



Project:

# Østfold Avfallssortering IKS - MRF

Title:

## APPENDIX D3

## SHE PLAN

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## 1 INTRODUCTION

The purpose of the SHE Plan is to define the Safety, Health and Environmental plan to be implemented in order to maintain a safe and healthy work environment during construction activities on site.

To ensure that safety, health and working environment at site is considered during the course of execution, the following shall be safeguarded (but not limited to):

Planning and project preparation:

- Architectural, technical or organizational choices made
- Identify risk factors for the work to be carried out
- Sufficient time for planning and execution of work operations

Execution of the works (construction):

- Coordinate and follow-up

## 2 TARGETS

Østfold Avfallssortering IKS has set the following targets linked to the completion of the project:

- The plant shall be safe for employees, contracted resources, transporter personnel and visitors throughout the process from start to the completion of civil works or erection of the plant
- No accidents shall occur that cause injury or harm to workers or the public as a result of project activities
- SHE shall be the first point of the agenda at project meetings
- The plant shall meet all requirements stipulated by the authorities during construction and no orders should be necessary from the inspection authorities
- Accidents and near accidents related to SHE shall be reported in writing to Client

## 3 UPDATING AND DISTRIBUTION

The plan will be updated throughout the construction period by the SHE Coordinator for the execution phase.

The plan will be distributed to all internal project participants, parties to the Contract, on the site and the latest revision will be posted on the SHE notice board on site.

## 4 PROJECT ORGANISATION

The project is organised as shown in appendix D1, PA Manual

## 5 TIMESCHEDULE

The projects time schedule is shown in Appendix C1.

A detailed schedule shall be drafted by Contractor for its own work prior to start-up. The schedule shall describe when and where each operation is to be performed. Client will draft a joint plan covering coordination of the work of the various building contractors.

## 6 RISK ANALYSIS – SPECIFIC MEASURES

To follow are brief details of the activities and events deemed to represent the highest risk. A list of measures for the work that cannot be planned or allowed for in the project design is provided.

Contractor is expected to implement relevant preventive measures, and perform systematic health, environmental and safety activities.

Wearing of ID card, helmets, safety footwear and hi-visibility work clothing is mandatory on the site.

Contractor must train and provide appropriate certificates upon arrival on site for personnel designated to operate special equipment and machinery that require special training. Copy of certificates must be accessible for the SHE Coordinator on site.

Client can evict any worker after 3<sup>rd</sup> warning for breach of the safety rules applicable to site and which lead to personal non-conformity.

The described measures states the risks after implementation of the measurement.

The following risk analysis shall be done by Contractor:

- Working near high voltage power lines and low voltage installations
- Work at locations with passing traffic (roads, footpaths)
- Work which can involve people being injured by falling or by falling objects
- Work which involves taking down load-bearing structures
- Work assembling and disassembling heavy equipment
- Work which implies a risk of hazardous exposure to dust, gas, noise or vibrations
- Work which exposes workers to chemical or biological substances that require health checks
- Work that involves fire and explosion risk
- Trial runs, testing and commissioning

## 6.1 Working near high voltage power lines and low voltage installations

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
Work near high voltage cable.	Personal injury as a result of exposure to electrical current/voltage (current discharge and arcing).	Labelling and careful exposure of cable (Contractor). Approval from Operations for temporary disconnection of current. Determine route of high voltage. Perform SWA for work near high voltage cables.
Work near high voltage pylon/ lines.	Serious personal injury.	Perform Safe Work Analysis (SWA) for work near high voltage lines (proximity agreement).
Excavation work especially in area around existing structures/ buildings. - electricity /water/sewer	Personal injury as a result of exposure to electrical current/voltage (current discharge and arcing).	Contact local company for exact details and follow their instructions for safe working. .
Use of interim electricity supply.	Personal injury as a result of exposure to electrical current/voltage (current discharge and arcing).	Check location and screening of prov. electrical cabinet (contractor). Check splice lines and electrical tools during safety and inspection rounds (Execution Phase Coordinator(Client)).

## 6.2 Work at locations with passing traffic (roads, footprints)

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
Traffic on site  Constricted building site	Personal injury from being run over or collision.  Vehicles will have low speed in the area.	Set up barriers (prime contractor). Provide the necessary signing (prime contractor). Hi-vis work clothes mandatory for outdoor work (contractor) Be prepared for snow and ice (salting/ clearing) <b><u>Drafting of rigging plan (prime contractor and Client) including:</u></b> - Asses need for fences/barriers. - Appropriate location of car parking and barracks. - Provision of lighting

## 6.3 Work which can involve people being injured by falling or by falling objects

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
Outdoor work will be performed at height: e.g. erecting steel structures, wall facades, roof covering, insulation etc.	Personal injury from falling from height.  High working heights mean that the consequences are deemed to be serious (death).	Perform SWA for special work operations (contractor).  Regular inspections and safety rounds.  Check that contractor has special HSE routines for working at heights, particularly

Indoor work will be performed at height for installation of sorting machines, conveyor belts, gangways etc.		the special requirements in chap. 17 of the Regulation on the Execution of Work.
Installation of ducting, ventilation and electrical equipment, surface treatment of walls, ceilings etc.	Personal injury (crushing, shock and impact) as a result of falling objects (tools, equipment etc.).	<p>Coordination of work to prevent concurrent work on several levels in the same area.</p> <p>Regular inspections and safety rounds</p> <p>Check that contractor has special HSE routines and applies them for working at heights, particularly the special requirements in chap. 17 of the Regulation on the Execution of Work.</p> <p>Mandatory wearing of protective gear.</p>

#### 6.4 Work assembling and disassembling heavy equipment

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
<p><b>Hoisting equipment into position</b></p> <p>Includes lifting and installation of:</p> <ul style="list-style-type: none"> <li>- Cavity deck elements</li> <li>- Steel structures. Walls/ceilings</li> <li>- Sorting machines, gangways, conveyor belts etc.</li> <li>- Strong winds</li> </ul>	<p><b>Serious</b> personal injury (crushing, shock and/or impact) from equipment that goes out of control.</p> <p><b>Minor</b> personal injury.</p>	<ul style="list-style-type: none"> <li>- Perform SWA before installing equipment (Contractor).</li> <li>- Coordination of work and sealing off areas for lifting operations over areas where other work is taking place.</li> <li>- Check that the contractor has HSE routines in place for working with lifting equipment and mobile lifting equipment.</li> <li>- Progress scheduling and coordination.</li> </ul> <p>Avoid stress situations.</p>

#### 6.5 Work which implies a risk of hazardous exposure to dust, gas, noise or vibrations

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
Dust and gas generated by indoor working	Nausea, temporary discomfort.	Use ventilation during the installation of process equipment
Noise will be linked to the use of equipment in general	Noise injuries.	Mandatory wearing of protective gear

## 6.6 Work that involves fire and explosion risk

<b>Scope</b>	<b>Undesirable events</b>	<b>Proposed measures</b>
Hot work will be involved in the installation of machinery, building structures, roof covering, conveyor belts, gangways, pipes, ducts, grilles and cable trays etc.	Burns.	Evacuation routes  Manual extinguishing equipment  Emergency lighting in admin. part  Tidiness

## 6.7 Missing information and checking SHE measures

<b>Scope</b>	<b>Undesirable events</b>	<b>Proposed measures</b>
Entire site	Unannounced arrival on site  Lack of training/awareness of safety routines/ requirements on the site	<ul style="list-style-type: none"> <li>• SHE information meeting before access to site</li> <li>• Workers must have ID cards before access to site is given</li> <li>• Client shall have access to details on pay and accommodation provision (inspection obligation). Applies to all companies on the site</li> <li>• Max. 2 levels under contract partner</li> </ul>

## 6.8 Use of foreign workers

<b>Scope</b>	<b>Undesirable events</b>	<b>Proposed measures</b>
Workers on the site	No ID card.  Poor attitude in terms of safety and risk analysis for various work operations  Poor awareness of Norwegian laws on working environment	<ul style="list-style-type: none"> <li>• Employers shall ensure that workers have an HSE card before being admitted to the site. Alternative, temporary valid documentation can be used until formal ID card is issued</li> <li>• Informed of SHE requirements for the site. Regular checks performed</li> <li>• Client shall have access to details on pay and accommodation provision (inspection obligation). To be included in tender documentation and applies to all companies on the site</li> </ul>

## 6.9 Requirements for proof of training, know-how and skills for use of equipment

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
On the site and rigging area	Personal injuries, damage to machinery and equipment	<ul style="list-style-type: none"> <li>Contractors on the site shall provide copies of certificates and other proof of training to the Client upon request</li> <li>Contractors shall also ensure that the worker has the skills necessary for operating equipment and machinery safely</li> </ul>

## 6.10 Trial runs, testing and commissioning

<i>Scope</i>	<i>Undesirable events</i>	<i>Proposed measures</i>
Entire site	Fire  Personnel injuries	Devise a plan and instruction for trial runs, testing and commissioning



## 7 CHANGE AND DEVIATION HANDLING

'Change' is defined in this context as revisions to plans, constructions, schedule and safety measures on electrical installations that can affect health, safety and the working environment during the construction period. Changes must be reported to the SHE Coordinator, who will inform the Client and the contractors affected.

The SHE Coordinator will see to that risk linked to the change has been evaluated, and that the necessary updates have been made to the SHE plan, progress plan and safety measures.

Reporting and follow-up of changes shall be in writing, including details of who is responsible for follow-up and what measures are to be taken. Deviation with agreed execution, undesirable events and accidents shall be dealt with in the Contractor's standard system for dealing with deviations. Client must be notified immediately in the event of any serious incident and must always have a copy of the deviation reports.