

Project:

Østfold Avfallssortering IKS - MRF

Title:

APPENDIX D2

QUALITY PLAN



C1		For Contract			
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1 QUALITY MANAGEMENT

1.1 Quality and Quality Plan

Quality is dependent on human factors as expertise, communication, attitudes, etc. All individuals involved are responsible for the quality of their own work and humans are equally important for achieving quality goals as systems and programs.

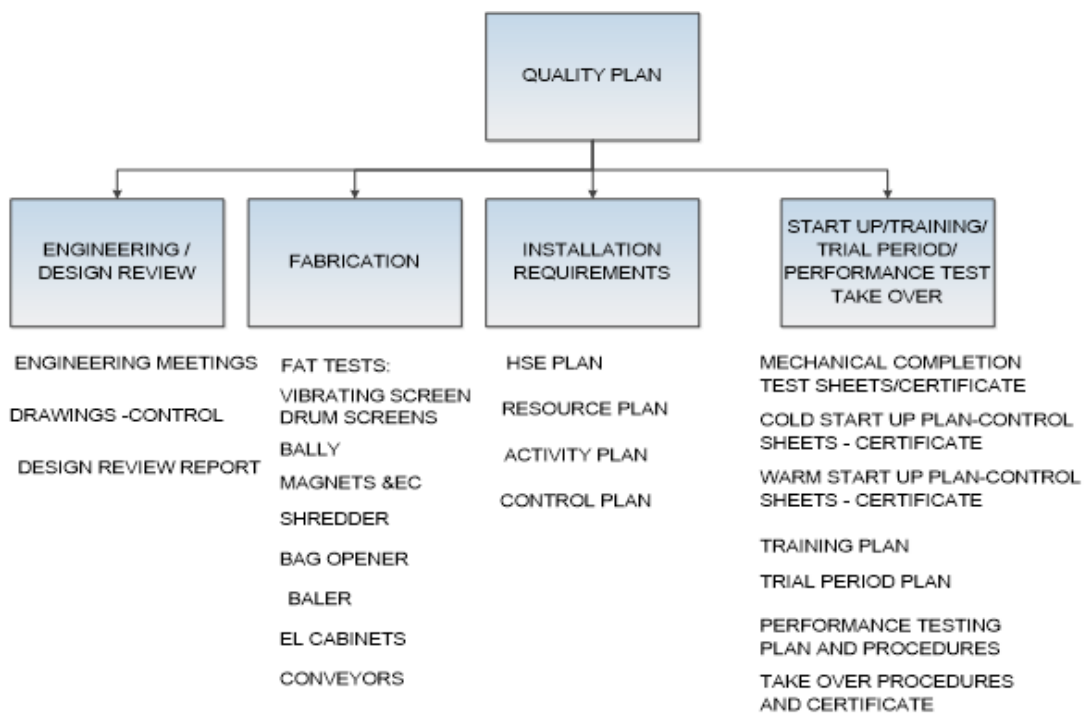
Quality is defined as fulfilment of requirements.

Compliance with the Quality Plan will contribute to the fulfilment of the customer's requirements:

- ✓ On final delivery
- ✓ On progress
- ✓ On cost

1.2 Quality Plan for the main project and process requirements

The project participants shall prepare a quality plan for their own contract work. This must be based on the guidelines in ISO 10005:2018 Quality management – Guidelines for quality plans.



As a minimum The Quality Plan shall contain the following information:

- Organising of the team for implementation of the contract work
- Staffing chosen for the project/sub-project implementation of the contact work

- Planning, control (follow up) and reporting on:
 - Quality (i.e. control activities necessary to meet the contract requirements)
 - Progress
 - Cost
- Responsibility for the control activities
- Deviation reporting and management
- Change management
- Risk management
- Reference to the contractual, or other, requirements the activity is based on
- Reference to any rules or guidelines to be pursued during implementation of the activity
- Reference to documentation that can confirm the activity's compliance of requirements and procedures
- Systems and tools used for the implementation of the contract work

2 DOCUMENTS AND DATA TO BE USED IN THE PROJECT

Documents and data to be used in the project includes i.e.:

- Laws, regulations, public regulations and Norwegian standards
- Governing and controlling documentation for the project
- Project documents established for the project
- Governing and controlling documents in the project participants' organisation
- Agreement / Contract Documents

3 RISK/UNCERTAINTY MANAGEMENT IN THE PROJECT

Risk/uncertainty analysis shall be conducted for the project risks/threats to be known, and necessary measures are to be implemented to reduce or eliminate the risks/threats. All project participants should report risks/uncertainties monthly. Major risks/uncertainties shall be subject to measures and are to be reported immediately. Status reports should be presented in every construction meeting.

4 SHE AND EXTERNAL ENVIRONMENT

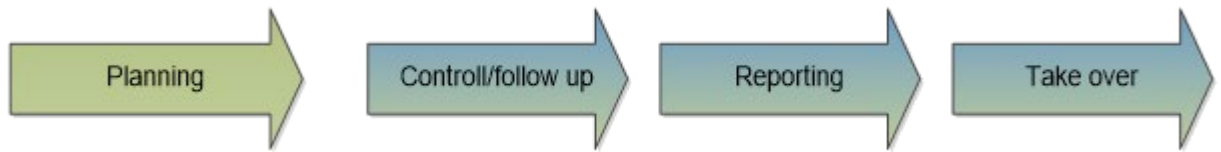
Please also refer to SHE Plan (Appendix D3) and Environment Management Program (Appendix D4).

Both documents are governing for attaining the set goals with regard to SHE and external environment.

5 ORGANISATION AND LINE OF RESPONSIBILITY

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

6 PLANNING



The subsequent plans, giving responsibility (author/checked/approved) and deadlines must be provided in the participant's Quality plan:

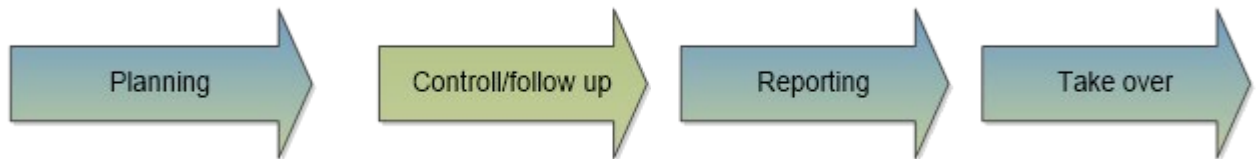
The work will initially be divided into work packages and then into individual tasks (without details like date, dependency or named resources). This will help the planner to:

- Develop an objective and rational view on the amount of work required
- Support the team's ability to understand the necessary resources and expertise.
- Provide a clear framework to allocate clear tasks, with responsibilities clearly defined to resources.
- Define the basis in order to analyse task dependency, and to isolate and manage risks.
- Define the basis to create a "bottom-up" estimate for the progress plan.

Delivery	Made by	Checked by	Approved by	Deadline
Quality plan	Contractor			
Organisation plan and staffing in their own team	Contractor			
Progress plan	Contractor			
Risk analysis	Contractor			
Activity plan in Microsoft Project	Contractor			
Inspection plan	Contractor			
SHE plan	Contractor			
FAT plan	Contractor			
Mechanical and electrical completion procedures	Contractor			
Operations manual	Contractor			
Resource plan	Contractor			
Control plan	Mepex			
Training plan	Contractor			
Cold and warm start-up plan	Contractor			
Trial and performance test plan	Contractor			
Take over procedure	Contractor			

Progress plans must be anchored within the individual organisation.

7 CONTROLLING/ FOLLOW UP



The purpose of the sub process "Controlling / Follow up" is to supervise and follow up the contract work progress plan. When the planned requirements are not met, corrections and corrective actions shall be implemented.

7.1 Progress

Follow-up of the progress in the project is to be carried out. Each participant must manage and report on their own work.

Progress plans are followed up with regard to the degree of completion. Major deviations shall be subject to measures and are to be reported immediately.

7.2 Control with the contract work, ensuring that specified requirements are met

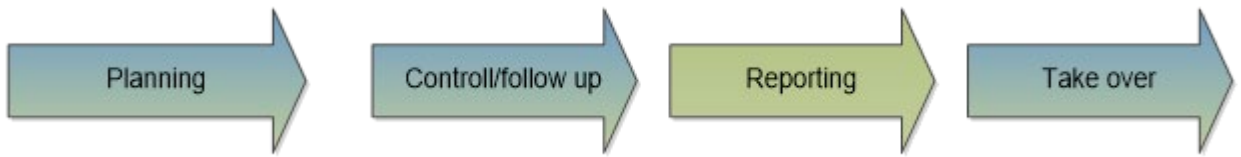
Control plans are used for supervising and documenting the execution of scheduled controls. In case of deviation from the requirements in the control plan, measures are to be taken to eliminate the deviation.

The control plan will identify the following:

- The elements of the contract work (activities)
- Requirements (contract requirements, regulatory requirements, internal and project specific requirements)
- Solution
- Acceptance criteria
- Responsible for execution
- Responsible for the control
- Time set for control
- Type of control
- Control status/signed by the person who executed the control
- Remark
- Reference to deviation notice

The control plans shall be subject to an ongoing evaluation based on the experience gained along the way. Executed control must be documented by signing the control plan or otherwise (checklists, log, etc.).

8 REPORTING



All project participants shall report monthly to the superior, cf. the project organisation plan.

It is to be reported on the following:

- Safety, health and working environment
- External environment
- Activities executed in the period and planned activities for the next period
- Organising and staffing
- Status registered contractual deviations
- Communication and information
- Progress
- Quality and quality assurance
- Public authorities

The participants must report the status on the above topics prior to construction meetings during the installation phase.

8.1 Deviation reporting and management

Deviation from the agreed quality

Deviation is the lack of fulfilment of requirements.

Each participant must have a deviation management system and document its use.

Deviation from plans

Deviations from the plans (see Chapter 6) will be reviewed in status meetings with the Client. Deviations with contractual consequences shall be notified in writing in accordance with the contract conditions.

8.2 Document Control

The quality plan and referenced documents must be under control. The document must indicate the content as shown in the table below.

The quality plan shall be presented the client for review/approval before the contract work can be commenced.

Rev.no.	Area/description of the change	Date	Made by	Checked by	Approved by
#	Description	xx.xx.xx	Name1	Name2	Name3

8.3 Audit and verification

Client, or possibly a third party engaged by Client, can carry out an audit or verification, including on-site inspection of the contractor and any subcontractors, in the period from the conclusion of the contract to six months after the final invoice has been paid, in order to investigate whether the contract requirements are met. This access also includes contracts and documentation in underlying sections.

The Contractor must make the necessary resources and documentation available for the client's inspection free of charge. The duty to cooperate and provide documentation also covers subcontractors.

All agreements entered into by the contractor for the performance of work under this contract must contain corresponding provisions.

8.4 Change management

Contract changes is managed with change lists and adjustment/ addition orders. Each participant must have a system for change management.

For all proposals for changes/additions to the approved plans, contracts/agreements, specifications, etc. a change orders must be submitted. For both deviations and changes/additions, it must continuously be kept an overview showing the consequences with regard to technical quality, SHE, external environment and time.

This also applies when the change does not have any consequences that increase the scope or offsets the project milestones.

9 Installation control, start up, training, performance testing, take over



Plans for the different phases shall be made and approved by Client before installation at site with all control documents and procedures:

- Installation control, procedure and control sheets
- Cold start up, procedures and control sheets
- Warm start up, procedures and control sheets
- Plan for training of Client personnel
- Approval of start trial period to start, procedures and control sheets
- Trial period with performance tests. Program and procedures
- Takeover, procedure and control sheets

9.1 Transfer of experience/evaluation, final report

Project evaluation shall be implemented no later than 14 days after completion of the project. Contractors/suppliers shall submit a final report.

10 PERFORMANCE GOALS

The performance measures are related to the solutions that the project will generate and reflect the goals which the project will be measured and managed by.

In the case of conflict between performance goals, the emphasis should be placed on the following priorities:

1. SHE (Safety, health and working environment)
2. Product Quality
3. Capacity /throughput
4. External environment
5. Economy
6. Progress

PERFORMANCE GOAL	SUCCESS CRITERIA
SHE	
<ul style="list-style-type: none"> ✓ The plant shall be safe for ØAS's employees, contracted resources, waste collection personnel and visitors during the entire process, from start-up to completion ✓ There shall be no accidents or injury during the construction phase 	<ul style="list-style-type: none"> ✓ Meet the normative requirements for an acceptable working environment ✓ All parties involved comply with the relevant laws and regulations ✓ Establish clear lines of responsibilities and agreements ✓ Prepare, communicate and follow up a plan for the safeguarding of safety, health and working environment (SHE) during the design and execution phase ✓ Identify and analyse high-risk work tasks ✓ Ensure that the involved parties follow up their obligations ✓ A system for management of unwanted events and following up measures shall be established
EXTERNAL ENVIRONMENT	
<ul style="list-style-type: none"> ✓ The project shall be implemented without illegal discharges and environmental damage during the entire construction period 	<ul style="list-style-type: none"> ✓ An environmental follow-up plan must be established with respect to the external environment ✓ Risk assessments and measures shall be implemented to prevent environmental damages ✓ Emergency plans for the management of unwanted events must be established
ECONOMY	
<ul style="list-style-type: none"> ✓ Cost overview and management throughout the entire implementation phase 	<ul style="list-style-type: none"> ✓ Continuous focus on both sub - and total costs

<ul style="list-style-type: none"> ✓ Focus on overall economic beneficial solutions in all project phases, with an emphasis on operation, maintenance and repairs throughout the plant's lifetime ✓ The project shall be carried out within the cost and time frameworks made available 	<ul style="list-style-type: none"> ✓ A financial management system included budget control and contract issues, shall be established ✓ A good change management system shall be established ✓ Fewest possible changes in the contracts ✓ Budget revisions ✓ For feasibility, decisions concerning cuts in accordance with the cut list shall be taken at an early stage ✓ Signatories of contracts and change orders ✓ Management of financial reserves. ✓ Continuous focus on uncertainty assessments ✓ Establish financial management procedures and invoicing instructions
QUALITY	
<ul style="list-style-type: none"> ✓ The project shall be designed and built in accordance with the negotiated design criteria ✓ Decisions and conclusions shall be subject to inter-disciplinary assessments, and be documented ✓ Technical quality shall be consistent with the design basis ✓ All choices and decision-making processes must be documentable and verifiable 	<ul style="list-style-type: none"> ✓ A quality plan for the project is established ✓ A PA manual for the pre-study and the building and construction phase (project administrative routines) is established ✓ NS 8407 will be used as contract form between Contractor and Client ✓ Requirements set in the previous phase must be made known to personnel responsible for the implementation phase ✓ Good cooperation with, and information towards, project managers in ØAS's administration, project organisation and other affected shall be emphasized ✓ A reference group with regard to QA, with representatives from ØAS, Mepex and Contractor shall be established ✓ The project shall continuously work to retain key personnel throughout the design and implementation phases

PROGRESS	
<ul style="list-style-type: none"> ✓ The project will be carried out and completed for the plant to be in operation according to schedule ✓ Key milestones with regard to communication shall be identified and the communication must be planned 	<ul style="list-style-type: none"> ✓ A hierarchy of plans shall be established ✓ Progress plans, both for engineering (document delivery schedule) and building integration shall be established ✓ The project will continuously follow up the contractors' and project designers' progress; periodically reporting monthly from all suppliers in the project ✓ Project shall, as early as possible, identify factors that may have impact on the progress ✓ A system for progress management shall be established

This Quality Plan and associated plans and documents are instruments for achieving the above goals.