



AMERICAN SAMOA POWER AUTHORITY

SCOPE OF WORK

SUPPLY AND INSTALLATION OF ODOR CONTROL SYSTEM

BACKGROUND INFORMATION *(Refer to Page 6 of RFP)*

The American Samoa Power Authority (ASPA) owns and operates two wastewater treatment plants, Utueli and Fogagogo, and the associated collection system infrastructure. The Environmental Protection Agency has issued two Administrative Orders [CWA-309(a)-11-016 and 017] to the ASPA, these Orders impose wastewater effluent limits including; total nitrogen, total phosphorus, ammonia, turbidity and enterococci. Meeting the effluent standards requires the continual operation of the Clarigesters and the ultraviolet (UV) reactor at each wastewater treatment plant.

To help in improving service delivery and develop an environmentally friendly surrounding, ASPA is investing in odor control system to help in reducing odor within the proximity of Utulei WWTP and Malaloa Lift Station. The odor issue has become a health concern and the improvement will augur well with the objective of the Administrative Order.

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PROJECT BACKGROUND: *(Refer to Page 7 of RFP)*

The issue of odor within the proximity of Utulei WWTP and Malaloa Lift Station has been a continuing concern, and the public demand for ASPA to address this has been the key objective here. Odor issue around the treatment plant and lift station location has affected people living within the area. It is very evident during certain period of the day and night that odor became a nuisance and pose psychological stress to family living within the area. The high level of sulphide emanating from the treatment plant and lift station has been the source of such odor.

PROJECT DESCRIPTION:

The installation of Odor Control System is to provide a treatment mechanism that will eliminate odor within the proximity of Utulei WWTP and Malaloa Lift Station. Odor has been a continuing issue to the public leaving around this area and those travelling past our WWTP and Malaloa Lift Station. It is a health hazard and the psychological impact posed to the public has prompted ASPA to find a solution to this continuing issue. This Odor Control System will help to eliminate odor and provide an environmentally friendly surrounding where public can leave peacefully. They will no longer be disturbed or harassed from time to time because of odor.

PROJECT GOAL AND OBJECTIVES

The primary goal and objectives of the supply and installation of the odor control system is summarized herewith:

- To provide treatment to odor issues confronting people living with the proximity of Utulei Wastewater Treatment.
- To provide corrosion control to Clarigesters and equipment used for the treatment of wastewater.
- To eliminate or control the odor within the area of the treatment plant and lift stations considered for the supply and installation of odor control.
- To eliminate a nuisance from what emanates from the wastewater treatment plant and eliminate any health concern.
- To make sure the general public living within the area will continue to enjoy their surrounding and be able to interact peacefully.

PROBLEM STATEMENT:

Odor has been a continuing problem and aesthetically a health hazard to the people living in Utulei and people driving past out Utulei WWTP. It has reach a point that the odor has been a nuisance and has affected the health of people within the proximity of the plant. The number of complaints received because of odor and those unpleasant pollution does not relieve ASPA from its obligation to find a solution to alleviate this problem. In addressing the concern of the public, ASPA is investing in an odor control system that will address this problem.

PROJECT SCOPE DESCRIPTION:

The project will see the supply and installation of Odor Control that will have the capacity reduce and control odor within the proximity of our Utulei WWTP and Malaloa Lift Station

IMPACT OF PROJECT TO PROBLEM STATEMENT:

The supply and installation of odor control will reduce and control the odor issue with the proximity of Utulei WWTP and Malaloa Lift Station and relieve the people from the a nuisance so that they can live and enjoy the privacy of their surroundings.

SCOPE OF WORK

The primary SOW for this supply and installation of odor control is to address odor within our Utulei WWTP. The scope of work for this supply and installation is defined along the following tasks which shall be undertaken under this proposed project:

1. ODOR CONTROL SOLUTION – UTULEI WWTP

- a. To supply and install Odor Control System for Utulei WWTP and the system shall be Pure Air Filtration Odor Control Solutions or equal. The minimum requirement of supply and install for the equipment shall meet the following condition:
 - i. Intake System (Wet Well) Air Flow Range – 300CFM - 750CFM
 - ii. Headwork Airflow Range – 75CFM – 200CFM
 - iii. Malaloa Lift Station Air Flow Range – 200CFM – 700CFM
- b. The use of chemical shall be an option for odor control and shall be considered based on the user friendliness of the chemical been proposed to be used for odor control purpose.
- c. The minimum requirement for the supply and install of chemical odor control shall be environmentally friendly and will not pose any damage to the surrounding environment and the sea. Refer technical requirement for minimum requirement for the supply of chemical.
- d. Any chemical use as media for Chemical Absorption Polishing shall also meet the minimum technical requirement for supply and installation.
- e. The chemical supplied has to meet all stipulated minimum requirement standard that is recommended for such chemical and due diligence shall govern the supply and delivery of such chemical.
- f. The anticipate location for installation shall be at Wet Well (Lift Station), Headwork, and Malaloa Lift Station, these are location where we have so much issue on odor.
- g. The minimum requirement for Odor Control Solution shall reduce H₂S to >99% efficiency and 0 ppm.
- h. The minimum requirement of chemical proposed to be used for odor control shall also help in corrosion control for all the installed Clarigester (4#)
- i. The minimum requirement for this equipment supplied for installation, shall be economical, simple to operate, efficient and effective solution for odor and corrosion control

- j. The supplier of the equipment shall make sure that all applicable electrical code, procedures and standards governing this project shall be for Hazardous Area Electrical Class 1, Division 1, Group D, NEC Article 501 shall govern.
- k. Any motor supplied with the equipment shall meet the following power supply condition; 460VAC, 60Hz, 3ph.
- l. As part of the training, if global situation allows, the supplier shall provide opportunity to two staff from WW Operations to be attached to any utilities that operates such equipment for a period of 10days (2weeks).
- m. In your submission or technical proposal, bidders shall clearly identify which equipment they will supply for odor control and corrosion control.
- n. In your bid submission, you shall clearly stated supply only or supply and install for the odor control equipment you're supplying.
- o. The bidder shall clearly label Option 1 Pure Air Filtration Odor Control System or Option 2 Chemical Odor Control System or Both.
- p. The minimum requirement for material used for the construction of odor control shall shall be 316 Stainless Steel, this is due to the robust environmental condition the equipment shall be exposed to.
- q. The use of Fiberglass Reinforced Plastic or otherwise shall be an option and this will be based on recommendation of the supplier/manufacturer in line with the environmental condition it will be exposed to.

Implementation Approach

I. ODOR CONTROLS SOLUTION – UTULEI WWTP

1. GENERAL.

- a. All civil works with regards to installations shall be certified by a US Professional Civil Engineer with 10year of experience. This includes, concrete platform, excavation work if needed, elevation check, structural integrity of all installed equipment. There shall be a sign off sheet to confirm installations and structural integrity of the equipment.
- b. All electrical installation shall be certified by a US Professional Electrical Engineer with more than 10years of experience. All electrical installations

shall be Class 1, Division 1 which govern Hazardous Area. There shall be assign sheet to confirm all supplied as per specification provided by the supplier.

- c. All mechanical installations shall be certified by a US Professional Engineer with more than 10 year of work experience. All mechanical installation such as pipe works, motor installation, and materials specification with all mechanical equipment supplied. There shall be assign sheet to confirm all supplied as per specification provided by the supplier.
- d. The odor control solution shall be installed on a concrete platform constructed on site and to be provided by the supplier of the equipment and to be size accordingly and located on the marked location.
- e. The equipment shall be user friendly and training for the use of the equipment to be carried out by the supplier of the equipment or qualified agent recommended by the supplier of the equipment.
- f. As part of the training, if global situation allows, the supplier shall provide opportunity to two staff from WW Operations to be attached to any utilities that operates such equipment for a period of 10days (2weeks).
- g. The supplier shall provide, supply all manuals and documents that shall help ASPA to maintain and operate the equipment.

2. SUBMITTALS SHALL BE PROVIDED AND SHALL INCLUDE THE FOLLOWING:

- a. Product Data – Provide catalog data on all components in accordance on all components in accordance to scope of supply and install.
- b. Drawing: this shall include wiring details and mechanical details which relate to the scope of supply and install.

3. SUPPLY OF OPERATING AND MAINTENANCE MANUAL

- a. Identify the size, model and features for each item.
- b. Furnish operating instruction manuals outlining step-by-step procedure required for system startup and operation, including manufacturer's name, model number, service manual parts list and brief description of all equipment and basic operating features. Instructions and documentation not related to the equipment furnished must be removed or crossed out. *O&M manuals must be individually tailored to the project and equipment as furnished.*

- c. Complete nomenclature of replaceable parts, part numbers, current cost, name and address of nearest vendor of replacement parts. Information on equipment or components not related to equipment furnished must be removed or crossed out. *O&M manuals must be individually tailored to the project and equipment as furnished.*
- d. Furnish maintenance instruction manuals outlining maintenance procedures, including a troubleshooting guide listing possible breakdown and repairs, and a simplified connection wiring diagram for the system.
- e. Copy of warranties issued on the installation, showing dates of expiration.

4. QUALITY ASSURANCE

- a. The installation manual shall governs all quality assurance for the equipment.
- b. Checklist to sign off the equipment when ready for operation shall be filled and checked.
- c. As expected, the equipment shall perform to the expectation define in the scope of supply and install.

5. WARRANTY

- a. Warranty period shall begin at date of substantial completion.
- b. The Manufacturer's warranty shall be furnished on all components, parts, assemblies and performance of the transfer equipment for a period of 2-years from the date of shipment. Warranty shall include parts, labor and travel expenses.

6. Materials

- a. The odor control equipment shall be manufactured of 316 stainless steel with full submersion of passivated surface treatment for superior corrosion protection on all materials that are used shall be applied. Option for use of Fiber Reinforced Plastic shall be considered based on recommendation and site conditions.
- b. All pipework in and out of the odor control equipment shall be 316 stainless steel and shall be well protected from corrosion of any form. Recommendation for other material use shall be considered based on site conditions.

- c. All Electrical installation shall be for Hazardous Area Electrical Class 1, Division 1, Group D, NEC Article 501 shall govern.
- d. All material measurement shall be confirm from any existing structure to the odor control equipment, to confirm amount and length that shall be used on all pipework, electrical conduits, cables and control wires.

1. EXECUTION:

a. COORDINATION

- a) There shall be better coordination on the installation of the equipment and supplied installation and operation manual shall govern the installation, start up and commissioning of the equipment.
- b) All Electrical, Mechanical and Civil installation shall be coordinate with our Operation for ease of operation.

b. INSTALLATION

- a. Install where indicated on plans. Mount unit such that it is level and plumb.
- b. Prior to installation, coordinate with other trades to verify conduits have adequate space to leave and enter the switch enclosure and for required code clearance. A minimum working clearance as defined by the NEC 110-26 shall be provided.
- c. Install in accordance with NFPA 70 and all applicable local codes and regulations.
- d. Prior to installation the shutdown shall be discussed with Operation so that minimum disruption shall be maintained.

1. TESTING

a. Factory Tests:

- I. Provide factory production tests in accordance with NEMA standards and NFPA standard 110. Check and set all instruments and safety devices.

b. On-site Tests:

- II. Simulate utility power failure to verify proper operation of the automatic transfer switch, automatic starting and stopping of the standby generator and retransfer back to utility when utility power is resumed. Record the time to achieve standby power after loss of the *Normal power* source. Record the time to retransfer back to the *Normal* power source.
- III. Verify all status and alarm signals being monitored remotely.
- IV. Coordinate with the Owner for programming for exerciser clock settings.

2. TRAINING

- a. The Contractor shall provide training by a manufacturer's factory-trained representative.
- b. The training shall be conducted at the project site.
- c. The training session shall include up to four Owner's representatives.
- d. The training session shall be a minimum of four (4) hours, conducted on a normal workday as decided upon by the Owner.
- e. The training session shall include the proper maintenance and operation of the odor control equipment.

3. MINIMUM TECHNICAL REQUIREMENT FOR THE SUPPLY AND USE OF CHEMICAL

- a. Chemical supplied to be used for odor control shall be provided with the following:
 - i. Chemical Name
 - ii. Molecular Formula
 - iii. Strength
 - iv. How it will be package, in powered form. Solid of liquid
 - v. Approved for USEPA/ASEPA, AWWA, WHO and ANSI/NSF
- b. Laboratory Analysis
 - i. Following test parameter should be reported in all analysis sent: pH, Conductivity, alkalinity and density

- c. Material Safety Data Sheet (MSDS)
 - i. All shipment shall be properly label
- d. Degradability
 - i. Supplier shall specify information on degrading rate of the product they are offering under storage in the following condition.
 - 1. Air conditioned storage facility
 - 2. Un-air conditioned storage facility
 - 3. Specify best or proper procedures and facility for storage
- e. Its active ingredients
- f. Any additional information of the product that the supplier may thing it is important, that we need to know.
- g. Shipping and handling:
 - i. Each batch shall be shipped with the following:
 - 1. Date of manufacturer
 - 2. Expiry date of the product
 - 3. MSDS
 - 4. Laboratory analysis of the product supplied
- h. Personal Protective Equipment (PPE)
 - i. Shall be provided for the handling of the product if there is a tendency that it will react and cause un-usual reaction to the body.

2. REQUEST FOR PROPOSAL SUBMISSION

The Request for Proposal for the Supply and Installation on Odor Control System shall include the following:

- 1. A covering letter including the complete name and address of the firm(s) performing the project, the principal firm including the name and title of person principally responsible for the project.

2. A detailed methodology including a programme for the supply and installation of the odor control system. Comments on the SOW can be included to add value to the submission.
3. State a lump sum and fixed price for the entire supply and installation of all the equipment, clearly identifying the cost breakdown of respective deliverables.
4. State hourly rates of personnel resources, if ASPA requests to undertake additional work related to this assignment.
5. Company background and evidence of similar works undertaken by the firm over the last five years including project name, summary of work carried out, contact name and address of clients
6. Background of proposed sub-contractors
7. CV's of personnel that will be engaged in the work including sub-contractors
8. Completed Responsibility matrix as shown below

3. RESPONSIBILITY MATRIX

The responsibility matrix shall define key personnel who will be involved directly and indirectly with the proposed feasibility studies. As expected, we shall require all the specialist skills required to have minimum qualification as follows:

1. **Civil/Structural/Environmental Engineer - Team Leader (full time):** He/she should have qualifications in civil/structural or/and environmental engineering and preferable have an advanced or second degree in a relevant specialization. He/she should have 10-15 years relevant post-graduation international experience. Should be a Registered PE within the US.

2. **Electrical/Mechanical Engineering.**

He/she should have qualifications in mechanical and electrical engineering and preferable have an advanced or second degree in a relevant specialization. He/she should have 10yrs – 15yrs relevant post-graduation and to be a recognized Registered PE of the US

Responsibility Matrix – Please use similar template

Name	Firm	Overall Project Management	Civil Engineer - Team Leader	Environmental Engineer	Structural Engineer	Environmental Specialist.	Sanitation/Waste water Engineer	Electrical/Mechanical Engineer
John X	XYZ	X						
Mary Y	ABC		X					

NOTE:

- Complete the first row with the Specialties required
- Complete the first column with the names of Project Key Staff.
- One Project Key Staff person may be responsible for more than one Specialty.
- Place a mark in the appropriate column relative to the appropriate Project Key Staff and Specialty.

4. EVALUATION METHODOLOGY

The RFP submissions shall be checked for completeness, firms that fail to submit all information required as part of the requirement for the feasibility study may not be considered for award. A 40% weighting shall be given for the firm background and experience, 20% weight on personnel background, specialist skills and qualification on those involved in this feasibility study and 40% weight for the lump sum price.

The breakdown on evaluation scores will be as follows:

Firm Background and experience	20%
Personal Background, special skills set and qualification	10%
Responsibility Matrix Submitted to define key responsibility and they are to work with the contractor or subcontract.	10%

Financial Status – financially stable and ready to do the job. To be based on 3 years audited financial report.	20%
Price	40%