 3 areas:
- Metrology and measurement,
- Gas metering,
- Chromatography.

Objectives of the training course

- As part of your duties to maintain the performance of the Morgana System and natural gas odorization systems in general, you will carry out operator-level maintenance operations on both hardware and software,
- Identify the various devices used by the Morgana System, such as regulation loops and different control modes, explain how they operate, and describe the risks in the event of malfunction (human, technical, legal),
- Navigate in the Morgana supervision application,
- Perform maintenance on the hardware and software of the supervision and PLC of the Morgana systems and related equipment,
- Identify simulated faults discussed during practical exercises.

Skills developed

- Why odorize, how odorization criteria are determined, the regulations and how they apply to the measurement process,
- Definitions of the physical quantities.
- Basic principles of regulation and application to the Morgana system,
- Communication and data transmission systems and applications for the Morgana system,
- The role of the Varian CP-4900 PRO Micro Gas chromatograph,
- Other devices and technologies (tanks, pumps, etc.). . Metrological adjustments to be carried out on these devices, and details of sales contracts and maintenance contracts, safety and environmental rules,
- Navigation in the Morgana supervision application and how to change the settings,
- Maintenance operations according to procedures defined by the measurement process,
- Fault simulation and troubleshooting.

TRAINING COURSES

Gas-fired combined-cycle power plant

7AEZ
Interventions in gas zones
IN-PERSON LEARNING
14 hours - 2 days

7CEZ
Manoeuvres on a gas network
IN-PERSON LEARNING
17.5 hours - 3 days

7AEZ

INTERVENTIONS IN GAS ZONES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 14 hours - 2 days

TARGET AUDIENCE:

All personnel responsible for thermal engineering production on gas infrastructure.

PREREQUISITES:

Be an employee of the thermal engineering production division and operate or work on gas infrastructure.

Objectives of the training course

- Identify and assess gas-related hazards prior to any work on a facility or infrastructure in operation,
- Implement appropriate risk prevention and protection measures.

Skills developed

- Identify the risks and hazards associated with using natural gas,
- Learn how to react when dealing with a gas hazard.

7CEZ

MANOEUVRES ON A GAS NETWORK

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 17.5 hours - 3 days

TARGET AUDIENCE:

This training course is for EDF employees. This training course is designed for operators and maintenance personnel.

PREREQUISITES:

- Have completed the intervention in gas zones training course (code 7AEZ),
- Be ISM-ATEX level 0 certified. If a trainee does not meet the prerequisites, Energy Formation will promptly inform their manager. In this case, it is unlikely that the learning objectives outlined here will be achieved.

Objectives of the training course

- Carry out operating manoeuvres on infrastructure in service, in compliance with local procedures and instructions.

Skills developed

On completion of the course, trainees will be able to:

- Explain the operation of a pressure regulating station and its accessories,
- Draw up operating instructions for a manoeuvre on a gas network, taking into account gas and environmental risks,
- Carry out an operating manoeuvre in compliance with established operating procedures or instructions.

TRAINING COURSES

Storage

Z831
"Earthworks / Excavation permit" requirements on underground gas storage sites
IN-PERSON LEARNING
7 hours - 1 day

Z832
Working at heights + crane work on underground gas storage sites
IN-PERSON LEARNING
7 hours - 1 day

Z833
Risks in specific atmospheres and permits for underground gas storage sites
IN-PERSON LEARNING
7 hours - 1 day

Z834
Risk prevention plan and work authorizations on underground gas storage sites
IN-PERSON LEARNING
7 hours - 1 day

Z839
Storengy introductory course on risk prevention and safety
IN-PERSON LEARNING
28 hours - 3.5 days

DTRZ
Storengy ATEX refresher course
DISTANCE LEARNING
5.5 hours - 1 day

Z147
Safety Supervisor
IN-PERSON LEARNING
21 hours - 3 days

Z177V2
Issues with respect to construction work near Storengy facilities
IN-PERSON LEARNING
14 hours - 2 days

Z831

"EARTHWORKS / EXCAVATION PERMIT" REQUIREMENTS ON UNDERGROUND GAS STORAGE SITES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 7 hours - 1 day

TARGET AUDIENCE:

This training course is for Storengy technicians, operating teams and/or on-call agents.

PREREQUISITES:

No prerequisites.

Objectives of the training course

In work situations, the trainees are able to:

- Apply and enforce the directives when working near a Storengy network,
- Write a Marking and Staking Report.

Skills developed

On completion of the course, trainees will be able to:

- Identify the key points of local laws, particularly those relating to the Storengy directives,
- Apply the recommendations contained in the associated procedures and best practices guide,
- Adapt the implementation procedures of the excavation permit,
- Mark and stake out a network using a plan and a detection device,
- Draw up a staking and marking report in accordance with the document provided.

Z832

WORKING AT HEIGHTS + CRANE WORK ON UNDERGROUND GAS STORAGE SITES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 7 hours - 1 day

TARGET AUDIENCE:

This training course is for Storengy technicians, operating teams and maintenance teams who have to prepare lifting, crane work and work at height operations, including aerial work platforms.

PREREQUISITES:

No prerequisites.

Objectives of the training course

In work situations, the trainees are able to:

- Distinguish roles and responsibilities between Storengy and service providers,
- Prepare a worksite involving work at height or lifting,
- Critically review safety issues in this specific field.

Skills developed

On completion of the course, trainees will be able to:

- Understand French laws governing work at height and lifting.
- Identify the crane operator and "critical" lifting operations.
- Prepare and authorize a worksite involving work at height or lifting equipment, in accordance with the risk prevention and safety protocols.

Z833

RISKS IN SPECIFIC ATMOSPHERES AND PERMITS FOR UNDERGROUND GAS STORAGE SITES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 7 hours - 1 day

TARGET AUDIENCE:

This training course is for Storengy operating team technicians, who are required to prepare, draft and validate various permits and authorizations.

PREREQUISITES:

No prerequisites.

Objectives of the training course

In work situations, the trainees are able to:

- Apply the safety rules for gas-related hazards,
- Draw up a fire permit and a confined-space entry permit.

Skills developed

On completion of the course, trainees will be able to:

- Name the six gas-related hazards,
- Determine the safety instructions for equipment maintenance, interventions and operations,
- Draw up a fire permit,
- Draw up a confined-space entry permit.

Z834

RISK PREVENTION PLAN AND WORK AUTHORIZATIONS ON UNDERGROUND GAS STORAGE SITES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 7 hours - 1 day

TARGET AUDIENCE:

This training course is for Storengy operating team technicians, who are required to draw up Risk Prevention Plans and Work Authorizations.

PREREQUISITES:

No prerequisites.

Objectives of the training course

In work situations, the trainees are able to:

- Draw up a risk prevention plan in compliance with Storengy's safety policy in force at the time of the course and with local laws,
- Draw up a work permit in line with the Risk Prevention Plan, in compliance with Storengy's safety policy in force at the time of the course and with local laws.

Skills developed

On completion of the course, trainees will be able to:

- Understand Storengy's internal rules that impact the risk prevention plan and the work authorization,
- Explain the steps involved in advancing from a "request for work authorization" to "work authorization" as part of a Risk Prevention Plan,
- Draw up a risk prevention plan, as well as a work authorization, in agreement with the risk prevention and safety protocol.

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Nicolas Lelievre
Head of Transport Training,
Instructor-Developer.

Could you tell us about Er
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Z839

STORENGY INTRODUCTORY COURSE ON RISK PREVENTION AND SAFETY

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 28 hours - 3.5 days

TARGET AUDIENCE:

Storengy employees

PREREQUISITES:

No prerequisites.

Objectives of the training course

- Identify and assess risks (including gas-related hazards) in the workplace.
- Before any intervention, the employee is able to set up the appropriate risk prevention and protection measures and identify non-compliant situations.

Skills developed

On completion of the course, trainees will be able to:

- Name the gas-related hazards,
- Determine the safety instructions for operations,
- Participate in a lockout/tagout procedure.

DRTZ

STORENGY ATEX REFRESHER COURSE

INSTRUCTIONAL METHOD:
Distance learning

DURATION: 5.5 hours - 1 day

TARGET AUDIENCE:

Storengy employees.

PREREQUISITES:

- As this is a skills maintenance course, trainees are required to have undergone initial training in ATEX risks.
- This distance learning course requires the use of a computer running Teams and an Internet connection

Objectives of the training course

Be aware of ATEX risks when working on Storengy storage facilities and implement the best practices recommended in Storengy directives.

Skills developed

- Understand the ATEX regulations,
- Identify the characteristics and hazards related to gas,
- Understand the equipment encountered in ATEX zones,
- Identify ATEX zones according to the task being performed.

Z147

SAFETY SUPERVISOR

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 21 hours - 3 days

TARGET AUDIENCE:

Underground storage workers who monitor construction sites.

PREREQUISITES:

For this training program to be of benefit to participants, they must have experience in supervising construction work carried out by external contractors.

Objectives of the training course

In this training course, the participants will learn more about the technical, regulatory and legal issues involved. On completion of the course, trainees will be able to:

- Understand more about the risks associated with interference from activities when supervising worksites carried out by external contractors,
- Be more aware of the legal implications of your decisions.

Skills developed

Name two general risk prevention principles

- Identify the decision-making process for a work authorization,
- Differentiate between explosimeters and thermal conductivity detectors,
- Identify the points to check when taking delivery of fixed scaffolding,
- Differentiate between interference (decree 92) and co-activity (law 93),
- Name the risk prevention measures to be checked during operations involving earthworks and work in confined spaces,
- Identify the civil liabilities.

Z177V2

ISSUES WITH RESPECT TO CONSTRUCTION WORK NEAR STORENGY FACILITIES

INSTRUCTIONAL METHOD:
In-person learning

DURATION: 14 hours - 2 days

TARGET AUDIENCE:

All operating staff working at Storengy sites (operatives, supervisors and managers).

PREREQUISITES:

Trainees must have some knowledge of gas.

Objectives of the training course

Acquire the skills needed to comply with regulations governing work near Storengy infrastructure, with a constant concern for the safety of people, property and the environment.

Skills developed

On completion of the course, trainees will be able to:

- Identify and apply the key points contained in the French anti-damage regulations and internal procedures,
- Provide third parties with information on the presence of pipelines in the work area, in particular by locating and identifying pipeline infrastructure.

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We offer both catalogue and customised training courses, on our campus or at your site. Our instructors adapt to your needs and your business context.

Energy Formation is equipped with facilities identical to the infrastructure used by transport system operators:

- Delivery and sectionalizing stations, 1/2 shutoff
- Valves and actuators
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We have a laboratory where trainees get hands-on experience, co-designed and financed by four organizations: Energy Formation, GRTgaz, Elengy and Storengy.

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Energy Formation is Qualiopi certified. Moreover, upon completion of our training courses, participants are awarded a certificate of achievement.

Energy Formation

OUR TRAINING PACKAGE

TRANSPORT_ STORAGE

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