CITY OF TAMPA, FLORIDA - RFQ
c/o Contract Administration Department
306 East Jackson Street #280A4N
Tampa, Florida 33602

21-C-00015; McKAY BAY WASTE-TO-ENERGY (WTE) FACILITY UPGRADES Design-Build

PUBLIC ANNOUNCEMENT IN COMPLIANCE WITH REQUIREMENTS OF SECTION 287.055, FLORIDA STATUTES (CONSULTANTS' COMPETITIVE NEGOTIATION ACT) APPLICABLE LAW, EXECUTIVE ORDERS, RULES, REGULATIONS, AND THE CITY'S STANDARD PROCEDURES. A NOTICE OF INTENT TO AWARD SHALL BE POSTED, IF AT ALL, ON THE CITY'S WEBSITE ACCESSIBLE BY UTILIZING THIS WEBSITE LINK: www.tampagov.net/contract-administration/programs/architectural-engineering-construction-and-related-rfqs .

The City of Tampa seeks Design-Build services related to various improvements at the McKay Bay Waste-To-Energy (WTE) Facility, located at 107 N. 34th Street Tampa, FL 33605.

The scope will include, but will not be limited to Comprehensive Design Services, Survey Services, City of Tampa and All Required Regulatory Permitting; Design and Construction of Upgrades or Repairs to Multiple Projects developed during the project, including those listed in the Design Criteria Package, Guaranteed Maximum Price (GMP) Proposal(s).

Estimate: $15 million.

Workforce Development - A description of a Workforce Development Program should include any ongoing or developing programs such as apprenticeship, mentoring or on-the-job training. The Program description should include any efforts toward fostering a strong and talented workforce in Tampa, promoting an increase of school attendance and graduation rates, defining pathways through higher education, technical certification programs and career readiness. It should also mention any workforce incentives, championing local businesses and removing barriers to access. The Program description should also include contracting and subcontracting trades, and engineering, architectural, geotechnical and public engagement opportunities.

Additional material may be found at demandstar.com and at: www.tampagov.net/contract-administration/programs/architectural-engineering-construction-and-related-rfqs
Questions may be directed to Jim Greiner, P.E., Contract Administration, City of Tampa, (813) 274-8598, or E-Mail jim.greiner@tampagov.net.

An individual or entity ("Firm") responding to this RFQ must provide evidence of any required licenses, certificates, or registrations with its submission or within 10 days thereof in order to be considered. The City shall own all ideas, documents, plans, and materials developed as a result of this solicitation and Firm is informed same shall be subject to reuse in accordance with Section 287.055(10), Florida Statutes. Firm (i) confirms it has read and is familiar with Section 119.071(3), Florida Statutes regarding certain building plans, blueprints, schematic drawings, which depict the internal layout and structural elements of a building, facility, or other structure owned or operated by the City or other agency that are per said section exempt from Section 119.07(1), Florida Statutes and Section 24(a), Art. I of the Florida Constitution ("Exempt Plans") and (ii) agrees Firm shall remain in compliance with same, including maintaining the exempt status of such Exempt Plans for so long as they are held by Firm or otherwise in its possession. The City may cancel, withdraw, or modify this RFQ at any time and reserves the right to reject any or all responses and to waive irregularities, formalities, and informalities as it determines in the City's best interest.

Firms desiring to provide these services to the City must submit a single electronic file in searchable PDF format, Smaller than 5MB, that includes the attached RFQ Transmittal Memorandum completed as appropriate, a Letter of Interest addressed to Brad L, Baird, P.E., Chairman, and referring to this RFQ by number, together with a Statement of Qualifications and any supplemental material allowing evaluation for further consideration (short-listing) based upon the following criteria/point system: Successful Comparable Project Experience, (30 pts); Municipal Waste To Energy Facility Experience (30 pts); Workload and Availability (5 pts); Past Performance/Low amount of City Work (5 pts); Standard Form #A305 (5 pts){Confidential Financial Info. May be submitted in a separate PDF.}; Workforce Development (5 pts); Planned WMBE/SLBE Solicitation & Utilization, Form MBD 10 & 20 (20 pts).

The PDF file must be **E-Mailed to ContractAdministration@tampagov.net BEFORE 2 P.M., March 18, 2021.** As a courtesy, the City will endeavor provide an email acknowledgement usually sent within a few days after submission receipt (submissions received on the day of the deadline may not be acknowledged before the deadline or at all). It is Firm's responsibility to confirm its submission (PDF file) has been received.

RFQ 21-C-00015 DESIGN-BUILD SERVICES FOR THE McKAY BAY WASTE-TO-ENERGY (WTE) FACILITY UPGRADES (107 N. 34TH STREET TAMPA, FL 33605)

DESIGN CRITERIA PACKAGE

PREPARED BY:

CONTRACT ADMINISTRATION DEPARTMENT

CITY OF TAMPA
February 4, 2021

DESIGN CRITERIA:

The City of Tampa has prepared the Design Criteria Package for RFQ: **21-C-00015** for Design-Build services related to the McKay Bay Waste to Energy (WTE) Facility, located at 107 N. 34th Street Tampa, FL 33605. The scope shall include, but not be limited to the following:

- **Comprehensive Design Services**
- **Survey Services**
- **Coordination of Upgrades/Repairs to the Multiple Projects Identified Herein**
- **City of Tampa and All Required Regulatory Permitting**
- **One Guaranteed Maximum Price (GMP) Proposal**

SECTION 1: Design Criteria in General

Purpose

1.1. This document provides the criteria for the design and construction of eight (8) separate repair, upgrade, and replacement projects (A - J, Sec. 2) at the McKay Bay WTE Facility. The intent is to list the minimum design criteria necessary for achieving this effort under one Design-Build GMP (GMP).

1.2. Scheduling and coordination of the following listed projects (A-J) must organize inevitable shutdowns, long lead times, and funding in the most efficient and suitable manner acceptable to McKay Bay WTE operations. In response to End-user project descriptions and product/system exhibits, respondents should propose a scheduling and coordination matrix for a single GMP package, to be refined during the pre-design/proposal phase in negotiation with the end-user and stakeholders of the City of Tampa.

1.3. This criteria package presents user comments and product data as a basis of design - it is not a specification or prescriptive checklist. This package is not intended to replace the professional judgment by a competent licensed professional engineer or architect in proposing the full scope of work needed and the budget required. The exhibits attached consist of proposals and estimates for parts of the work described under this RFQ that have been compiled by the end-user and are included here for use as a basis of design only and not intended to indicate acceptance or intent to hire.

1.4. Additionally, nothing in this document should preclude consideration and use of emerging technologies and commercially available products if they can be proven to result in the successful and satisfactory design and construction of the following projects.

1.5. Construction Documents: In addition to City of Tampa requirements, it is imperative that the final designer and preparer of construction documents fully understand ADA regulations and accessibility, public safety, and all related code/plan-review submittal requirements to design and construct facility improvements accordingly.

SECTION 2: Basis of Design (Projects A – J)

A. McKay Bay Main-Transformer Auxiliary-Equipment Upgrade and Replacement-Plan (Project)

1.1 Preliminary Budget

$1,250,000 (Project total budget to be determined as part of the design and pre-construction effort.)

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include this all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing GMP total scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Replacement Plan Introduction: *This project provides for the replacement of the main 69kV transformer at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This includes new style and controls (Note - very long lead time on procurement).*
Additional Information: *The existing main transformer is over 35 years old and there is no on-site spare. Failure would result in a complete facility shutdown. Timing will be required to coincide with a facility cold iron outage. Lead time is estimated at 2 years to design and manufacture a completely new transformer.*
*NOTE: The Main Transformer Replacement-Plan is to include a cost and timeline proposal for main transformer replacement - the following Additional Information is for work to be completed currently:

b. Main-Transformer Auxiliary-Equipment: Repair/replace with comparable or better:

1. *High voltage switch gear with breakers*
2. *All high voltage feeders and breakers on turbine island MCC*
3. *All metering relays, transformers, and protective devices on each side of the main transformer*

c. Exhibits

1. **TBA**

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

B. McKay Bay Scalper Building Repairs (Project)

1.1 Preliminary Budget

$300,000 (project scope and total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for the refurbishment of the scalper building and equipment at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This project includes additional pre-engineering for updated Fly Ash Conditioner, replacing feed hoppers, piping, and controls, and other construction access.*

Additional Information: *Properly operating pug mills are essential to limit ash dusting, which is an environmental and personnel/safety hazard. Completion of a new fly ash conditioner design should lower personnel cleaning requirements in this area*

b. Repair/replace with comparable or better:

1. Fly Ash Conditioner: (End-user Comments) *Before we do any work on the scalper building structure, we need to replace our ash mixers…DustMASTER has a proprietary mixing system ideal for WTE fly ash. This system is in use at several other WTE facilities in Florida with very beneficial results. The current system and style of design of the mixers has been causing significant operations issues and potential environmental issues. The DustMaster proprietary system reduces the airborne ash escaping the mixing system. When the ash escapes, it accumulates on other surrounding equipment and the interior of the building and is highly corrosive. Significant amounts of escaped ash could be hazardous to employees or environment. Reducing the ash escaping the mixing system will improve housekeeping in the scalper building and scalper building and equipment longevity. No other mixing system provides this specific technology and proven performance and reliability.*
2. *Upgrade/Repair Feed Hoppers and Piping, Controls*
3. *Decking and structural steel replacement where needed*
4. *Replace all piping, hangers and electrical circuits.*
5. *Upgrade all electrical boxes to NEMA 4 enclosures*
6. *Sandblasting and painting - remove all paint currently on steel and re-paint.*

c. Exhibits

1. **Exhibit B-01**: DustMASTER. Fly-Ash Conditioner, Literature (Proposal)
2. **Exhibit B-02:** DustMASTER. Fly-Ash Conditioner, Diagram A (Proposal)
3. **Exhibit B-03:** DustMASTER Fly-Ash Conditioner, Quote (Proposal)

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

C. McKay Bay Ash Floors and Bunker Repairs (Project)

1.1 Preliminary Budget

$400,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for repairs to the ash building concrete floors, bunkers, walls, and sacrificial wear surfaces at the McKay Bay WTE Facility. This includes rebar replacement, wear rail replacement, sacrificial concrete replacement, bunker and building wall repairs and protective plating, and all other necessary concrete testing and supplies.*

Additional Information: *Current ash building concrete floors and walls are showing damage and wear and require repairs and replacements. Repairs will cause considerable downtime and need to be coincided with a turbine or cold iron outage to minimize impact to facility operations.*

b. Repair/replace with comparable or better:

1. *Improve U-drain system in the ash building for collecting and trapping ash.*
2. *Modify ash building wall/wastewater containment for easier access from inside the ash building*

c. Exhibits:

1. TBA

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

D. McKay Bay Pump and Equipment Improvements (Project)

1.1 Preliminary Budget

$563,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for refurbishment of various pumps and equipment around the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This includes four boiler ram feeders table rebuilds, fabric filter double dump valve replacements, circulating water pump replacement, sump pump replacements, carbon and lime dust collector replacements, turbine-area pump replacements, and other spare parts, misc. tools, and equipment.*

Additional Information: *There are many aging small pumps around the facility that are due for replacement. In most cases replacement will be tied to a boiler or cold iron outage to minimize facility downtime.*

b. Repair/replace with comparable or better:

1. *Fabric filter screw conveyors. Need to upgrade or change of current system*
2. *Expeller replacement*
3. *Vibratory conveyors*
4. *Feed pump rebuilds and ARC valve replacements*

c. Exhibits:

1. **Exhibit D-01:** Kinematics. Vibratory Conveyor, Scope (Proposal)
2. **Exhibit D-02:** Kinematics. Vibratory Conveyor, Budget (Proposal)
3. **Exhibit D-03:** Kinematics. Vibratory Conveyor, Bottom Ash Handler (Proposal)
4. **Exhibit D-04:** Kraft-Werks. Ash-Extractor Engineering, Proposal

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

E. McKay Bay Refuse Crane Replacement (Project)

1.1 Preliminary Budget

$3,000,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for the removal and replacement of the refuse crane, bridge, rails, and trolley at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This project includes additional pre-engineering for design upgrades and new technology, controls upgrades and replacement, and other construction access.*

Additional Information: *The facility cranes have had significant recent availability issues due to their age and condition. Upgrades are necessary to the controllers and festoons. Timing should be coordinated with the T/G outage or a facility cold iron outage to minimize downtime disruptions.*

…this project is going to have to be done is stages and we should be able to do some of these items online without a major cold iron. But I do feel that some of these replacements will have to be done offline.

b. Repair/replace with comparable or better:

1. *Access and work platforms outside the runway rails*
2. *Safety tie off devices and horizontal lifelines*
3. *Rail stops*
4. *Rail*
5. *Festoon Cables (bridge side / trolley side)*
6. *Trolleys*
7. *Variable Frequency Drive*
8. *Upgrade Controls*

c. Exhibits:

1. TBA

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

F. McKay Bay Turbine Overhaul (Project)

1.1 Preliminary Budget

$3,600,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for the Turbine/Generator overhaul and rebuild at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work for the normal 5-7 year T/G overhaul schedule. This project includes additional efforts for starter and rotor generator rewinds, turbine blade replacements or rebuilds, T/G controller and lube oil replacement and upgrades, and other necessary valve and steam line refurbishment.*

Additional Information: *McKay Bay WTE Facility's T/G is over 35 years old and due for a substantial overhaul. The overhaul will cause significant downtime and is planned to coincide with other major projects to minimize disruption. Timing is a key constraint. During the outage, pieces of the turbine and generator will be required to be shipped off site for overhaul, as these are precision machines and all work cannot be done on site. Additional spare parts and some tools are required to be purchased for use during this overhaul. As this is an extremely technical project with multiple interlacing scopes, the plan is to sole-source to the current experienced vendor to complete the work and manage scope creep*

b. Repair/replace with comparable or better:

1. *Rebuild and replace all control valves*
2. *Strip insulation on TG island, inspect and replace piping as necessary and reinsulate*
3. *Replace/recondition lube oil pumps*
4. *Upgrade or replace lube oil conditioner*
5. *Replace all steam traps*
6. *Recondition all NRVs, actuators, valves, solenoids, etc*

c. Exhibits

1. **TBA**

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

G. McKay Bay Cooling Tower and Condensate Replacement (Project)

1.1 Preliminary Budget

$4,200,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for replacement and repairs to the cooling tower, circulating water, and condensate systems at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This includes a new rebuilt cooling tower with updated design, retube or upgrade the condensate system and pump to better support the plant demands.*

**Also*

- *replace condensers, rebuild circulating water and condensate pumps, line circulating water piping, and other updates.*

Additional Information: *The existing cooling tower is over 35 years old and a wood tower. The existing circulating water and condensate systems are the same age and have shown significant wear and issues. Timing of this work will result in significant facility downtime and must coincide with the major T/G outage to minimize facility disruption. Cooling tower and new circulating water piping will require detailed engineering, but due to long lead times, procurement of major pieces will need to occur separately from CCNA processes.*

b. Cooling Water System: *Replacement of the cooling water system. This is the system that supplies water to and from the cooling tower. It should be all one bi project. The current system is underground and is 35 years old. We would like to abandon the current underground piping and install new above ground piping for the cooling water system.*

**Also*

- *replace the circulating lines rather than lining them.*

c. Exhibits:

1. **Exhibit G-01:** Graham. Replacement Steam Surface Condenser, Proposal
   End-user Note: ...use the OE equipment for the condenser replacement
2. **Exhibit G-02:** Cooling Tower Depot. Tower-Replacement, Proposal

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

H. McKay Bay Stack Repairs (Project)

1.1 Preliminary Budget

$500,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

a. End-user Introduction: *This project provides for repairs to the stack and flues at the McKay Bay WTE Facility. This includes necessary parts/procurement, contractors, and unexpected discovery work. This includes new design to protect dead air space from corrosion.*

Additional Information: *Considerable corrosion has occurred in the past on the dead air space in the stack flues for all four boiler flues. The flues have been overlay patched to prolong structural stability but will eventually require permanent repairs. While portions could be done on a boiler basis, timing would work better when coincided with a cold iron outage.*

b. Repair/replace with comparable or better:

1. *Ducting and expansion joints to ID fans*
2. *Upgrade stack lights for ease of maintenance*
3. *Replace/upgrade fall protection equipment*
4. *Additional minor repairs to the stack, TBD.*

c. Exhibits:

1. TBA

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

I. McKay Bay WTE ABB DCS Upgrade (Project)

1.1 Preliminary Budget

$350,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

a. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

b. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

1. **Exhibit I-01:** ABB Incinerator, Conductor NT to S+ 3.2/2.2 Upgrade & PLC Replacement Proposal

1.4 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

J. McKay Bay WTE Auxiliary Burner System Replacement (Project)

1.1 Preliminary Budget

$750,000 (project total budget to be determined as part of the design and pre-construction effort).

1.2 RFQ Responses

c. Demonstrate experience and ability to develop a GMP to include all associated exhibits (design/construction scopes, preliminary pricing, and qualifications addressing this project scope).

d. Demonstrate experience and ability to coordinate this project proposal in response to Solid Waste scheduling criteria as a recommendation for one GMP to most efficiently coordinate lead-times, maximize downtime efficiencies, and generally phase work in least disruptive sequence to Solid Waste operations that remain active during construction.

1.3 Basis of Design

d. End-user Introduction: *…the burner replacement is a large project that will span over a 3 to a 4 year period.*

1.4 Basis of Design

1. **Exhibit J-01:** PSCE. Auxiliary Burner System Proposal

1.5 Existing Conditions

Design build services shall include but not be limited to survey and verification of all existing conditions including environmental compliance, utility coordination, regulatory permitting, and ultimate construction of all site amenities necessary to provide the needed upgrades, repairs, and/or replacements in equipment, buildings, and site infrastructure.

RFQ: 21-C-00015
McKay Bay Waste-to-Energy (WTE) Facility Upgrades: Design-Build, Design Criteria Package

SUMMARY

Estimated Project Budget

A.	**McKay Bay Main Transformer Replacement**	**$ 1,250,000**
B.	**McKay Bay Scalper Building Repairs**	**$ 300,000**
C.	**McKay Bay Ash Floors and Bunker Repairs**	**$ 400,000**
D.	**McKay Bay Pump and Equipment Improvements**	**$ 563,000**
E.	**McKay Bay Refuse Crane Replacement**	**$ 3,000,000**
F.	**McKay Bay Turbine Overhaul**	**$ 3,600,000**
G.	**McKay Bay Cooling Tower and Condensate Replacement**	**$ 4,200,000**
H.	**McKay Bay Stack Repairs**	**$ 500,000**
I.	**McKay Bay General-Facility Upgrades**	**$ 350,000**
J.	**McKay Bay Auxiliary Burner System Replacement**	**$ 750,000**
	Total Preliminary Budget	**$14,963,000**

Exhibits

B-01 ***Fly-Ash Conditioner:*** DustMASTER. Fly-Ash Conditioner. Literature
File: *B-01_DustMASTER_Literature_Proposal.pdf*

B-02 ***Ash Floors and Bunker Repairs:*** DustMASTER. Fly-Ash Conditioner, Diagram A
File: *B-02_DustMASTER_Diagram-A_Proposal.pdf*

B-03 ***Pump and Equipment Improvements:*** DustMASTER. Fly-Ash Conditioner. Quote
File: *B-03_DustMASTER_Quote_Proposal.pdf*

D-01 ***Vibratory Conveyor:*** Kinematics. Vibratory Conveyor, Scope
File: *B-04_Kinematics_Vibratory-Conveyor-Scope _Proposal.pdf*

D-02 ***Vibratory Conveyor:*** Kinematics. Vibratory Conveyor, Budget
File: *B-05_Kinematics_Vibratory-Conveyor-Budget_Proposal.pdf*

D-03 ***Vibratory Conveyor:*** Kinematics. Vibratory Conveyor, Bottom Ash Handler, Proposal
File: *B-06_Kinematics_Vibratory Conveyor_Bottom-Ash-Handlng_Proposal.pdf*

D-04 ***Ash-Extractor:*** Kraft-Werks. Ash Extractor Engineering, Proposal
File: *B-07_Kraft-Werks_Ash-Extractor-Engineering_Proposal.pdf*

F-01 ***Turbine Overhaul*****:** PSCE. Auxiliary Burner Proposal (Op. 2)
File: *PSCE-Auxiliary-Burner-System_Proposal.pdf.*

G-01 ***Condensate Replacement*****:** Graham. Replacement Steam Surface Condenser, Proposal
File: *G-01_Graham_Replacement-Steam-Surface-Condenser-Proposal.pdf*

G-02 ***Tower Replacement*****:** Cooling Tower Depot. Replacement Cooling Tower, Proposal
File: *G-02_Cooling-Tower-Depot_Tower-Replacement_Proposal.pdf*

I-01 ***General-Facility Software/Hardware Upgrades***
File: *I-01_ABB_Gen-Facility-Upgrades_Proposal.pdf*

X-01 ***General Site Location/Reference Plan***
File: *X-01_SitePlan.pdf*

Exhibit 0A-01:
ABB. Basis of Design for Multiple Upgrades, Proposal
(General-Facility Project: McKay Bay WTE)

CITY OF TAMPA

McKay Bay

Incinerator, Conductor NT to S+ 3.2/2.2 Upgrade & PLC Replacement

Reference Number: MAK-201029-1 Firm

Contact Information

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Proposal Contact

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Proposal Engineer
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Revision History

Revision History Table

Revision Number	Issue Date	Comments
Revision 00	11/3/2020	Initial Release

1 Introduction

ABB is pleased to submit this Firm proposal for the City of Tampa - McKay Bay Incinerator, Conductor NT to S+ 3.2/2.2 Upgrade & PLC Replacement. Our proposal covers the furnishing of the hardware, software, and services as described in the attached proposal, based on the request.

This proposal is based on the following:

- Evolve Conductor NT HMI to S+ Operations 3.2
- Evolve Composer to S+ Engineering 2.2
- Option price to include Disaster Recovery
- Replacement of all MPS II's with MPS IV's
- Upgrade of all MFP controllers with BRC410 controllers along with latest version of firmware/hardware
- Upgrade of communication topology to ethernet
- Replacing the existing Allen Bradley PLC with Symphony Din Rail I/O
- Redundant SPC700 Controllers and separate power source provided for Burners in each Unit
- Software configuration utilizing S+ hardware

2 HMI Evolution Hardware & Software Scope of Supply

2.1 Industry Care – Sites and Systems Supported

This proposal is based on City of Tampa – McKay Bay having an active and valid Industry Care Agreement that includes coverage for the software identified in the table below at the Maintain and Evolve Software Support Level.

City of Tampa – McKay Bay – SID13777

Software Support Level	Maintain and Evolve	# of Concurrent Users	6	System Functionality	☐ Turbine Analyst ☒ History ☐ Harm. Gateway

Licenses Included in System Identification

License #	Product Description	Machine ID
6S6866921	Composer Client, v5.0	26933
6S6866922	Composer Client, v5.0	38281
6S6866923	Composer Client, v5.0	20501
6S6866911	Composer Server, v5.0	20501
6S6866912	Composer Server, v5.0	20501
SLMM07012003165111	Conductor NT/Client, vSR6.0	26933
SLMM07012003165207	Conductor NT/Client, vSR6.0	20500
SLMM07012003165259	Conductor NT/Client, vSR6.0	20501
SLMM07012003165352	Conductor NT/Cient, vSR6.0	20502
SLMM31012003175824	Conductor NT/Server, vSR6.0	20503
SLMM31012003175937	Conductor NT/Server, vSR6.0	20504

2.2 Software Scope of Supply

ABB will be upgrading the following software licenses numbers:

- License 6S6866911
- License SLMM07012003165111
- License SLMM07012003165207
- License SLMM07012003165259
- License SLMM07012003165352
- License SLMM31012003175824
- License SLMM31012003175937

Additional features or capacity expansions (tags, operator clients, OPC client, etc.) can be quoted upon your request.

2.3 Hardware Scope of Supply

ABB will supply all necessary Dell computer hardware per ABB's specifications, third party software, and all third party equipment as follows:

- Four (4) Servers
  - Two (2) S+ Operations Servers
  - One (1) Engineering Server
  - One (1) Historian Server
- Six (6) Workstations
  - Four (4) Operator Workstations
  - Two (2) Engineering Workstations
- Three (3) Switches
- Twelve (12) Monitors
- Three (3) Ethernet PNI Kits to be shipped loose and mounted in existing PCU Cabinet

  Note: ABB assumes existing PCU has sufficient space and power. It is also assumed that a DCS hardware upgrade from INFINET to PN800 will be implemented before the HMI project.

ABB provides McAfee anti-virus software on all computers.

ABB provides Microsoft Excel 2016 on SPO historians and EWS computers.

Please see the Attachments section of this proposal and refer to the Detailed Bill of Material for additional information.

3 Incinerator Hardware and Software Scope of Supply

Please see the Attachments section of this proposal and refer to the Detailed Bill of Material.

Notes:

1. *Harmony hardware is being provided at a 20% discount off list price per the City of Tampa & ABB active service agreement*
2. *S+ software is being provided at a 10% discount off list price per the City of Tampa & ABB active service agreement*

4 PLC Replacement Hardware and Software Scope of Supply

ABB will be providing twenty-one (21) panels to be mounted in existing cabinets and connected to existing termination blocks. In accordance to NRPA, burner locations will have their own redundant pair of SPC700 controllers with dedicated power sources.

Please refer to Section 7 below for the tag count and attached Bill of Material for a more detailed description.

5 Project Organization

5.1 Project Management

The success of every project is based upon the effective coordination and communication between the Client and ABB. In order to achieve this goal, ABB assigns a qualified Project Manager to each project that is awarded. The Project Manager acts as the single point of contact for the Client for all matters related to project scope, schedule, and commercial items.

The Project Manager develops the project implementation plan in conjunction with the Project Team and is responsible for its execution in accordance with the Client's contractual requirements and expectations. Review of those requirements and expectations is made during project kick-off, to ensure all parties have a common understanding.

The implementation strategy developed by the Project Manager will ensure optimum schedule adherence, contract delivery, and system performance through effective and efficient resource utilization with a focus on maximum quality and reliability through internal design reviews and through industry-wide, sustainable quality procedures including but not limited to ISO9001.

The Project Manager is supported by the Primary System Engineer (PSE), the Lead Field Service Engineer, and by Technical Specialists.

The PSE is responsible for directing the technical implementation of the project and assuring consistency and uniformity across the design and implementation phases of the project by following the design basis agreed upon with the customer. The PSE coordinates the System Engineers, who provide the detailed design, implementation, and testing of the Distributed Control System. They include HMI, application and hardware engineers / technicians.

5.2 Meetings

The following meetings are included.

Meetings Proposal Summary

Qty.	Meeting	Location	Duration	Attendees
1	Kick-off Meeting	On-Site	1/2 Day	Project Manager & Lead Engineer
1	Design Review Meeting	Conference Call	1 Day	Project Manager & Lead Engineer

Notes:

1. *Additional review meetings can be conducted by conference call.*
2. *Travel and living expenses have been included.*

6 Project Engineering Services

6.1 HMI In-House Engineering

This proposal is based on ABB performing the following services in-house:

- Order software and hardware as described in scope of supply
- Stage hardware and load software
- Acquire customer's backup files
- Configure Windows Security
- Development of up to one hundred (100) graphics
- Perform health check of system
- Two (2) day remote Software Acceptance Test (SAT)
- Tear down and package hardware for shipment

6.2 Incinerator In-House Engineering

ABB will perform the below in-house engineering.

- Procure hardware and software.
- Provide new topology diagram

6.3 PLC Replacement Basis of Engineering

Below is the customer provided basis of system definition and engineering.

6.3.1 System Tags for the DCS

The below I/O summary will be provided for each machine for the 4 different units unless otherwise noted.

I/O Summary: Burner				
Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
DI 120 VAC – System (Routed)	DI02	16	4	64
DO 24/48/120/125 Field	DO05	16	4	64
TOTAL PER UNIT			8	128
Units	1	2	3	4
Panel Count	1	1	1	1

Notes:

1. *In order to meet NRPA, each burner location will have its own dedicated redundant pair of SPC700 controllers and power source.*

I/O Summary: NOX Out Circulating System				
Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
AI 4-20 mA HART (Group) System	AI02	16	1	16
DI 120 VAC – System (Routed)	DI02	16	1	16
DO 24/48/120/125 Field	DO05	16	1	16
TOTAL PER UNIT			3	48
Units	1	2	3	4
Panel Count	1	0	0	0

Notes:

1. *It is assumed there is only one NOX Circulating System in the whole plant.*
2. *This is remote I/O that will be connecting back to BRC410s not included in this proposal.*

I/O Summary: NOX Metering				
Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
AI 4-20 mA HART (Group) System	AI02	16	1	16
AO 4-20 mA - System	AO01	16	1	16
DI 120 VAC – System (Routed)	DI02	16	2	32
DO 24/48/120/125 Field	DO05	16	1	16
TOTAL PER UNIT			5	80
Units	1	2	3	4
Panel Count	1	1	1	1

Notes:

1. *This is remote I/O that will be connecting back to BRC410s not included in this proposal.*

I/O Summary: Soot Blower

Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
DI 120 VAC – System (Routed)	DI02	16	2	32
DO 24/48/120/125 Field	DO05	16	1	16
TOTAL PER UNIT			3	48
Units	1	2	3	4
Panel Count	1	1	1	1

Notes:

1. *This is remote I/O that will be connecting back to BRC410s not included in this proposal.*

I/O Summary: Expeller				
Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
DI 120 VAC – System (Routed)	DI02	16	1	16
DO 24/48/120/125 Field	DO05	16	1	16
TOTAL PER UNIT			2	32
Units	1	2	3	4
Panel Count	1	1	1	1

Notes:

1. *This is remote I/O that will be connecting back to BRC410s not included in this proposal.*

I/O Summary: Vonroll Stoker				
Signal Type	Module	Pts/ Module	Module Qty	Supplied I/O
SD I/O per Unit				
AI 4-20 mA HART (Group) System	AI02	16	1	16
AO 4-20 mA - System	AO01	16	1	16
DI 120 VAC – System (Routed)	DI02	16	3	48

DO 24/48/120/125 Field	DO05	16	3	48
TOTAL PER UNIT			8	128
Units	1	2	3	4
Panel Count	1	1	1	1

Notes:

1. *This is remote I/O that will be connecting back to BRC410s not included in this proposal.*

6.3.2 System Displays

System Display Summary

ABB has provided up to:

- 42 Process Displays

6.4 PLC ReplacementHardware Definition & Assembly

Receiving the design data is a predecessor of ABB beginning hardware design activities (cabinet drawings, power drawings, procurement, etc.). ABB's proposal is based on a completely assembled and internally tested system. Engineering provides a partitioned I/O database, system overview, cabinet and power drawings. Assembly includes the mounting of equipment (modules, power, terminations, etc.) into standard ABB enclosures or onto a sub-panel and wiring of power and communications channels located within the cabinets or on the sub-panels.

6.4.1 Hardware Cut-off

Hardware cut-off is defined as the last date on which the customer can revise the design data (I/O list, cabinet layout requirements, etc.) and maintain the schedule without a commercial impact.

If customer reviews are in the scope of the contract then during the design review process only corrections will be addressed without commercial impact. If the customer includes changes in their design review comments related to changes in scope then these will be addressed commercially.

6.4.2 Software Definition & Configuration

Receiving the design data is a predecessor of ABB beginning software design activities (logic configuration, graphics, etc.). Controllers are configured to execute a defined control strategy. Complete controller execution includes: the scanning of input signals, generation of control actions based on the configured control strategy, and the output of those actions to a final control element. Controller configurations consist mainly of arrangements of ABB Function Blocks, prepared and downloaded using ABB's System Engineering Tools software package. ABB will use ABB standard device macros and application logics to create the controller configurations.

Operator Consoles are configured to display, document and archive process data and provide for control interaction with the operator. Displays can include graphic screens representing plant devices, trends of process and calculated data, alarm summaries, etc. all of which contain live process data. The primary configuration elements of the

operator console are the tag database and graphics configuration. Other major configuration elements include display hierarchies, logging, archival storage, alarm management, and password security. Configurations are prepared using ABB console configuration software packages. ABB will use ABB standard symbol and element libraries to create console displays.

6.4.3 Software Cut-off

Software cut-off is defined as the last date on which the customer can revise the design data (I/O list, logic drawings, tagged graphic sketches, alarm set points, etc.) and maintain the schedule without a commercial impact.
If customer reviews are in the scope of the contract then during the design review process only corrections will be addressed without commercial impact. If the customer includes changes in their design review comments related to scope then these will be addressed commercially.

6.5 Testing

6.5.1 PLC Replacement Hardware Testing

All cabinets are completely assembled, staged and tested at ABB's assembler's site. System Testing Services provided by ABB will include:

- Power System and Ground Test
- Power Up Control System Equipment
- Verify Control System
- Equipment Communication and Operation
- Standard I/O Testing
- Formal Documentation of Testing Results using ABB TeamTrack

6.5.2 PLC Replacement Software Testing

ABB's Control System Software testing will begin with a visual inspection of server cabinets, consoles and network equipment. ABB will then conduct a functional test which will include:

- Proper functionality and purpose of all computers based on software applications
- Verification of the Control Logic
- Proper behavior of all symbols, faceplates, trends, and displays
- Review of HMI alarm management definition
- Verification of user interactions

ABB will conduct a Fault Tolerance Test when redundant hardware and/or software applications are included in the scope of the project.

Software testing will be conducted on the Internal Servers/Workstations utilizing soft controllers with simulated feedback for all configured loops, testing the consoles to/from the controller application. Software testing will include the following:

- System Operation of the control logic and HMI will be verified through loading, testing, and documenting using ABB Teamtrack.

- ABB verifies all display call up times meet industry standards, and that all HMI features function as required.

6.5.3 PLC Replacement Customer Witness Testing

ABB has based the proposal on providing the following:

Customer Witness Test Proposal Summary

Location	Duration
Customer Witness Test Software - Remote	Three (3) Days

6.5.4 HMI Customer Witness Testing

ABB has based the proposal on providing the following:

Customer Witness Test Proposal Summary

Location	Duration
Customer Witness Test Software - Remote	Two (2) Days

6.6 Deliverables

6.6.1 HMI Customer Deliverables

This proposal is based upon the customer providing the following deliverables:

- HMI Backup Files
- Engineering Backup Files

ABB will provide a document that defines the procedures on how to obtain the required information. It is very important that the Customer deliverables be error free prior to submittal to ABB for evolving to the latest software being supplied for this project. Errors that exist in the legacy backup files may/will result in these same errors in the new system. Customer recommendations prior to sending ABB the backup files:

- HMI Backup Files
  - All symbols and displays are error free.
  - All HMI system databases/files match the engineering software; the customer can define which to use if the source can be supplied from more than 1 source.
- Engineering Backup Files
  - All software engineering files are updated with current controller specifications/settings that may have been tuned from the HMI and not saved to its respective engineering software.
  - All controller configurations compile without errors.
  - If compiler warnings exist, they should be understood and found acceptable to the customer.

If the customer needs assistance in acquiring the customer deliverable files or verifying these files are error free, the ABB team can help upon request. Please see the Optional Pricing section.

6.6.2 Incinerator Customer Deliverables

- Customer will provide system backup, specifically database and composer/engineering files.
- Customer is responsible for pulling all affected cables and wiring.

6.6.3 PLC Replacement Customer Deliverables

Hardware Definition

- Existing PLC database
- Existing PLC wiring diagrams
- Existing cabinet and panel drawings
- Customer will be responsible for pulling all affected cables and wiring.
- Customer will be performing point to point loop checks.

Software Definition

- Logic Diagrams / Descriptions: Print outs of existing ladder logic, process descriptions or operational manuals
- Operator Display Definition: Existing Process Instrumentation Diagrams

6.6.4 HMI ABB Deliverables

This proposal is based upon ABB providing the following deliverables:

- Computer & Network & Peripheral Connection information
- Project Loading information which documents data such as node names, IP addresses, and security data.
- Server Cabinet Arrangement and Power Distribution information
- Standard ABB Product Manuals in electronic format
- ABB will provide one (1) set of As-Shipped ABB software back-up files

6.6.5 Incinerator ABB Deliverables

- ABB will include time for field service engineers to install provided hardware and do configuration on site as described below.

6.6.6 PLC Replacement ABB Deliverables

Hardware

- I/O Database Guideline
- Site Preparation Manual

- Client/Server and Network Guidelines: Includes ABB's standard server, workstation and networking specification; including computer naming and IP addressing.
- System Overview Drawings: System processor distribution, network and fieldbus interface equipment.
- Client/Server Network Layout Drawing
- Cabinet (Sub-panel) Arrangement Drawings: Graphically display the physical location of server/client machines, controller modules, I/O modules, and terminations inside of the cabinets.
- Power Distribution Drawings: Detail module and I/O power cabling throughout the cabinet.
- Heat and Power Calculations
- Formal documentation of testing results using ABB TeamCheck.
- Standard Product Manuals
- As Shipped Drawings: Client/Server Network Layout, Server Cabinet, Cabinet arrangement, Power distribution, and System Overview Drawings.

Software

- I/O Database Guideline
- ABB Macro and Logic Libraries
- Tested Controller and Console Configuration
- Standard Report Template: Customer can use to create customized reports
- Formal Documentation of Procedure and Results from the Customer Witness Test
- As Shipped Drawings: Includes Composer/S+ Engineering Control Logic Diagrams

6.6.7 Incinerator Prerequisites

- Composer 5.1 or higher
- S+ Operations or 800xA 6.0 or 6.1
- S+ Engineering 2.1 or later
- If Harmony OPC connected to CIUs on the same INFINET, Harmony OPC must be v7.0 to support PNI800
- Controllers communicating on the controlway must be BRC300/400/410

7 Training (Optional)

7.1 Introduction to Training

ABB University has certified technical instructors to deliver the technical training you need; at ABB University's world-class training centers and facilities, locally at your plant site, or via the internet. For more information or other course offerings please visit www.abb.com/abbuniversity.

7.2 ABB University Training

For decades, ABB University has helped customers achieve optimized equipment performance by providing cost effective, high quality, technical training. Our

courseware and learning paths described below deliver comprehensive and up-to-date expertise for existing and new ABB product offerings, processes and technological advances.

7.3 On-Site Training

ABB On-Site Training makes it possible for plant personnel to learn all about their new DCS from the convenience of their own plant, on their own system, using their own machines.

8 Field Service

8.1 Introduction to Field Service

When it comes to service, ABB's target is the same as yours – more uptime, greater safety, and increased profitability. Providing world-class support to ensure maximum performance of your Power and Automation equipment investment is important to us. Our complete portfolio of services and service products can help you maximize your investment by improving equipment productivity and minimizing costs through extending the useful equipment life.

At ABB, we give you one of the largest staff of control system specialists in the industry. They are thoroughly capable of diagnosing and solving any instrumentation and control challenges. We offer the flexibility and know-how to expertly service ABB products, as well as the instrumentation and controls of other manufacturers.

8.2 Start-up, Testing & Commissioning Services for HMI Upgrade

A detailed Summary of the service support hours can be found below.

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Field Service Engineer	1	Ten (10) Working Days	10 hr Days (Monday - Friday)

Notes:

1. *Field Service is offered as an allotment of working days as described above. In addition to above, ABB has also included travel time to and from the site.*
2. *Any adjustment of hours (increase or decrease) will result in a responding change order. Please note, a per diem rate for Field Service is provided in the Commercial Section of this proposal for your information.*
3. *The field service engineer shall be granted unencumbered access to the equipment upon which work is to be conducted. Standby time, resulting from any issue, will be charged against the stipulated hours.*
4. *Travel & Living expenses have been included.*
5. *City of Tampa is receiving a 10% discount off field service according to the City of Tampa and ABB active service agreement*

8.3 Incinerator Hardware Field Service Summary

MPSIV Upgrade

- Remove the existing power system
- Replace existing power bus bars and MMU's as needed
- Install new MPS IV equipment
- Check for functionality

Controller Upgrade

- Recompile existing controller configurations for BRC410's, as appropriate
- Remove existing modules
- Install new modules
- Download compiled controller configurations into BRC410's
- Power up cabinets
- Check modules for proper operation

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Field Service Engineer	2	20 Working Days	10hr Days (Monday - Friday)

Notes:

1. *Field Service is offered as an allotment of working days as described above. ABB has also included travel time to and from the site.*
2. *Any adjustment of hours (increase or decrease) will result in a responding change order. Please note, a per diem rate for Field Service is provided in the Commercial Section of this proposal for your information.*
3. *The field service engineer shall be granted unencumbered access to the equipment upon which work is to be conducted. Standby time, resulting from any issue, will be charged against the stipulated hours.*
4. *Travel & Living expenses have been included.*
5. *City of Tampa is receiving a 10% discount off field service according to the City of Tampa and ABB active service agreement*

8.4 Incinerator Project Prerequisites for Field Service

- The cabinets to be worked on must be shut down and made available to ABB for installation
- Customer to stage parts at work location
- Customer will provide one (1) technician to assist ABB's Field Service Engineer during the MPS IV Power Supply upgrade
- Modules requiring 30VDC power must be replaced
- ABB will only provide hand tools. Ladders, carts, etc. will be the responsibility of the customer

- Updating existing cabinet arrangements or power distribution drawings is not included. Upon request, ABB can provide pricing to upgrade these drawings.
- Disposition of replaced parts will be the responsibility of the customer
- The cabinets to be worked on are standard ABB/Bailey cabinet with dimensions (2200mm / 86.6in. H 600mm/23.62 in W 800mm/ 31.5 D) with front and rear access. This proposal does not include any parts or service to install the MPS IV power supply into a nonstandard cabinet. Additional review is needed to determine if nonstandard cabinet can be supported.

8.5 PLC Replacement Field Service Summary

A detailed Summary of the service support hours can be found below to do onsite configurations, database changes and provide loop check support as actually point to point loop checks will be done by customer. This is assumed to be taking place during one outage.

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
4 Field Service Engineers	1 Each	15 Working Days Each	10hr Days (Monday - Friday)

Notes:

1. *Field Service is offered as an allotment of working days as described above. ABB has also included travel time to and from the site.*
2. *Any adjustment of hours (increase or decrease) will result in a responding change order. Please note, a per diem rate for Field Service is provided in the Commercial Section of this proposal for your information.*
3. *The field service engineer shall be granted unencumbered access to the equipment upon which work is to be conducted. Standby time, resulting from any issue, will be charged against the stipulated hours.*
4. *Travel & Living expenses have been included.*

9 Assumptions, Clarifications, and Standards (HMI & Incinerator)

Any order for this proposal will be based only on the hardware, software, and services as described above and in the Detailed Bill of Materials.

This proposal is based upon ABB supplying standard servers, workstations, networking hardware, and utilizing ABB developed libraries and following standard system loading procedures, including computer naming, user account names, and IP addressing. Software loading and network/computer hardware configuration information will be provided during the course of system design and engineering for information purposes. This standardization allows ABB to load the computers based on system images and reduces cost to the customer.

The specific network equipment part numbers listed are based on current standards and are subject to change during the project execution if updated equipment is released by the OEM.

There is no guarantee that DBDOC or other APPs connected to a CIU on the same INFINET will work when the CIU is replaced with a PNI800.

If the Customer would like to use a different computer model or make, or purchase the computers or use existing computers, or wants other software packages, then ABB will adjust the price to account for the extra engineering time to individually implement the Customer selections and load the software.

10 Assumptions and Clarifications (PLC Replacement)

10.1 Assumptions and Clarifications

- The design intent of the proposed Control System is to comply with the most common codes, standards and design practices found in our own industry, as well as those of the markets we serve.
- All ABB Burner Management Systems are designed to comply with the latest NFPA codes in place at the time of offering. ABB standard practice to meet the NFPA 85 requirement that no single point failure shall prevent a MFT is to design all MFT trip conditions to be implemented with 1 out of 2 logic (if either signal is in a trip condition the boiler will be tripped). All hardwired interfaces to the existing CCS and/or other systems will be implemented as hardwired inputs or outputs to the proposed BMS. The BMS will be designed to trip fuel devices on loss of BMS power.
- ABB has not included any modifications or materials for the existing field hardware or other control sub-systems as part of this offering.
- The provided ABB testing is based primarily on software verification. All I/O Panels will be assembled and tested. A complete test report of all hardware testing and results will be provided. Software testing will be conducted on the Owners/Internal Servers/ Workstations utilizing soft controllers with simulated feedback for all configured loops testing the consoles to/from the controller

application. Certain test hardware may be utilized for demonstration purposes; i.e. to demonstrate to the operator an indication of a controller or communication failure.

10.2 Duplicate Engineering

The control configuration for the duplicate units (Units 2-4) will be identical to Unit 1. The console database for Units 2-4 will be a copy of Unit 1. Graphics for Units 2-4 will be identical to the Unit 1. Separate drawings will be provided for each unit, but the only changes to the drawings for Units 2-4 will be the title block changes (plant, drawing number, revision level) and tag-name changes for tag-names that appear on the drawings.
The following clarifications are provided for the duplicate DCS units:

- ABB's proposal excludes a kick-off meeting and review meeting for the duplicate units.
- ABB expects only one (1) set of unit documentation from the customer for the original and duplicate units. ABB will engineer all systems based on that documentation.
- ABB will require approvals for only the original DCS unit. The duplicate units are assumed to be identical, as such; no additional hardware or software approvals will be required.
- ABB will duplicate the configuration properties of the HMI for the duplicate DCS units.
- ABB will only perform the Customer Witness Test for the original unit; any resulting changes made to the original DCS unit will be duplicated for the duplicate DCS units.

11.1

Notes:

12 Optional Pricing

12.1 Security Workplace (SWP) / Disaster Recovery

Please refer to Attachment 4 – Cyber Security Workplace Packages.

12.2 Field Service

If additional field service time, beyond the time included in the proposal is required, the field service will be invoiced per City of Tampa – McKay Bay active and valid Industry Care Agreement. If no active and valid Industry Care Agreement is in place, field service will be invoiced at List Price in accordance with ABB Field Service Rate Sheet at the time services are rendered.

12.3 Field Service Data Collection Assistance

A Field Service Engineer will go to Site and assist in collect the Customer Deliverables in Section 4.2.1.

12.4 Delivery to McKay Bay

13 Purchase Order Instructions

If this proposal meets your approval, please send your purchase order referencing the Proposal Number, MAK-201029-1, Revision Number, and Date information to US-PSPG-OE@abb.com.

14 Commercial

14.1 Terms and Conditions of Sale

The Terms and Conditions of this proposal are per the Master Alliance Agreement and City of Tampa effective June 12, 2020. No other terms and conditions shall apply.

14.2 Coronavirus (COVID-19) Sales Contract Clause

The Parties are aware of the outbreak of a Coronavirus (commonly known as COVID-19) or any mutation of such virus which is or may impact normal business and execution of this Contract. The Parties agree that ABB is entitled to cost compensation, time extension, or other reasonably required contract adjustments, if any consequences whether directly or indirectly resulting out of, or in connection with the coronavirus outbreak, lead to delays in delivery of goods or provision of services or otherwise affect ABB's contractual obligations or duties.

14.3 Validity

This proposal is subject to acceptance within One hundred eighty (180) days. All prices, schedules, and technical descriptions are valid throughout this period.

14.4 Payment Terms

Terms are Net 30.

14.5 Payment Milestones

- 25% Upon Receipt of Order (December 2020)
- 20% Upon ABB Prepare & Submit Cabinet Arrangement Drawings for Customer Review (February 2021)
- 15% Upon Release of Equipment Procurement Orders (March 2021)
- 30% Upon shipment of Order (September 2021)
- 10% Upon Completion of Startup and Commission, no later than 90 days from Delivery (December 2021)

*Note: The above dates reflect payment invoices.

14.6 Delivery

This proposal is based on delivery FCA Factory (Cleveland, OH) per Incoterms 2020.

14.7 Schedule

Shipment can be made approximately twenty-six (26) to thirty-two (32) weeks after receipt of customer design data. This schedule is approximate and may be improved pending further commercial discussions.

14.8 Confidentiality

This proposal contains information that is proprietary to ABB Inc.

15 Attachments

1. ABB Inc. Standard Terms & Conditions of Sale (per Alliance Agreement)
2. Field Service Rate Sheet
3. Detailed Bill of Material
4. Cyber Security Workplace Packages

CANCELLATION/NON-RENEWAL - Each insurance policy shall provide that at least 30 days written notice must be given to City of any cancellation of coverage and at least 10 days' notice for non-payment of premium. Firm shall also have an independent duty to notify City in like manner, within 5 business days of Firm's receipt from its insurer of any notices of same. If any policy's aggregate limit is reduced and not reinstated, Firm shall directly take steps to have it reinstated. Notice and proof of renewal/continued coverage/certifications, etc. shall be sent to the City's notice (or Award contact) address as stated in the Agreement with a copy to the following: 1 Purchasing Department, 306 E Jackson Street, Tampa, FL 33602 1 Other: City of Tampa Insurance Compliance c/o Ebix BPO, PO Box 100085- ZS, Duluth, GA 30096

CERTIFICATE OF INSURANCE (COI) AND ENDORSEMENTS (blanket additional insured and blanket waiver of subrogation) - to be provided to City prior to Firm beginning any work/services or taking occupancy and, if the insurance expires prior to completion of the work or services or Agreement term (as may be extended), a renewal COI at least 15 days before expiration to the above address(es). COIs shall specifically identify the Agreement and its subject (project, lease, etc.), shall be sufficiently comprehensive to insure City (named as additional insured as required above) and Firm and to certify that coverage extends to subcontractors' work, and as to permit the City to determine the required coverages are in place. Certificate Holder must be The City of Tampa, Florida.

CLAIMS MADE - If any liability insurance is issued on a claims made form, Firm agrees to maintain such coverage uninterrupted for t 3 years following completion and acceptance of the work either through purchase of an extended reporting provision or purchase of successive renewals. The Retroactive Date must be shown and be a date not later than the earlier of the Agreement date or the date performance/occupancy began thereunder.

DEDUCTIBLES/ SELF-INSURED RETENTIONS (SIR) -Firm shall be fully responsible for any deductible or SIR. In the event of loss which would have been covered but for a deductible or SIR, City may withhold from any payment due Firm, under any agreement with the City, an amount equal to same to cover such loss should full recovery not be obtained under the policy.

PRIMARY POLICIES - To the extent of the additional insureds' status as such, Firm's insurance coverage, required under this Agreement, shall be primary insurance coverage as to the City, its elected officials, departments, officers, and employees, and any insurance or self-insurance maintained by the City, its elected officials, departments, officers, and employees shall be excess of the Firm's insurance and shall not contribute with it.

WAIVER OF SUBROGATION - To the extent allowable under applicable law, with regard to any policy of insurance that would pay third party losses, except for the required Cyber Liability insurance, Firm hereby grants City a waiver of any right to subrogation which any insurer of Firm may acquire against the City by virtue of the payment of any loss under such insurance. Firm agrees to obtain a blanket endorsement that may be necessary to affect such waiver, but this provision shall apply to such policies regardless.

ABB US Service Standard Rate Sheet – 2020

Primary Work Hours

The following labor rates are applicable during Primary Working Hours (PWH) defined as an 8-hour period beginning between 7:00 A.M. and 10: 00 A.M. Monday through Friday, excluding national and ABB recognized holidays. The primary work hours include a one half-hour non-paid lunch period and two 15-minute breaks during the day.

Base Service Labor Rates

Technology	Service Type	Hourly Rate
Drives and Motors	Field Services	$315
Open Control systems (OCS)	Field Services	$306
	Process Application Engineering Services	$345
Paper Quality Control Systems & Web Imaging Systems (QCS &WIS)	Field Services	$306
	Sensor Specialist Services	$342
	Systems Engineering Services	$342
	Process Application Engineering Services	$345
	Lorentzen & Wettre Engineering Services	$326
	Lorentzen & Wettre Specialist Service	$370
Power Generation Specialist	Turbine Control Systems Services	$335
	Flame Scanner Services	$335
	Power Plant Tuning	$335
All	Project Management Services	$331
	Process Control Tuning Services	$339
	Regional Technical Advisor, Network & Security Services	$345
	Process Optimization Services	$367

Overtime Hours

For billing purposes ABB Inc. defines overtime as those hours worked outside the Primary Working Hours or in excess of eight (8) hours in one day. The standard charges for overtime are defined as follows:

- All work performed outside the PWH or over 8 hours in one day is charged at one and one half times the labor rate (Base Service Labor Rate X 1.5).
- All work performed on Saturday is charged at one and one half times the labor rate (Base Service Labor Rate X 1.5).
- All work performed on Sunday is charged at two times the labor rate (Base Service Labor Rate X 2).
- All work performed on national or an ABB holiday is charged at three times the labor rate (Base Service Labor Rate X 3).

Field Engineer Stand-By

- Engineer Stand-By support occurs when a customer requests an engineer to perform "stand-by" duty where that engineer is specifically reserved for that Customer and cannot be dispatched to another Customer job site. The customer reserving the engineer in stand-by readiness mode shall be charged for Stand-By service.
- Field Engineer Stand-By Service is charged at 4 PWH per day. If the "reserved" Field Engineer is called to this site, then 2 PWH will be credited to the customer. Overtime hours, travel expenses, travel time and other conditions of service per this rate sheet shall apply.

Telephone Support.....$400.00 per hour

- A minimum of one (1) hour is charged per request.
- Additional charges are in one-hour increments beyond the first one (1) hour period.

Travel Costs

- Travel expenses are charged at 58 cents / mile or actual public transportation costs plus 10%.
- Living expenses are charged at actual costs incurred plus 10%.
- Completed Travel Time, to and from the Customer Site, will be charged at rates listed under this rate sheet.

Conditions of Service

- Service provided per this rate sheet is approved by the customer in the form of a purchase order or written authorization for additional hours prior to dispatching field personal to site.
- Other chargeable time will be invoiced which may include additional PWH and/or overtime spent at the customer's facility, round trip travel to and from site, time spent preparing written service reports, and time for other customer requested activities.
- A minimum of four (4) hours is charged for any service call to a client's facility.
- ABB Inc. General Terms and Conditions of Sales apply.
- All orders are subject to credit approval by ABB.
- The standard delivery lead-time for parts and materials is eight weeks from acceptance of order.
- All information contained herein is proprietary data of ABB Inc. and that no disclosure, reproduction or use by third parties may be made without written permission of ABB.
- Customer approves the use of their company names in ABB newsletters, press releases, proposals, experience lists, and resumes (for proposal purposes) of our employees.

City of Tampa
Incinerator
MAK-201029-1 Rev 00 - Equipment List

QTY	PART NUMBER	DESCRIPTION
	PCU 06	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
4	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
4	NKEB01	EXPANDER BUS CABLE 1.50 INCH
40	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
4	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
2	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 13	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 14	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY

	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 15	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
5	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
5	NKEB01	EXPANDER BUS CABLE 1.50 INCH
50	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
6	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
3	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 11	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 12	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE

1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 01	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 02	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ

2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 03	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 04	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
3	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
3	NKEB01	EXPANDER BUS CABLE 1.50 INCH
30	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	
2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PCU 05	
	MPS IV POWER SUPPLIES	
1	2VAA008282R101	BP01-L, LEFT BASE
1	2VAA008282R301	BP01-R, RIGHT BASE
1	2VAA008283R101	BP03 BASE
1	PHARPSFAN03000	FAN, SYSTEM MONITORING AND COOLING
1	2VAA008284R101	BP-K01-AA, INSTALLATION ACCESSORY FOR RACK SPS
4	2VAA008278R001	SPS01 POWER SUPPLY, 24V, 10A
2	2VAA008280R001	SPS03-5V POWER SUPPLY, 5V, 60A
2	2VAA008281R001	SPS03-15V POWER SUPPLY, +15V@3A, -15V@3A
1	1949790A1	FAN, FILTER ASSEMBLY
	MODULE MOUNTING UNIT	
2	IEMMU21	MODULE MOUNTING UNIT , REAR MOUNT
2	NKEB01	EXPANDER BUS CABLE 1.50 INCH
20	6632285A54	Assembly, Wire & Terminal
	COMMUNICATION MODULES	

2	2VAA009488R1	SPENM01 ETHERNET NETWORK MODULE I/F
	CONTROLLERS	
2	SPBRC410	CONTROLLER WITH MODBUS TCP INTERFACE
1	PMKHRMBRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
	MISC PARTS	
1	2VAA009522R1	SPK-HREM-RLH CABLE, SPENM01 RED, HORIZ
2	943221001	SPIDER 4TX/1FX
2	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	Existing Cabinet	
	MISC PARTS	
2	RS30-1602	RS30-1602 16 PORT GB SWITCH W 2 FIBER PORTS
22	943890001	SPIDER 1TX/1FX
3	PNI800K01	PN800 PLANT NETWORK INTERFACE KIT
3	PNI800SWLIC-01	PLANT NETWORK INTERFACE SW LICENSE KEY

City of Tampa
McKay Bay Conductor NT to Splus 3.2/2.2 Upgrade
MAK-201029-1 Rev 00 - Equipment List

QTY	PART NUMBER	DESCRIPTION
	SPLUS CONSOLE 1	
	S+ OPERATIONS SYSTEM ARCHITECHTURE	
1	8VZZ000777S0100	S+ OPERATIONS 3.2 - BASE
1	8VZZ000777L0110	SERVER-CLIENT LICENSING
	S+ OPERATIONS SERVER SERVICES	
1	8VZZ000777L0130	REAL-TIME SERVERS
1	8VZZ000777L0160	DUO DRIVER
	S+ OPERATIONS CONNECTIVITIES	
1	8VZZ000777L0180	HR CONNECT
	S+ OPERATIONS REALTIME SERVER TAGS	
5	8VZZ000777L0410	1000 REDUNDANT TAGS PACK
	S+ OPERATIONS OPERATOR CLIENTS	
4	8VZZ000777L0640	1 OPERATOR CLIENT PACKAGE
	S+ OPERATIONS DCS APPLICATIONS	
1	8VZZ000777L0820	ADVANCED OPERATIONS >= 5000 TAGS
1	8VZZ000777L0830	MULTI- SCREEN SUPPORT
	S+ ENGINEERING BASE LICENSE	
1	8VZZ000771S0100	S+ ENGINEERING 2.2 BASE
	S+ ENGINEERING CLIENT SUPPORT	
1	8VZZ000771L0120	ADDITIONAL CLIENT SUPPORT
	S+ OPERATIONS ENGINEERING	
1	8VZZ000771L0200	S+ OPERATIONS ENGINEERING - ADVANCED
	S+ SYSTEM MEDIA	
1	8VZZ000052Z0005	SYMPHONY PLUS PRODUCT PACKAGE 10/2018
1	2VAA006772R1	USB KEY FOR WIN 8.1/2012 AND LATER
	CLIENT/SERVER EQUIPMENT	
	OPERATOR WORKSTATIONS	
4	CLIENT-PC	TOWER CLIENT PC - BUNDLE
8	EVNSL64X-0050	CAT 6 CABLE EVNSL64X 0050 (50FT)
8	8VUS000225R0001	24" ULTRASHARP MONITOR W/ SOUNDBAR
	ENGINEERING WORKSTATIONS	
2	CLIENT-PC	TOWER CLIENT PC - BUNDLE
4	EVNSL64X-0050	CAT 6 CABLE EVNSL64X 0050 (50FT)
4	8VUS000225R0001	24" ULTRASHARP MONITOR W/ SOUNDBAR
	SERVER/NETWORK CABINETS	
1	9971170	ENCLOSURE 2200MMH, 600MMW, 1000MMD
1	PDBT01	SERVER CABINET POWER DISTRIBUTION - TOP ENTRY
2	PDUMH20AT	TRIPPLITE 120 VAC TRANSFER SWITCH
11	RM1031	SERVER CABINET BLANK PLATE - 1U
1	6638902A3	ABB Cabinet Logo ABS Plastic
1	PPA-PPB KVM SWITCH	19 INCH RACKMOUNT LCD KEYBOARD AND MOUSE 1U
	SYSTEM SERVERS	
2	DCSSERVER-RACK	DCS RACK SYSTEM SERVER - BUNDLE
6	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	HISTORIAN SERVER	
1	HISSERVER-RACK	HISTORY RACK SYSTEM SERVER - BUNDLE
3	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	SPLUS ENGINEERING SERVER	
1	DCSSERVER-RACK	DCS RACK SYSTEM SERVER - BUNDLE
3	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	ANTIVIRUS SOFTWARE	
11	EPSCDE-AA-ROYL	VSE - MCAFEE ENDPOINT PROTECTION SUITE VIRUS SCAN ENTERPRISE 8.8I + ANTISPYWA
	CLIENT/SERVER NETWORK SWITCHES	
3	S3900-24T4S	S3900-24T4S 24 PORT SWITCH
	MISC PARTS	
3	PNI800K01	PN800 PLANT NETWORK INTERFACE KIT
3	PNI800SWLIC-01	PLANT NETWORK INTERFACE SW LICENSE KEY

CITY OF TAMPA
TAMPA MCKAY BAY PLC REPLACEMENT
MAK-201029-1 Rev 00 - Equipment List

QTY	PART NUMBER	DESCRIPTION
	BURNER 1	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	SYMPHONY PLUS CONTROLLER	
1	SPC700K02	SPC700 KIT, HORIZONTAL, REDUNDANT
1	SPK800-02	S+ HN800/CW800 CABLE, 2.0 M
8	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PLANT NETWORK 800 COMMUNICATION NETWORK	
2	943221001	SPIDER 4TX/1FX
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	SD DIGITAL INPUTS - SYSTEM POWERED	
4	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
4	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
4	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
4	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	BURNER 2	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	SYMPHONY PLUS CONTROLLER	
1	SPC700K02	SPC700 KIT, HORIZONTAL, REDUNDANT
1	SPK800-02	S+ HN800/CW800 CABLE, 2.0 M
8	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PLANT NETWORK 800 COMMUNICATION NETWORK	
2	943221001	SPIDER 4TX/1FX
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	SD DIGITAL INPUTS - SYSTEM POWERED	
4	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
4	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
4	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
4	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	BURNER 3	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	SYMPHONY PLUS CONTROLLER	
1	SPC700K02	SPC700 KIT, HORIZONTAL, REDUNDANT
1	SPK800-02	S+ HN800/CW800 CABLE, 2.0 M
8	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PLANT NETWORK 800 COMMUNICATION NETWORK	
2	943221001	SPIDER 4TX/1FX

	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	SD DIGITAL INPUTS - SYSTEM POWERED	
4	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
4	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
4	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
4	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	BURNER 4	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	SYMPHONY PLUS CONTROLLER	
1	SPC700K02	SPC700 KIT, HORIZONTAL, REDUNDANT
1	SPK800-02	S+ HN800/CW800 CABLE, 2.0 M
8	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	PLANT NETWORK 800 COMMUNICATION NETWORK	
2	943221001	SPIDER 4TX/1FX
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	SD DIGITAL INPUTS - SYSTEM POWERED	
4	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
4	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
4	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
4	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	NOXOUT CIRC SYS.	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL INPUTS - SYSTEM POWERED	
1	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
6	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	NOX METERING 1	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)

	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
10	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	NOX METERING 2	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
10	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	NOX METERING 3	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL

1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
10	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	NOX METERING 4	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
10	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	SOOT BLOWER 1	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
6	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	SOOT BLOWER 2	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M

2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
6	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	SOOT BLOWER 3	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
6	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	SOOT BLOWER 4	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
2	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
2	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
6	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	EXPELLER 1	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ

1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
1	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
4	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	EXPELLER 2	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
1	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
4	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	EXPELLER 3	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
1	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
4	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	EXPELLER 4	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD DIGITAL INPUTS - SYSTEM POWERED	
1	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE

1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
1	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
1	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
4	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	VONROLL STOKER 1	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
3	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
3	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
3	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
3	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	VONROLL STOKER 2	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
3	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
3	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
3	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
3	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	VONROLL STOKER 3	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)

	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
3	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
3	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
3	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
3	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	VONROLL STOKER 4	
	S+ PANEL HARDWARE	
1	9967516	2200H0800W 6 PACK F/ ABB Controller
	POWER SUPPLIES	
1	PWRKITACAC	Incoming Power Kit AC/AC
2	PS24DC10A	24VDC Power System (10A)
	S+ PANEL COMMUNICATION ACCESSORIES	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
2	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REMOTE SD I/O COMMUNICATION	
1	2VAA009363R1	HRBX01K04 CMPT FO REPEATER KIT RED HORIZ
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
	SD ANALOG INPUTS - SYSTEM POWERED	
1	AI02	AI MODULE, 16-CH WITH HART
1	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD ANALOG OUTPUTS - SYSTEM POWERED	
1	AO01	AO MODULE, 16-CH, HIGH LEVEL
1	HBS01-EPD	HORIZ. BASE, SINGLE, EXT. PWR INPUTS
	SD DIGITAL INPUTS - SYSTEM POWERED	
3	DI02	DI MODULE, 16-CH, 120 VAC / 125 VDC, SOE
3	HBS01-FPH	HORIZ. BASE, SINGLE, FIELD PWR, HOT
	SD DIGITAL OUTPUTS - FIELD POWERED	
3	8VZZ000167H1	DO05 DO W/ EM RELAYS, 16-CH, MAX 3A
3	2VAA009528R1	HBS02-EPD, HIGH CURRENT BASE FOR DO05
	SD BLOCK MARSHALLING	
16	SPK01B-05	I/O CABLE, BOTTOM, FLYING LEADS, 5.0 M
	Unit 1 Existing PCU	
	REMOTE SD I/O COMMUNICATION	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
1	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REDUNDANT HARMONY CONTROLLERS	
1	P-MK-HRM-BRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
2	PBA800	HN800 PROCESS BUS ADAPTOR
	Unit 2 Existing PCU	
	REMOTE SD I/O COMMUNICATION	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
1	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REDUNDANT HARMONY CONTROLLERS	
1	P-MK-HRM-BRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
2	PBA800	HN800 PROCESS BUS ADAPTOR
	Unit 3 Existing PCU	
	REMOTE SD I/O COMMUNICATION	

1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
1	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REDUNDANT HARMONY CONTROLLERS	
1	P-MK-HRM-BRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
2	PBA800	HN800 PROCESS BUS ADAPTOR
	Unit 4 Existing PCU	
	REMOTE SD I/O COMMUNICATION	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
1	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REDUNDANT HARMONY CONTROLLERS	
1	P-MK-HRM-BRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
2	PBA800	HN800 PROCESS BUS ADAPTOR
	BOP Existing PCU	
	REMOTE SD I/O COMMUNICATION	
1	2VAA008580R1	CHBX01K02 COMPACT BUS EXT KIT HORIZ
1	SPK800-0A	S+ HN800/CW800 CABLE, 0.5 M
1	TER810	HN800 OR CW800 BUS TERMINATOR WITH COVER
	REDUNDANT HARMONY CONTROLLERS	
1	P-MK-HRM-BRC3000A	REDUNDANCY CABLE FOR CTRL/COMM - 4 CM
2	PBA800	HN800 PROCESS BUS ADAPTOR

INDUSTRIAL AUTOMATION ENERGY INDUSTRIES

ABB Ability Cyber Security for Symphony Plus & 800xA

Cyber Security Workplace Packages

Issue Date: March 27, 2020

Reference Number: IAEN-SWP-2020 Rev 00

Revision History

Revision History Table

Revision Number	Release Date	Comments
Revision 00	03/27/2020	Initial release

Introduction

ABB is pleased to provide you with a certified solution specifically designed to be used by I&C engineers or DCS specialists to perform ABB recommended cyber security maintenance of the control system.

This solution has been tested and validated by the ABB Ability Industrial Automation Energy Industries Cyber Security Center of Excellence to integrate reliably with Symphony Plus or System 800xA when deployed per the secure deployment guidelines and policies defined by ABB. This solution will enhance the reliability of your ABB DCS when properly managed and maintained.

Business challenge: Managing cyber maintenance and disaster recovery requirements

The reliable operation of your ABB Distributed Control System (DCS), and therefore the plant, depends on your ability to maintain the ABB recommended security baseline for the networking and computing platforms that comprise the system. In addition, performing periodic software backups to facilitate recovery from any level of hardware or software failure that may occur can be the difference between an outage of 2 days versus 2 weeks. These essential security maintenance tasks are often neglected due to a lack of skilled resources, low prioritization, or perceived risk to an online system. The plant operation requires an efficient process using existing personnel to address these requirements in a cost-effective manner.

Risk factors: Human error, physical and cyber threats

With the rapid increase in cyber threats and specifically Ransomware, the likelihood of a system-wide failure has increased. In addition, physical threats such as high temperatures, water, or power quality can result in hardware failures. Each month that a server or client machine remains unpatched results in another 10-15 known vulnerabilities existing on the system that can be exploited by a cyber threat. A security patch management policy and program is required to address this risk. This is validated by a Department of Homeland Security report on the “Seven Steps to Effectively Defend Industrial Control Systems” that identifies approximately 29% percent of incidents in 2015 may have been avoided with proper Patch Management. Manual efforts to perform software backups or Microsoft security patch updates introduces the chance of human error resulting in a system failure.

The Solution: Cyber Security Workplace Maintain Package

Designed for use by plant personnel, the Cyber Security Workplace maintenance solutions provide the tools, training and documentation guides for centralized management of the cyber security maintenance tasks recommended by ABB and industry best practices. These certified solutions automate functions where practical, prevent human error and integrate reliably to support the availability demands of the ABB DCS. This solution enables your control system experts to perform IT related tasks at a time that is convenient to the operation.

Cyber Security Workplace Packages

ABB Ability Cyber Security Workplace solutions are designed to meet the unique needs of the industry to achieve and maintain reliability, security, and compliance. As your trusted partner, ABB provides the validated services and solutions to protect, monitor, and manage your most valuable assets from one simplified security platform: ABB Ability Cyber Security Workplace.

ABB Ability Cyber Security Workplace is a suite of applications and services designed to enhance and maintain the security of your distributed control system. Cyber Security Workplace is a scalable solution which can be catered to the customer's demand. This proposal includes the following solutions:

- Centralized Security Patch Management
- Centralized Endpoint Protection
- Centralized Disaster Recovery

ABB is pleased to present these Cyber Security Workplace components a la carte and in bundled packages, to best meet the needs of the customer.

Centralized Security Patch Management

ABB shall supply centrally managed Microsoft security patch deployment for the 800xA or Symphony Plus system. This solution reduces the time required to deploy Microsoft patches by up to 75% versus manual patching.

Centralized patch management can be supplied via one of two methods: the offline ABB Patch Management Utility (PMU), or the online ABB Security Update Service (SUS). ABB can supply whichever of these two methods the customer prefers.

The Patch Management Utility has the following features:

- Isolated, offline utility for centrally managing Microsoft patches
- Imports ABB validation status and Microsoft patches directly from the Industry Care Security Patch Delivery Service monthly discs
- Reports a single, simplified overview of system patching status
- Intuitive UI and workflows to scan, copy, and install patches with a single click

The Security Update Service has the following features:

- Convenient, online utility for automatically deploying Microsoft patches
- Daily synchronizes ABB validation status and Microsoft patches via the secure ABB Remote Access Platform service (detailed in the Attachment)
- Standardized and widely used Microsoft WSUS patch deployment software
- Minimizes user efforts in evaluating, installing, and testing of security patches and updates

Please note that patch remediation is not included in the Centralized Security Patch Management scope of work. ABB will not be updating the systems with the latest approved Microsoft patches, but can quote patch remediation separately upon request.

Centralized Endpoint Protection

ABB shall provide centrally managed endpoint protection console. This includes:

- Endpoint protection with VirusScan Enterprise + AntiSpyware Enterprise
- Configurable On-Access System and Device Scans
- Central management via ePolicy Orchestrator (ePO)

McAfee ePolicy Orchestrator (McAfee ePO) is the most advanced, extensible, and scalable centralized security management software in the industry. Unifying security management through an open platform, McAfee ePO makes risk and compliance management simpler and more successful for organizations of all sizes. As the foundation of McAfee Security Management Platform, McAfee ePO enables customers to connect industry-leading security solutions to their enterprise infrastructure to increase visibility, gain efficiencies, and strengthen protection.

Centralized Disaster Recovery

ABB shall provide an automated software backup and recovery solution in the form of a Disaster Recovery appliance. It enables central management of Backup and Recovery software as well as provide hard disk storage for the repository where the backups are stored. VMware Workstation shall be loaded for testing of created system images. The Disaster Recovery package grants the following advantages:

- Reduced lost time from down machines – from multiple weeks of reloading and reconfiguring, to as little as an hour when restoring from a backup
- Reduced lost time from waiting for replacement hardware, using conversion of backups to Virtual Machines
- Improved troubleshooting capabilities with the ability to convert running machines to VMs for diagnosing remotely or in a lab environement

The Disaster Recovery software includes the following key features:

- Daily Backup Images
- Individual File Recovery from any backup
- Online rollback from a backup
- Full Bare-Metal Recovery
- Conversion of backups to Virtual Machines

Scope of Supply

Base Services

Project Coordinator – A project coordinator will be assigned to this project to perform the duties and tasks that are associated with delivery of the proposed scope on time, on spec, and to the satisfaction of our customer.

In-House Engineering

ABB will perform the following in-house engineering for each package:

- Procure hardware and software, as necessary for the scope of supply
- Initial configuration and setup, as necessary for the scope of supply

Hardware, Software, and On-Site Services

A detailed Bill of Material and summary of on-site services for each package can be found below. Typically one Base Package is selected per system, along with any number of add-on Options desired.

Base Package 1: IAEN-SWP-01 – Complete Security Workplace Package (Offline)

This Cyber Security Workplace Package consists of the following:

- Centralized Security Patch Management via ABB Patch Management Utility
- Centralized Endpoint Protection
- Centralized Disaster Recovery

This package includes the initial setup and first year of subscription for Patch Management Utility Software Maintenance. ABB assumes that the customer selecting this package is under a valid Industry Care Contract that will maintain the required PMU software maintenance after the first year.

ABB also assumes that the customer selecting this package is under a valid Industry Care Contract including the required Cyber Security Patch Delivery subscription. If needed, this subscription can be quoted separately upon request.

Hardware and Software Summary

Part Number	Qty.	Description
8VUS000226R0001	1	Cyber Security Server
2VAA004988	1	Patch Management Utility Product Package
2VAA004990	1	Patch Management Utility Software License
2VAA004989	1	Patch Management Utility Software Maintenance – 1 Year
EPSCDE-AA-ROYL	1	McAfee Management Console License
8VUS000227R0001	3	Quest Rapid Recovery License – 1TB
EVNSL64X-0010	2	10ft. CAT6 Cables
OPE-OTHER	1	VMware Workstation Pro Software License

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Application Specialist	1	Up to 3 Working Days	8hr Days (Monday - Friday)

Base Package 2: IAEN-SWP-02 – Complete Security Workplace Package (Online)

This Cyber Security Workplace Package consists of the following:

- Centralized Security Patch Management via ABB Security Update Service
- Centralized Endpoint Protection
- Centralized Disaster Recovery

This package includes the initial setup and first year of subscription for one (1) Remote Access Platform Level 1 license and one (1) Security Update Service license. ABB assumes that the customer selecting this package is under a valid Industry Care Contract that will maintain the required RAP and SUS license subscriptions after the first year.

Hardware and Software Summary

Part Number	Qty.	Description
8VUS000226R0001	1	Cyber Security Server
LICENSE-RAP-1YR	1	Remote Access Platform Level 1 License – 1 Year
LICENSE-SUS-1YR	1	Security Update Service License – 1 Year
EPSCDE-AA-ROYL	1	McAfee Management Console License
8VUS000227R0001	3	Quest Rapid Recovery License – 1TB
EVNSL64X-0010	2	10ft. CAT6 Cables
OPE-OTHER	1	VMware Workstation Pro Software License

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Application Specialist	1	Up to 3 Working Days	8hr Days (Monday - Friday)

Base Package 3: IAEN-SPM-01 – Standalone Centralized Security Patch Management and Endpoint Protection Package (Offline)

This Cyber Security Workplace Package consists of the following:

- Centralized Security Patch Management via ABB Patch Management Utility
- Centralized Endpoint Protection

This package includes the initial setup and first year of subscription for Patch Management Utility Software Maintenance. ABB assumes that the customer selecting this package is under a valid Industry Care Contract that will maintain the required PMU software maintenance after the first year.

ABB also assumes that the customer selecting this package is under a valid Industry Care Contract including the required Cyber Security Patch Delivery subscription. If needed, this subscription can be quoted separately upon request.

Hardware and Software Summary

Part Number	Qty.	Description
8VUS000226R0001	1	Cyber Security Server
2VAA004988	1	Patch Management Utility Product Package
2VAA004990	1	Patch Management Utility Software License
2VAA004989	1	Patch Management Utility Software Maintenance – 1 Year
EPSCDE-AA-ROYL	1	McAfee Management Console License
EVNSL64X-0010	2	10ft. CAT6 Cables

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Application Specialist	1	Up to 2 Working Days	8hr Days (Monday - Friday)

Base Package 4: IAEN-SPM-02 – Standalone Centralized Security Patch Management and Endpoint Protection Package (Online)

This Cyber Security Workplace Package consists of the following:

- Centralized Security Patch Management via ABB Security Update Service
- Centralized Endpoint Protection

This package includes the initial setup and first year of subscription for one (1) Remote Access Platform Level 1 license and one (1) Security Update Service license. ABB assumes that the customer selecting this package is under a valid Industry Care Contract that will maintain the required RAP and SUS license subscriptions after the first year.

Hardware and Software Summary

Part Number	Qty.	Description
8VUS000226R0001	1	Cyber Security Server
LICENSE-RAP-1YR	1	Remote Access Platform Level 1 License – 1 Year
LICENSE-SUS-1YR	1	Security Update Service License – 1 Year
EPSCDE-AA-ROYL	1	McAfee Management Console License
EVNSL64X-0010	2	10ft. CAT6 Cables

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Application Specialist	1	Up to 2 Working Days	8hr Days (Monday - Friday)

Base Package 5: IAEN-DR-01 – Standalone Centralized Disaster Recovery Package

This Cyber Security Workplace Package consists of the following:

- Centralized Disaster Recovery

Note: No Industry Care Contract subscriptions are required to support the Standalone Centralized Disaster Recovery solution.

Hardware and Software Summary

Part Number	Qty.	Description
8VUS000226R0001	1	Cyber Security Server
EPSCDE-AA-ROYL	1	McAfee Management Console License
8VUS000227R0001	3	Quest Rapid Recovery License – 1TB
OPE-OTHER	1	VMware Workstation Pro Software License
EVNSL64X-0010	2	10ft. CAT6 Cables

Field Service Proposal Summary

ABB Personnel	Trips	Duration	ABB Personnel Shifts
Application Specialist	1	Up to 2 Working Days	8hr Days (Monday - Friday)

Option 1: IAEN-DMZ-01 – DMZ Adder

ABB has included an option to create a Demilitarized Zone (DMZ) for the Cyber Security Workplace solution(s) purchased to reside in. This DMZ Adder includes the following:

- Ability for Cyber Security Workplace solution(s) to connect to multiple systems
- Configuration of Ingress and Egress firewall rules
- Direct packet captures of monitored traffic from the Firewall
- Creation of well defined Electronic Security Perimeter in accordance to ISA 99

The DMZ will be deployed during the same Field Service trip that the base Cyber Security Workplace solution is deployed onto the customer's system.

Hardware and Software Summary

Part Number	Qty.	Description
FG-61E-BDL-974-12	1	Fortigate 61E Firewall Appliance
EVNSL64X-0010	2	CAT6 Cables

Option 2: IAEN-KVM-01 – KVM Adder

ABB has included an option to provide a KVM Extender and a monitor to facilitate ease of access to the Cyber Security Workplace solution. The KVM and monitor will be set up during the same Field Service trip that the base Cyber Security Workplace solution is deployed onto the customer's system.

Hardware and Software Summary

Part Number	Qty.	Description
OPE-OTHER	1	KVM Extender Kit – Single Monitor
OPE-OTHER	1	24“ Monitor

Proposal Assumptions and Clarifications

Scope Restrictions

The equipment and engineering services included in this proposal are accurate for systems consisting of:

- Up to 17 Server machines
- Up to 19 Workstation machines

Please contact your Account Manager for a custom quote if your system exceeds one or more of these quantities.

On-Site Service Clarifications

- Field Service is offered as an allotment of working days as described in each package above. ABB has also included travel time to and from the site, as well as Travel & Living expenses.
- The described Field Service allotment for each Base Scope Package includes one (1) half-day of hands-on Customer Familiarization.
- The Application Specialist and/or Field Service Engineer shall be granted unencumbered access to the equipment upon which work is to be conducted. Standby time resulting from any issue will be charged against the allotted hours and may result in a corresponding change order.
- During on-site installation, ABB requires support from a customer representative for controlled machine reboots at the completion of agent deployment.

Additional Clarifications

- This proposal assumes the customer has sufficient cabinet space and power to house the equipment proposed herein at the appropriate proximity to client/network switches.
- This proposal assumes that the customer's DCS network supports 1000Mbps (Gigabit Ethernet), which is required to support the Disaster Recovery component of this solution.
- Customer is responsible for ensuring Network and/or Internet connectivity as required for the solution(s). ABB is not responsible for ensuring live connectivity.

Attachment 2

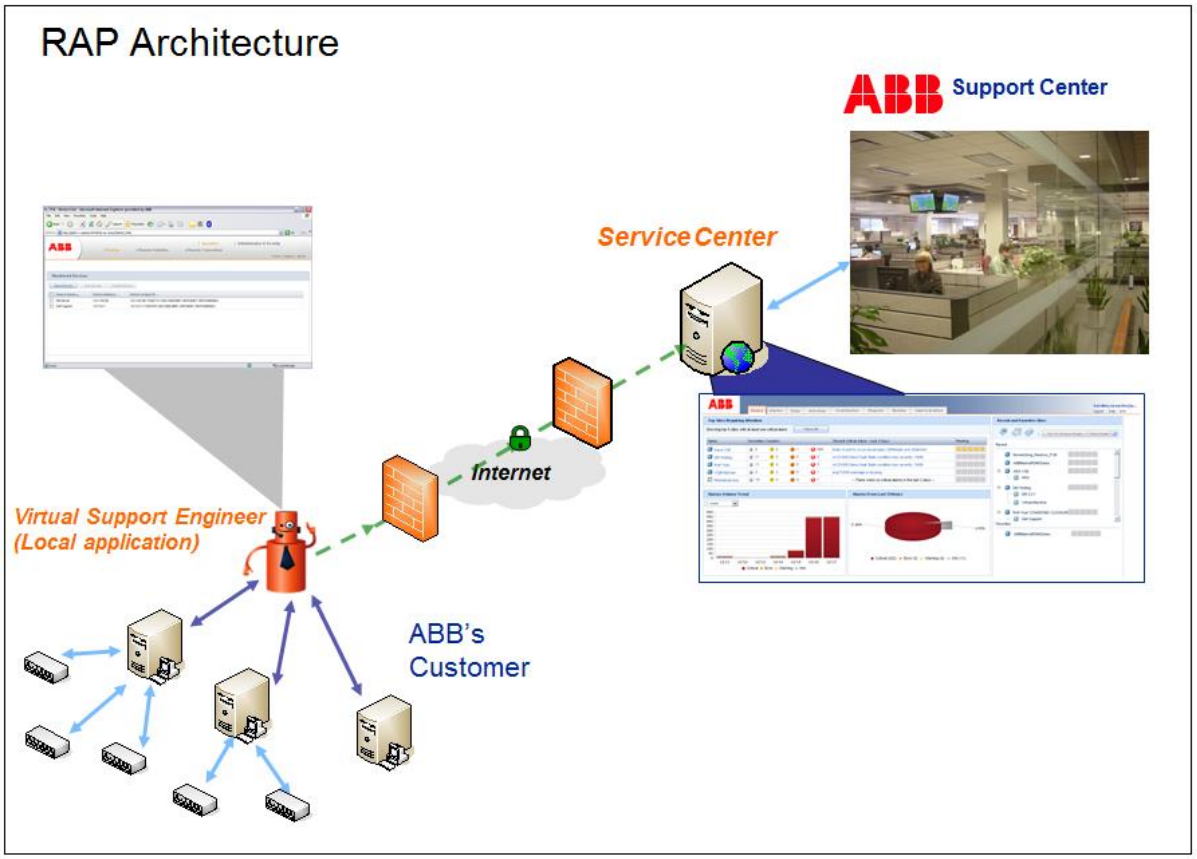
ABB Remote Access Platform Brochure

INDUSTRIAL AUTOMATION ENERGY INDUSTRIES

ABB Advanced Services

Remote Access Platform

ABB Remote Access Platform (RAP) is an annual subscription service which allows ABB Support to remotely connect to a customer's control system. It provides ABB specialists a direct view of equipment and associated software applications through the Virtual Support Engineer remote connection software installed on a selected node on the customer's control system network. It is recommended that the selected node have an internet connection of at least 3 Mbps.



RAP facilitates many of ABB's remote-enabled services, such as:

- Automatic Windows and Antivirus system patching
- Remote system troubleshooting and support of on-site service
- Process maintenance, data monitoring, and optimization
- Recommendation of improvements to applications related to the process

Performing these and other services remotely through RAP allows ABB to deliver a faster service response at a reduced cost to the customer.

100% STABILIZATION. GUARANTEED.

DUSTMASTER

Exhibit B-01:
DustMASTER. Fly-Ash Conditioner Literature (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

Reuse, Recycle or Dispose of Fine, Dusty or Powdery Hazardous and Non-Hazardous Materials

WE HAVE NOT ENCOUNTERED A DUST WE CANNOT SUCCESSFULLY PROCESS.

When

you have a difficult waste or recycle problem

involving dusts, powders or fine materials, call the experts at DustMASTER. We've successfully handled numerous types of hazardous and non-hazardous dusts at industries around the world.

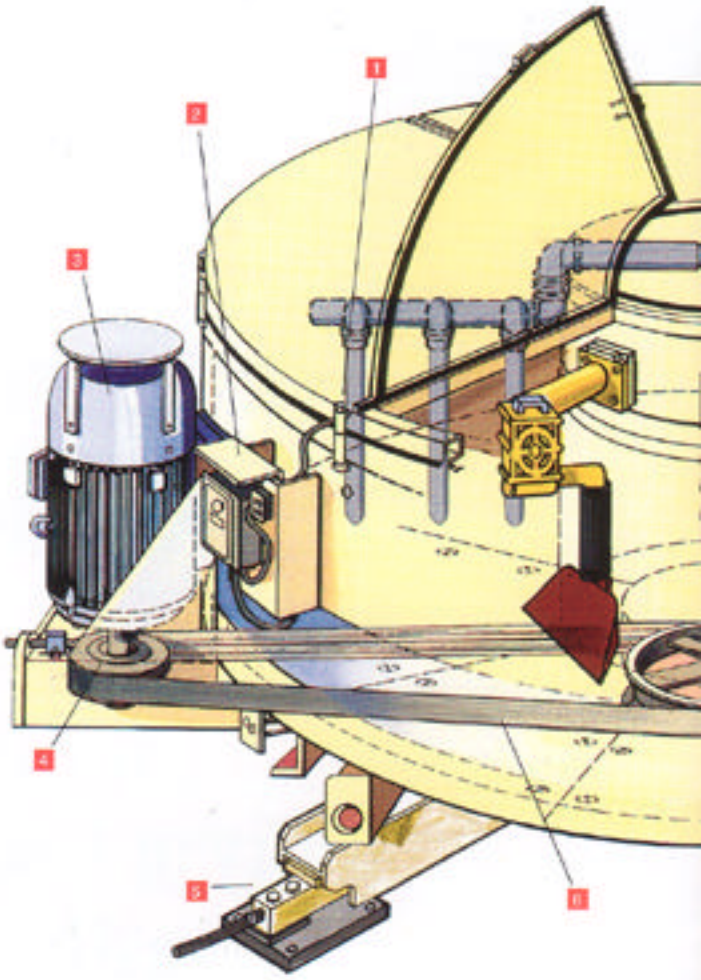
We can assess your needs—then design, build, and install a system to fit those needs. A DustMASTER system will allow you to economically recover valuable product; will allow you to reuse formerly wasted materials; or will allow you to inexpensively dispose of your dust while complying with environmental requirements or restrictions.

The systems we supply are universally acknowledged to simplify processing, handling, storage and transportation. Our systems achieve 100% stabilization, with consistent results. And we guarantee to turn any problem material into a uniform non-dusting product.

DustMASTER Enviro Systems can be your single source for providing a total solution on a turnkey basis. As a start, please ask us about our user lists and ask to see our video.

SINGLE

Single Source
Fugitive Dusts and



Inward and Outward Facing Mixing Paddles constantly force materials back and forth, creating a superior braiding action without dead spots. Paddles have unique concave faces, forcing materials upwards to create a rolling-mixing action within the braid.

Inner and Outer Wall Scraper Blades prevent peripheral "dead zones," are cast Ni-Hard steel for wear resistance and segmented for inexpensive replacement.

DUSTMASTER Serie

1 Electric Interlocks protect personnel. System of safety engineered interlocks and cutouts shut down the Turbin mixer when moving parts are exposed. An audible alarm start system sounds before the mixer starts.

Programmable Controller (not shown) features fully automatic operation including easy adjustments to mixing time, water-to-solids ratio and batch weight.

2 Reducer Lubrication System (hidden) is self-lubricating and sealed against contamination.

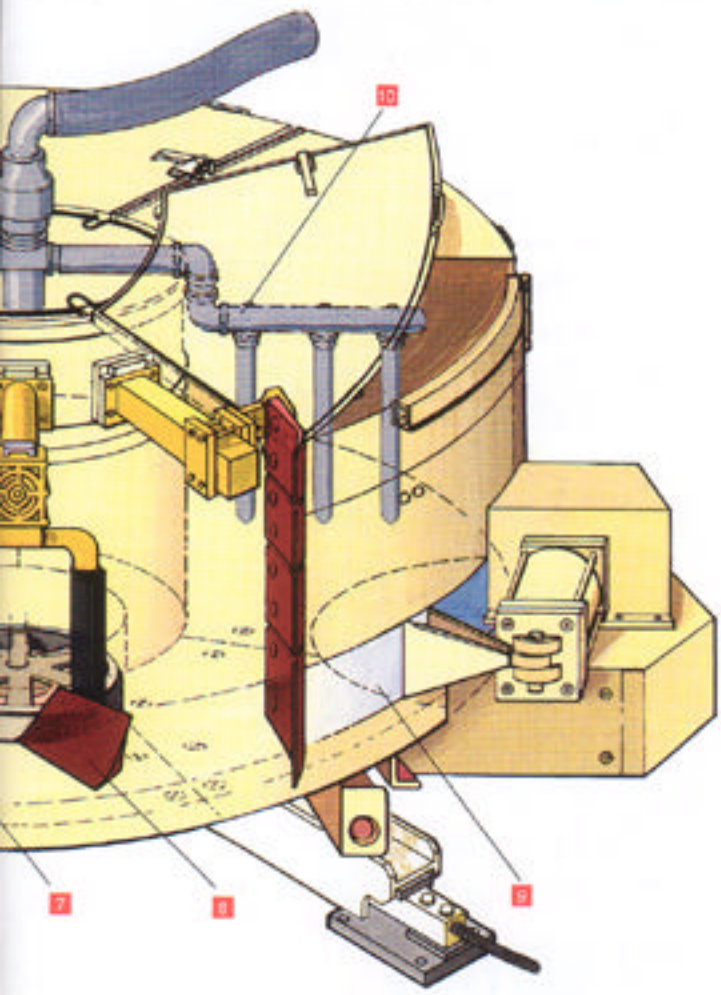
3 Heavy Duty Motor is totally enclosed for dust protection and fan cooled for long life. Motor and V-belt adjustment is very convenient.

4 Gyro-Drive Reducer has 2/3 of teeth in constant contact with motor's pinion gear versus one or two teeth for conventional reducers. The tooth interface is strong, efficient and reliable. Reducer offers 500% overload capacity and has an output torque/input horsepower ratio of almost 95%.

5 Load cells below DustMASTER Series II assure the required quantity of material is processed each cycle. DustMASTER Series I uses a weigh hopper to measure materials.

WE HAVE NOT ENCOUNTERED A DUST

Solutions For Problem Materials



s l l Batch System

6 V-Band Belt Drive offers inherent shock protection for the drive train. Proven since 1975, design eliminates maintenance prone and difficult to replace gear boxes, U-joints or chain and sprocket assemblies. Belt tension can be adjusted quickly and easily with bolts on the motor mount.

7 Replaceable Liners with 225 Brinell hardness are standard. For longer life and easier cleanup, rubber or urethane liners are available. Liner sections are accessible from top of mixer.

8 Paddles are cast Ni-Hard steel, extra abrasion resistant for long life. Hard rubber paddle blades are optional. Paddle height is controlled with one bolt at top of mixing arm. Individual paddles can be quickly replaced by removing two bolts on the back of the mixing arm.

9 Discharge Door (hidden) is hydraulically operated. Door slides in a protected track to maintain alignment and eliminate binding. Hydraulic power pack is included.

10 Rotary Water Distribution System uses vertical fingers on radial spray bars for fast, controlled liquid introduction into the mixing chamber. Water is gravity injected into mix, so splashing is non-existent or minimal. This contributes to low water usage, shorter cycle times and easier cleanup. Water volume is measured by a flow meter.

WE CANNOT SUCCESSFULLY PROCESS.

Intensive Batch Mixing With Uniform Wetting Produces a Homogenous, Stabilized Mix

At the heart of the DustMASTER system is the high-speed, heavy duty Turbin® Mixer. It produces a homogeneous 100% stabilized mix, batch after batch. Thorough mixing and complete uniform wetting of dusts is achieved with unique concave mixing paddles, and three dimensional mixing action.

Although dependent upon the type of dust, a non-dusting material can be produced in only 30 seconds with as little as eight percent water (or other reagent). With paddles rotating at 600 feet per minute, the mixing action generates excellent dispersion — turns dust into a stabilized uniform, homogenous material.

DustMASTER systems are totally enclosed, meet all the requirements of the accumulation tank process for the treatment of hazardous and non-hazardous material. The DustMASTER system is the fastest, most economical producer of a high quality stabilized product at the lowest operating cost. We guarantee it.

Paddle Mixer Suited For Smaller Stabilization Jobs

For smaller volume stabilization needs, (up to eight tons per hour) the DustMASTER eight cubic foot (0.25 cu. m) horizontal paddle mixer provides proven performance features in a compact design. Cross-current mixing action, longitudinal water dispersion tube and heavy duty, abrasion resistant components contribute to effectiveness of design.

Crane hook and fork lift brackets make for easy transport. Contact factory for more information.

We Have Not Encountered A Dust We Could Not Handle

The DustMASTER batch system is a complete, self-contained unit consisting of a high intensity mixer, volumetric batcher and water system with programmable controls. Eight sizes are available, ranging from 8 to 200 tons per hour. Production is based on dry fly ash weighing 50 lbs./ft³.

Two models in each of the sizes are available: DustMASTER Series I with a weigh batcher; and DustMASTER Series II with load cells under the mixer.

The following is a sample of materials successfully handled by the DustMASTER:

- Baghouse Powder Residue - Steel Mills
- Bottom Ash
- Calcium Oxide - Utilities
- Cement Residue - General Industry
- Cupola Dust - Foundries
- CKD and Alkaline Bypass Dust - Cement Plants
- Economizer Ash - Utilities
- Fly Ash - all types, including ash from Powder River Basin and low sulfur coal - Utilities, Steel Mills
- Fly Ash from FBC - General Industry
- Foundry Sand - Foundries
- Hazardous and Non-Hazardous Wastes - General Industry
- Iron Oxides and Heavy Metals - Steel Mills
- Lignite - Utilities
- Incinerated Medical Waste - Medical
- Municipal Incinerator Waste - from MRF Mass Burn and Waste-To-Energy Plants - General Industry
- Nuclear Waste Sludge- Nuclear Power Plants
- Shot Blast - Foundries
- Pyrites - Utilities
- Hot and/or Exothermic Materials
- Sludge and Dry Solids - Wastewater

Performance Guarantee

DUSTMASTER

A System Guaranteed To Work

This guarantee only applies where all waste powders have been factory tested by DustMASTER Enviro Systems and the prescribed mixing and maintenance instructions of DustMASTER Enviro Systems are followed for the DustMASTER. Any deviations from these instructions will void this guarantee.

Under these conditions, the DustMASTER is guaranteed to thoroughly mix powder and dusty residue materials with water in order to produce a DUST FREE product.

A FREE TEST OF MATERIALS TO DETERMINE RESULTS IS AVAILABLE.

Call Today

For more information, contact us today and ask about our free DustMASTER video, samples of different test results, and/or user reports on DustMASTER systems in various industries.

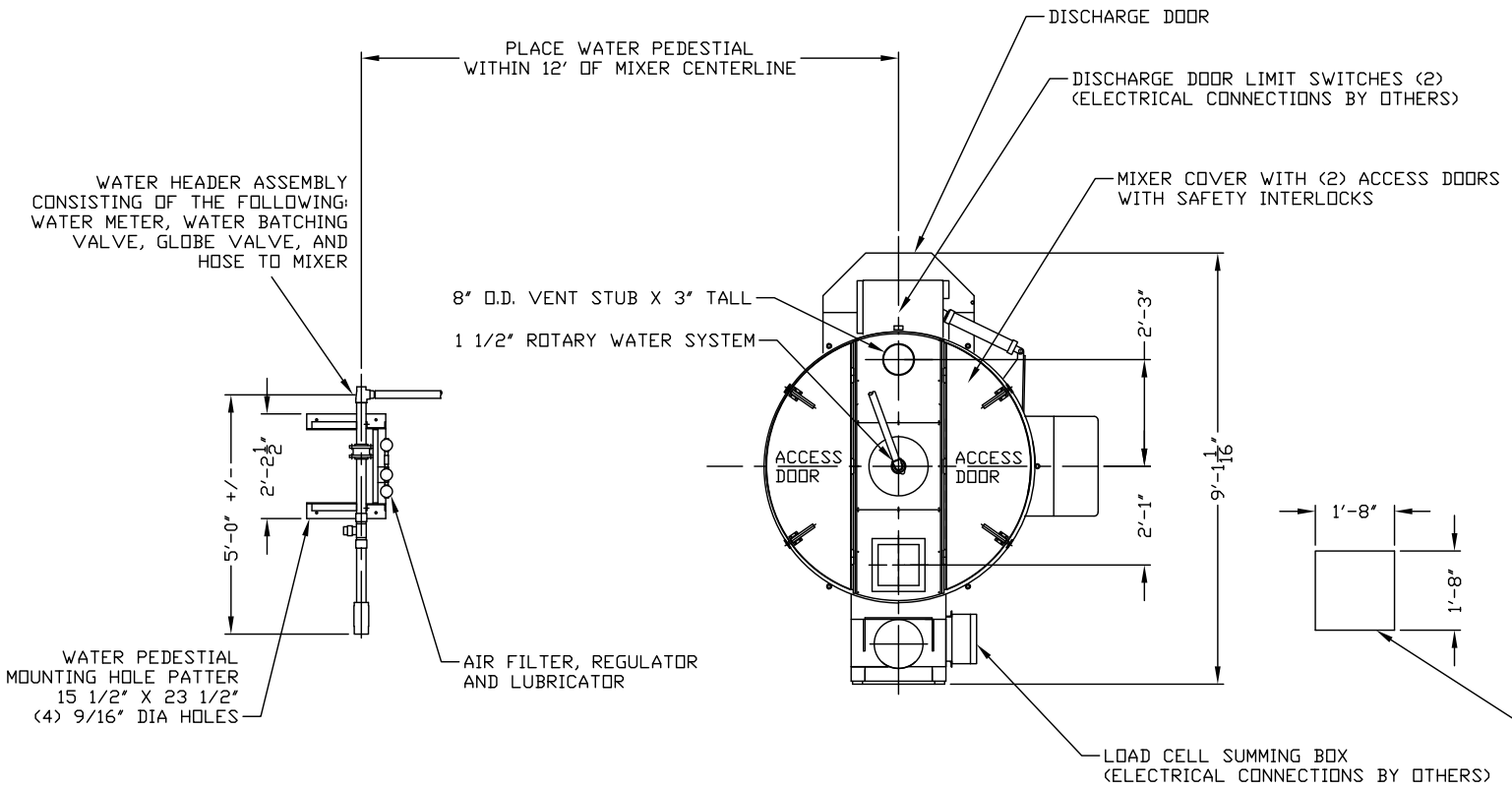
DUSTMASTER

Enviro Systems
A Division of Mixer Systems, Inc.

190 Simmons Avenue
P. O. Box 10
Pewaukee, WI 53072
262-691-3100 phone
800-75-MIXER (800-756-4937) toll free phone
262-691-3184 fax
Website: www.dustmaster.com
E-mail: info@dustmaster.com

DM 1.5m 02/01
Printed in U.S.A.

ITEM	PART NUMBER	QTY	DESCRIPTION	MATERIAL



HYDRAULIC POWER PACK-5 HP
230/460V, 3PH, 60HZ.
7 FLA AT 460V.
LOCATE WITHIN 15 FT. OF THE
DISCHARGE DOOR CYLINDER
MTG. HOLE PATTERN - 14" X 17-1/2"
HOLE SIZE - 7/16" DIA. (4)
(APPROX. WEIGHT: 325 LBS. W/
HYD. OIL) (ELECTRICAL CONNECTION BY OTHERS)

SUPPLIED BY CUSTOMER:

1.) ELECTRICAL POWER & STARTER W/ DISCONNECT FOR 20 HP MIXER MOTOR - 3 PHASE, 60 HZ, 460 VAC. (24 FLA AT 460V)
2.) ELECTRICAL POWER & STARTER W/ DISCONNECT FOR 5 HP HYDRAULIC POWER PACK MOTOR - 3 PHASE, 60 HZ, 460 VAC. (7 FLA AT 460V)
3.) ELECTRICAL POWER FOR 1/2 HP TRANSMISSION LUBE PUMP 115V, 60HZ, 1 PH - 8 FLA,
4.) ELECTRICAL POWER FOR CONTROL PANEL - DEDICATED CIRCUIT, 115 VAC, 15 AMP SERVICE.
5.) ELECTRICAL POWER FOR CONTROL PANEL AUX. OUTLET - DEDICATED CIRCUIT, 115 VAC, 15 AMP SERVICE.
6.) WATER: 50 GPM @ 45 TO 60 PSI.
7.) COMPRESSED AIR: 90 TO 120 PSI, 5 SCFM.
8.) STEEL GROUT PLATES FOR SECURING MIXER LOAD CELLS TO FLOOR (SEE FLOOR PLAN).
9.) FOUNDATIONS AND ANCHOR BOLTS.
10.) INSTALLATION AND CONNECTION OF SERVICES, FLOOR MODIFICATIONS, AND COMPLIANCE WITH LOCAL CODES AND REGULATIONS.
11.) MIXER VENT DUCT AND EQUIPMENT FOR PARTICULATE COLLECTION AND REMOVAL.

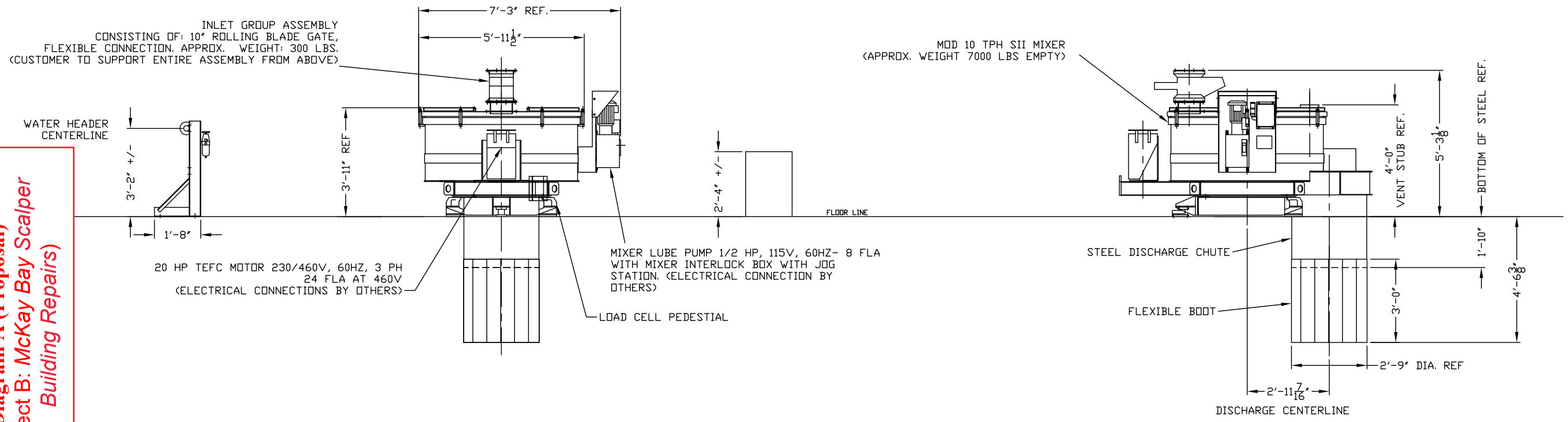


Exhibit B-02:
DustMASTER. Fly-Ash Conditioner
Diagram A (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

REV	ECN #	DATE	BY	REVISION
A		9/8/20	SMA	ORIGINAL ISSUE

Mixer Systems, Inc.
190 Simons Avenue - P.O. Box 10
Pewaukee, WI 53072-0010
(414) 691-3100 - FAX (414) 691-3184

EST. WEIGHT

TOL. UNLESS OTHERWISE SPECIFIED
X.X ±0.06" FRACTIONS ±1/16"
X.XX ±0.02" ANGLES ±1°
X.XXX ±0.005" MACH SURF 125

DRAWN BY: SMA
DATE: 9/8/20
SCALE: 1/2" = 1'-0"

TITLE
PROPOSAL DRAWING
MODEL 10 TPH -SII DUSTMASTER
CITY OF TAMPA/McKAY BAY WTE

SHEET: 1 OF 1
DRAWING NO.: McKAY
REV: A

DUSTMASTER® ENVIRO SYSTEMS Division of Mixer Systems, Inc.
190 Simmons Avenue • P.O. Box 10 • Pewaukee, WI 53072-0010 • Ph (262) 691-3100 • Fax (262) 691-3184 • www.dustmaster.com

TO: City of Tampa . McKay Bay WTE Facility
107 North 34th Street
Tampa, FL 33605

QUOTATION #: DM1803-20

Exhibit B-03:
DustMASTER. Fly-Ash Conditioner Quote (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

TERMS: Payable in U.S. Funds
25% Due with Order
50% Due at Approval Drawing
25% Due Before Final Shipment

APPROXIMATE DELIVERY AFTER RECEIPT OF ORDER AND FINAL APPROVAL DRAWINGS: 10-14 Weeks

CUSTOMER INQUIRY: Bobby Baker

10 TPH DustMASTER Series II System with Turbin Mixer Model 50 including 20 HP Electric Motor, 10 tons/hr.*

*Capacity based on material being processed weighing 35 lbs. per cu. ft. and a 90 second batch cycle

Standard Equipment Includes:
(All motors are 460v, 3ph, 60 Hz unless otherwise specified)

ITEM A
Mixer Module:

- Mixer tank weldment all wetted parts 316 stainless steel – tank shell wall is 3/16" thick
- 20 HP TEFC motor with v-band belt drive
- Gyro-Drive gear reducer, mounted internally in mixer center tank well, external ½ HP, 115 v, lube pump assembly
- Discharge door, one (1) 316 stainless steel swivel floor segment weldment , hydraulically operated with two (2) proximity type limit switches
- Hydraulic power pack assembly with 5 HP TEFC motor to operate discharge door cylinder
- 316 Stainless steel tank liners (3/8" thick), bolt in place
- 316 stainless steel cover assembly with two (2) hinged access doors with safety limit switches, charging panel w/ inlet flange and vent pipe stub connection
- 316 Stainless steel rotating case weldment
- Mixing paddles, wall and well scrapers are from Cast Ni-hard
- Mild steel mixing arms
- Mixer safety interlock station with emergency stop and warning horn mounted on mixer
- Rotary water distribution system installed in mixer, 316 stainless steel discharge pipes into mixer
- Mixer zero speed switch

Batcher Module:

- Mixer mounted on steel load cell pedestal with three (3) floor mount load cells
- Summing box NEMA 4 enclosure mounted on mixer

Air Line System Module:

- Single Solenoid Valves for remote control of pneumatic system batching valves
- Filter, Regulator & Lubricator assembly including all hoses and clamps

Water Module:

- Water strainer – mild steel
- Batching valve for water – mild steel
- Flow meter with transmitter for water – mild steel
- Globe valve – mild steel
- Mounting pedestal – mild steel

Control Module:

- Programmable controller- Allen Bradley Compactlogix L32E
- Emergency manual controls
- Mounted in NEMA 4 enclosure
- Terminal block wired
- A-B Panelview Plus, 10” screen
- Field programmable watchdogs, timers & batch parameters
- Ethernet compatible
- Includes three (3) day equipment start-up

Support Module:

- 10” Rolling blade gate, pneumatically operated for material batching
- Connection chute with flex joint boot and clamping bars, mounted between rolling blade gate and mixer inlet flange
- Mixer discharge chute, floor mounted

F.O.B. FACTORY, PEWAUKEE, WI (NOT INSTALLED)

OPTIONS

ITEM B

Additional Equipment Start-up:

Field Service Technician can provide equipment start-up assistance during the final start-up of the plant. The Field Technician would arrive after all the equipment is located, load cells calibrated, wired and motors have been bumped to make sure they are running in the right direction.

His Duties Will Include:

- Final troubleshooting of equipment operation.
- Supervise mechanics, electricians and operators in adjustments to be made to make the equipment run properly.
- Oversee the plant control set-up.
- Explain adjusting procedures and maintenance of all equipment.
- Train the personnel in the proper operation and adjustments of the control.
- Teach the personnel in operating the control in the manual and automatic mode.
- Review the parts and service manuals and explain any procedures listed in the manuals

Note: Please allow two (2) weeks notice to ensure availability of a Field Service Technician.

Note: Start-up will be invoiced as follows:

$110 per hour per 8-hour day Monday thru Friday
$165 per hour beyond the first eight (8) hours Monday thru Friday
$165 per hour per 8-hour day Saturdays
$220 per hour all work performed beyond 16-hours Monday thru Friday
$220 per hour beyond eight hours on Saturdays, and all Sunday hours
$250 per hour per 8-hour day for all Holidays.

Any and all additional travel expenses including, but not limited to airfare, auto rental, lodging and meals will be invoiced to the customer at cost plus 20%.

ITEM C

Not Included in Pricing:

- Calibration of load cells by others - requires power to the control panel
- Venting of mixer by others
- Motor starters by others
- Freight
- Installation by others

Leadership in Vibrating Process Equipment
5050 Rickert Road Crystal Lake, IL 60014
Phone: (815)455-3222 Fax: (815)479-9098

GKC PRELIMINARY Scope of Work Defined

Date of planned Installation: Fall Outage 2021	**General Kinematics Serial #**: C08558 & C11091
Company: City of Tampa/McKay Bay WTE	
Job Site: 107 N 34th Street Tampa, FL 33605	

Exhibit B-04:
Kinematics. Vibratory Conveyor, Scope (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

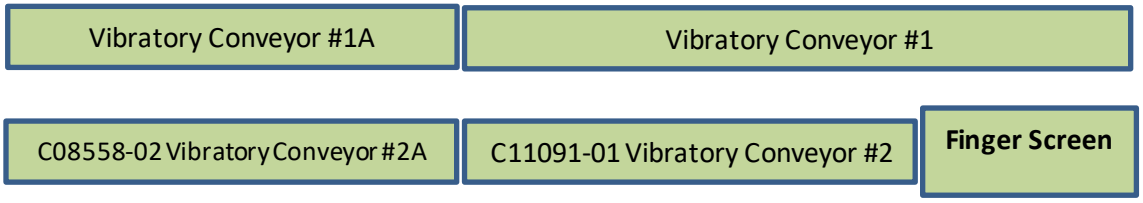
GKC Serial Number(s) & Description of Location: City of Tampa Bottom Ash Conveying System C8558 & C11091

General Kinematics Meeting Participants: Bob Huffer – Project Manager

Preliminary Budget Planning for Expeller with Flop Gates & Conveyor Replacement:
City of Tampa is considering the replacement of all four expellers & flop gates over a month long outage to take place in the Fall of 2021. To remove the existing expellers and flop-gates and install the new components the GK Vibratory Conveyors and Finger Screen will need to be removed for proper access. After the removal of the GK Vibratory Conveyors and Finger Screen, we will be replacing them with new machines once the new expellers and flop gates are in position. Demo/Removal can be in as small or in as large of pieces/sections desired.

The machine layout is as follows:

NORTH

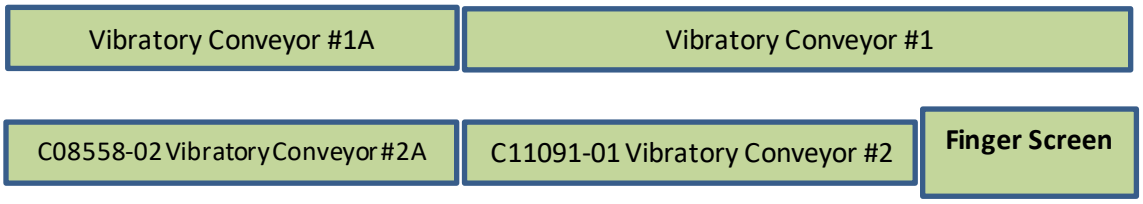


SOUTH

City of Tampa Project Goals/Objective:
Conveyors #1A, #1, and #2A and Finger Screen will ALL have to be removed and our plan at this point will be to replace all three conveyors and Finger Screen with complete new machines after the new Expellers and Flop Gates are back in position.

Conveyor #2 is already a newer Conveyor and our plan is to break it free from the floor and keep it as one complete machine without having to cut it in sections if possible. As the expellers are replaced down the length of the line, Conveyor #2 will be "shifted" from side-to-side considering the other three Vibratory Conveyors are already removed. That way this machine will not have be cut into sections or removed from the pit/building. But it will need to be physically rigged and moved from side to side in the pit depending on which expeller is being replaced.

NORTH



SOUTH

We envision the following steps required to take place on the demo side:

1. Remove Finger Screen from the EAST side building to allow the Conveyors to be removed.
2. Conveyor #1 cut and removed out EAST side of building as Finger Screen.
3. Conveyors #1A and #2A to be removed out the WEST side of the building.
4. Conveyor #2 cut free from floor and kept in one piece and moved as needed for expellers

PRELIMINARY BID REQUEST:

Please provide a Preliminary Cost for this project knowing the timeframe will take place over a month long outage. There will be heavy work at the start, light work in the middle while expellers are being replaced, and heavy work at the end to install the new machines.

Keep in mind this is PRELIMINARY, as we get further along in the project approval and planning stages we will refine the scope of work and schedule in an effort to "firm up" the final costing.

General comments & working conditions at the plant and through the course of the project:

1. Work is planned to be completed during a month long outage. We envision the Conveyor and Finger Screen removal to take place immediately. Then some time will be pass with Expeller replacement work by others to be completed. Then we would come back to site to install the new machines.
2. Priority #1 is to clean the spillage in the pit below the Conveyors and make corrective actions to keep spillage from re-occurring in the future and maintain a clean pit.
    - *The City of Tampa will be responsible for ensuring the pit area is clean and clear of ash so work can be performed.*
3. General Kinematics will have a Direct Technical Service Representative on site during the course of the work on site to give proper guidance and direction as needed.

GKC Welding Wire/Rod Specifications for welding of GK1000 liner seams:

- Must be MIG welded.
- Wire Specification: .045 Lincoln UltraCore® 81Ni1C-H Plus (Lincoln PN ED034858) - Gas: 100% CO_2
- Notes: Preheat to 200°F and Cover (insulate) to slow cooling once welding is complete.
- Spec Sheet: UltraCore® 81Ni1C-H Plus
- SDS Link: https://www.lincolnelectric.com/assets/US/EN/MSDS_lib/ZLE_SDS_NA-EN-200000002376.PDF

IMPORTANT: The wire manufacture recommends at a minimum a welder wear an approved respirator with fume removal and strongly recommends a filtered supplied air (Positive Pressure) helmet or hood be worn by the welder along with fume removal. Our Welders use a fume removal hood and a Powered Air Purifying Respirator (PAPR). The GKC 500 Dura-Plus and Ultra Core wire, contain Nickel, Manganese and

Chromium. The SDS and detailed product information are available on the manufacture's website. We suggest you obtain and review the SDS before using the welding product listed above.

Sincerely,

Bob Huffer / Team East Regional Sales Manager
bhuffer@generalkinematics.com
815-444-3527 Direct Office / 239-318-9196 Mobile
www.generalkinematics.com

Exhibit B-05:
Kinematics. Vibratory Conveyor, Budget (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

November 4, 2020

City of Tampa
107 North 34th Street
Tampa, FL 33605

SENT VIA: christopher.eckert@tampagov.net
mike.derocher@tampagov.net
bobby_baker@tampagov.net

Attention: Chris Eckert, Mike Derocher & Bobby Baker

Subject: General Kinematics Vibratory Bottom Ash Handling Equipment complete with Turnkey Demo/Installation/Start-up Services
Our Budgetary Proposal No. Q49543-00

Gentlemen:
Thank you for your interest in General Kinematics Corporation. We are pleased to present our Budgetary proposal for (4) pieces of vibratory equipment for your Bottom Ash processing line complete with Turnkey Demo/Installation/Start-up Services. We have enclosed the descriptions of the proposed machines and services. If anything needs to be changed, please let us know.

We understand, the requirements of the project to be as follows:

- Vibratory machines are to be designed to process 60 TPH of bottom ash, same as they are currently.
- New vibratory machines are to replace existing GK machines: C8558-01, -02 & -03
- New Vibratory Conveyors to be provided with similar trough design to match what is currently installed on C11091-01 (VC# 2) Conveyor.
- New Vibratory Conveyors to be provided with GKC1000 liners to match what is currently installed on C11091-01 (VC# 2) Conveyor.
- New Grizzly Screen to be provided with latest GK drive design for higher operating stroke resulting in improved material conveyance and screening.

The enclosed proposal drawing, Q49543-00-001, depicts the proposed general arrangement of the vibratory equipment.

We thank you for the opportunity to quote this application and look forward to working with you on this project. If you have any questions, please feel free to contact us at your convenience.

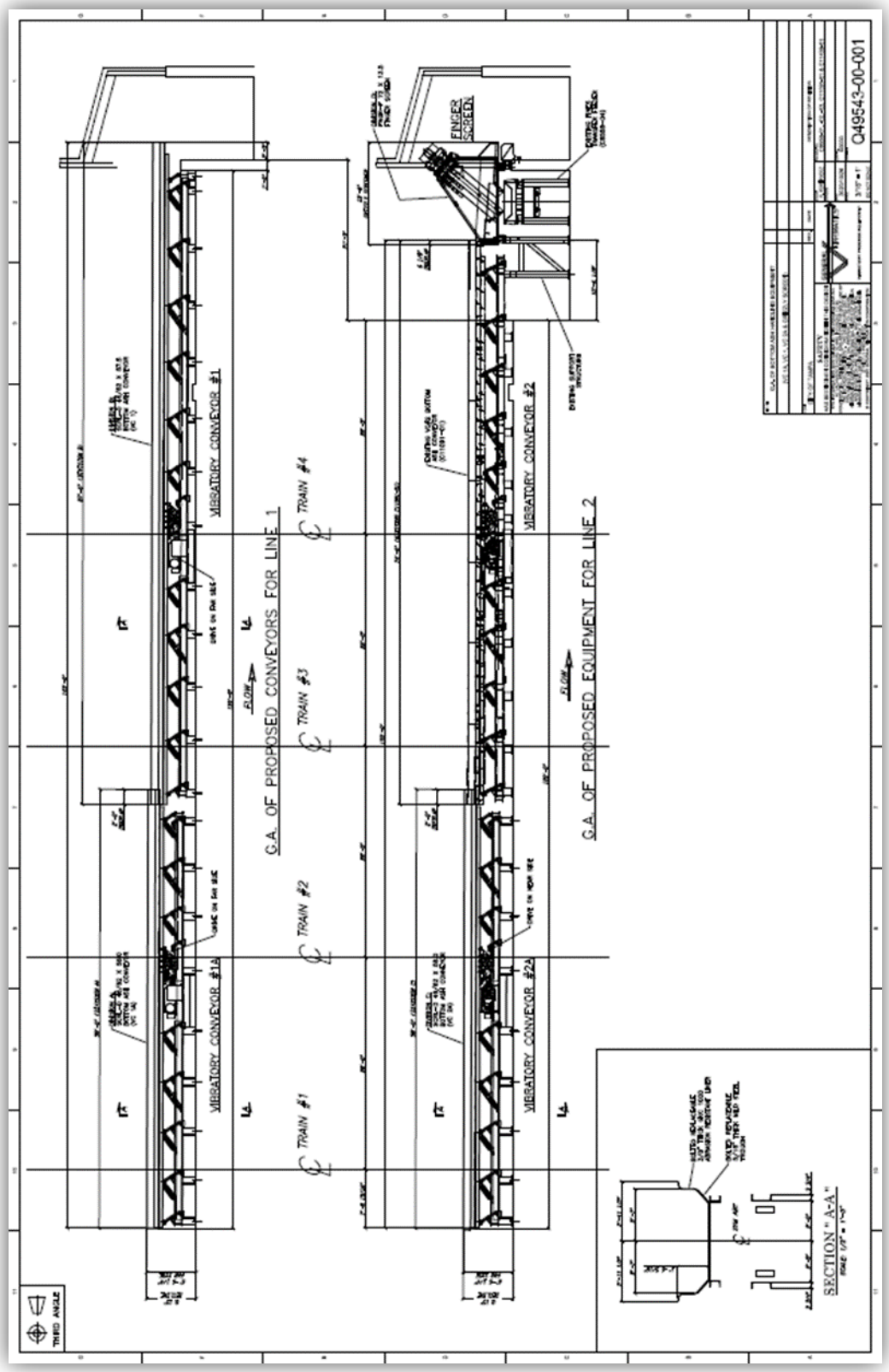
Sincerely,

GENERAL KINEMATICS CORPORATION

Bob Huffer
Regional Sales Manager
815-444-3527

Paul Fernandez
Sales Application Engineer
815-444-3546

Cc: D. Reeves



GK Proposal Drawing Q49543-00-001 showing replacement machines

QUOTATION NO. Q49543-00
DIVISION A
SYNCRO-COIL® VIBRATORY CONVEYOR (VC# 1A)

WE OFFER:

One (1) MODEL SCRL-D 46/62 X 58.0 **HEAVY-DUTY SYNCRO-COIL® VIBRATORY CONVEYOR**, 46" wide at the bottom of the trough flared to 62" at the top by 18" deep and 58'-0" long.

FUNCTION:

Conveyor is to receive 60 TPH of Bottom Ash Residue at approximately 60-80 pounds per cubic foot. The bottom ash will enter the Conveyor from Overhead Expeller chutes.

DESCRIPTION:

Unit Construction:

- Bolted replaceable trough is to be fabricated of 5/16" thick ASTM A-36 steel.
- A bolted replaceable liner will be fabricated of 3/8" thick GKC1000 abrasion resistant steel.
- Trough frame will be fabricated of structural steel members.
- "D-Balanced" balancing system to minimize foundation loadings.
- Heavy-duty **SYNCRO-SHEAR®** drive design allows repeated starts and stops of the unit under a full product load and accommodates surge loading.
- Conveyor base to be fabricated of heavy-duty structural steel members.
- Anchor Plates will be provided for anchoring the unit to the foundation.
- (1) 25 hp, 1200 rpm motor wired for 460 volt, 60 hz., 3 phase operation.
- Unit will be supplied with a Central Lubrication Kit which allows the drive bearings to be lubricated from a single position while the conveyor is operating.
- Unit will be supplied with a Vibration Monitor.

QUOTATION NO. Q49543-00
DIVISION B
SYNCRO-COIL® VIBRATORY CONVEYOR (VC# 1)

WE OFFER:

One (1) MODEL SCRL-D 46/62 X 87.5 **HEAVY-DUTY SYNCRO-COIL® VIBRATORY CONVEYOR**, 46" wide at the bottom of the trough flared to 62" at the top by 18" deep and 87'-6" long.

FUNCTION:

Conveyor is to receive 60 TPH of Bottom Ash Residue at approximately 60-80 pounds per cubic foot. The bottom ash will enter the Conveyor from Overhead Ejector chutes & Division A Vibratory Conveyor.

DESCRIPTION:

Unit Construction:

- Bolted replaceable trough is to be fabricated of 5/16" thick ASTM A-36 steel.
- A bolted replaceable liner will be fabricated of 3/8" thick GKC1000 abrasion resistant steel.
- Trough frame will be fabricated of structural steel members.
- "D-Balanced" balancing system to minimize foundation loadings.
- Heavy-duty **SYNCRO-SHEAR®** drive design allows repeated starts and stops of the unit under a full product load and accommodates surge loading.
- Conveyor base to be fabricated of heavy-duty structural steel members.
- Anchor Plates will be provided for anchoring the unit to the foundation.
- (1) 30 hp, 1200 rpm motor wired for 460 volt, 60 hz., 3 phase operation.
- Unit will be supplied with a Central Lubrication Kit which allows the drive bearings to be lubricated from a single position while the conveyor is operating.
- Unit will be supplied with a Vibration Monitor.

QUOTATION NO. Q49543-00
DIVISION C
SYNCRO-COIL® VIBRATORY CONVEYOR (VC# 2A)

WE OFFER:

One (1) MODEL SCRL-D 46/62 X 58.0 **HEAVY-DUTY SYNCRO-COIL® VIBRATORY CONVEYOR**, 46" wide at the bottom of the trough flared to 62" at the top by 18" deep and 58'-0" long.

FUNCTION:

Conveyor is to receive 60 TPH of Bottom Ash Residue at approximately 60-80 pounds per cubic foot. The bottom ash will enter the Conveyor from Overhead Ejector chutes.

DESCRIPTION:

Unit Construction:

- Bolted replaceable trough is to be fabricated of 5/16" thick ASTM A-36 steel.
- A bolted replaceable liner will be fabricated of 3/8" thick GKC1000 abrasion resistant steel.
- Trough frame will be fabricated of structural steel members.
- "D-Balanced" balancing system to minimize foundation loadings.
- Heavy-duty **SYNCRO-SHEAR®** drive design allows repeated starts and stops of the unit under a full product load and accommodates surge loading.
- Conveyor base to be fabricated of heavy-duty structural steel members.
- Anchor Plates will be provided for anchoring the unit to the foundation.
- (1) 25 hp, 1200 rpm motor wired for 460 volt, 60 hz., 3 phase operation.
- Unit will be supplied with a Central Lubrication Kit which allows the drive bearings to be lubricated from a single position while the conveyor is operating.
- Unit will be supplied with a Vibration Monitor.

QUOTATION NO. Q49543-00
DIVISION D
PARA-MOUNT II® VIBRATORY FINGER SCREEN

WE OFFER:

One (1) MODEL FNGR-F 72 X 13.5 **HEAVY-DUTY, FIXED RATE PARA-MOUNT II® VIBRATORY FINGER SCREEN**, 72" wide by 13'-6" long with the drive mounted above the trough. Finger Screen is to be foot mounted and designed to handle 60 TPH of Bottom Ash Residue at approximately 60-80 PCF. Machine is to be installed on approximately a 4° decline.

DESCRIPTION:

Unit Construction:

- Trough body to be fabricated of 1/2" thick ASTM A-36 steel.
- Load Deck will be fabricated of 1/2" thick GKC400 abrasion resistant steel.
- Welded replaceable side liners will be fabricated of 1/4" thick GKC400 abrasion resistant steel.
- Bolted Replaceable Finger Deck will be fabricated of 1/2" thick GKC400 abrasion resistant steel.
- **PARA-MOUNT II®** Fixed Rate Drive complete with heavy-duty coil reactor springs and (2) 2.0 HP, 720 RPM, TENV vibratory motor wound for a 230/460 volt, 3-phase, 60 hertz power supply.
- Marshmellow isolation springs, spring seats and fittings are provided to be mounted on the existing structural supports.
- GKC Stroke Monitors included.

ALL NEW EQUIPMENT WILL HAVE THE FOLLOWING:

Surface Preparation and Paint (STD 06):

Surface Preparation:	SSPC-SP6 (blast cleaning)
Prime Coat:	1 coat Interseal 385 4-6 mils D.F.T. minimum
Finish Coat:	1 coat Interthane 99 Color – Surrey Beige 2-3 mils D.F.T. minimum

QUOTATION NO. Q49543-00
DIVISION E
GENERAL KINEMATICS MECHANICAL INSTALLATION, PROJECT MANAGEMENT AND DIRECT GK FIELD SERVICE SUPPORT

WE OFFER:

One (1) LOT **of General Kinematics Mechanical Installation, Project Management and Direct GK Field Service Support**.

MECHANICAL INSTALLATION WORK:

Safety: Upon notice to procced with the project we will immediately begin planning for a safe performance of all personnel during this scope of work. A fulltime safety professional will be on site for the duration of the outage performing daily job site inspections, checking JSA's, LOTO procedures, confined space work, fall hazard recognition and mitigation and many other vital tasks.

Quality: As with safety, quality starts before the job begins. We have included in our bid a fulltime quality person to inspect and monitor the work. We are in receipt of the City of Tampa's inspection test plan for all of the projects and fully understand the expectation.

Service description: The attached General Kinematics PRELIMINARY Scope of Work has been developed as a guide to pre-plan the work on site. See attached document for details of the overall Scope of Work reviewed with our local contractor.

- All labor, supervision, travel, per diem, hotels, rental equipment, supplies, and consumables for a complete job, including all welding wire and gases.
- Receipt and off-loading of all materials associated with the work including care, custody and control thereafter.
- Delivery and implementation of a rigging plan as necessary to complete the work.

City of Tampa will supply the following:

- LOTO of the machines
- Cleaning of the Pit & removal / disposal of the ash
- Disposal of the Equipment being removed after Demo
- All electrical support
- Safe and clean working environment

GK PROJECT MANGEMENT & DIRECT FIELD SERVICE SUPPORT:

- General Kinematics will have a Project Manager assigned to this project upon order acceptance. At which time we would look to schedule a "planning" meeting with our local contractor and City of Tampa to discuss the overall Scope of Work, Safety Planning, Laydown Area defined, Schedule, and reporting interface during the course of the project.
- General Kinematics will also have a Direct Technical Service person on site during the majority of the project to ensure the field work is being carried out to GK's recommendations & design.

General Conditions

- All field painting shall be limited to touch-up only.
- The job site will be policed for debris daily and upon completion. Prior to acceptance, the site will be cleaned to the satisfaction of Customer.
- Customer will provide an accessible storage area within 100 yards of the installation site.
- Installation is based on General Kinematics being provided free and clear access to the job site and installation area, and the job being manned continuously from start to finish.
- Unless specifically noted, we have not included any handling, use, or disposal of hazardous, toxic or environmentally sensitive material.
- We have not included any removal or disposal of any hidden concrete, rerouting or replacement of any utilities or other items hidden below existing grade or in walls and ceilings unless specifically noted in this proposal.
- All permits and fees, where applicable, are to be supplied along with any independent lab testing (other than that specified) that may be required before or after installation and start-up.

PURCHASER TO FURNISH:

Electrical wiring, motor starters and conduit, all necessary chutes, unloading and complete erection in place.

TESTING:

General Kinematics' vibratory equipment is completely shop assembled and given a twenty (20) hour test run prior to shipment. Equipment may be broken down for shipment and will remain assembled as much as possible.

ENGINEERING:

General arrangement approval drawings specifically detailed for this application, enabling you to complete your design drawings, will be provided after receipt of order.

FIELD SERVICE ADVISORY SERVICES:

Field startup advisory service is available upon request per the rate sheet. GKC field service personnel are on-site in an advisory capacity and in no way supervise any contractors, customer employees or other workers with respect to work being performed regarding the project.

FOUNDATION:

General Kinematics' general arrangement drawings are to be furnished with the magnitude and frequency of dynamic reactions, along with static loads. Embedded steel is recommended for anchoring GKC vibratory equipment. However, if embedded steel is not available, an anchor bolt option is noted in the general arrangement drawings. General Kinematics is not responsible for vibration transmission to surrounding structures, nor responsible for soil conditions, underground piping, water tables, or other items affecting foundations. Any additional costs for foundation design, building design, or vibration analysis are not within the GKC scope of supply. It is the responsibility of the customer to ensure that the foundation is adequate to support GKC vibratory equipment.

SAFETY:

Acceptance of this proposal holds the Purchaser responsible for maintaining safety features provided by GKC. The Purchaser accepts the responsibility to not remove, defeat or bypass any safety features provided by GKC, except in the course of normal service and maintenance. When performing service or maintenance, the equipment must be placed in a zero mechanical state using proper lock-out/tag-out procedures.

VALIDITY: Prices are valid for thirty (30) days from the quotation date. Prices are subject to change upon review of any specifications sent with the purchase order and are subject to review of raw material costs at the time of order.

PRICES: All prices are in U.S. dollars.

TERMS: 30% down with purchase order.
65% to be billed and payment to be received seven (7) days prior to shipment.
5% net thirty (30) days from start-up, not to exceed sixty (60) days from shipment.

Payment terms are subject to GKC credit review upon placement of an order.

LATE PAY: Invoices not paid within terms may be assessed a service charge of 1.5% per month (or fraction thereof).

STORAGE: A storage fee of 0.5% per week beginning the 1st Monday after the contractual due date may be charged in the event the delivery is not taken at the contractually agreed upon date.

FREIGHT: FCA Point of Manufacture or as specifically stipulated.

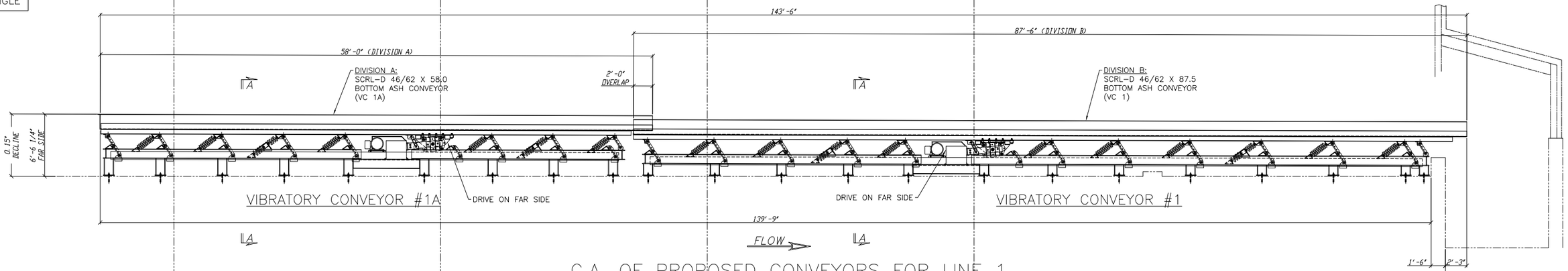
DELIVERY: Estimated delivery to be determined at receipt of purchase order and down payment check or wire and is subject to our backlog at the time of order.

CONDITIONS: I have read and agree to the provisions set forth in this contract and to the additional terms and conditions available on General Kinematics Corporation's website at https://www.generalkinematics.com/order-terms/ and that I am duly authorized to bind the following organization ("customer") to such provisions. These terms and conditions, effective 9/28/2020, located at https://www.generalkinematics.com/order-terms/ govern both our contractual commitments. I confirm that they are readily available to me at all times so I can access them for my understanding and use, and a hard copy will be provided to me upon request. The terms and conditions located on the General Kinematics Corporation website are subject to change; therefore, the terms and conditions in effect upon the signing of this contract will be the governing version for this contract and for the underlining services and duties of both contracting parties.

CONFIDENTIALITY: This quotation contains General Kinematics' confidentiality trade secrets and proprietary information relating to the design and components of the subject equipment. This information is being disclosed with an expectation of confidentiality. Copying, distribution or use of this information without General Kinematics' written permission is strictly prohibited. In the event this quotation does not result in an order to General Kinematics, then the original and all copies must be returned to General Kinematics immediately. If you do not wish to return the documents, you may destroy them and confirm the document destruction via letter or email.

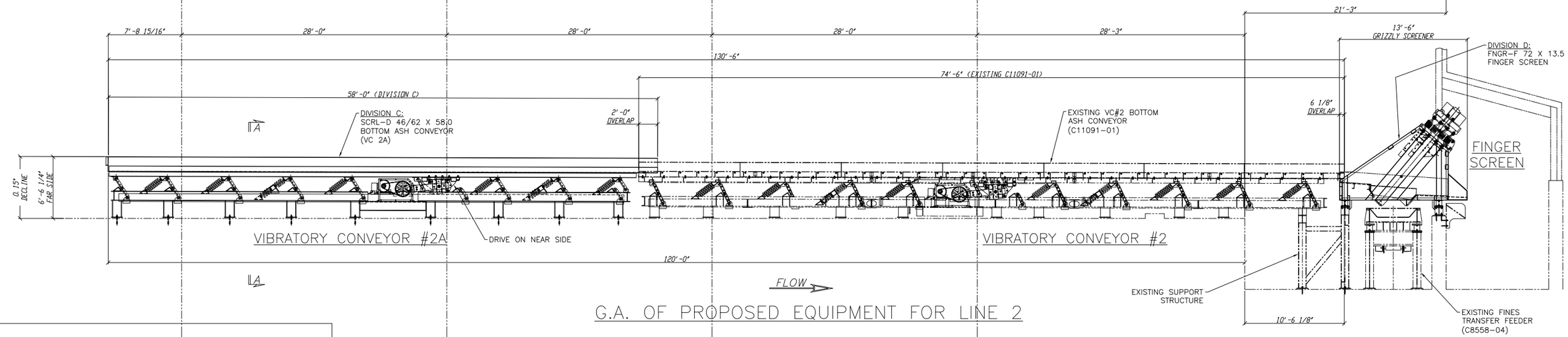
Domestic Field Service Rates: http://bit.ly/domesticFSR

THIRD ANGLE

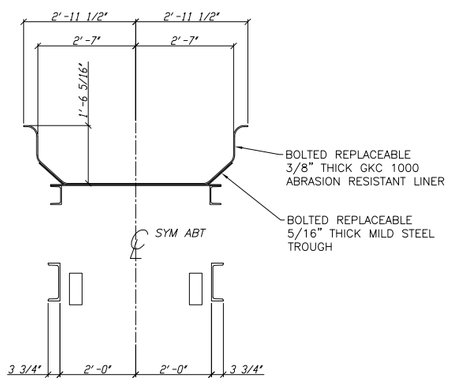


G.A. OF PROPOSED CONVEYORS FOR LINE 1

TRAIN #1 TRAIN #2 TRAIN #3 TRAIN #4



G.A. OF PROPOSED EQUIPMENT FOR LINE 2



SECTION "A-A"

SCALE: 1/2" = 1'-0"

Exhibit B-06:
Kinematics. Vibratory Conveyor, Bottom Ash Handling (Proposal)
(Project B: *McKay Bay Scalper Building Repairs*)

TITLE: G.A. OF BOTTOM ASH HANDLING EQUIPMENT (VC 1A, VC 1, VC 2A & GRIZZLY SCREEN)			
FOR: CITY OF TAMPA	REV.	DATE	DESCRIPTION OF REVISION
SAFETY HAS BEEN GIVEN CONSIDERATION IN THIS DESIGN			
DRAWN: P. FERNANDEZ			REFERENCE: C8558-01, -02, -03, C11091-01 & C11439-01
CHECKED:			
DATE: 2020/10/26			JOB NO: 00000
SCALE: 3/16" = 1' DO NOT SCALE			DWG. NO: Q49543-00-001

GENERAL KINEMATICS — VIBRATORY PROCESS EQUIPMENT

Exhibit B-07:
Kraft-Werks. Ash-Extractor Engineering, Proposal
(Project B: *McKay Bay Scalper Building Repairs*)

Kraft Werks Engineering

Proposal to

City of Tampa

For

Replacement Ash Extractors

McKay Bay Waste to Energy Facility

Tampa, FL

Kraft Werks Engineering Quotation 2223 Rev. D

November 24, 2020

Contents

Attachments

New Equipment Budget Quotation 2223D

Kraft Werks Engineering North America Inc. Standard Terms and Conditions of Sale (Reference)

New Equipment Quotation 2223 rev. D

Date: November 24, 2020

Customer: City of Tampa
Attn: Mike Derocher **mike.derocher@tampagov.net**
Attn: Bobby Baker **bobby.baker@tampagov.net**

Project: **Ash Extractor Replacement @ McKay Bay Waste to Energy Facility**

ITEM	DESCRIPTION	
1	Engineering/Drawings per KWE proposal 2223	
2	Replacement Ash Extractor and Transfer Chute for 4 units per KWE proposal 2223	

Terms:

- **Pricing:** Firm, based on the concurrent purchase of 4 units
- **Validity:** 45 Days
- **Freight:** Ex Works
- **Lead Time:** 52 weeks from receipt of order as follows:
  - 12 weeks for Design Engineering (item 1)
  - 40 weeks for manufacturing of Replacement Extractor **following Engineering completion**
- **Drawings:** Arrangement drawing 4 Weeks after receipt of written P.O., Installation drawing/instructions 8 weeks after Arrangement drawing approval
- **Taxes:** Any applicable taxes are not included in the pricing above.
- **Terms:** Per mutually agreed terms between Kraft Werks Engineering and the City of Tampa

Invoice Milestones (Payments **due Net 30 days** from invoice date - Items as referenced above**)**:

- Item 1 to be invoiced upon acceptance of order
- 10% of Item 2 @ KWE Submittal of Arrangement drawing, no later than 4 weeks after award
- 10% of Item 2 @ Approval of Arrangement drawing, no later than 2 weeks after KWE submittal
- 50% of Item 2 @ Major Material Procurement, no later than 16 weeks prior to ship ready date
- 10% of Item 2 @ 30 Days Prior to Ship Ready Date, payment must be received prior to dispatch of the equipment
- 20% of Item 2 @ Ship Ready Date, no later than 2 weeks after Ship Ready date of the equipment

Quotation Prepared by:

Peter K. Payor ppayor@kraftwerkseng.com
Product Manager, Ash Handling Systems

Preferred Special Combustion Engineering
A Division of Preferred Utilities Manufacturing Corp
"A Tradition of Excellence in Combustion Technology"

Headquarters: 31-35 South Street - Danbury, CT 06810 - Tel: (203) 743-6741 - Fax: (203) 798-7313 - www.preferredinstruments.com
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October 29, 2020

City of Tampa McKay Bay
107 N. 34th Street
Tampa, FL 33605
Telephone: 813-248-1457

Exhibit F-01:
PSCE Auxiliary Burner System Proposal
(Project F: McKay Bay Turbine Overhaul)

Attention: Mr. Bobby Baker

Subject: Auxiliary Burner System Reliability Upgrades and Retrofit Replacement Rev 0

PSCE is pleased to quote you with several paths to upgrade the existing auxiliary burner system.

The first path will focus on re-use of major equipment and provide new register burner insert with the intent to re-use the existing windbox and FD Fan. This approach will require modifications to the front wall and the slide gate by to be performed by WTI. An option to provide windbox cooling utilizing the FD Fan and a VFD will be provided. The other intent of this option is to eliminate the slide gate completely with its associated maintenance.

The second path will focus on providing complete replacement of the existing burner system including windbox and fd fan. Various options will be broken out to provide the City of Tampa an idea for future planning and consideration purposes.

In the first path, PSCE will focus on re-using the existing combustion air forced draft fan, the burner cooling air fan, burner flame scanner, natural gas fuel piping train, and Burner Management System. We have analyzed the existing burner FD Fan and fan wheel sizing, burner sizing, and slide gate assembly. The existing FD Fan as sized will provide the necessary air flow required for the newly sized burner. The existing burner was designed for a 3.9" w.c. burner register draft loss and a 20" burner throat diameter, the new burner is sized for performance and as a result will be designed for 6.7" w.c. burner register draft loss with a smaller 16" burner throat diameter. This reduction in throat size will require a new refractory throat to be formed and will require the windbox front plate and slide gate to be modified by WTI to accept the new register insert. PSCE will provide a new refractory throat forming tool and a refractory throat steel tub work. The existing windbox cooling blower can be re-used with the modified slide gate or a VFD can be coupled to the burner combustion air FD Fan to provide cooling as described below in Path 1 Option 2.

The burner register insert (shown below) design features removable gas lances and spuds. This feature will provide WTI with maintenance ability at the burner deck without having to remove the entire burner register or enter the boiler for inspection. The burner swirler will be made of high temperature stainless steel and utilize ceramic coating for additional temperature and corrosion resistance. The burner register will be provided with PSCE's High Energy Spark Igniter Shielded Tube Design Pilot Assembly.

There are several additional options targeted at maximize the benefits of the new burner register insert provided in the first path. They include:

- Path 1 Option 1: Burner Pressure Monitoring System. This option provides a gas pressure transmitter with manifold assembly and a multi-loop controller to monitor and alarm deviations in gas pressure and gas flow from the "As Commissioned" settings. This system will essentially

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alert if burner spuds have begun to plug from ash build up or if a spud's orifices have burned out, providing WTI the heads up ability to schedule maintenance or replacement.

-Path 1 Option 2: Variable Speed Drive System for Burner Cooling. This option provides a variable speed drive paired to the Burner Combustion Air Forced Draft Fan Motor to allow use of the Combustion Air Fan for burner cooling and eliminating the need of both the separate windbox cooling blower and the burner slide gate. The combustion air forced draft fan will run at low speed to achieve a given target burner barrel temperature as indicated by the provided burner barrel thermocouple. It will eliminate the burner slide gate and its associated maintenance completely and will require some burner/boiler interface front wall modifications (burner boot).

In the second path, PSCE will focus on full replacement of the auxiliary burner system with new. A New Burner Register with the same removable gas lances and spuds as described in Path 1 will be provided along with a new burner windbox, new combustion air forced draft fan, High Energy Spark Igniter Shielded Tube Design Pilot Assembly, burner flame scanner, natural gas fuel train, and Burner Management System. Breakouts of the Natural Gas Fuel Train and Burner Management System will be provided. The Burner will include the Burner Pressure Monitoring System and Variable Speed Drive System for Burner Cooling quoted as Path 1 Options as the basis of design.

Brian Sy
Preferred Special Combustion Engineering
Preferred Utilities Manufacturing Corporation
203-743-6741 Ext 1101
Mobile: 203-297-4800

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Path 1: New Burner Insert, Re-Use Major Equipment

Preferred will provide a ship loose burner register insert utilizing the latest technology advances for Waste to Energy Process Facilities. The burner register insert will be designed to reuse the existing combustion air forced draft fan, the burner cooling air fan, burner flame scanner, natural gas fuel piping train, and Burner Management System. The windbox front plate will be required to be modified to accept the new register insert. The existing slide gate will be to be modified by WTI for the smaller diameter burner. The burner refractory throat will have to be re-formed for the smaller burner throat. The windbox mounted pilot train may need to be relocated or temporary removed during the register burner installation.

1. One Register Assembly to include the following:
    a. One Register Assembly
    b. One Stainless Steel Swirler Ceramic Coated
    c. One Gas Manifold Assembly with One Set of Removable Spuds
    d. One Spud Removal Tool
    e. Front Access Design for removing gas lances and spuds for inspection and maintenance without having to remove the burner register
    f. One High Energy Spark Igniter Shielded Tube Pilot Assembly with ignition transformer wired to the burner windbox junction box
    g. One Natural Gas Pilot Train Assembly with pilot PRV, two SSO solenoid valves with proof of closure switch, one SSO vent solenoid valve with proof of open switch, manual valves, wired to the burner windbox junction box.
    h. One Scanner Mount with Purge Air Connection, cooling air flow meter and PRV (Existing Scanner to be Re-Used)
    i. Two Viewports
    j. One 4.5" Gauge for Gas Pressure at the Manifold
    k. One Purge Air Flow Switch
    l. One Minimum Air Flow Transmitter with Transmitter Signal Conditioner (Redundant Minimum Air Flow), includes Fan IVC Inlet Coverplate with Swagelock Fitting
    m. One Burner Fan Inlet to Windbox Differential Pressure Switch in NEMA 4 Enclosure
    n. One Refractory Throat Steel Piece with Anchors and refractory throat forming tool (refractory work by others)

The Burner will be designed to allow the individual natural gas lances and spuds to be removed for inspection and maintenance WITHOUT having to remove the entire burner register/barrel assembly.

Path 1 Option 1: Burner Pressure Monitoring System

This option provides a gas pressure transmitter with manifold assembly and a multi-loop controller to monitor and alarm deviations in gas pressure and gas flow from the "As Commissioned" settings. This system will essentially alert if burner spuds have begun to plug from ash build up or if a spud's orifices have burned out, providing WTI the heads up ability to schedule maintenance or replacement.
-One Gas Pressure Transmitter with Manifold Assembly
-One Preferred Instruments PCC-III Multi-Loop Controller in NEMA 4 Enclosure

Path 1 Option 2: Variable Speed Drive System for Burner Cooling

Variable Speed Drive System for Burner Cooling. This option provides a variable speed drive paired to the Burner Combustion Air Forced Draft Fan Motor to allow use of the Combustion Air Fan for burner cooling and eliminating the need of both the separate windbox cooling blower

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and the burner slide gate. The combustion air forced draft fan will run at low speed to achieve a given target burner barrel temperature as indicated by the provided burner barrel thermocouple. It will eliminate the burner slide gate maintenance completely and will require some burner/boiler interface front wall modifications (burner boot).

-One Danfoss Variable Speed Drive, NEMA 12 or 3R, 20 HP (Sized up from the existing FD Fan 15 HP Motor for temperature considerations), 460VAC/3Ph/60Hz, with Bypass and Fused Disconnect.
-One Burner Barrel Thermocouple wired to the Burner Windbox Junction Box
-One Preferred Instruments PCC-III Multi-Loop Controller in NEMA 4 Enclosure for VFD modulation for cooling air flow requirement (same controller as Path 1 Option 1

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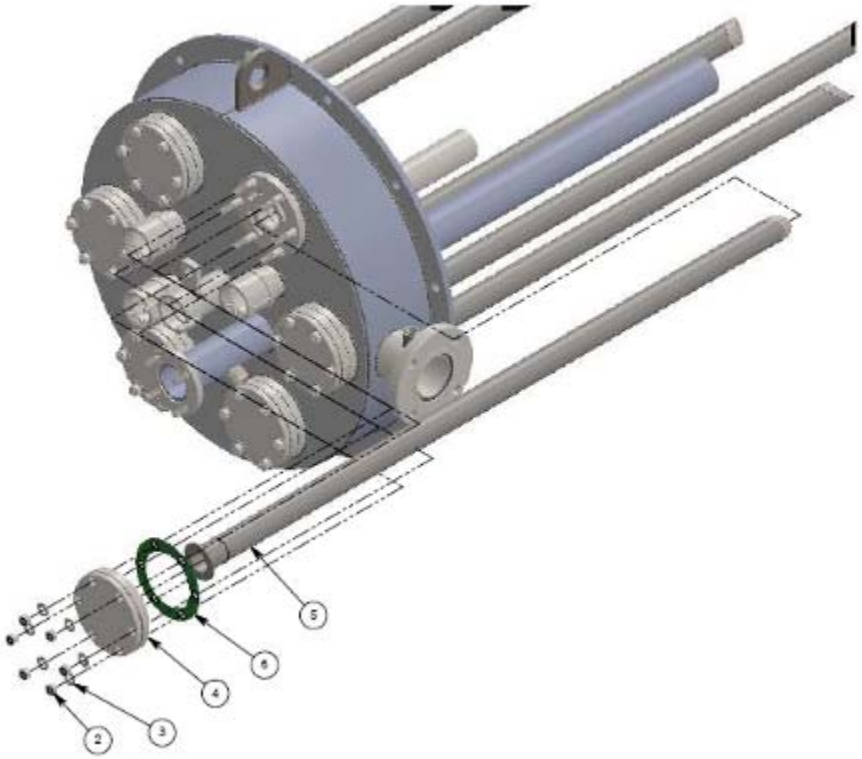

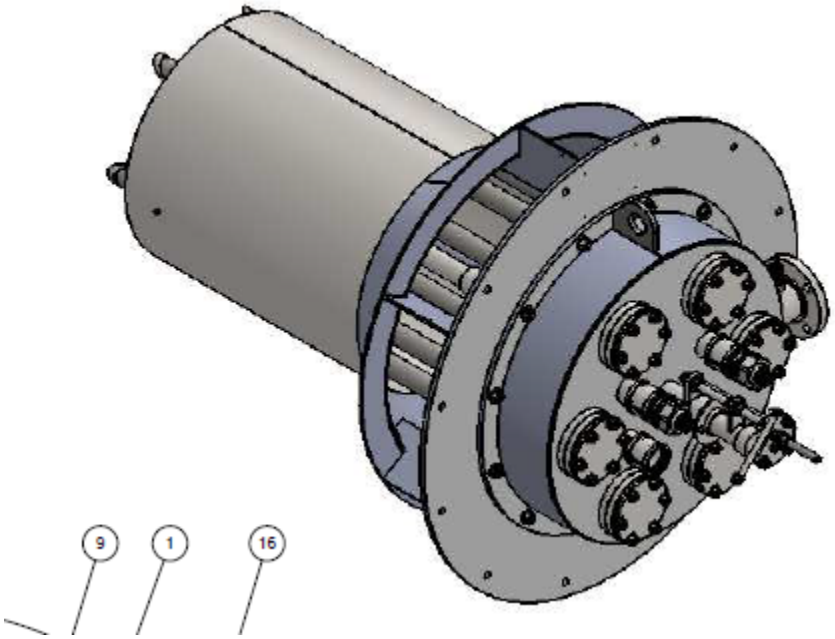

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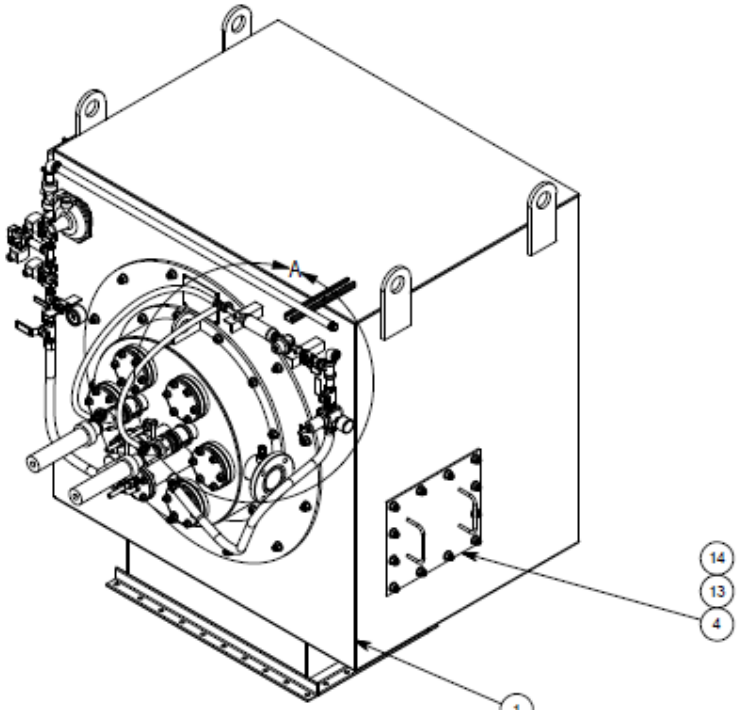

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Path 2: Full Replacement of Existing Combustion System with New Windbox

In the second path, PSCE will focus on full replacement of the auxiliary burner system with new. A New Burner Register with the same removable gas lances and spuds as described in Path 1 will be provided along with a new burner windbox, High Energy Spark Igniter Shielded Tube Design Pilot Assembly, burner flame scanner, natural gas fuel train, and Burner Management System. Breakouts for a new Combustion Air Forced Draft Fan, Natural Gas Fuel Train, and Burner Management System will be provided. The Burner will include the Burner Pressure Monitoring System and Variable Speed Drive System for Burner Cooling quoted as Path 1 Options as the basis of design.

1. Burner Register Assembly to include the following:
    a. One Register Assembly
    b. One Windbox Assembly with ¼" Construction, access door, and necessary taps.
    c. One Stainless Steel Swirler Ceramic Coated
    d. One Gas Manifold Assembly with One Set of Removable Spuds
    e. One Spud Removal Tool
    f. Front Access Design for removing gas lances and spuds for inspection and maintenance without having to remove the burner register
    g. One High Energy Spark Igniter Shielded Tube Pilot Assembly with ignition transformer wired to the burner windbox junction box
    h. One Natural Gas Pilot Train Assembly with pilot PRV, two SSO solenoid valves with proof of closure switch, one SSO vent solenoid valve with proof of open switch, manual valves, wired to the burner windbox junction box.
    i. One Scanner Mount with Purge Air Connection
    j. One UV Self Checking Flame Scanner
    k. Two Viewports
    l. One 4.5" Gauge for Gas Pressure at the Manifold
    m. One Purge Air Flow Switch
    n. One Minimum Air Flow Transmitter with Transmitter Signal Conditioner (Redundant Minimum Air Flow)
    o. One Burner Fan Inlet to Windbox Differential Pressure Switch in NEMA 4 Enclosure
    p. One Refractory Throat Steel Piece with Anchors and refractory throat forming tool (refractory work by others)
    q. One Pressure Transmitter for Burner Pressure Monitoring System with Multiloop Controller
    r. Option for One FD Fan, with Premium Efficiency TEFC Motor with Inlet Volume Control Damper
    s. One FD Fan Variable Speed Drive for Burner Cooling
    t. One Burner Barrel Thermocouple for Burner Cooling

The Burner will be designed to allow the individual natural gas lances and spuds to be removed for inspection and maintenance WITHOUT having to remove the entire burner register/barrel assembly.

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2. Natural Gas Fuel Train

One 3" Natural Gas Main Fuel Valve Train, mounted on a piping rack, NEMA 4, constructed per NFPA 85 Requirements utilizing PSCE's standard design, component selection, and manufacturing practices. Components above 2" will utilize flanged connections and cast iron valve bodies. The devices will be pre-wired to a NEMA 4 Fuel Train Junction Box. Each fuel train to include the following devices:

-One (1) Inlet manual shut-off Valve, with handle
-One (1) Inlet Strainer
-Two (2) Pressure gauges with isolation valves
-One (1) Natural Gas PRV, Cast Iron Body, Flat Faced Flanged
-One (1) low gas pressure switch
-One (1) high gas pressure switch
-Two (2) Safety Shut-off Valves with proof of closure and open switches
-One (1) Vent Valve with proof of closure and open switch
-One (1) Gas Flow Meter
-One (1) Flow Control Valve with Electro-Pneumatic Positioner, low fire position switch and minimum mechanical down-stop

3. Burner Management System, PLC Based

Preferred's *BMS LOGIC+* Custom Burner Management Systems are designed and engineered to provide the safe and reliable start up, operation, and monitoring of oil and gas fired burners. From a single designated location, operations staff can monitor and manage both flame safeguard and burner control. Preferred's combustion experience insures job specific programming while maintaining the highest level of reliability in the industry. A NEMA 4 Carbon Steel, 48" High x 36" wide x 16" deep, wall mount control panel will be shipped loose for field mounting and wiring to field and burner supplied devices by the installation contractor.

The new control panel will communicate via Ethernet TCP/IP. Provisions will be made for hard wire local and remote (DCS Control Room) Start-Stop and Firing Rate Control. All alarms and trips will be annunciated and provided to the control room DCS via Ethernet TCP/IP interface.

Quality Control assures that Preferred Burner Management Systems are in compliance with all NFPA 85 standards for multiple burner furnaces. All systems undergo thorough simulation testing prior to shipment.

Redundant Watchdog Timers are provided with all *LOGIC+* Systems to guard against processor, memory, I/O, and power supply failures.

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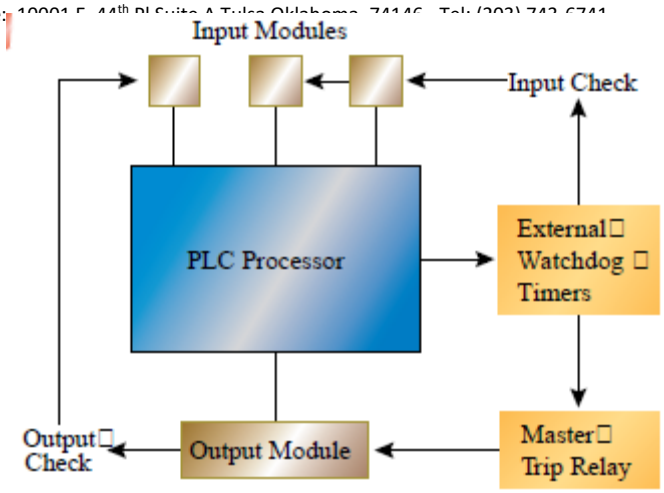

Critical PLC Output Modules are monitored on a continual basis to assure they are in keeping with the sequence of operation. Failure of an output to pass continual testing will result in an immediate shutdown of the system.

Critical PLC Input Modules are monitored at three second intervals. A failed input module results in the immediate shutdown of the system and the annunciation of the failed input card.

Burner Management System Allen Bradley CompactLogix PLC Based System with the following panel mounted devices:

- 12.5" Allen Bradley Panelview Human Machine Interface (HMI)
- CPU Module with Ethernet Port
- Power Supply
- Discrete Input Modules
- Relay and Triac Output Modules
- One Emergency Stop Pushbutton
- One Alarm Lamp
- One Alarm Silence Pushbutton
- One System Reset Pushbutton
- One Alarm Horn
- One Burner Start/Stop Pushbutton
- One Burner Pilot Valves Energized (Graphically Displayed on Touchscreen)
- One Burner Valves Energized (Graphically Displayed on Touchscreen)
- One Burner Released to Modulate Graphically Displayed on Touchscreen)
- One Boiler Purge Complete (Burner Start Permissive Status Indication (Graphically Displayed on Touchscreen)
- One Flame Detected Status (Graphically Displayed on Touchscreen)
- One Boiler Reset Required Status (Graphically Displayed on Touchscreen)
- One Boiler Reset Push Button
- Two Watchdog Timers
- One Ethernet Communication Port
- Panel Auctioneering

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The Burner Management System shall monitor, alarm and trip all the burners based on the following safety interlock switches:

- Pilot Igniter Flame Failure
- Flame Failure
- Boiler Run Permissive/Interlock from Existing DCS
- Purge Bypass Interlock from Existing DCS
- Low Instrument Air
- High and Low Main Gas Pressure
- Low Combustion Air
- Purge Air Flow
- FD Fan Trip/Fail
- High burner temperature alarm

Main Boiler Run Permissive-Interlock (Shall fall under one run permissive contact provided by Facility DCS called Boiler Run Permissive-Interlock) to consist of:

- ID Fan Trip/Fail
- Low Water Level
- Low Low Water Level
- High Water Level
- High Furnace Pressure
- Low Furnace Pressure
- Low Stack O_2
- Excess High Drum Pressure
- High Drum Pressure

- Flame Failure, Igniter
- Flame Failure, Main Fuel

BMS Basis for Design:

The BMS will include the necessary Input and Output Modules to interface with the following equipment

1. Natural Gas Pilot Train
   a. Discrete Inputs
      -Pilot Valves Energized
   b. Relay Outputs
      -Pilot SSO Valves
      -Pilot Vent Valve
      -Energize Burner Pilot - Two SSO Valves and One Vent Valve
      -Ignition Transformer

2. Natural Gas Main Fuel Train
   a. Discrete Inputs
      -Main Gas Low Gas Supply Pressure Switch
      -Main Gas High Gas Supply Pressure Switch
      -Main SSOs Valve Proof of Closure Switches
      -Main SSOs Valve Proof of Open Switch
      -Main Flow Control Valve Low Fire Position Switch
      -Main Vent Valve Proof of Open Switch
      -Main Vent Valve Proof of Closure Switch
      -Burners Energize -Two SSO Valves and Vent Valve Proof of Closure and Open Switch

   b. Preferred will provide the following contacts
      -Burner Start in Progress

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-Burner Fail to Light
-Trouble Alarm
-Burner Tripped
-Burner On

3. Boiler Run Permisive Interlock
   a. Common Discrete Inputs
      -Boiler Permissive satisfied. Boiler permissive represents the following boiler safety interlock:
      - Low Water Level
      - Low low Water Level
      - High water level
      - High Boiler System Pressure
      - Low Furnace Pressure
      - High Furnace Pressure
      - Boiler FD Fan running interlock
      - Boiler ID Fan running interlock
      - Boiler Purge Complete

      -Low Auxiliary Burner F.D. Fan Flow
      - Auxiliary Burner Purge Air Flow
      - Auxiliary Burner Low Instrument Air Pressure
      -One Flame Scanner, Flame Detected
      -Burner FD Fan IVC Low Fire Proving Switch
      -Burner FD Fan IVC Damper Open Proving Switch

   b. Relay Outputs
      -Energize Burners Ignition
      -Contact for Combustion Controls to Purge Command
      -Contact for Combustion Controls Release for Modulation Command (Combustion Controls Are Existing by Facility DCS)

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Allen Bradley CompactLogix Based Burner Management System

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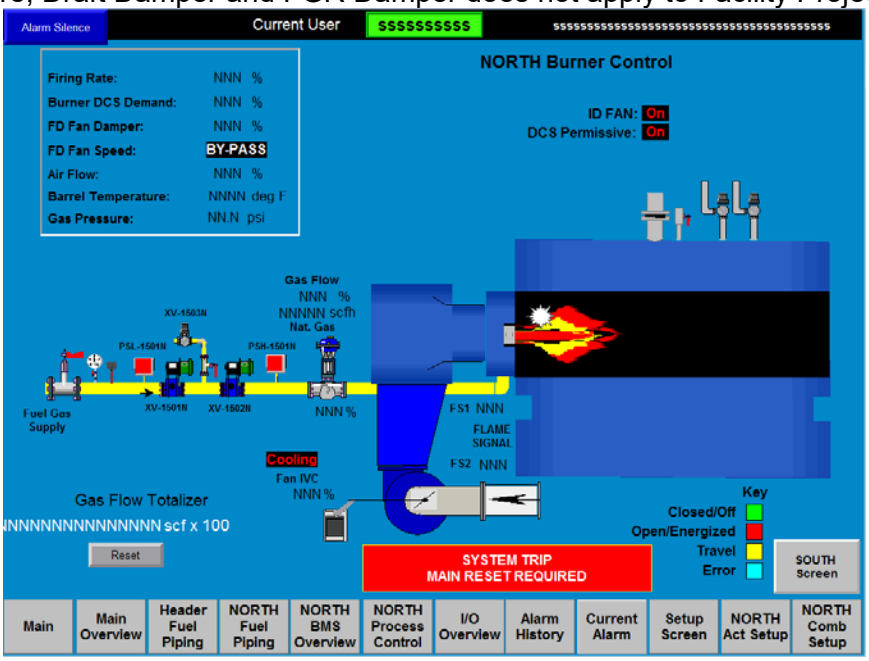
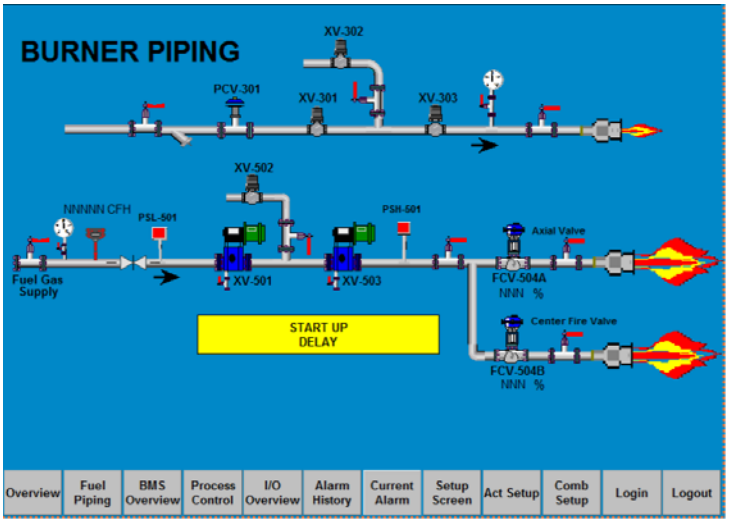
Human Machine Interface/Touch Screen Sample Graphics

Typical Preferred Allen Bradley Burner Overview Screens. The graphics will be similar to below except the Fresh Air Damper, Furnace Pressure, Air Temperature, Stack O2, Flue Gas Temperature, Draft Damper and FGR Damper does not apply to Facility Project.



Typical Burner Piping HMI.



Typical HMI graphics indicates that the panel is in Local Control. The controls can be operated Remotely at the control room HMI or Local at the burner control panel. Local control panel can also be set-up to bias the plant master firing rate signal. The Fresh Air Damper, Furnace Pressure, CF Valve and O2 trim does not apply to Facility application.

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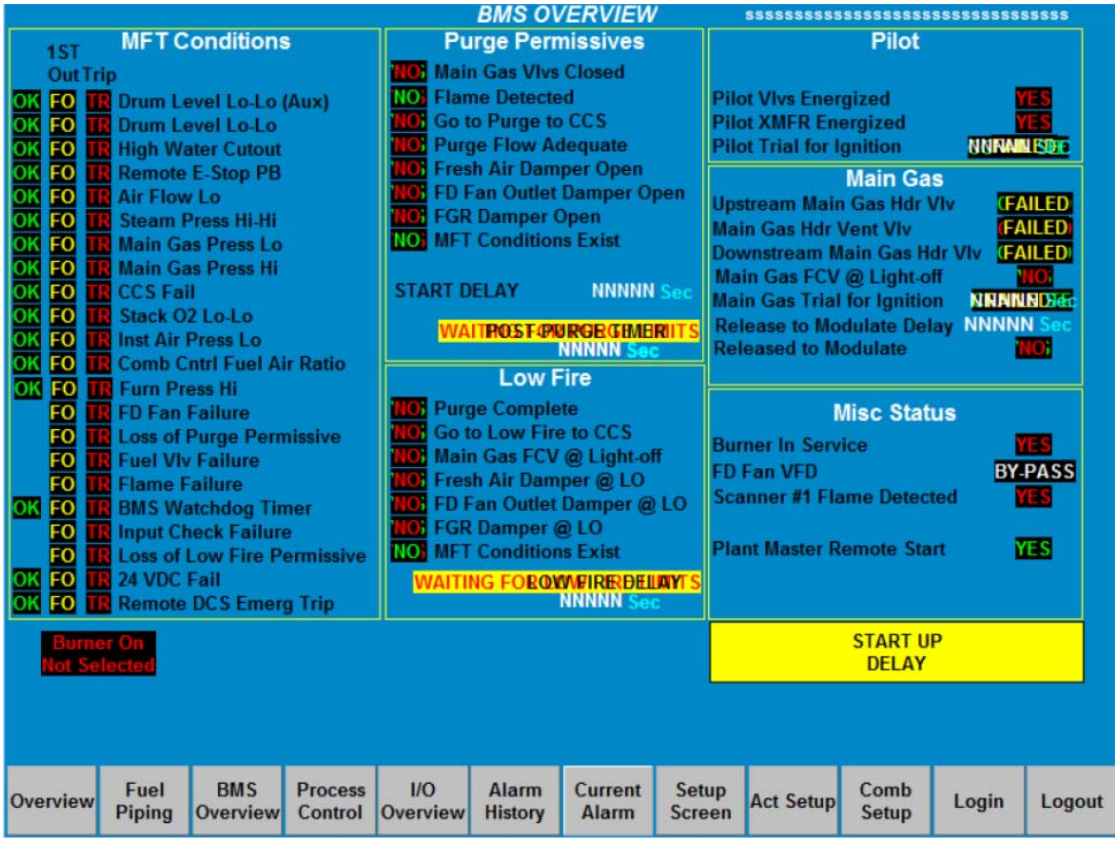
Touching the NEXT SCREEN soft button takes the operator to the HMI graphics below were the firing rate is trended. In case of this facility, since the firing rate is from the DCS, the DCS signal will be the Setpoint and the Process Variable will be the burner firing rate.

The Control System Constantly Monitors all Main Fuel Trip Conditions and provides status if condition is met (OK), First Out (FO) and Trip (TR).
Provides sequencing status from "Burner Start" to Main Burner Light-off with first out annunciation.
Indicates Purge Permissive requirements with actual status for trouble shooting and immediate correction.
Indicates Light-off Permissive requirements with actual status for trouble shooting and immediate correction.
Provides additional "Miscellaneous Status" such as FD fan at VFD Mode or By-pass Mode, Remote Start by DCS.
All of above is shown on one BMS Overview Graphics Page



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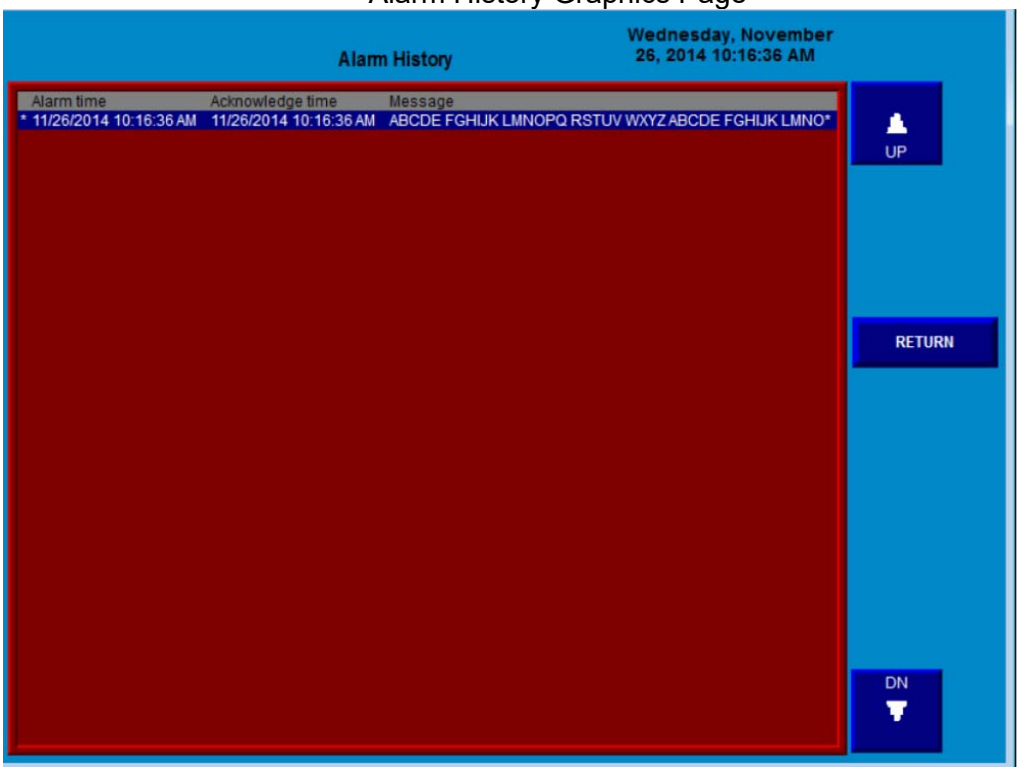
All BMS Digital Inputs status are indicated either Made (ON) or Not Made (OFF)

Alarm History Graphics Page



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Any extended delivery schedule of this project, we propose any price escalation be based upon the Producer Price Index for Material Escalation, and Bureau of Labor Statistics for Labor Cost Escalation to be applied should PUMC experience any material or labor increase over the current pricing.

All prices are NET, FOB Origin, Freight Prepaid & Add. Packaging will be suitable for transport within the continental United States and for shipment within an enclosed and weather-protected vehicle/container and for storage in an enclosed and weather-protected area. Shipping and or storage in unprotected outdoor (or indoor) environments will do irreparable damage to the systems provided.

Our pricing **excludes** the following:

- Equipment other than that specifically listed
- It is expected that all equipment required to produce an NFPA standard compliant system has been included. If additional equipment is required to come into compliance it may have a cost and schedule impacts.
- Spare Parts except those specifically called out in the specifications
- Installation and/or installation hardware, painting and/or insulation
- Existing equipment demolition, removal and disposal
- Asbestos and/or Lead paint removal, encapsulation and disposal
- All sales taxes and duties, insurance, permits and approvals
- Off-loading

This quotation is valid for 30 days from the date of this proposal. All quoted prices are firm for that period and for an additional one hundred-eighty (180) day period assuming that an order is received and shipment (of all equipment) is made during that interval (refer to **"Project Delays"**).

Preferred Instruments' proposal is based on the information and scope contained herein and is based on Preferred Utilities Manufacturing Corporation (PUMC) Terms and Conditions of Sale.

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Comments and Clarifications

Specification	C/E	Description
General	C	All burner related field devices (including any specified spares) are not included and are assumed to be provided by others and in good working condition for service use. The following devices will be required from the customer's controls portion of the DCS on a per boiler basis: -One Firing Rate Signal The boiler level control and draft control is the scope of the existing DCS system. Any transmitters related to boiler drum level and draft controls are assumed to be existing.
General	C	The items below are Boiler Related Safety Interlock Field Devices are assume to be existing and to be re-used and fall into one common boiler run permissive as listed below: -One (1) Low Furnace Pressure Switch -One (1) High Furnace Pressure Switch -One (1) High Drum Pressure Switch -One (1) High Excess Drum Pressure Switch -One (1) Low Water Level Cutout -One (1) Low Low Water Level Cutout -One (1) High Drum Level Cutout -One (1) High Drum Level Alarm -One (1) Low Drum Level Alarm -One (1) FD Fan Running Contact -One (1) ID Fan Running Contact -Draft Damper Purge Position Switch
General	C	Equipment is to be located outdoors in an unclassified area.
		The boiler tube nest opening dimensions must be confirmed.
General	C	All installation activities are the responsibility of others (i.e. not by PUMC). Estimates provided in the pricing summary are budget estimates only and the installation workscope will need to be walked down with contractors before a firm quote can be provided.
General	C	Burner Paint is Per Burner Manufacturer's Standard Powdercoat Protection System
General	C	We assume there is an existing natural gas relief valve to protect downstream gas valves rated for 50 psig.
General	C	Preferred Requires 25 PSIG Natural Gas at the Inlet of each Natural Gas Fuel Train Inlet.
General	C	FD Fan motor starter is assumed to be existing or by others and located in the MCC Room.
General	C	PSCE will provide a throat tile tub and a refractory throat sweep forming tool. The refractory and refractory throat forming and boot modification will be by the refractory contractor, Not PSCE.
General	C	No Emission Guarantees
General	C	The following listed components are assumed to be by others: • All instrument piping, tubing and fittings • A dedicated Compressed Air line will be required for cooling scanner

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		and pilot combustion air/cooling to be provided by facility or others. PSCE will provide the burner with the necessary piping, needle valves, and flow meter to feed the compressed air for cooling to the scanner and pilot. Our equipment will require 120VAC single phase power and termination to field instrumentation (done by others) to become fully operational. • The FD Fan Motor and VFD will require a Clean Source of 460VAC/3PH/60Hz power
General	C	Boiler FD and ID fan main air flow control dampers, motor starters, actuators and flow measuring devices are not in PUMC Scope of Supply.
General	C	Preferred Standard Insurance Coverage Applies
General	C	Preferred takes exception to any liquidated and consequential damages or backcharges

C – Comment
E – Exception

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Terms & Warranty

Terms and Conditions

Preferred Utilities Manufacturing Corporation (PUMC) Terms and Conditions of Sale Apply. Payment terms are as follows:

25% of TOV with Purchase Order
35% Upon Submittal
35% of TOV upon "Released to Manufacture"
5% of TOV upon shipment
Freight Invoice

Payment Terms are Net 30 Days from date of Invoice

Project Delays

We may invoice for additional fees resulting from "Project Delays" imposed by others. These fees will vary in amount depending on the stage of the project at the time of the delay. Our fee schedule is:

For imposed Project Delays before preparation of the Engineering Submittal – there will be no fee unless the delay is greater than six (6) months following the date your formal Purchase Order was received, whereupon we may be required to pass along any price increases.
For imposed Project Delays after preparation of the Engineering Submittal – no fee will be invoiced, unless the delay is greater than six (6) months following the date the Engineering Submittal was sent, whereupon we may be required to pass along any price increases.
For imposed Project Delays before purchase of system components – no fee will be invoiced, unless the delay is greater than six (6) months following the date the Engineering Submittal was sent, whereupon we may be required to pass along any price increases.
For imposed Project Delays after purchase of system components but before manufacturing begins, 30% of the entire project's value will be invoiced (bringing the total project invoices to 80%).
For imposed Project Delays after manufacturing has been completed, 50% of the entire project's value will be invoiced (bringing the total project invoices to 100%) and a storage fee of $600/month to cover insurance will also be charged.

Warranty

We offer a (12) Month Warranty on equipment included in our offering not to exceed 18 months from shipment. Please be aware that this Warranty covers equipment only and not Service Engineering time, expenses, or labor.

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Engineering Submittals & Delivery

Typically, Engineering Submittals can be transmitted within ten (10) weeks from the time of receiving your formal purchase order. See attached preliminary schedule. Manufacturing will not begin until receipt of formal release to manufacture by PUMC Form 352 is returned and filed.

Documentation will be supplied to reflect the burner mechanical system design. This includes the below listed drawings, descriptions and lists.

-Bills of Material
-Individual Burner Fuel Train Ship Loose Device Cutsheets and Literature
-Burner Management System and Combustion Control System Panel Arrangement
-Burner Management System I/O List
-Combustion Control System I/O List
-Burner Management System Wiring Diagrams
-Combustion Control System Wiring Diagrams
-VFD Wiring Diagrams

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Proposed Services

General:
All of the technical services to be provided by PUMC are applicable only to the scope of supply defined in this proposal. Existing and/or new equipment to be supplied by others are not the responsibility of PUMC. This applies to the equipment's existing conditions, the engineering applied to its selection (if new), its actual performance in the field and any and all project management, scheduling and or coordination activities related to it.

Field Services:
We have not included any service in our proposal. See attached service rates. We estimate that start-up will take 15 days + 3 days travel.

*Installation Supervision and/or Field Project Management services (i.e. attendance at Project meetings when not already onsite for Commissioning or Training) can be provided at the per diem rate in effect at the time. Please refer to the **Field Service Rates and Terms** for the current Schedule.*

Please be aware that the listed service time is estimated strictly in accordance with our scope of supply which has been established in response to the specifications (with clarification per the **Comments and Clarifications** section of this proposal) and should not be viewed as our assessment of the requirements. We feel that the specified levels are reasonable under **"perfect conditions"** which are defined as follows:

Service Estimating Time Perfect Conditions:

- ✓ All installation functions which impact on the commissioning of our control systems must be completed prior to our arrival. This includes any work related to components which though not in our scope of supply are necessary for the control system's operation. Work specific to our scope of supply must also be per our Engineering information.
- ✓ All equipment supplied by others and/or that to be reused which impacts on the commissioning of our burner and control systems must be in proper working order during the entire period that our Field Service Engineer is on site (the Boiler's' condition and performance is an example).
- ✓ It must be possible to operate each Boiler at the expected minimum and maximum firing rate and at a minimum of eight (8) firing rates in between, under steady state conditions for approximately 15-20 minutes at each rate. If steam needs to be vented (make-up water must be ample as well) or heat "shedded" to meet these requirements, it is the facilities' obligation to provide this capability. If we are asked to set up any Boiler to fire at the "best achievable" rate at a given time we will satisfy the request but it will of course require a subsequent visit(s) to meet the specified requirements.

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Proposed Services cont'd

- ✓ If any Emissions Testing is to be performed at a different time from that when the Boilers are commissioned, and our attendance is required and or requested, this will lead to additional Field Service expenses.

The examples given are specific to this project, but any condition that could delay completion of a Service Engineer's work, which is beyond their control, should be considered and should lead to the application of contingency in estimating any additional service time and expenses.

Factors impacting on one's estimate of additional commissioning expenses are:

- ❑ If because of scheduling it becomes necessary to have a Field Service Engineer travel from a remote location up to two (2) additional travel days should be budgeted for each service visit.
- ❑ Any possible overtime hours should also be considered, since as noted above, these will be billed at a higher hourly rate.
- ❑ Airline, hotel, rental car (or mileage) and meal expenses should also be budgeted.

For the reasons cited, we will not be held accountable for anyone's evaluation of unforeseen Field Service Engineering costs based on the guidelines we have presented.

Preferred Utilities Manufacturing Corporation

Preferred's extensive capabilities in Combustion Technology reflects a heavy commitment to Research and Development combined with state-of-the-art design,
86 years experience in the combustion industry and a practical approach to solving the problems of plant operations.

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Field Service Rates and Terms

Preferred Utilities provides expert field services for the commissioning of new systems as well as the routine maintenance and calibration of existing control systems. Our factory trained engineers and technicians are instrumentation specialists. They reflect Preferred Utilities over 80 years of manufacturing and service history which includes boilers, burners, fuel handling filtration systems, tank gauging and leak detection, combustion instrumentation, control systems, supervisory control centers, and SCADA systems.

Hourly Rate	$240.00 / Hour
Travel Time Hourly Rate (Portal to Portal)	$175.00 / Hour
Engineering Support by Telephone After First 15 Minutes:	$140.00 / Hour
Vehicle Mileage Rate	$1.03 / Mile
All Travel and Living Expenses are cost plus 5%	

Effective July 1, 2008

Field Service Terms and Conditions:

Notwithstanding any different or additional terms in Buyer's documents, Preferred Services (herein called Seller) offers service expressly conditioned upon these terms.

1. Hourly rates are for normal working days, Monday through Friday, between the hours of 8:00 AM and 5:00 PM. Work performed before or after these hours will be considered overtime.
2. Weeknights and Saturdays are considered time and one half.
3. Sundays and Holidays are considered double time
4. **All demand service calls will have a minimum charge of 4 hrs (includes travel time).**
5. Travel Time Hourly charges are calculated portal to portal.
6. Travel time is charged as straight time on normal working days. Travel during the hours of 12:00 AM to 6:00 AM on Mondays, 6:00 PM to 11:59 PM on Fridays and Saturdays is considered time and one half. Travel on Sundays or Holidays is considered double time.
7. Vehicle mileage charge is $1.03/mile
8. Travel and living expenses are invoiced at cost plus 5%.

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Field Service Terms and Conditions cont'd:

9. A purchase order with a confirmation of these terms or a Credit Card payment number is required prior to the dispatch of service personnel.
10. Payment terms are net 10 days with approval of the Danbury Credit Department. All late payments are subject to a finance charge of 1-1/2% per month on the unpaid balance.
11. A minimum of a three-week lead-time is required to schedule service personnel. A cancellation or postponement of the scheduled time may require as long as an additional three weeks before a service person is again available.
12. Preferred Services will not be held responsible for any cost incurred by the buyer due to the inability of Preferred Services to accommodate the buyers start up or service requirements due to insufficient scheduling lead time as noted in (11) above or the availability of field personnel.
13. Except as expressly stated on the face of Seller's quotation, prices do not include any present or future sales or use tax; nor any parts required to perform the service; nor any time outside the normal 8 hour working day as noted in this document.
14. Seller warrants the work done by its service personnel to be free from defects in workmanship for a period of 30 days after date the work is supplied. There are no other warranties, expressed or implied. If any portion of the work performed proves to be defective within such 30 day period and prompt notification is made in writing, Seller will, at its own expense, supply the necessary technical direction or consultation to correct the defect. The foregoing shall constitute the sole remedy of the purchaser and the sole liability of the Seller whether in warranty or otherwise.
15. SELLER SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, UNDER ANY CIRCUMSTANCES, including, but not limited to, damage or loss resulting from inability to use the equipment, increased operating costs, loss of production, loss of anticipated profits, cost of replacement power, or other special, incidental, or consequential damages, whether similar or dissimilar, of any nature arising from any cause whatsoever, whether based in contract, tort (including negligence) or any other theory of law.
16. Seller's maximum liability herein arising from any causes whatsoever, whether based in contract, tort (including negligence) or any other theory of law, shall not exceed the contract price. Any above-mentioned cause of action must be commenced within one year from the date of which that action accrues.
17. In areas where local labor practices dictates that the Service Engineer be assisted or accompanied by Construction Craft Personnel while performing his on-site service functions, the Seller will not accept charges for such personnel.
18. **It is understood that the buyer will provide adequate field office facilities and normal personal conveniences at no charge to Seller. All reports and documentation will be prepared at the job site and be considered part of the on site billable time.**
19. Seller's personnel are neither required nor authorized to sign Gate Passes that include conditions, which in any way impose liabilities not consistent with the above stated limitation of liability.
20. For non-Preferred products supplied by others, the Seller's Personnel will, at his discretion, when requested by the buyer, perform service on certain non-Preferred products, provided the buyer makes available all material and data required to support this activity. The cost associated with such service performed is the responsibility of the buyer.

I have read and accept these Rates, Terms, and Conditions:

Name Signature:_____Date: _____

Name Print: _____

Title: _____

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General Terms and Conditions of Sale

The following terms and conditions apply to negotiations, acceptances, sales and deliveries. No terms or condition or other understanding, oral or written, in any form purposing to vary or expand upon these terms and conditions, whether contained in Buyer's forms or elsewhere, shall be binding on Preferred Utilities Manufacturing Corporation (hereinafter called "Preferred") unless in writing and signed by an officer of Preferred.

Terms: Net 30 Days from date of invoice subject to credit approval. Certain types of equipment quotations will include progress payments.

Prices: Prices are subject to change without notice. Orders calling for future delivery will be invoiced at prices prevailing at time of delivery. Quotations are conditional upon 30 day acceptance and subject to correction for clerical error or by notice.

Taxes: Prices are exclusive of all federal, state, or local, sales, use or similar taxes. Buyer accepts liability for such taxes.

Transportation: All prices F.O.B. Danbury, CT. Delay, loss or damage during shipment is at buyer's risk. Preferred will render buyer assistance in securing adjustment of claims.

Delivery: Quoted shipping dates are approximate. Every effort will be made to expedite shipments, however, Preferred shall not be liable for loss or damage of any kind resulting from delay or inability to deliver as may be caused by fire, labor troubles, accidents, acts of government authorities, force majeure, or any other cause beyond its immediate control.

Shortages: No claim for shortages will be considered unless reported in writing within 10 Days from receipt of material.

Material Returned for Credit: No equipment should be returned for credit except by the original buyer and after receiving a Return Material Authorization from Preferred. Only unused material as currently manufactured, in active demand, which has been invoiced to the buyer within 60 Days, will be considered for credit upon its return. All returned material will be subject to inspection at our factory and Preferred's decision as to credit must be final. Material accepted for credit is subject to a minimum 30% plus transportation restocking charge to cover inspection, testing, handling, and accounting expenses. Special equipment purchased specifically for or built to order is not subject to return for credit under any circumstances.

Material Returned for Repair: No material should be returned without authorization. Contact Preferred for a Return Material Authorization number and shipping instructions.

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General Terms and Conditions of Sale cont'd

WARRANTIES, EXCLUSIVE REMEDIES, AND LIMITATION OF DAMAGES:
Preferred guarantees products of its manufacture to be free from defects due to workmanship or material for one year from date of shipment. Preferred's obligation under this guarantee is limited strictly to repairing or replacing such products (or part or parts) without charge, upon return, transportation prepaid, to its factory within the above stated guarantee period, and which, upon inspection, is determined by Preferred to be defective in workmanship or material and not to have been exposed to misuse or abuse. Warranties on non-proprietary products sold or furnished by Preferred are those of their original manufacturers. Preferred assumes no responsibility for expenses incidental to the field evaluation, calibration, repair, removal or re-installation of products.

THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY AND ALL PRODUCTS MANUFACTURED OR FURNISHED BY PREFERRED. IN NO EVENT SHALL PREFERRED BE RESPONSIBLE FOR ANY CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY NATURE WHATSOEVER.

Effective Date of Original Installation: The warranty period for a product commences when any portion of the equipment is put into operation. If the equipment is used for temporary operation during the installation or construction period, the warranty date commences the date the equipment is started for this temporary operation.

Order Cancellation: All orders once placed with and acknowledged by Preferred can be canceled only with the consent of Preferred and upon terms that will indemnify it against any losses.

Postponement of Delivery: Equipment held at the factory for convenience of the buyer beyond the available delivery date will be invoiced as of the date of completion. Equipment postponed during production will be invoiced as of the date of postponement for an amount that will reflect all charges for the work performed. All invoices for postponed equipment will be for the same payment terms as if shipment had been made. Equipment held by Preferred after invoicing will be at the risk of the buyer. Storage and handling charges will be invoiced as applicable.

Special Conditions: Upon request Preferred and/or its representatives may furnish data or engineering information relating to typical application or use of its products. Because of the wide variations in specific applications and interfacing with non-proprietary equipment, Preferred will not be responsible and it does not assume any liability whatsoever for damages of any kind sustained either directly or indirectly by any person who adopts or uses such data or information in whole or in part. Statements repugnant to the foregoing contained on Buyer's order forms or elsewhere are not withstanding. Preferred's liability is determined solely by the foregoing terms and conditions. In accepting and consummating any such order, Preferred shall be deemed not to have in any way altered the terms and conditions as set forth above. The failure of Preferred to adhere to any above term shall not constitute a waiver of it or any other term.

1-1/2% MONTHLY SERVICE CHARGE (18% ANNUAL) IS CHARGED ON BALANCE OVER 30 DAYS.

Claims regarding errors or shortages must be made within 10 Days. We take every precaution to prevent damage in transit. When damage occurs, claims should be filed with the carrier. Please call for a RMA number before returning any materials. No credit will be issued without an RMA number.
Return Address: Preferred Utilities Manufacturing Corp., 31-35 South Street, Danbury, CT 06810

Exhibit G-01:
Graham. Replacement Steam Surface Condenser, Proposal
(Project G: McKay Bay Cooling Tower and Condensate Replacement)

August 20, 2020

McKay Bay-City of Tampa
107 North 34th Street
Tampa, FL
33605
Attn: Mike Derocher

Dear Mr. Derocher,

Cooling Tower Depot, Inc. (CTD) is pleased to provide our quotation for your cooling tower repair project. With our extensive cooling tower experience, CTD is adept in identifying the necessary repairs to get the most efficient life out of your cooling tower(s). As a leading designer and manufacturer of industrial cooling towers, CTD is providing you with the highest quality-cooling tower parts and materials, which meet or exceed your requirements. Our designs utilize components that have proven to be reliable in the cooling tower industry. With CTD's experience, convenient website to purchase parts, and our cost advantages, we hope to be of service to you well into the future.

CTD appreciates the opportunity to submit our proposal and we look forward to being of further service to you on this project. If you have any questions or require further clarification, please let us know.

Sincerely,
Mark P Carzeri
East Coast Construction Manager
303-278-7000 Office
727-439-0477 Mobile
mpcarzeri@ctdinc.com

SCOPE OF WORK

Proposal is as follows:

OPTION # 1- Rebuild Existing Cooling Tower;

Rebuild Marley 597-58-2-two (2) cell wood crossflow cooling tower 56’ long by 46’ wide by 28’ high to the fan deck.

Construction will consist of the following:

- Replacement of all 4x4 vertical columns.
- Replacement of all 2x6 fan deck and how water deck supports.
- Replacement of all 2x4 longitudinal tie-lines. Installation includes new splice blocks.
- Replacement of all 2x4 transverse tie-lines. Installation includes new splice blocks.
- Replacement of all 4x4 longitudinal diagonals. Installation includes new shear bushings and SS brace straps.
- Replacement of all 4x4 transverse diagonals. Installation includes new shear bushings and SS brace straps.
- New materials shall be fire retardant FRP.
- All connecting hardware shall be 304 stainless steel.
- Replacement of all fill - parallel to airflow and new 14Ga PVC coated wires
- Replacement of all cellular PVC drift eliminators with XF150 drift eliminators
- Replacement of all fan deck with non-skid fire retardant FRP
- Replacement of all hot water deck with fire retardant FRP
- Replacement of all partition wall with 12oz GP FRP casing
- Replacement of all casing with 12oz GP FRP casing
- Replacement of all louvers with 12oz GP FRP louvers
- Reuse existing mechanical components and fan stacks
- Reuse existing crossover pipe and valves
- Reuse existing stairway
- Open Shop Labor Installation

OPTION # 2 Install New FRP Counterflow Cooling Tower –With New Mechanicals:

PROPOSAL DETAILED WORK SCOPE

Furnish one Cooling Tower Depot 2 cell, counterflow cooling tower 56’ long by 42’ wide by 28’ high to the fan deck.

Guaranteed to reject 165,375,000 BTU/HR and produce 86.9°F CWT at a 79°F IWBT and a BHP/cell of 150.

The tower consists of the following features:

- Demolition of existing tower
- Fire retardant FRP structure
- Stainless steel hardware (304 series)
- Heavy duty PVC film fill
- Cellular PVC drift eliminators
- Nonskid fire retardant FRP fan deck
- Partitions: 12oz GP FRP
- Wind Walls: 12oz GP FRP
- Casing: 12oz GP FRP
- FRP or PVC header with PVC lateral distribution system
- Composite drive shafts with 316 SS couplings
- Amarillo gear boxes
- SPDT vibration switches
- 24’ diameter high efficiency fans
- FRP fan cylinders with view port - velocity recovery
- 150hp high efficiency motors (480 volt, 3 phase, 60 Hz, 1800 rpm) with space heaters
- One HDG escape ladder
- One Fire retardant FRP stairway
- Open Shop Labor Installation

OPTION # 3 Install New FRP Counterflow Cooling Tower–Reusing Mechanicals:

PROPOSAL DETAILED WORK SCOPE

Furnish one Cooling Tower Depot 2 cell, FRP counterflow cooling tower 56’ long by 42’ wide by 28’ high to the fan deck.
Guaranteed reject 165,375,000 BTU/HR and produce 87.3°F CWT at a 79°F IWBT and a BHP/cell of 150.

The tower consists of the following features:

- Demolition of existing tower
- Fire retardant FRP structure
- Stainless steel hardware (304 series)
- Heavy duty PVC film fill
- Cellular PVC drift eliminators
- Nonskid fire retardant FRP fan deck
- Partitions: 12oz GP FRP
- Wind Walls: 12oz GP FRP
- Casing: 12oz GP FRP
- FRP or PVC header with PVC lateral distribution system
- One HDG escape ladder
- One Fire retardant FRP stairway
- Reuse existing mechanical components and fan stacks
- Open Shop Installation Labor

EQUIPMENT AND WORK TO BE FURNISHED BY OTHERS:

(1) Electrical Power
(2) Switch Gear and Starters
(3) Wiring and Controls
(4) Tower Lighting
(5) Lightning Protection System (optional)
(6) Fire Protection System (optional)
(7) Circulating Water Systems, including: pump, yard pipe, risers, and valves
(8) Blow Down System
(9) Makeup Water Piping
(10) Dumpsters and Rental Equipment/Crane

SITE CONDITIONS:

Any physical site conditions varying significantly from those described below, will result in equitable adjustment to the contract price and schedule.

Assumed site conditions, available at no expense to the Seller, are as follows:

(1) A minimum 60 foot wide safety buffer around the structure which will be free of other contractor's personnel or equipment and be reasonably level and solid.
(2) A material lay down/storage area will be provided, no more than 200 ft. from the structure, and be as a minimum, twice the basin area.
(3) Access roads and work areas will be provided, and be solid enough in any weather to support a 35-ton mobile crane. Access roads shall be reasonably level, compacted and maintained by others.
(4) Connections for adequate electrical power (120 VAC with a minimum of 100 AMP service) and potable water supply shall be provided to the Seller within 50 feet of the structure.
(5) An employee parking area within 400 yards of the tower construction site shall be provided.
(6) The top of the basin curb is assumed to be one foot above grade, unless otherwise noted. The basin shall be one hundred percent complete before CTD's mobilization to site.

PROPOSAL NOTES

(1) Prices do not include sales/use tax and purchaser is responsible for any and all applicable taxes. Any applicable sales/use tax imposed upon seller will be invoiced for separately, and in addition to, contract price.
(2) Prices do not include any building permits, certificates or special licenses that may be required. Also, no PE stamp, start-up assistance or training is included in this pricing.
(3) No confined space entry, hole-watch, drug testing, or background checks are assumed to be required.

(4) Pricing is valid until 60 days.
(5) CTD payment terms: Unless otherwise agreed to in writing between CTD and the Client, CTD shall be entitled to payment within thirty (30) days of the date of its invoice for the Work in accordance with the following schedule:
    a. Customer Engineering Package; twenty percent (20%) of the contract price due upon receipt of the drawings and calculations by the Client. Customer Engineering Package shall be deemed to include general arrangement drawings, basin drawings and drawings depicting structural loads applied to basin;
    b. Thermal Engineering Package; thirty-five (35%) due upon receipt of fill/drift eliminators material in our shop or completion of fabrication at sub vendor's shop;
    c. Materials incorporated into the Work shall be invoiced upon shipment from the manufacturers' shipping point;
    d. Field Construction Labor shall be invoiced monthly in proportion to the Work performed for client.
(6) CTD standard warranty is 18 months after shipment or 12 months after start-up whichever occurs first.

Submitted by,
COOLING TOWER DEPOT, INC.

Micky Fisher
Vice President of Reconstruction

Exhibit G-02:
Cooling Tower Depot. Tower Replacement, Proposal
(Project F: McKay Bay Turbine Overhaul)

August 20, 2020

McKay Bay-City of Tampa
107 North 34th Street
Tampa, FL
33605
Attn: Mike Derocher

Dear Mr. Derocher,

Cooling Tower Depot, Inc. (CTD) is pleased to provide our quotation for your cooling tower repair project. With our extensive cooling tower experience, CTD is adept in identifying the necessary repairs to get the most efficient life out of your cooling tower(s). As a leading designer and manufacturer of industrial cooling towers, CTD is providing you with the highest quality-cooling tower parts and materials, which meet or exceed your requirements. Our designs utilize components that have proven to be reliable in the cooling tower industry. With CTD's experience, convenient website to purchase parts, and our cost advantages, we hope to be of service to you well into the future.

CTD appreciates the opportunity to submit our proposal and we look forward to being of further service to you on this project. If you have any questions or require further clarification, please let us know.

Sincerely,
Mark P Carzeri
East Coast Construction Manager
303-278-7000 Office
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Proposal is as follows:

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- New materials shall be fire retardant FRP.
- All connecting hardware shall be 304 stainless steel.
- Replacement of all fill - parallel to airflow and new 14Ga PVC coated wires
- Replacement of all cellular PVC drift eliminators with XF150 drift eliminators
- Replacement of all fan deck with non-skid fire retardant FRP
- Replacement of all hot water deck with fire retardant FRP
- Replacement of all partition wall with 12oz GP FRP casing
- Replacement of all casing with 12oz GP FRP casing
- Replacement of all louvers with 12oz GP FRP louvers
- Reuse existing mechanical components and fan stacks
- Reuse existing crossover pipe and valves
- Reuse existing stairway
- Open Shop Labor Installation

OPTION # 2 Install New FRP Counterflow Cooling Tower –With New Mechanicals:

PROPOSAL DETAILED WORK SCOPE

Furnish one Cooling Tower Depot 2 cell, counterflow cooling tower 56’ long by 42’ wide by 28’ high to the fan deck.

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- Cellular PVC drift eliminators
- Nonskid fire retardant FRP fan deck
- Partitions: 12oz GP FRP
- Wind Walls: 12oz GP FRP
- Casing: 12oz GP FRP
- FRP or PVC header with PVC lateral distribution system
- Composite drive shafts with 316 SS couplings
- Amarillo gear boxes
- SPDT vibration switches
- 24’ diameter high efficiency fans
- FRP fan cylinders with view port - velocity recovery
- 150hp high efficiency motors (480 volt, 3 phase, 60 Hz, 1800 rpm) with space heaters
- One HDG escape ladder
- One Fire retardant FRP stairway
- Open Shop Labor Installation

OPTION # 3 Install New FRP Counterflow Cooling Tower–Reusing Mechanicals:

PROPOSAL DETAILED WORK SCOPE

Furnish one Cooling Tower Depot 2 cell, FRP counterflow cooling tower 56’ long by 42’ wide by 28’ high to the fan deck.
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- Stainless steel hardware (304 series)
- Heavy duty PVC film fill
- Cellular PVC drift eliminators
- Nonskid fire retardant FRP fan deck
- Partitions: 12oz GP FRP
- Wind Walls: 12oz GP FRP
- Casing: 12oz GP FRP
- FRP or PVC header with PVC lateral distribution system
- One HDG escape ladder
- One Fire retardant FRP stairway
- Reuse existing mechanical components and fan stacks
- Open Shop Installation Labor

EQUIPMENT AND WORK TO BE FURNISHED BY OTHERS:

(1) Electrical Power
(2) Switch Gear and Starters
(3) Wiring and Controls
(4) Tower Lighting
(5) Lightning Protection System (optional)
(6) Fire Protection System (optional)
(7) Circulating Water Systems, including: pump, yard pipe, risers, and valves
(8) Blow Down System
(9) Makeup Water Piping
(10) Dumpsters and Rental Equipment/Crane

SITE CONDITIONS:

Any physical site conditions varying significantly from those described below, will result in equitable adjustment to the contract price and schedule.

Assumed site conditions, available at no expense to the Seller, are as follows:

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(3) Access roads and work areas will be provided, and be solid enough in any weather to support a 35-ton mobile crane. Access roads shall be reasonably level, compacted and maintained by others.
(4) Connections for adequate electrical power (120 VAC with a minimum of 100 AMP service) and potable water supply shall be provided to the Seller within 50 feet of the structure.
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(6) The top of the basin curb is assumed to be one foot above grade, unless otherwise noted. The basin shall be one hundred percent complete before CTD's mobilization to site.

PROPOSAL NOTES

(1) Prices do not include sales/use tax and purchaser is responsible for any and all applicable taxes. Any applicable sales/use tax imposed upon seller will be invoiced for separately, and in addition to, contract price.
(2) Prices do not include any building permits, certificates or special licenses that may be required. Also, no PE stamp, start-up assistance or training is included in this pricing.
(3) No confined space entry, hole-watch, drug testing, or background checks are assumed to be required.

(4) Pricing is valid until 60 days after 08/22/17.

(5) CTD payment terms: Unless otherwise agreed to in writing between CTD and the Client, CTD shall be entitled to payment within thirty (30) days of the date of its invoice for the Work in accordance with the following schedule:

a. Customer Engineering Package; twenty percent (20%) of the contract price due upon receipt of the drawings and calculations by the Client. Customer Engineering Package shall be deemed to include general arrangement drawings, basin drawings and drawings depicting structural loads applied to basin;

b. Thermal Engineering Package; thirty-five (35%) due upon receipt of fill/drift eliminators material in our shop or completion of fabrication at sub vendor's shop;

c. Materials incorporated into the Work shall be invoiced upon shipment from the manufacturers' shipping point;

d. Field Construction Labor shall be invoiced monthly in proportion to the Work performed for client.

(6) CTD standard warranty is 18 months after shipment or 12 months after start-up whichever occurs first.

Submitted by,
COOLING TOWER DEPOT, INC.

Micky Fisher
Vice President of Reconstruction

12. **INDEPENDENT CONTRACTOR.** Cooling Tower Depot shall perform the Work hereunder as an independent contractor and shall have the right to select the means and method of construction and operation of its employees and subcontractors. Cooling Tower Depot shall conform to all applicable safety standards required by any Federal, State, or Local government and shall comply with all OSHA requirements as may be applicable to the project. Cooling Tower Depot shall have the right to subcontract those portions of the Work that Cooling Tower Depot deems in its best interest without interference from the Client.

13. **PERFORMANCE TESTS.** In the event that performance tests are required, the tests shall be performed by either Cooling Tower Depot or a neutral third party as may be mutually agreed upon by Cooling Tower Depot and Client and shall be performed pursuant to the procedures set forth by Cooling Technology Institute as specified by ATC-105, and shall be subject to the tolerances specified herein.

14. **ENTIRE AGREEMENT AND CHOICE OF LAW.** Unless otherwise agreed in writing by Cooling Tower Depot and Client, this agreement shall be governed by the laws of the state of Colorado. The contract represented by this proposal constitutes the entire understanding of the parties. All prior understandings, writings, proposals, between the parties are hereby merged and supersede hereby. This agreement may not be modified or amended except by written instrument signed by a duly authorized representative of each party.

RFQ TRANSMITTAL MEMORANDUM
FOR A SUBMITTAL TO THE CITY OF TAMPA, FLORIDA

TRANSMITTAL DATE:

RFQ NO. & TITLE: 21-C-00015; McKAY BAY WASTE-TO-ENERGY (WTE) FACILITY UPGRADES Design-Build

TO: **Brad L. Baird, P. E., Chairman Selection & Certification Committee (CCNA)**
c/o Contract Administration Department via ContractAdministration@tampagov.net
306 East Jackson Street, 4th Floor North, Tampa, Florida 33602

SUBMITTER ("Firm") NAME:

FEDERAL TAX ID#:

FIRM TYPE: ☐ **Individual/Sole Proprietor** ☐ **Joint Venture (JV)*** ☐ **Partnership (PN)*** ☐ **Corporation**
☐ **Limited Liability Company** ☐ **Other:** _____

FIRM **CONTACT NAME:** **EMAIL:** **PHONE:**

CERTIFICATIONS: **Firm is licensed, permitted, and certified as required to do business in Florida:** ☐ **Yes |** ☐ **No**
License/registration/certification no(s): _____

Per §287.133, Fla. Stat., individuals or entities (including those meeting the §287.133, Fla. Stat. definition of "affiliate") placed on the convicted vendor list ("List") following a conviction for public entity crimes may not submit a bid, proposal, or reply ("Response") on a contract to provide any goods or services to a public entity, may not submit a Response on a contract with a public entity for the repair or construction of a public building or public work, may not submit a Response for leases of real property to a public entity, and may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in §287.017, Fla. Stat. for CATEGORY TWO for a period of 36 months from the date of placement on the List. Neither Firm nor its affiliates have been placed on the List: ☐ **Yes |** ☐ **No**

Firm's own initial application for employment has criminal history screening practices similar to those contained in Chapter 12, Article VI, Tampa Code (responses, whether "Yes" or "No", are for informational purposes only and will not be used as a basis for award or denial, or for any protest): ☐ **Yes |** ☐ **No**

Firm shall comply with all applicable governmental rules & regulations, including the City's Ethics Code (Sec. 2-522, Tampa Code). The City's Charter & Ethics Code prohibit any City employee from receiving any substantial benefit or profit out of any award or obligation entered into with the City, or from having any direct or indirect financial interest in effecting any such award or obligation. If Firm is successful, it shall ensure no City employee receives any such benefit or interest as a result of such award (See Sec.2-514(d),Tampa Code): ☐ **Yes |** ☐ **No**

Firm is not in arrears and is not in default upon any obligation to the City of Tampa: ☐ **Yes |** ☐ **No**

Firm agrees that if the City of Tampa determines Firm has participated in any collusive, deceptive, or fraudulent practices with regard to this submittal, in addition to any other remedy it may exercise, the City will have the right to debar Firm and deem invalid any contract let under such circumstances: ☐ **Yes |** ☐ **No**

Data or material Firm asserts to be exempted from public disclosure under Chapter 119, Fla. Stat., is submitted in a separate, single electronic searchable PDF file labeled with the above RFQ number and the phrase "Confidential Material", which identifies the data/material to be protected, states the reasons the date/material is exempt from public disclosure, and the specific Florida statute allowing such exemption (if "No" or otherwise, then Firm waives any possible or claimed exemption upon submission, effective at opening): ☐ **Yes |** ☐ **No**

FAILURE TO COMPLETE THE ABOVE MAY RESULT IN FIRM'S SUBMITTAL BEING DECLARED NON-RESPONSIVE

[SEAL]

Authorized Signature (wet): _____
Printed Name: _____
Title: ☐ **Sole Prop** ☐ **Pres** ☐ **Sr VP** ☐ **Gen Ptnr** ☐ **LLC Auth.Mbr/Mgr**
☐ **Other** _____ **(attach proof of authority)**

STATE OF
COUNTY OF
The forgoing instrument was sworn (or affirmed) before me before me by means of ☐ physical presence or ☐ online notarization, this ____ **day of** _____**, 20**____ **by** _____
either in his/her individual capacity or where Firm is an entity as the _____ **of** _____ ☐ _____ ☐**, on behalf of such entity. He/She is personally known to me** OR **produced identification.** Type of identification produced:

[NOTARY SEAL]

_____
Printed Name: _____ **Notary Public, State of** _____
My Commission Expires: _____ **Commission No:**_____

*** With submittal or within 10 days thereafter, Firm must provide a signed copy of the complete agreement between all JV/PN members indicating respective roles, responsibilities, and levels of participation.**

Points Pursuant to Designated Industry Category:_____ *FORM MBD-71* **(Refer to MBD Form 70 and Form 50-GFECP Outreach)**		
	Evaluation Criteria	**Point Values**
A.	Underutilized WMBE Firms participating as the Prime Contractor (City of Tampa Certified Only)	20
B.	City of Tampa Certified SLBE firms participating as the Prime Contractor, which include City of Tampa Certified WMBE/SLBE sub-(contractor, consultant) participation	5 - 15
C.	Non-City of Tampa Certified WMBE/SLBE Prime Contractor with meaningful sub-(contractor, consultant) participation by City Certified Underutilized WMBE and/or SLBE firms	1 - 15
D.	* External agency WMBE/SLBE/DBE certifications recognized by City of Tampa for designated RFP, RFQ, RFI solicitations	0 – 7
NOTE: The maximum points available for WMBE and/or SLBE participation will not exceed twenty (20)		

Points are determined by the Equal Business Opportunity Program as follows (Requires Form 50-GFECP):

A. A maximum of twenty (20) rating points may be awarded when the Proposer is a City of Tampa Certified WMBE firm deemed underutilized within the Industry category established by the RFQ.

B. A maximum of fifteen (15) rating points may be awarded when the Proposer is a City of Tampa certified SLBE with meaningful participation by City certified WMBE/SLBE sub-contractors/consultants.

C. One to Fifteen (1-15) rating points may be awarded when the Proposer is not a City of Tampa certified WMBE/SLBE prime contractor but utilizes either Underutilized WMBE and/or SLBE certified firm(s) as sub-contractors/consultants and assigned to perform meaningful segments of the contractual services detailed herein and documented on the enclosed MBD Form 10-20.

D. A maximum of seven (7) "discretionary" rating points may be awarded when the Proposer provides WMBE/SLBE participation from an external agency recognized by the City. Discretionary points may be awarded for ancillary participation (see definition). The point values for ancillary participation may be subordinate to weighted values outlined in categories A, B and C above.

NOTE: *WMBE participation is narrowly-tailored (per policy) to target underutilization of affected groups in specific trade/industry categories. Any WMBE/SLBE achievement that was not designated on MBD Form 70 is considered ancillary. Ancillary participation may be counted with overall participation and credited to your rating points when underutilization criteria are met.

The maximum number of points available for WMBE and/or SLBE participation will not exceed a total of twenty (20) points.

Equal Business Opportunity Evaluation Weighted Points: CCNA Proposal Guidelines

Under CCNA solicitations, proposers must submit to preconstruction Good Faith Efforts (GFE) requirements covering the inclusion of City of Tampa certified WMBE & SLBE firms. Such inclusion shall be clearly addressed and documented utilizing Forms MBD 10, 20 & 50. Proof of certification shall include copies of current certification certificates. This applies to ALL Phase 1 preconstruction design services.

Points awarded during the shortlist selection process will be more heavily weighted predominantly on the design side (this does not preclude identification of phase 2 projections of construction participation which follow in the future, i.e., GMPs). In order to ensure the maximum points, a proposer must **clearly identify and quantify** its planned participation without ambiguity. Simply marking "To Be Determined" (TBD) will not satisfy this requirement and may receive significantly lower ratings. Finally, additional favorable consideration will be granted to the firm(s) that beyond all others and provide(s) the highest *relevant* and most binding participation.

GMP Exhibit

Tampa's Equal Business Opportunity Program Procedures for GMP Contracts

- The City of Tampa's Equal Business Opportunity Program (EBO) requires setting a construction subcontract goal on each GMP under the CM /or D-Build delivery system.

- Prior to the time construction subcontract goals are set, the Construction Manager (CM) or the Design-Builder (D-B) provides information on subcontract packages planned for the construction phase(s) and their sequencing.
  (Ref: use **Detailed GMP Estimate and MBD Form-80 PTW)**

- The CM (or D-B) participates in a meeting wherein the City will establish narrowly-tailored project goals for SLBE and/or W/MBE subcontractor participation on the project.
  (Ref: use **MBD Form-70)**

- For each subcontracting package to be bid, the CM (or D-B) confirms with the MBD Office, the City's minimum contact list of available SLBE and/or W/MBE firms to be solicited. Note: strategic, extensive outreach is the CM/DB's responsibility (i.e. GFECP)
  (Ref: use **Minimum Contact List provided w/final Project EBO Determination Goal)**

- The CM (or D-B) documents the notification of **all** potential subcontractors, including the SLBE or W/MBE firms identified above, i.e. minimum contact list of certified firms.
  (Ref: use **DMI 10-20 for construction phase Solicitation/Utilization outcomes)**

- The CM (or D-B) receives, opens, and tabulates subcontract bid results. The City, including representatives of the managing department and the MBD Office, may be present for the bid openings or to review the bids submitted.
  (Ref: use **MBD Form-50 GFECP outreach w/documentation)**

- The CM (or D-B) provides to the City, a tabulation of all bids received and its determination of the lowest responsive/responsible bidder. If bids received exceed contracted Guaranteed Maximum Price, CM (or D-B) advises City as to how they will proceed. If re-bidding is selected, notification at least equal to the original solicitation will occur. **(Ref: Reaffirm EBO Outreach)**

- As all subcontracts are executed, final copies are provided to the City. Where participation is achieved via sub-subcontractors and/or suppliers, the CM (or D-B) provides the City and MBD with copy of executed agreement or purchase order as documentation. **(Ref:** use **MBD Form-40 LOIs execute "Letters-of-Intent")**

- During construction, monitoring activities may including but may not be limited to, subcontractor payment reports to be submitted with pay requests, prior approval by the MBD Office and the managing departments, of any replacement of SLBE or W/MBE subcontractors, and a report of final amounts paid to all subcontractors.
  (Ref: use **#1-DMI 30 Form w/Pay Applications; #2-Prime & Subs must log into Diversity Mgt. Compliance System to report payment activity)**

Good Faith Effort Compliance Plan Guidelines

for Women/Minority Business Enterprise\Small Local Business Enterprise Participation
City of Tampa - Equal Business Opportunity Program
(MBD Form 50 – detailed instructions on page 2 of 2)

Contract Name_____ **Bid Date** _____

Bidder/Proposer_____

Signature _____ **Date** _____

Name _____ **Title** _____

The Compliance Plan with attachments is a true account of Good Faith Efforts (GFE) made to achieve the participation goals as specified for Women/Minority Business Enterprises/Small Local Business Enterprises (WMBE/SLBE) on the referenced contract:

□ The WMBE/SLBE participation Goal is Met or Exceeded. See DMI Forms 10 and 20 which accurately report all subcontractors solicited and all subcontractors to-be-utilized.

□ The WMBE/SLBE participation Goal is Not Achieved. The following list is an overview of the baseline GFE action steps already performed. Furthermore, it is understood that these GFE requirements are weighted in the compliance evaluation based on the veracity and demonstrable degree of documentation provided with the bid/proposal:

(Check applicable boxes below. Must enclose supporting documents accordingly with remarks)

(1) Solicited through reasonable and available means the interest of WMBE/SLBEs that have the capability to perform the work of the contract. The Bidder or Proposer must solicit this interest within sufficient time to allow the WMBE/SLBEs to respond. The Bidder or Proposer must take appropriate steps to follow up initial solicitations with interested WMBE/SLBEs. □ **See DMI report forms for subcontractors solicited**. □ **See enclosed supplemental data on solicitation efforts**. □ **Qualifying Remarks**:

(2) Provided interested WMBE/SLBEs with adequate, specific scope information about the plans, specifications, and requirements of the contract, including addenda, in a timely manner to assist them in responding to the requested-scope identified by bidder/proposer for the solicitation. □ **See enclosed actual solicitations used**. □ **Qualifying Remarks**:

(3) Negotiated in good faith with interested WMBE/SLBEs that have submitted bids (e.g. adjusted quantities or scale). Documentation of negotiation must include the names, addresses, and telephone numbers of WMBE/SLBEs that were solicited; the date of each such solicitation; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why agreements could not be reached with WMBE/SLBEs to perform the work. Additional costs involved in soliciting and using subcontractors is not a sufficient reason for a bidder/proposer's failure to meet goals or achieve participation, as long as such costs are reasonable. Bidders are not required to accept excessive quotes in order to meet the goal.
□ **DMI Utilized Forms for sub-(contractor/consultant) reflect genuine negotiations** □ **This project is an RFQ/RFP in nature and negotiations are limited to clarifications of scope/specifications and qualifications.** □ **See enclosed documentation**.
□ **Qualifying Remarks**:

(4) Not rejecting WMBE/SLBEs as being unqualified without justification based on a thorough investigation of their capabilities. The WMBE/SLBEs standing within its industry, membership in specific groups, organizations / associations and political or social affiliations are not legitimate causes for rejecting or not soliciting bids to meet the goals.
□ **Not applicable**. □ **See attached justification for rejection of a subcontractor's bid or proposal**. □ **Qualifying Remarks**:

(5) Made scope(s) of work available to WMBE/SLBE subcontractors and suppliers; and, segmented portions of the work or material consistent with the available WMBE/SLBE subcontractors and suppliers, so as to facilitate meeting the goal. □ **Sub-Contractors were allowed to bid on their own choice of work** or **trade without restriction to a pre-determined portion**. □ **See enclosed comments**. □ **Qualifying Remarks**:

(6) Made good faith efforts, despite the ability or desire of Bidder/Proposer to perform the work of a contract with its own forces/organization. A Bidder/Proposer who desires to self-perform the work of a contract must demonstrate good faith efforts if the goal has not been met. □ Sub-Contractors were not prohibited from submitting bids/proposals and were solicited on work typically self-performed by the prime. □ Qualifying Remarks:

(7) Segmented portions of the work to be performed by WMBE/SLBEs in order to increase the likelihood that the goals will be met. This includes, where appropriate, breaking out contract work items into economically feasible units (quantities/scale) to facilitate WMBE/SLBE participation, even when the Bidder/Proposer might otherwise prefer to perform these work items with its own forces. □ **Sub-Contractors were allowed to bid on their own choice of work or trade without restriction to a pre-determined portion.** □ **Sub-Contractors were not prohibited from submitting bids/proposals and were solicited on work typically self-performed by the prime.** □ **See enclosed comments.** □ **Qualifying Remarks:**

(8) Made efforts to assist interested WMBE/SLBEs in obtaining bonding, lines of credit, or insurance as required by the city or contractor.
□ **See enclosed documentation on initiatives undertaken and methods to accomplish**. □ **Qualifying Remarks**:

(9) Made efforts to assist interested WMBE/SLBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, including participation in an acceptable mentor-protégé program. □ **See enclosed documentation of initiatives and/or agreements.** □ **Qualifying Remarks**:

(10) Effectively used the services of the City and other organizations that provide assistance in the recruitment and placement of WMBE/SLBEs.
□ **See enclosed documentation.** □ **The following services were used**:

Note: Provide any unsolicited information that will support the Bid/RFP Compliance Evaluation. □ **Named Documents Are:**

Participation Plan: Guidance for Complying with Good Faith Efforts Outreach

1. All firms on the WMBE/SLBE Goal Setting List must be solicited and documentation provided for email, fax, letters, phone calls, and other methods of outreach/communication with the listed firms. The DMI Solicited and DMI-Utilized forms must be completed for all firms solicited or utilized. Other opportunities for subcontracting may be explored by consulting the City of Tampa MBD Office and/or researching the on-line Diversity Management Business System Directory for Tampa certified WMBE/SLBE firms.

2. Solicitation of WMBE/SLBEs, via written or electronic notification, should provide specific information on the services needed, where plans can be reviewed and assistance offered in obtaining these, if required. Solicitations should be sent a minimum of a week (i.e. 5 business days or more) before the bid/proposal date. Actual copies of the bidder's solicitation containing their scope specific instructions should be provided.

3. With any quotes received, a follow-up should be made when needed to confirm detail scope of work. For any WMBE/SLBE low quotes rejected, an explanation Shall be provided detailing negotiation efforts.

4. If a low bid WMBE/SLBE is rejected or deemed unqualified the contractor must provide an explanation and supporting documentation for this decision.

5. Prime Shall break down portions of work into economical feasible opportunities for subcontracting. The WMBE/SLBE directory may be useful in identifying additional subcontracting opportunities and firms not listed in the "WMBE/SLBE Goal Setting Firms List."

6. Contractor Shall not preclude WMBE/SLBEs from bidding on any part of work, even if the Contractor may desire to self-perform the work.

7. Contractor Shall avoid relying solely on subcontracting out work-scope where WMBE/SLBE availability is not sufficient to attain the pre-determined subcontract goal set for the Bid or when targeted sub-consultant participation is stated within the RFP/RFQ.

8. In its solicitations, the Bidder should offer assistance to WMBE/SLBEs in obtaining bonding, insurance, et cetera, if required of subcontractors by the City or Prime Contractor.

9. In its solicitation, the Bidder should offer assistance in obtaining equipment for a specific job to WMBE/SLBEs, if needed.

10. Contractor should use the services offered by such agencies as the City of Tampa Minority and Small Business Development Office, Hillsborough County Entrepreneur Collaborative Center, Hillsborough County Economic Development Department's MBE/SBE Program and the NAACP Empowerment Center to name a few for the recruitment and placement of WMBEs/SLBEs.

Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive

Page 1 of 4 – DMI Solicited/Utilized Schedules
City of Tampa – Schedule of All Solicited Sub-(Contractors/Consultants/Suppliers)
(FORM MBD-10)

Contract No.:_____ **Contract Name:**_____
Company Name:_____ **Address:**_____
Federal ID:_____ **Phone:**_____ **Fax:**_____ **Email:**_____

Check applicable box(es). Detailed Instructions for completing this form are on page 2 of 4.
[ ] No Firms were contacted or solicited for this contract.
[ ] No Firms were contacted because:_____
[ ] See attached list of additional Firms solicited and all supplemental information (List must comply to this form)
Note: Form MBD-10 must list ALL subcontractors solicited including Non-minority/small businesses

NIGP Code Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

S = SLBE W=WMBE O = Neither Federal ID	Company Name Address Phone, Fax, Email	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade or Services NIGP Code (listed above)	Contact Method L=Letter F=Fax E=Email P=Phone	Quote or Response Received Y/N

It is hereby certified that the information provided is an accurate and true account of contacts and solicitations for sub–contracting opportunities on this contract.

Signed:_____ **Name/Title:**_____ **Date:**_____

Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive
Forms must be included with Bid / Proposal

Instructions for completing The Sub-(Contractors/Consultants/ Suppliers) Solicited Form (Form MBD-10)

This form must be submitted with all bids or proposals. **All** subcontractors (regardless of ownership or size) solicited and subcontractors from whom unsolicited quotations were received must be included on this form. The instructions that follow correspond to the headings on the form required to be completed. Note: Ability or desire to self-perform all work shall not exempt the prime from Good Faith Efforts to achieve participation.

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business and/or doing business as (dba) if applicable.
- **Address.** The physical address of your business.
- **Federal ID.** FIN. A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Firms were contacted or solicited for this contract.** Checking the box indicates that a pre-determined Subcontract Goal or Participation Plan Requirement was not set by the City resulting in your business not using subcontractors and will self-perform all work. If during the performance of the contract you employ subcontractors, the City must pre-approve subcontractors. Use of the "Sub-(Contractors/Consultants/Suppliers) Payments" form (MBD Form-30) must be submitted with every pay application and invoice. Note: Certified SLBE or WMBE firms bidding as Primes are not exempt from outreach and solicitation of subcontractors.
- **No Firms were contacted because.** Provide brief explanation why no firms were contacted or solicited.
- **See attached documents.** Check box, if after you have completed the DMI Form in its entirety, you need more space to list additional firms and/or if you have supplemental information/documentation relating to the form. All DMI data not submitted on the MBD Form-10 must be in the same format and have all requested data from MBD Form-10 included.

The following instructions are for information of any and all subcontractors solicited.

- **"S" = SLBE, "W" = WMBE.** Enter "**S**" for firms Certified by the City as Small Local Business Enterprises and/or "**W**" for firms Certified by the City as either Women/Minority Business Enterprise; **"O" = Non-certified others**.
- **Federal ID.** FIN. A number assigned to a business for tax reporting purposes. This information is critical in proper identification and payment of the contractor/subcontractor.
- **Company Name, Address, Phone & Fax**. Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials** indicate the trade, service, or materials provided by the subcontractor. NIGP codes aka "National Institute of Governmental Purchasing" are listed at top section of document.
- **Contact Method L=letter, F=fax, E=Email, P=Phone.** Indicate with letter the method(s) of soliciting for bid.
- **Quote or Resp. (response) Rec'd (received) Y/N**. Indicate "Y" Yes if you received a quotation or if you received a response to your solicitation. Indicate "N" No if you received no response to your solicitation from the subcontractor. Must keep records: log, ledger, documentation, etc. that can validate/verify.

If additional information is required or you have questions, please contact the Equal Business Opportunity Program - Minority and Small Business Development Office at (813) 274-5522.

Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive

Page 3 of 4 – DMI Solicited/Utilized Schedules
City of Tampa – Schedule of All To-Be-Utilized Sub-(Contractors/Consultants/Suppliers)
(FORM MBD-20)

Contract No.:_____ **Contract Name:**_____
Company Name:_____ **Address:**_____
Federal ID:_____ **Phone:**_____ **Fax:**_____ **Email:**_____

Check applicable box(es). Detailed Instructions for completing this form are on page 4 of 4.
[ ] See attached list of additional Firms Utilized and all supplemental information (List must comply to this form)
Note: Form MBD-20 must list ALL subcontractors To-Be-Utilized including Non-minority/small businesses
[ ] No Subcontracting/consulting (of any kind) will be performed on this contract.
[ ] No Firms are listed to be utilized because:_____

NIGP Code General Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

Enter "S" for firms Certified as Small Local Business Enterprises, "W" for firms Certified as Women/Minority Business Enterprise, "O" for Other Non-Certified

S = SLBE W=WMBE O =Neither Federal ID	Company Name Address Phone, Fax, Email	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic Am. AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade, Services, or Materials NIGP Code Listed above	$ Amount of Quote. Letter of Intent (LOI) if available	Percent of Scope or Contract %

Total ALL Subcontract / Supplier Utilization $_____
Total SLBE Utilization $ _____
Total WMBE Utilization $ _____
Percent SLBE Utilization of Total Bid/Proposal Amt. _____% Percent WMBE Utilization of Total Bid/Proposal Amt. _____%

It is hereby certified that the following information is a true and accurate account of utilization for sub-contracting opportunities on this Contract.

Signed:_____ **Name/Title:**_____ **Date:**_____

Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive
Forms must be included with Bid / Proposal

Instructions for completing The Sub-(Contractors/Consultants/ Suppliers) to be Utilized Form

(Form MBD-20)

This form must be submitted with all bids or proposals. All subcontractors (regardless of ownership or size) projected to be utilized must be included on this form. Note: Ability or desire to self-perform all work shall not exempt the prime from Good Faith Efforts to achieve participation.

Contract No. This is the number assigned by the City of Tampa for the bid or proposal.

- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business and/or doing business as (dba) if applicable.
- **Address.** The physical address of your business.
- **Federal ID.** FIN. A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Subcontracting/consulting (of any kind) will be performed on this contract.** Checking box indicates your business will not use subcontractors when no Subcontract Goal or Participation Plan Requirement was set by the City, but will self-perform all work. When subcontractors are utilized during the performance of the contract, the "Sub-(Contractors/Consultants/Suppliers) Payments" form (MBD Form-30) must be submitted with every pay application and invoice. Note: certified SLBE or WMBE firms bidding as Primes are not exempt from outreach and solicitation of subcontractors, including completion and submitting Form-10 and Form-20.
- **No Firms listed To-Be-Utilized.** Check box; provide brief explanation why no firms were retained when a goal or participation plan requirement was set on the contract. Note: mandatory compliance with Good Faith Effort outreach (GFECP) requirements applies (MBD Form-50) and supporting documentation must accompany the bid.
- **See attached documents.** Check box, if after completing the DMI Form in its entirety, you need more space to list additional firms and/or if you have supplemental information/documentation relating to the scope/value/percent utilization of subcontractors. Reproduce copies of MBD-20 and attach. All data not submitted on duplicate forms must be in the same format and content as specified in these instructions.

The following instructions are for information of Any and All subcontractors To Be Utilized.

- **Federal ID.** FIN. A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **"S" = SLBE, "W" = WMBE.** Enter "**S**" for firms Certified by the City as Small Local Business Enterprises and/or "**W**" for firms Certified by the City as Women/Minority Business Enterprise; **"O" = Non-certified others**.
- **Company Name, Address, Phone & Fax**. Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials (NIGP code if Known)** Indicate the trade, service, or material provided by the subcontractor. Abbreviated list of NIGP is available at http:/www.tampagov.net/mbd "Information Resources".
- **Amount of Quote, Letters of Intent** (required for both SLBEs and WMBEs).
- **Percent of Work/Contract.** Indicate the percent of the total contract price the subcontract(s) represent. For CCNA only (i.e. Consultant A/E Services) you must indicate subcontracts as percent of total scope/contract.
- **Total Subcontract/Supplier Utilization.** – Provide total dollar amount of all subcontractors/suppliers projected to be used for the contract. (Dollar amounts may be optional in CCNA depending on solicitation format).
- **Total SLBE Utilization.** Provide total dollar amount for all projected SLBE subcontractors/Suppliers used for this contract. (Dollar amounts may be optional in CCNA proposals depending on the solicitation format).
- **Total WMBE Utilization.** Provide total dollar amount for all projected WMBE subcontractors/Suppliers used for this contract. (Dollar amounts may be optional in CCNA proposals depending on the solicitation format).
- **Percent SLBE Utilization.** Total amount allocated to SLBEs divided by the total bid/proposal amount.
- **Percent WMBE Utilization.** Total amount allocated to WMBEs divided by the total bid/proposal amount.

If additional information is required or you have questions, please contact the Equal Business Opportunity Program - Minority and Small Business Development Office at (813) 274-5522.

Procurement Guidelines To Implement Minority & Small Business Participation

Underutilized WMBE Primes by Industry Category

FORMAL PROCUREMENT

Construction	Construction-Related	Professional	Non-Professional	Goods
Black	Asian	Black	Black	Black
Hispanic	Native Am.	Hispanic	Asian	Hispanic
Native Am.	Woman	Asian	Native Am.	Asian
Woman		Native Am.		Native Am.
		Woman		Woman

Underutilized WMBE Sub-Contractors / Sub-Consultants

SUB WORK

Construction	Construction-Related	Professional	Non-Professional	Goods
Black	Black	Black	Black	Black
	Asian	Hispanic	Asian	Asian
	Native Am.	Asian	Native Am.	Native Am.
	Woman	Native Am.		Woman
		Woman		

Policy

The Guidelines apply to formal procurements and solicitations. WMBE participation will be narrowly-tailored.

Index

- Black = Black/African-American Business Enterprise
- Hispanic = Hispanic Business Enterprise
- Asian = Asian Business Enterprise
- Native Am. = Native American Business Enterprise
- Woman = Woman Business Enterprise (Caucasian)

Industry Categories

Construction is defined as: new construction, renovation, restoration, maintenance of public improvements and underground utilities.
Construction-Related Services are defined as: architecture, professional engineering, landscape architecture, design build, construction management services, or registered surveying and mapping.
Professional Services are defined as: attorney, accountant, medical doctor, veterinarian, miscellaneous consultant, etc.
Non-Professional Services are defined as: lawn maintenance, painting, janitorial, printing, hauling, security guard, etc.
Goods are defined as: all supplies, materials, pipes, equipment, machinery, appliances, and other commodities.

MBD Form-70