

## **VI – Annexes**

## **Part 1 – Annex 1**

## Annex 1: Contractor's Documents

(Reference Sub-Clause 5.2 of the General Conditions of Contract)

*[List the documents that are required to be submitted by the Contractor, for the Employer's review and/or for approval e.g.:]*

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                          | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies                                  | Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1        | Design Schedule<br>(Design Period)             | Work program for design preparation (This work program will include the time schedule, priority order, identification and description of design works)                                                 | Prior approval                                                     | Electronic and Hard Copy                             | 1 (one) copy                                                                    | 21 days                                                                                                        |
|          |                                                |                                                                                                                                                                                                        | Final approval                                                     | Electronic and Hard Copy                             | 5 (five) original hard copies (Approved and Signed)<br>3 (three) digital copies | 21 days                                                                                                        |
| 2        | Preliminary Design<br>(Design Period)          | <b>Documentation for Process Calculation for each Unit of Entire Hurma WTE Facility</b> <ul style="list-style-type: none"> <li>a) Process Description</li> <li>b) Design criteria and basis</li> </ul> | Approval                                                           | Electronic and Hard Copy                             | 5 (five) original hard copies (Approved and Signed)<br>3 (three) digital copies | 21 days for each submission                                                                                    |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

4

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b> | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b> | <b>Review period in days, by the Employer's Representative<br/>(default position is 21 days under GCC Sub-Clause 5.2)</b> |
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|                 |                                                        | <ul style="list-style-type: none"> <li>c) Process design and calculation of components (including structural modelling and inlet values)</li> <li>d) Mass balance and heat and calculations of the entire Hurma WTE Facility</li> <li>e) HAZOP Applications for the entire Hurma WTE Facility</li> <li>f) Calculation for the Emission Control Unit</li> <li>g) Calculation for operation parameters (heat, pressure, capacity, CFD (Computational Fluid Dynamics))</li> <li>h) Evaluation of soil investigation report submitted by the Employer's Representative if required preparation of new soil investigation report by the Contractor and submission of soil improvement methodology before the construction works</li> <li>i) The Temperature Decrease Curve Diagram showing the decrease of the furnace temperature over time during hot standby and during controlled shutdown. This curve will show the maximum time that the facility can be</li> </ul> |                                                                              |                                                              |                                                        |                                                                                                                           |

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative<br>(default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|          |                                                | <p>kept in the furnace during hot standby without causing harmful effects and controlled shutdown will be preferred.</p> <p><b>General Designs for Entire Hurma WTE Facility</b></p> <ul style="list-style-type: none"> <li>a) General Layout, Layout arrangement, component plans</li> <li>b) General P&amp;I Diagrams /Process flow diagram</li> <li>c) General General Site Piping</li> <li>d) General Automation and SCADA System design</li> </ul> <p><b><u>Sludge Acceptance/Storage Unit (Sludge inlet bunkers/intermediate bunkers/structures/transferring of sludge to the facility)</u></b></p> <ul style="list-style-type: none"> <li>a) Preliminary Architectural Designs</li> <li>b) Preliminary Structural Designs</li> <li>c) Preliminary Mechanical Designs</li> <li>d) Preliminary Electrical Designs</li> </ul> <p><b><u>Sludge Pre-Drying Unit:</u></b></p> |                                                                    |                                                      |                                                |                                                                                                                   |

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative<br>(default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|          |                                                | <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> <li>b) Preliminary Architectural Designs</li> <li>c) Preliminary Structural Designs</li> <li>d) Preliminary Mechanical Designs</li> <li>e) Preliminary Electrical and Electro-mechanical Designs</li> </ul> <p><b>Odour Control Unit (According to Bidder's technical solution requirement)</b></p> <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> <li>b) Preliminary Architectural Designs</li> <li>c) Preliminary Structural Designs</li> <li>d) Preliminary Mechanical Designs</li> <li>e) Preliminary Electrical and Electro-mechanical Designs</li> </ul> <p><b>Fluidized Bed Incinerator (FBI) Unit with Heat Recovery System:</b></p> <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> <li>b) Preliminary Architectural Designs</li> <li>c) Preliminary Structural Designs</li> <li>d) Preliminary Mechanical Designs</li> </ul> |                                                                    |                                                      |                                                |                                                                                                                   |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

7

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative<br>(default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|          |                                                | <p>e) Preliminary Electrical and Electro-mechanical Designs</p> <p><b>Flue Gas Emission Control Unit</b></p> <p>a) P&amp;I Diagrams /Process flow diagram</p> <p>b) Preliminary Architectural Designs</p> <p>c) Preliminary Structural Designs</p> <p>d) Preliminary Mechanical Designs</p> <p>e) Preliminary Electrical and Electro-mechanical Designs</p> <p><b>Energy Recovery Unit with Steam Turbine</b></p> <p>a) P&amp;I Diagrams /Process flow diagram</p> <p>b) Preliminary Architectural Designs</p> <p>c) Preliminary Structural Designs</p> <p>d) Preliminary Mechanical Designs</p> <p>e) Preliminary Electrical and Electro-mechanical Designs</p> <p><b>Ash Collection and Storage Unit</b></p> <p>a) Preliminary Architectural Designs</p> <p>b) Preliminary Structural Designs</p> <p>c) Preliminary Mechanical Designs</p> |                                                                    |                                                      |                                                |                                                                                                                   |

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|          |                                                | <p>d) Preliminary Electrical and Electro-mechanical Designs</p> <p><b>Administration Building/Unit:</b></p> <p>a) Preliminary Architectural Designs</p> <p>b) Preliminary Structural Designs</p> <p>c) Preliminary Mechanical Designs</p> <p>d) Preliminary Electrical Designs</p> <p><b>Laboratory Building/Unit:</b></p> <p>a) Preliminary Architectural Designs</p> <p>b) Preliminary Structural Designs</p> <p>c) Preliminary Mechanical Designs</p> <p>d) Preliminary Electrical Designs</p> <p>e) Preliminary Laboratory Equipment List</p> <p><b>New Bio-Gas Tanks Construction and Replacement of Existing Piping</b></p> <p>a) Site Piping</p> <p>b) Preliminary Architectural Designs</p> <p>c) Preliminary Structural Designs</p> <p>d) Preliminary Mechanical Designs</p> |                                                                    |                                                      |                                                |                                                                                                                |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

9

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies                                  | Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|          |                                                | e) Preliminary Electrical Designs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                    |                                                      |                                                                                 |                                                                                                                |
| 3        | Final Designs<br>(Design Period)               | <b>Documentation for Process Calculation</b> <ul style="list-style-type: none"> <li>a) Final design criteria and basis</li> <li>b) Final process design and calculation of components (including structural modelling and inlet values)</li> <li>c) Final mass balance and heat and calculations of the entire Hurma WTE Facility</li> <li>d) Final HAZOP Applications for the entire Hurma WTE Facility</li> <li>e) Final Calculation for the Emission Control Unit and stack</li> <li>f) Final Calculation for operation parameters (heat, pressure, capacity, CFD (Computational Fluid Dynamics))</li> <li>g) Final soil improvement methodology before the construction works</li> <li>h) Final static calculations for all units of entire Hurma WWTP</li> <li>i) Description of the SCADA and Automation systems (including Facility Command and Control Center Plan and</li> </ul> | Approval                                                           | Electronic and Hard Copy                             | 5 (five) original hard copies (Approved and Signed)<br>3 (three) digital copies | 21 days for each submission                                                                                    |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

10

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b> | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b> | <b>Review period in days, by the Employer's Representative<br/>(default position is 21 days under GCC Sub-Clause 5.2)</b> |
|-----------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                 |                                                        | <p>software description that will be used by the Contractor)</p> <p>j) Detailed mechanical equipment list for units of the entire Hurma WWTP including technical specification, number of equipment, life span, origin of the equipment, class, capacity, efficiency ratio and load curve diagrams, standards / codes etc.</p> <p>k) Detailed electrical and SCADA Automation equipment list for units of the entire Hurma WWTP including technical specification, number of equipment, life span, origin of the equipment, class, capacity, efficiency ratio load curve diagrams, standards / codes etc.</p> <p>l) Detailed construction material list for units of the entire Hurma WWTP including technical specification, life span, class, origin, standards / codes etc.</p> <p>m) Detailed instrument list for units of the entire Hurma WWTP including technical specification, number of equipment, life span, origin of the</p> |                                                                              |                                                              |                                                        |                                                                                                                           |

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b> | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b> | <b>Review period in days, by the Employer's Representative<br/>(default position is 21 days under GCC Sub-Clause 5.2)</b> |
|-----------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                 |                                                        | <p>equipment, class, capacity, efficiency ratio, standards / codes etc.</p> <p>n) Detailed laboratory equipment list for units of the entire Hurma WWTP including technical specification, number of equipment, life span, origin of the equipment, class, capacity, efficiency ratio, standards / codes etc.</p> <p>o) Final Temperature Decrease Curve Diagram showing the decrease of the furnace temperature over time during hot standby and during controlled shutdown.</p> <p><b>General Designs for Entire Hurma WTE Facility</b></p> <p>a) Final General Layout, Layout arrangement, component plans</p> <p>b) Final General P&amp;I Diagrams /Process flow diagram</p> <p>c) Final General General Site Piping</p> <p>d) Final General Automation and SCADA System design</p> |                                                                              |                                                              |                                                        |                                                                                                                           |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

12

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative<br>(default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|          |                                                | <ul style="list-style-type: none"> <li>e) Single line diagrams for electrical works</li> <li>f) SCADA and PLC designs</li> <li>g) Drainage drawings for ground surface water of the facility</li> <li>h) Drainage drawing for the access water occurred during the processing of the Hurma WTE Facility</li> <li>i) Final Fire fighting desings</li> <li>j) Landscaping desings</li> <li>k) 3D desings in REVIT format</li> </ul> <p><b><u>Sludge Acceptance/Storage Unit (Sludge inlet bunkers/intermediate bunkers/structures/transferring of sludge to the facility)</u></b></p> <ul style="list-style-type: none"> <li>a) Final Architectral Designs</li> <li>b) Final Structural Designs</li> <li>c) Final Mechanical Designs</li> <li>d) Final Electrical Designs</li> </ul> <p><b><u>Sludge Pre-Drying Unit:</u></b></p> <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> </ul> |                                                                    |                                                      |                                                |                                                                                                                   |

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2) |
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|          |                                                | <ul style="list-style-type: none"> <li>b) Final Architectural Designs</li> <li>c) Final Structural Designs</li> <li>d) Final Mechanical Designs</li> <li>e) Final Electrical and Electro-mechanical Designs</li> </ul> <p><b>Odour Control Unit (According to Bidder's technical solution requirement)</b></p> <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> <li>b) Final Architectural Designs</li> <li>c) Final Structural Designs</li> <li>d) Final Mechanical Designs</li> <li>e) Final Electrical and Electro-mechanical Designs</li> </ul> <p><b>Fluidized Bed Incinerator (FBI) Unit with Heat Recovery System:</b></p> <ul style="list-style-type: none"> <li>a) P&amp;I Diagrams /Process flow diagram</li> <li>b) Final Architectural Designs</li> <li>c) Final Structural Designs</li> <li>d) Final Mechanical Designs</li> </ul> |                                                                    |                                                      |                                                |                                                                                                                |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

14

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative<br>(default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|          |                                                | <p>e) Final Electrical and Electro-mechanical Designs</p> <p><b>Flue Gas Emission Control Unit</b></p> <p>a) P&amp;I Diagrams /Process flow diagram</p> <p>b) Final Architectural Designs</p> <p>c) Final Structural Designs</p> <p>d) Final Mechanical Designs</p> <p>e) Final Electrical and Electro-mechanical Designs</p> <p><b>Energy Recovery Unit with Steam Turbine</b></p> <p>a) P&amp;I Diagrams /Process flow diagram</p> <p>b) Final Architectural Designs</p> <p>c) Final Structural Designs</p> <p>d) Final Mechanical Designs</p> <p>e) Final Electrical and Electro-mechanical Designs</p> <p><b>Ash Collection and Storage Unit</b></p> <p>a) Final Architectural Designs</p> <p>b) Final Structural Designs</p> <p>c) Final Mechanical Designs</p> |                                                                    |                                                      |                                                |                                                                                                                   |

| Item No. | Item Type<br>(Contractor's Documents, samples) | Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Submission for:<br>"prior approval",<br>"approval" or<br>"consent" | Submission format<br>(electronic and/or hard copies) | Number of Submissions:<br>originals and copies | Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2) |
|----------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|          |                                                | <p>d) Final Electrical and Electro-mechanical Designs</p> <p><b>Administration Building/Unit:</b></p> <p>a) Final Architectural Designs</p> <p>b) Final Structural Designs</p> <p>c) Final Mechanical Designs</p> <p>d) Final Electrical Designs</p> <p><b>Laboratory Building/Unit:</b></p> <p>a) Final Architectural Designs</p> <p>b) Final Structural Designs</p> <p>c) Final Mechanical Designs</p> <p>d) Final Electrical Designs</p> <p>e) Final Laboratory Equipment List</p> <p><b>New Bio-Gas Tanks Construction and Replacement of Existing Piping</b></p> <p>a) Site Piping</p> <p>b) Final Architectural Designs</p> <p>c) Final Structural Designs</p> <p>d) Final Mechanical Designs</p> |                                                                    |                                                      |                                                |                                                                                                                |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

16

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b>                                                                               | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b> | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b> | <b>Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2)</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                                                                      | e) Final Electrical Designs                                                                                                          |                                                                              |                                                              |                                                        |                                                                                                                       |
| 4               | Permission Procedure Documents regarding to local legislations for design requirements<br><i>(Before the beginning of the works)</i> |                                                                                                                                      | Approval                                                                     | Electronic Copy and Hard Copy                                | 1 (one) digital copy<br>1 (one) hard copy              | 14 days                                                                                                               |
| 5               | Site inspection photos<br><i>(Before the beginning of the works)</i>                                                                 |                                                                                                                                      | Approval                                                                     | Electronic Copy                                              | 1 (one) digital copy                                   | 14 days                                                                                                               |
| 6               | Worksite – ESMP environmental and Social Management Plan<br><i>(Design Period)</i>                                                   |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy     | 14 days                                                                                                               |
| 7               | Emergency Response Plan (including firefighting methodology, hazardous gas detection and control)<br><i>(Design Period)</i>          |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy     | 14 days                                                                                                               |
| 8               | The Health and Safety Manual<br><i>(Design – Build Period)</i>                                                                       |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy     | 14 days                                                                                                               |
| 9               | The Quality Assurance Plan                                                                                                           |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy                             | 14 days                                                                                                               |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

17

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b>                                                                    | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b> | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b>             | <b>Review period in days, by the Employer's Representative (default position is 21 days under GCC Sub-Clause 5.2)</b> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|                 | <i>(Design – Build Period)</i>                                                                                            |                                                                                                                                      |                                                                              |                                                              | 1 (one) digital copy                                               |                                                                                                                       |
| 10              | Risk Assessment Plan<br><i>(Design – Build Period)</i>                                                                    |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy                 | 14 days                                                                                                               |
| 11              | Permission Procedure Documents regarding to local legislations for works requirements<br><i>(During the build period)</i> |                                                                                                                                      | Approval                                                                     | Electronic Copy and Hard Copy                                | 1 (one) digital copy<br>1 (one) hard copy                          | 14 days                                                                                                               |
| 12              | The Testing Plan for works<br><i>(Build phase)</i>                                                                        |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy                 | 14 days                                                                                                               |
| 13              | The Testing Plan for performance guarantee<br><i>(Build Phase)</i>                                                        |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy                 | 14 days                                                                                                               |
| 14              | Design for Construction (as-built)<br><i>(Before the tests on completion of the design – build period)</i>                |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 5 (five) original hard copies (Signed)<br>3 (three) digital copies | 21 days for each submission                                                                                           |
| 15              | Site inspection photos                                                                                                    |                                                                                                                                      | Approval                                                                     | Electronic Copy                                              | 1 (one) digital copy                                               | 14 days                                                                                                               |

**Contract No. ASAT/C1 Waste Sludge Incineration and Energy Recovery Facility Project**  
**Section VII – Employer's Requirements VI – Annexes Part 1 – Annex 1**

18

| <b>Item No.</b> | <b>Item Type<br/>(Contractor's Documents, samples)</b>                                                                                                      | <b>Item description (e.g. Process and Instrumentation of the Pumping Station, Detailed Design of the Chlorine Dosing Room, etc.)</b> | <b>Submission for:<br/>"prior approval",<br/>"approval" or<br/>"consent"</b> | <b>Submission format<br/>(electronic and/or hard copies)</b> | <b>Number of Submissions:<br/>originals and copies</b>    | <b>Review period in days, by the Employer's Representative<br/>(default position is 21 days under GCC Sub-Clause 5.2)</b> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                 | <i>(Before the commencement of the commissioning period)</i>                                                                                                |                                                                                                                                      |                                                                              |                                                              |                                                           |                                                                                                                           |
| 16              | The Operating and Maintenance Manual<br><i>(Before the commencement of the commissioning period)</i>                                                        |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 5 (five) original hard copies<br>3 (three) digital copies | 21 days                                                                                                                   |
| 17              | Permission Procedure Documents regarding to local legislations for operational requirements<br><i>(Before the commencement of the commissioning period)</i> |                                                                                                                                      | Approval                                                                     | Electronic Copy and Hard Copy                                | 1 (one) digital copy<br>1 (one) hard copy                 | 14 days                                                                                                                   |
| 18              | The Health and Safety Manual<br><i>(Operation Service)</i>                                                                                                  |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy        | 14 days                                                                                                                   |
| 19              | Training Plan<br><i>(Operation Service)</i>                                                                                                                 |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy        | 14 days                                                                                                                   |
| 20              | Testing Plan for contract completion                                                                                                                        |                                                                                                                                      | Approval                                                                     | Electronic and Hard Copy                                     | 1 (one) original hard copy<br>1 (one) digital copy        | 14 days                                                                                                                   |

*[This section shall also indicate any design review by, and then consent and/or approval process from local authorities as might be imposed by the applicable Laws and regulations. These shall then duly be taken into account when planning his activities.]*

As a general rule, there is no point in requiring documents to be submitted for approval if the Employer does not intend to give approval. The Employer should carefully weigh in the documents that it requires for review and/or for approval. Unreasonable approval requirements may interfere in the Contractor's design process. Further, notwithstanding the last paragraph of Sub-Clause 5.2 of the General Conditions, it may be difficult, in case a dispute arises, for the Employer to refute all liability for an approved submission.

The Employer shall specify any independent verification requirements for any of the Contractor's Documents.

The Employer's Requirements shall also require the Contractor to provide for approval the ESHS documents as specified in the Specifications for ESHS Management of Worksite.

**Documents to be Submitted,**

The Contractor's Documents shall include, but not be limited to, the following minimum requirements.

**For Earth and Construction Works**

The following details should be included in the projects;

- General site layout including all buildings, auxiliary facilities, structures, trenches, foundations, construction infrastructure, entrances, roads, landscapes in site settlements,
- All general architectural arrangements including layout plans, floor plans, elevations and sections,
- Detailed static projects of all structures and buildings, including foundations, including all types of stone fillings,
- Ducts, grounding, crane areas, support for auxiliary equipment (pipes, cables), local drainage systems,
- General arrangements of all services, channels, drainage (including culverts to be built on waterways) and all other underground services to be laid,
- General arrangements and cross-sections of road construction, cable trenches and associated crossing points, including drainage,
- General arrangement projects and schedules of all internal piping and services,
- Electrical installation wiring diagrams,
- Fire routes and assembly points,
- Arrangements of the entire safety boundaries, local and general entrance of
- Details of building Fine / finishing works, walls floors, ceilings etc.

**For Mechanical and Electrical Works**

The following details should be included in the projects;

- Facility waste heat recovery/usage system projects and calculations,
- Factory test procedures for all equipment,
- Calculations related to lightning protection system,
- Calculations related to the grounding system,
- Grounding system schematic project,

- Internal and external cable route projects,
- Electrical protection system study, including coordination with mains connection,
- Details of typical SCADA cable terminations,
- SCADA cable diagrams,
- Details of typical MV cable terminations,
- LV power and control cable schedules,
- General arrangement of MV switchgear panels of the transformer in the field
- MV cable charts
- General Arrangement and schematic projects of the Engine Control Center,
- Transformer connection protection systems schematic projects,
- Factory testing procedures including switchgear cables and SCADA cabling
- General arrangements and wiring diagrams of switchgear panels

### **For Instruments Works**

The following details should be included in the projects;

- Instrumentation closed circuit diagrams,
- Chart of instrumentation and control manufacturers,
- General arrangement and schematic projects of facility command and control center,
- General arrangement and schematic projects of the facility observation and monitoring center,
- SCADA and control systems factory and field acceptance testing procedures,
- SCADA and control system input/output chart
- Telemetry interface charts and projects
- Control logic diagrams