



**ETELÄ-KARJALAN JÄTEHUOLTO OY DRY DIGESTION FACILITY AND
BIOGAS UPGRADING AND FILLING STATION DESIGN AND TURN KEY-
CONTRACT**

**SAFETY DOCUMENT,
SAFETY REGULATIONS AND CODE OF PRACTICE**

25.05.2018



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1 CONSTRUCTION DETAILS AND ORGANISATION REGARDING THE CONSTRUCTION

1.1 Description of the construction

The subject of construction is a bio-waste and sludge dry digestion facility and biogas upgrading and filling station including civil construction, technical, machinery, piping, HVAC and electrical, automation and instrumentation works according to the plans specified in the list of documents and to a fully operational readiness at the area of Etelä-Karjalan Jätehuolto Oy waste management centre.

This is a Turnkey-contract, where the Turnkey-contractor acts as a principal designer, general contractor and project supervisor as established in law.

Kekkilä Oy composting facility operates next to the construction area.

1.2 Client and contractor

Etelä-Karjalan Jätehuolto Oy
Hulkonmäentie 130
54190 KONNUNSUO

Client, representative:

Sami Huotari, responsible for the area
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1.3 Safety coordinator

The safety coordinator for the project is:

Vesa Urpalainen
Project Manager, Area Manager
Real Estate Project Management
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2 SAFETY DOCUMENT

The safety document details and presents the danger and hazard factors due to the construction project's characteristics, conditions and nature as well as information related to occupational health and safety related to the construction project. The safety document is the document on occupational safety for the preparation and planning of a construction project as required in points 2 and 3 of § 8 of the Government Decree on the Safety of Construction Work (205/2009). This safety document also includes the client's safety regulations and code of practice for the contract.

2.1 Occupational safety regulations

In a construction project, the parties of the construction project must together and each for their part ensure that no danger arises from the work to those working at the construction site or other persons in the zone affected by the work.

In a construction project, the parties of the construction project must know the Occupational Safety and Health Act and government regulations and decrees issued under this, at minimum to the extent they are applicable to the construction site in question.

Occupational safety regulations in effect are specified, among other places, on the Occupational Health and Safety Inspectorate's websites. The Government Decree on the Safety of Construction Work (26.3.2009/205) is available in the database of translations of Finnish acts and decrees (Finlex).

2.2 Client's obligations

Client means a person or organisation initiating a construction project that directs and supervises a construction project. If a client has not been named for the construction project, the relevant obligations fall on the purchaser.

When a construction project is designed and prepared, the client must ensure that the work can be carried out safely and without causing any harm to employees' health.

The client must appoint a competent safety coordinator, who acts as the client's responsible representative and manages the client's obligations.



2.3 Safety coordinator's obligations

The safety coordinator is responsible for the measures concerning safety and health in the construction project. The client must ensure that the safety coordinator possesses sufficient competence, has appropriate powers and meets all other requirements so that he/she is able to manage the construction project in question. The client must ensure that the safety coordinator takes care of the tasks assigned to him/her.

The safety coordinator must cooperate with the project supervisor in the planning concerning construction safety and in the carrying out of the construction work.

The safety coordinator shall be notified of any changes and exceptions to the information provided in this safety document.

2.4 Project supervisor's obligations

Project supervisor means the main contractor appointed by the client, or an employer using the main authority, or where there is no such employer, the client.

The project supervisor's responsible and contact persons are named no later than at the contract negotiation and are recorded in the project contract.

Each project party shall give notice of their responsible persons for an updated list. Persons responsible for safety in subcontractors shall be approved by the project supervisor.

The project supervisor shall ensure that any person present at the construction site has the appropriate permits and competence and the necessary practical experience for the task at hand.

The client's occupational safety organisation may inspect conditions at the construction site, intervene with possible discrepancies and suspend work if necessary.

According to the Government Decree on the Safety of Construction Work (26.3.2009/205), the project supervisor is also responsible for the following:

- Introducing and guiding employees, so they are sufficiently familiar with safe working practices and that they are familiar with the hazards and risks of the construction site in question and the measures required for eliminating them.



- Before the start of the construction work, giving the appropriate occupational safety and health authority and client a prior notice on a construction site planned to exist and publishing
- The prior notice clearly on display at the construction site and keeping it up to date, where necessary.
- Before the start of the construction work, drawing up written occupational safety and health plans and keeping these up to date.
- Analysing and identifying the hazards and risks arising from the general work tasks, working conditions and the work environment at the site.
- Compiling a written plan for using the construction site's area (site area plan), which accounts for the hazards and risks related to the site area's general organisation, implementation and taking into use and turns special attention to removing and mitigating hazard and health risks.
- Seeing to the general management of the construction site regarding safety and health, arrangements for cooperation and dissemination of information between the parties, coordination of functions and general order and tidiness of the construction site.
- Appointing a competent responsible person for the construction site to manage these tasks and, when necessary, a substitute.
- Ensuring that the project supervisor knows which workers and self-employed workers are working at the construction site and that any information needed for orientation purposes is available.

The project supervisor must also consider the information contained in this safety document and make the client the necessary proposals for changes in the safety document as the work progresses so that the necessary safety measures are carried out.

The project supervisor's possible subcontractors shall follow the project supervisor's guidance on work organisation, take part in the contractor's organised training and construction site's safety instruction.

The project supervisor is responsible for the site's safety until the handover inspection and transfer to the client.

In a shared contract, the main contractor is responsible for the project supervisor's occupational safety tasks and obligations. The main contractor is responsible for coordinating work by various contractors, so that concurrent works does not create safety hazards. Before they start work, the main contractor shall introduce the construction site's safety instructions to each own employee and to the subcontractor's employees or external contractor's employees.



3 CONSTRUCTION PROJECT'S HAZARDS AND RISKS

3.1 Clearing obligation

In case of the specific construction project it's important, that the waste centres activities are not disturbed more than planned and work does not need to be suspended. Work reconciliation is important, so the waste centres and composting facility's continued operation is ensured.

The purchaser shall provide an induction for any person working at the site. Participation in such inductions is mandatory. Induction is conducted in Finnish.

Before construction work is initiated, the parties must learn the waste centre's area characteristics and determine possible hazards and risks.

The project supervisor shall ensure that suitable implementation plans have been compiled before each relevant work stage.

3.2 Hazards and risks

The hazards of this construction site are:

- Excavation works
- Hot works
- Work near power cables
- Lifting works
- Demolition works
- Hazardous substances, apparatus and equipment
- Working on scaffolding and elevated surfaces
- Commissioning of the process

3.3 Construction site area and surrounding environment

The contracted work shall take place in the existing waste centre and adjacent composting facility area. The construction site shall be kept orderly and clean. Waste and other residue collected at the work area shall be immediately transported to the designated areas. Waste management and material handling at the construction site is organised by the project supervisor.



Construction materials are stored according to their deliverer's storage instructions. Hazardous substances (including chemicals, oils) are stored with special attention to each substance's storage instructions and regulations.

The construction site area is clearly marked and access by unauthorised persons is prevented by prohibiting signs and barriers where needed.

4 INDUSTRIAL AND OTHER ACTIVITY RELATED TO THE CONSTRUCTION SITE

There is no other industrial activity at the construction site limited for the use by the contractor during the construction.

The contractor shall however pay attention to the other operators present at the facility's area and will cooperate to combine work, movement etc. The contractor shall ensure that any operators present at the facility's area are kept informed during the contraction.

5 SAFETY REGULATIONS

The objective is to avoid any serious incidents. All incidents are investigated and reported to the client, based on the 0-incident principle.

5.1 Construction site safety plan

The principle contents of the construction site include:

- The construction site's site area plan (including electricity) and related plans
- Excavation and foundation plans
- Construction site's movement plan
- Fire management plan (hot work)
- Scaffolding plans
- Lifting works plans

Other plans mentioned in technical or contract documents.



5.2 Contractor's obligations and transfer of obligations

Subcontractors shall follow the main contractor's guidance on work organisation, take part in the main contractor's organised construction site's safety instruction.

If a subcontractor delivers own lifting equipment and this requires a vertical inspection, the subcontractor shall conduct the inspection and deliver a copy of the inspection log and information about authorised users to the project supervisor.

5.3 Occupational safety organisation and safety inspections

The main contractor shall nominate a competent occupational safety supervisor and designate an alternate.

The main contractor is responsible for construction site organisation and safety monitoring. Weekly inspections are conducted as safety measurements (TR measurement). If the construction site's two consecutive safety measurements are <80 or a single measurement is <70, an immediate occupational safety meeting is organised by the occupational safety manager. This meeting shall discuss corrective and preventive actions for avoiding future underperformance. The meeting includes the safety coordinator, occupational safety manager, principal designer (if needed or related to design) and management of principal subcontractors. The target value for the construction site's safety measurement level is >90.

Limit values are observed once the construction site is permanent (evaluated at 1 month after initiation). The main contractor is responsible for deployment and weekly inspections of scaffolding, bridges and protective installations.

5.4 Permits and work subject to a license

Each person working at the construction site shall always wear a visible picture ID with the person's individual tax identifier. The ID must show, if the person is an employee or self-employed. Employee's ID includes the employer's name.

In addition to movement authorisations and picture ID-s, the main contractor shall ensure, that each person working at the construction site holds the appropriate permits and practical experience for electrical, welding, hot works etc.



5.5 General protection

Drinking alcohol during working hours and working or arriving intoxicated is absolutely forbidden. The main contractor ensures that any intoxicated person is immediately removed from the construction site.

Working alone is to be avoided.

Each person working at the construction site is responsible for observing occupational safety matters (general care obligation). Deficiency's causing immediate harm shall be remedied immediately and the responsible person for work safety shall be notified.

If the deficiency can't be immediately remedied, the area shall be protected as possible and the responsible person for work safety shall be notified. The person responsible for occupational safety at the construction site shall ensure, that any work safety deficiencies are remedied and fixed without delay.

6 CODE OF PRACTICE

6.1 Working areas

Working areas shall be separated from other activities at the waste centre and composting facility.

6.2 Storage of materials

Construction supplies and materials shall be stored at the construction site in locations specified in the site area plan or indoors and covered sufficiently to avoid possible damage.

Gas and liquid gas bottles shall not be stored indoors and their storage, as well as the storage of flammable liquids, shall be previously agreed with the occupational safety manager.

6.3 Scaffolding and work equipment

The project supervisor is responsible for scaffolding design, appropriateness and durability. This also applies for scaffolding done for other contractors. Should authorities so demand, e.g. the contractor shall compile structural drawings and obtain approvals from inspecting authorities.



The main contractor is responsible for the deployment of work and safety devices at the construction site according to building & safety requirements. Scaffolding shall not be used without a scaffolding card confirming deployment inspection. Work equipment, machinery and other construction tools shall be purposeful and in conformance to occupational safety regulations. Equipment shall, if required, be equipped with auxiliary equipment to prevent damaging the tools used, parts of the construction or the environment.

6.4 Digging and filling works

In case of digging work can create an accident hazard upon collapse, written digging work plans shall be compiled in accordance with applicable legislation and contract documentation and digging work shall be performed according to plans.

Digging and filling works plans shall be taken into account soil quality, digging depth, collapsing hazard, ramp angle and load as well as any hazards caused by water, traffic or weather conditions as well as the requirements of equipment used. Special attention shall be turned to protecting nearby traffic and preventing possible collapses. Digging works plans are approved by the competent designer.

Before starting any digging work, the contractor shall determine the location of pipes, cables, structures and devices below the dig site and evaluate their effects on the work at hand.

Working areas, digs and edges of filled areas shall be clearly marked with fences, so that access by unauthorized persons (e.g. the facility's staff) is prevented.

6.5 Formwork

As various forms are used that require the use of lifting equipment due to their weight or size, a written plan is required for different stages of formwork. The plan shall at least include safety controls regarding the handling of forms, warehousing, lifting, supports, stability during work and mitigating falling hazards. The plan should take into account the manufacturer's instructions.

Before any installation or demolition work, it shall be ensured, that form installers or dismantlers are aware of the relevant form's work methods and possess appropriate skill for finishing



the task safely. Appropriate skills are evaluated with individual training and guidance appropriate for the used form and work method.

6.6 Working alone

In principle, working alone is not permitted (especially outside regular working hours). Management shall always be notified, if working alone is required. Work pairs are essential especially for lifts, excavation/pools. For digs, at least one other worker shall always have a visual overview of a person working at the bottom of a dig. No excess material is permitted in narrow shafts or pools.

6.7 Construction site's safety information

In addition to the main contractor, all other contractors shall keep passageways, pathways, bridges, hallways and floors in a condition that does not create a falling, slipping or tripping hazard.

The construction site shall be kept organised, clean and fenced off as needed. Waste and other residue collected at the work area shall be immediately transported to the designated areas.

Each contractor is responsible for maintaining the cleanliness of the contractor's own working area and organisation so, that the main contractor can, without obstacles, manage general cleaning by vacuuming or other appropriate methods. Each contractor shall clean and transport construction and packaging waste to the main contractor's designated location daily. The main contractor shall ensure their regular removal from the construction site.

6.8 Asbestos demolition

There are no asbestos demolition works at the construction site.

6.9 Lifts

The users of lift devices are responsible for their maintenance.

Regarding a lifting platform, the placement of lift devices creates a hazard, if the lifting devices support legs are placed too close to an edge (movement while lifting) or the support leg footing is uneven, hence causing a possible fall. This can lead to e.g. personal injuries. Lifting platforms shall be inspected before any lifts.



Lifting devices shall pass commissioning inspections and relevant documentation shall be kept. The contractor is responsible for relevant inspections.

A separate lifting works plan is required for lifting works. Lifting elements, uneven load distribution and the lifting method used must be taken into consideration.

6.10 Protection against falls

All the shafts and other holes resulting from construction works, to which persons or items could fall, must be protected by hatches and/or railings. Equipment against falls or railings shall be arranged while planning the work, if the work includes any falling hazards. If such equipment or constructions can't be used due to the nature of the work, a personal protection harness and ropes shall be used for the prevention of falls.

6.11 Ladders

Ladders may not be used as working platforms. Ladders may only be used as temporary means of access, for fastening and detachment of lifting aids and for other respective works of short-term and one-time nature. The maximum permitted height for leaning ladders is six meters.

Step ladders can only be used as a working platform instead of scaffolding, if scaffolding can't be reasonably used due to the short-term nature of the work or other similar reason. In such situations, a step ladder can be used as a working platform, if the employee stands at a height of less than one meter.

6.12 Chemicals and exposure to chemicals

The project supervisor is responsible for keeping a list of chemicals and the chemical safety data sheets accessible to the employees and the client's representatives at the construction site. If requested, these shall be delivered to the client and the client's designated representative.

Care must be taken when handling paint, oils, flammable fluids, bitumen solutions and solvents. Flammable fluids and other chemicals shall be stored in a locked storage area and sealed containers.

Gas and liquid gas containers shall not be stored indoors and their storage, as well as the storage of flammable liquids, shall be previously agreed with the occupational safety manager designated by the project supervisor. Releasing such substances to the ground or water is prohibited. The contractor is obliged to maintain documentation on used oil.



Work involving chemicals shall be planned separately according to the work plan. Employees shall use relevant personal protective equipment when transporting or unloading chemicals. In case of a chemical leak, the dangerous area shall be isolated, and leaks are eliminated with personal protective equipment.

6.13 Environmental safety

Oil spillages etc. shall be prevented while tanking, installation, use and maintenance of any equipment. Potential oil disasters are prevented by providing absorbent materials for initial recovery efforts.

6.14 Fire safety

The contractor shall pay special attention to fire safety, operate in a manner preventing fire hazards and follow the construction site's and authorities fire safety guidance.

Employees conducting hot works must have passed a hot works training and possess a valid hot work card. A hot work plan shall be compiled, and the employee must obtain a written hot works permit before starting hot works. The permit is granted by a person designated in the hot works plan, who has sufficient knowledge of the related fire hazards and knows the site. The contractor shall compile a list of all employees with valid hot works cards and delivers this to the client's supervisor.

Hot works means any work conducted in the presence of sparking, flames or other heat that creates an explosion or fire hazard. Hot works include gas and arc welding, burn or arc cutting, disc cutting, metal sanding and any work involving a gas burner, other open flame or a hot air blower.

The contractor shall ensure work time anti-fire impregnation, fire safety and the construction site's general fire monitoring. The contractor is responsible for workplace fire monitoring and follow-up monitoring for a period of no less than 2 hours after work is finished.

Each contractor is obliged to pay special attention to fire safety and shall operate in own responsibility area so, that fire hazards are prevented. A contractor responsible for a fire hazard is responsible for any damages caused to the client, purchaser and/or third person.



6.15 Personal protective equipment

Contractors shall provide a sufficient amount of personal protective equipment at the construction site and shall ensure the use of all designated personal protective equipment. Appropriate protection shall be used for any work involving eye, hearing or falling hazards.

Helmets, eye protection, high visibility vests and safety boots are worn always at the construction site. Eye protection can be safety spectacles, helmet visor or glasses with plastic side protection.

Refusal to use personal protective equipment leads to the person's removal from the construction site.

6.16 Electrical safety

Work planning shall account for preventing hazards to employees near electrical lines and cables and preventing damage to electrical lines and cables. If work needs to be conducted near non-insulated wires, indirect and direct electrical hazards shall be prevented by protective structures or other measures.

Surge suppressors shall be installed in the primary substation as well as process and construction electricity stations. Electrical room's doors shall be locked always if no installation work is ongoing.

Electrical equipment can be dismantled only once a professional electrician has powered them down. The lack of power shall be verified before starting work. Installations shall be done by employees with relevant electrical work training and professional skills. All installations and connections shall be tested before powering up.

All electrical installations must comply with electrical safety regulations. Powered up hardware or hardware parts shall be clearly marked and fitted with protections against direct access.

Work plans and implementations shall account for eliminating the possibility of starting a device or tool by any other means than from the intended control device.

6.17 Information



The main contractor shall maintain updated list of persons responsible for safety at the construction site. The main contractor shall keep a log of occupational safety observations, 'near-miss' situations etc. and shall report these to the purchaser in a monthly report. Serious incidents shall be communicated to the construction site's management, work site's responsible manager, the purchaser's supervisor, safety coordinator and relevant authorities if so required.

6.18 Sanctions

The construction site's safety regulations, code of practice and general safety and protection guidance shall be followed unconditionally. The purchaser can issue sanction fines for occupational safety violations and regulations violations.

The sanctions are in the following order:

1. Verbal warning.
2. Written warning.
3. Suspension from the construction site for a specified time.
4. Suspension from the construction site permanently.

Temporary suspension after a written warning can be decided by the project supervisor alone or with the purchaser. Permanent suspension is decided together with the project supervisor and purchaser. Temporary and permanent suspension is based on repetitive warnings or serious neglect of regulations. The project supervisor shall record written warnings in the construction site log. Reprimands issued by the occupational safety and health authority are also considered as warnings.