Request for Qualifications
RFQ #2025-01
For:
Design-Build: Hydrogen Fuel Station

Eastern Contra Costa Transit Authority

801 Wilbur Avenue

Antioch, CA 94509

February 7, 2025

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Section 1

Notice Inviting Qualifications

Notice Inviting Qualifications

For

Hydrogen Fuel Station Consultant

Eastern Contra Costa Transit Authority

Notice and Invitation to Interested Firms

Eastern Contra Costa Transit Authority (ECCTA), a Joint Powers Agency (JPA) located in eastern Contra Costa County, California, is requesting statements of qualifications (SOQs) from firms interested in providing design-build services to assist ECCTA with the design and installation of a hydrogen fueling station for use by buses powered with hydrogen fuel-cells, to be located at ECCTA's facility in the City of Antioch, California.

The SOQs will be used to create a short list of prequalified firms who will then be invited to participate in a Request for Proposal (RFP) solicitation for the award of the final design-build contract. **In accordance with California Public Contract Code section 22164 et. seq .,only those firms who have been prequalified as a result of this RFQ will be allowed to participate in the subsequent RFP.**

ECCTA was formed in 1976 as a JPA consisting of the cities of Antioch, Brentwood, Pittsburg and the county of Contra Costa. Oakley incorporated as a city and joined the JPA in 1999. ECCTA provides over 2,000,000 trips each year to a population of nearly 315,000 residents in the 225 square miles of eastern Contra Costa County.

Deadline for Receipt of Statements

Statements of qualifications will be received by Eastern Contra Costa Transit Authority (ECCTA) until 12:00 p.m. local time, on Friday, March 7, 2025. Statements may be submitted either via Bid Express or via mail to ECCTA's facility located at 801 Wilbur Avenue, Antioch, CA 94509. Statements received after the said time or at any other place other than the time and place stated in this RFQ will not be considered. Statements must be received on the enclosed ECCTA form with the required certification forms listed in the RFQ documents. Statements submitted on any other forms will be considered non-responsive and will be rejected.

Statement Documents/ECCTA Representative

Copies of the RFQ documents may be obtained from the following ECCTA representative:

Joe Chappelle
Manager of Administrative Services
Eastern Contra Costa Transit Authority
801 Wilbur Avenue
Antioch, CA 94509
Fax: (925) 757-2530
procurement@eccta.org

Copies of the RFQ documents may also be obtained by visiting the following link: https://www.bidexpress.com/businesses/72695/home. New users to the Bid Express portal will be required to complete a free registration before receiving access to the RFQ documents.

ECCTA may change the identity or contact information of the ECCTA representative at any time.

Following the closure of the SOQ submittal period, ECCTA intends to procure the highest quality service possible for the best value possible.

All statements must be furnished in accordance with the terms and conditions of the contract documents, including the Information for Interested Firms, General Conditions, Special Conditions, Scope of Work, and Proposal Form. All prospective proposers receiving SOQ documents directly from ECCTA will be notified of all addenda and will receive copies.

Contractor License Requirements

In accordance with provisions of California Public Contract Code section 3300, ECCTA has determined that the contractor shall possess and maintain valid State of California Class A contractor's license and all other licenses necessary at the time the proposal is submitted. Failure to possess the specified license shall render the proposal non-responsive.

Federal Requirements

The contract that is to be award as a result of a subsequent RFP is subject to the receipt of financial assistance from the U.S. Department of Transportation (U.S. DOT), Federal Transit Administration (FTA) and local sales tax funds, and may also be subject to a grant contract between the Metropolitan Transportation Commission (MTC). The contract is subject to laws and regulations governing the use of such funds. Proposers will be required to certify that they have not been suspended or debarred from participation in federal or state funded contracts. Full compliance with applicable Safety and Health Standards, DBE requirements, Equal Employment Opportunity and Americans with Disabilities Act laws and regulations will be required of the successful proposer.

ECCTA has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the U.S. DOT, 49 Code of Federal Regulations (C.F.R.) Part 26, and as a recipient of federal financial assistance, ECCTA has signed an assurance that it will comply with 49 C.F.R. Part 26. As such, ECCTA hereby notifies all proposers that it will affirmatively ensure that in regard to any contract entered into pursuant to this RFQ, Disadvantaged Business Enterprises (DBEs) will be afforded full opportunity to submit a SOQ in response to this request. ECCTA shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. DOT-assisted contracts or

in the administration of its DBE Program or the requirements of 49 C.F.R. Part 26. ECCTA shall take all necessary and reasonable steps under 49 C.F.R. Part 26 to ensure nondiscrimination in the award and administration of U.S. DOT-assisted contracts. ECCTA's DBE Program, as required by 49 C.F.R. Part 26 and as approved by U.S. DOT, is incorporated by reference in this contract. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this contract. Upon notification to ECCTA of its failure to carry out its approved program, the U.S. DOT may impose sanctions as provided for under Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq.).

Prevailing Wages

Subject to Labor Code Section 1771.1, as amended by SB 854, the construction portion of this project will be subject to prevailing wages compliance monitoring and enforcement by the Department of Industrial Relations (DIR).

ECCTA will only award this proposal to contractors (including listed subcontractors) that are currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5.

Pursuant to Section 1770, et seq. of the California Labor Code, the successful proposer and all subcontractors shall pay not less than the prevailing rate of per diem wages as determined by the Director of the DIR.

Reserved Rights

ECCTA reserves the right to reject any and all SOQs, to waive any irregularities or informalities in any SOQ or in the proposal procedure, to make any awards or any rejections in what it alone considers to be in the best interest of ECCTA, or to postpone the SOQ opening or award for any reason whatsoever in ECCTA's sole discretion. Each proposer will be notified of the prequalified short list and the award of contract, if an award is made.

Office of the Chief Executive Officer
February 7, 2025

Section 2

Key Dates

Key Dates

Hydrogen Fuel Station Consultant

RFQ #2025-01

RFQ Key Dates

Task	**Date**
Request for Qualifications issue date:	Friday, February 7
Last day for questions:	Wednesday, February 19 by 12:00 p.m.
Statement of Qualifications due date:	Friday, March 7 by 12:00 p.m.
Anticipated Short List RFP publication:	Thursday, March 13
Anticipated RFP publication date:	Monday, April 21

Section 3

Information for Interested Firms

Information for Interested Firms

Hydrogen Fuel Station Consultant

RFQ #2025-01

Scope, Location and Estimated Cost of Work

The project will be a start-to-finish, design-build contract, with the selected firm being responsible for the production and presentation of a complete design of a hydrogen fueling station during the subsequent RFP process. The current estimate of the overall project is approximately $9.43 million. ECCTA intends to award the final contract based on the highest quality service possible for the best value possible.

The work to be performed under the final contract will consists of the furnishing of all labor, materials, tools, equipment, and services for design-build services for the design and installation of a hydrogen fueling station for use by buses powered with hydrogen fuel-cells. The construction work will be performed in the City of Antioch, County of Contra Costa, State of California.

Examination of Contract Documents/Notification of Errors

Each proposer shall thoroughly examine and be familiar with legal and procedural documents, general conditions, specifications, and addenda (if any). Submission of a SOQ shall constitute acknowledgment, upon which ECCTA may rely, that the proposer has thoroughly examined and is familiar with the contract documents. Failure or neglect of a proposer to receive or examine any of the contract documents shall in no way relieve them of any obligation with respect to their proposal or to the contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any contract documents.

Additionally, proposers shall review the technical specifications and prior to submission of the SOQ, report any errors and omissions noted by the contractor to ECCTA. The review by the contractor shall be confined to the contractor's capacity as a contractor and not as a licensed contractor.

It shall also be the proposer's responsibility to call to ECCTA's attention any missing pages in the contract documents, including the addenda. These items shall be brought to the attention of ECCTA, in writing, at least one week prior to the SOQ due date.

Interpretation of Contract Documents

No oral representation or interpretations will be made to any proposer as to the meaning of the contract documents. Requests for interpretation shall be made in writing and delivered to ECCTA no later than 10 business days before the time announced for the SOQ due date. Interpretations, where necessary, will be made by ECCTA in the form of an addendum to the contract documents. Addendums will be sent as promptly as is practical to all parties to whom the SOQ documents have been issued. All such addenda shall become part of the contract. Requests for information before the award of contract shall be directed to the ECCTA representative identified in the Notice Inviting Qualifications.

Statement of Qualifications

General

Interested firms must not be on the Comptroller General's list of ineligible firms. The contractor will be required to comply with all applicable Equal Employment Opportunity laws and regulations. DBEs will be afforded full opportunity to submit SOQs in response to this RFQ and will not be subjected to discrimination on the basis of race, disability, color, sex, or national origin in consideration for an award.

All SOQs shall give, in the space provided, all other information requested therein, and shall be signed by the proposer, or an authorized representative, with their address. SOQs will be evaluated as provided in "Evaluation of Statements" below.

Proposers must prepare and submit all required documents. Failure to properly complete and sign any forms may be cause for rejection of a SOQ.

Format of the Statement of Qualifications and the Required Forms

Information should be provided in a concise and well-organized manner. Submittals should not contain any unnecessary promotional material.

Copies of the statements of qualifications should be prepared in at least a 12-point font. All signatures must be signed in ink and shall be made by an officer of the proposer with the authority to bind the proposer to the terms of the solicitation.

Content of Statement of Qualifications

1. Description of Organization
   This section should contain a concise description of the firm's background, including size and years in business, and experience in providing services similar to those outlined in the Scope of Work.

   If the organization is a corporation, limited liability company, partnership, joint venture, or other legal entity, a copy of the organization documents or agreement committing to the form the organization shall be included. These documents shall also include a listing of all shareholders, partners, or members known at the time of submission who will perform work on the project.

   Resumes of Key Personnel

   This section should contain, if applicable, resumes of the proposer's:
   - Project Manager (having overall responsibilities for design and construction)
   - Principal Engineer
   - Lead Design Engineer or Manager
   - Lead Electrical Engineer
   - Lead Mechanical Engineer
   - Structural Engineer
   - Project Superintendent (oversees day-to-day operations on the construction site)

- Start-Up Manager (plans, coordinates, and manages the start-up, testing, and commissioning for all elements and facilities constructed as part of the project)
- Other Staff (as required to fulfill the contractual RFP requirements)

The resume should feature all job experience over the past three years including:

- Years employed by proposer
- Current assignment, location and primary responsibilities for each position
- Education
- Professional registrations or certifications
- Key skills
- Total years of professional experience

References

This section should contain a listing of at least three projects within the last three years. The information submitted should include:

- Name, address, and telephone number of the project manager
- Service provided
- Dates service encompass
- Cost of the contract
- The status of the contract

2. Licensing

   Proof of holding the licenses, registrations, and credentials required to design and construct the project, including any information on the revocation or suspension of any license, credential, or registration.

3. Bonds

   Evidence that establishes the firm has the capacity to obtain all required payment and performance bonding, liability insurance, and errors and omissions insurance.

4. Worker's Compensation and Safety

   The firm shall include information concerning its' safety record, worker's compensation experience history, and worker's compensation safety program. The information shall include, but not be limited to:

   - An experience modification rate for the most recent three-year period with an average that is 1.00 or less
   - An average total recordable injury or illness rate and average lost work rate for the most recent three-year period that does not exceed the applicable statistical standard
   - Documentation, if applicable, showing that the firm is party to an alternative dispute resolution system in accordance with California Labor Code, section 3201.5

5. Financial Statements

   This section should contain audited financial statements for the previous three years.

Properly Executed Certifications
All properly executed certifications in Section 7 of this RFQ and:

If the SOQ is made by a partnership or joint venture:

- The signature, printed name, title, and company name of at least one of the general partners. Additionally, the SOQ shall include a notarized Power of Attorney form which certifies that the individual(s) signing the SOQ have the authority to bind the partnership or joint venture.

If the SOQ is made by a corporation:

- The signature, printed name, and title of at least one officer authorized to sign on behalf of the corporation.
- The state under the laws of which the corporation is incorporated must be indicated. Additionally, the SOQ shall include a notarized Power of Attorney form which certifies that the individual(s) signing the SOQ have the authority to bind the corporation.

Proprietary Information
Proposers are to identify all parts of the SOQ the proposer considers proprietary and include written justification for the claim, as the SOQ could be made public as a result of Freedom of Information Act requests.

SOQ Submission Procedures

All SOQs shall either be completed and submitted on the Bid Express portal or be enclosed in a sealed envelope or package, labeled and delivered to the ECCTA at the place, and on or before the time, indicated in the Notice Inviting Qualifications. SOQs received after this time, or at any other location, will not be considered. ECCTA shall not be responsible for the failure of mailed, delivered, or submitted SOQs to actually be received by ECCTA by the time due on the date due. **Technical problems with submission at the Bid Express portal shall be directed to Bid Express Customer Service.** No oral, telegraphic, or telephone (including facsimile) SOQs or modifications will be considered.

Mailed hard copies of a proposer's statement of qualifications must be submitted as follows:

One original SOQ with required signatures in ink by an officer of the proposer with the authority to bind the proposer to the terms of the RFQ submitted in a securely sealed envelope marked as follows:

1. ORIGINAL: RFQ 2025-01 HYDROGEN FUEL CONSULTANT – Design-Build Statement of Qualifications

   If applicable, one redacted copy must also be submitted, in securely sealed envelope, marked as follows:

   REDACTED: HYDROGEN FUEL CONSULTANT – Design-Build Statement of Qualifications

1. One electronic copy on a thumb drive in a securely sealed envelope marked as follows:

ELECTRONIC: RFQ 2025-01 HYDROGEN FUEL CONSULTANT – Design-Build Statement of Qualifications

Inquiries over the phone for clarification, interpretation, submission, or other proposal-related matters will not be answered outside the issuance of an addendum. Inquiries about proposal results will not answered prior to contract award. SOQ forms received after the designated time will not be accepted. Proposers and their authorized agents may be invited to attend an interview.

ECCTA reserves the right to reject any or all SOQs, to make any awards or any rejections in what it alone considers to be in the best interest of ECCTA, and to waive any informalities or irregularities in the SOQs.

Addenda

Each SOQ shall include specific acknowledgment (in space provided) of the receipt of all addenda issued during the SOQ period. Failure to so acknowledge all addenda may result in the SOQ being rejected as non-responsive.

Evaluation of Statements

General

If a contract is to be awarded to a prequalified firm, it shall be awarded to the firm that is the most qualified responsive proposer who demonstrates the attributes of trustworthiness as well as quality, fitness (including financial qualifications), and the capacity and experience to enable it to prosecute the work successfully and properly and to complete the work within the time period named in the contract documents.

Evaluation of Statements

ECCTA's evaluation committee will employ the following selection criteria:

Design Experience and Staffing (30%)

- Knowledge of, and experience with, hydrogen fuel handling and use
- Qualifications, knowledge and experience of proposer's staff to be involved in the project
- References

Construction Experience and Staffing (30%)

- Proposer's knowledge of, and experience with, with hydrogen fueling stations or similar work
- Knowledge of, and experience with, public transit agencies
- Knowledge of local permitting requirements

Safety Record (20%)

- Most recent three-year experience modification rate
- Average total Recordable Incident Rate (RIR)

Financial Capability (20%)

- Ability to secure proper bonding and insurance
- Financial resources to complete the project.

The technical review committee may use numerical scores in applying the evaluation criteria. The significance of the difference in numerical scores is not the numerical difference itself and is based on the considered judgment of the technical review committee.

Thus, SOQs with essentially equal total scores may be deemed significantly different because of the significance of differences in scores on individual evaluation criteria. Likewise, SOQs with substantially different total numerical scores may be deemed essentially equal.

ECCTA has attempted to state the evaluation criteria in a manner that makes the relative importance of each criterion readily apparent. Any prospective proposer that is unsure about the meaning or relative importance of an evaluation criterion should request clarification as soon as possible.

Modification of SOQs

Modification of a SOQ already received will be considered only if the modification is received prior to the time established for receiving SOQs. All modifications shall be made in writing, executed, and submitted in the same form and manner as the original SOQ.

Postponement of Due Date

ECCTA reserves the right to postpone the date and time for receiving the SOQs at any time prior to the date and time established in the Notice Inviting Qualifications.

Protest Procedures

These procedures will apply to all procurement actions whether by sealed bid, request for proposal or sole source and regardless of the stage of the procurement process at which the protest is filed.

Protest Before SOQs Due

Protests based upon restrictive specifications or alleged improprieties in the SOQ procedure shall be filed, in writing, 10 business days prior to the SOQ due date. A detailed description of the facts underlying the protest plus any supporting documentation must be included with the written protest. The protest must be submitted to the ECCTA representative identified in the Notice Inviting Qualifications.

Protest of Award

A proposer may file a protest with ECCTA alleging a violation of applicable federal or state law relative to the seeking, evaluating and/or awarding of a procurement contract. Such protest must be submitted to the ECCTA representative identified in the Notice Inviting Qualifications no later than three business days after the date of the notice of intent to award of the contract by ECCTA.

The initial protest document must contain a detailed description of the legal and/or factual grounds for the protest, including references to the specific portion(s) of all document(s) that form the basis for the protest and all supporting documentation. The protest must state the form of relief requested. For protests

containing elements not based on publicly released information, the protest must contain documentation clearly showing the date on which the protestor received the information.

The protest must contain the RFQ solicitation number and title under which the protest is submitted, and must include the name, address, and telephone number of the person representing the protesting party, and the signature of the protester or authorized representative of the protester.

The written decision of the ECCTA representative or designee on the protest shall be served upon the protesting proposer and any proposer subject to the protest within five business days of receipt of the protest. The ECCTA representative or designee may extend the five business days if necessary to review additional information requested from any proposer or otherwise received.

If the subject matter of the project is receiving any state or federal funds which require a protest procedure different than the procedures stated above, then that protest procedure shall control.

The procedure and time limits set forth in this section are mandatory and are the proposer's sole and exclusive remedy in the event of a protest. A proposer's failure to comply with these procedures shall constitute a waiver of any right to further pursue the SOQ protest, including appealing the ECCTA representative's decision, filing a Government Code Claim or other legal proceedings. A proposer may not rely on a protest submitted by another proposer, but must timely pursue its own protest.

Appeal of Decision

If any proposer is not satisfied with the decision of the ECCTA Representative, the proposer may appeal the decision, in writing, within three business days to ECCTA's CEO:

Office of the CEO
Eastern Contra Costa Transit Authority
801 Wilbur Avenue
Antioch, CA 94509

The CEO shall investigate and shall respond in writing, within five business days, specifying any differences between their findings and those of the Manager of Administrative Services. The CEO shall state the action to be taken by ECCTA or the fact that no action shall be taken. The decision of the CEO is the final decision of ECCTA.

Public Records Act Requests

In accordance with the California Public Records Act, ECCTA will make available to the public the proposer's "Contractor/Subcontractor Worker Classification" form in Section 7 of this RFQ, all correspondence and written questions submitted during the SOQ period, all SOQ submissions opened in accordance with the procedures set forth herein, and all subsequent SOQ evaluation information. All submissions not opened will remain sealed and shall be returned to the submitter. Except as otherwise require by law, ECCTA will not disclose trade secrets or proprietary financial information submitted by bidders that has been designated as confidential by proposer (including, without limitation, the Contractor/Subcontractor Worker Classification form). Any such trade secrets or proprietary financial information that proposer believes should be exempted from disclosure shall be specifically identified and

marked as such. Blanket-type identification by designating whole pages or sections shall not be permitted and shall be invalid. The specific confidential information must be clearly identified as such.

Information disclosed in the Contractor/Subcontractor Worker Classification form and the attendant opened submissions are the property of ECCTA unless proposer makes specific reference to data that is considered proprietary. Subject to the requirements in the Public Records Act, reasonable efforts will be made to prevent the disclosure of information except on a need-to-know basis during the evaluation process.

Section 4

General Conditions

General Conditions

Hydrogen Fuel Station Consultant

RFQ #2025-01

Prohibited Interest

By submitting a SOQ, the proposer represents and warrants that neither the CEO, nor any director, officer, agent nor employee of ECCTA, has in any manner any interest, contractual or non-contractual, financial or otherwise, in this transaction or in the business of the proposer.

If any such interest comes to the knowledge of the proposer at any time, a full and complete disclosure of all such information shall be made in writing to ECCTA, even if such interest would not be considered a conflict of interest under Article IV Division 4 (commencing with Section 1090) or Division 4.5 (commencing with Section 3600) of the Government Code of the State of California.

No member, officer, or employee of ECCTA or of any of its member jurisdictions during their tenure of office, or for one year thereafter, shall have any interest, direct or indirect, in this contract or the proceeds therefrom.

No member or a delegate to the Congress of the United States shall be admitted to any share or part of the contract awarded under this proposal or to any benefits arising therefrom.

Proposer's Status

Neither the proposer nor any party contracting with the proposer shall be deemed to be an agent or employee of ECCTA. The proposer is and shall be an independent contractor, and the legal relationship of any person performing work for the proposer shall be one solely between said parties.

Ownership of Work

All reports, drawings, plans, specifications, and other materials prepared, or in the process of being prepared, for the services to be performed by the proposer shall be and are the property of ECCTA, and ECCTA shall be entitled access to, and copies of, during the progress of the work.

In the event that the work which is the subject of the contract is not completed, for any reason whatsoever, all designs and materials generated under this contract shall be delivered as ECCTA may direct.

Subcontracts

Pursuant to California Public Contract Code section 4100 et seq., applicable subcontracts under this contract must have the prior written approval of ECCTA's CEO. In the event the contractor enters into one or more subcontracts pursuant to this paragraph, it is understood and agreed that the participating subcontractors shall be solely and directly responsible to the contractor and that ECCTA shall have no obligation to them.

Insurance, Bonds and Indemnity

Insurance Requirements

A. Insurance Certificates, Riders, Stipulations

Within 10 business days, the successful contractor shall furnish original certificates of insurance showing a commencement date no later than the effective date of the contract. The insurance shall be in compliance with the stipulations outlined in the scope of work.

With respect to all coverages, the certificates of insurance shall include a stipulation that the insurer will notify ECCTA no less than 30 calendar days prior to any change, termination or cancellation of the insurance policy or coverages provided under such policy.

With respect to all coverages, the certificates of insurance shall indicate that ECCTA, its directors, officers, agents, and employees are additional insureds under said policies and that the contractor's policies are primary and no insurance of ECCTA shall be called upon to contribute to any loss up to the limits of contractor's policy.

The contractor shall indemnify, keep and hold harmless, ECCTA, its directors, officers, agents, employees, and member jurisdictions against all suits or claims that may be based on any injury to persons or property that may occur, or that may be alleged to have occurred, in the course of the performance of this contract by the contractor, whether or not it shall be claimed that the injury was caused through a negligent act or omission of the contractor or its employees, and the contractor shall, at its own expense, defend any and all such actions, and shall at its own expense pay all charges of attorneys and all costs and other expense arising therefrom or incurred in connection therewith, and if any judgment shall be rendered against ECCTA in any such action, the contractor shall, at its own expense, satisfy and discharge the same.

B. Worker's Compensation

The contractor and subcontractors, at their own cost and expense, shall carry and maintain Statutory Worker's Compensation Insurance and Employer's Liability Insurance with limits not less than $1,000,000 with an insurance carrier that is satisfactory to ECCTA that has a Best's rating of no less than A: VII.

C. General Liability

The contractor and subcontractors, at their own cost and expense, shall maintain liability insurance for the period covered by the contract in an amount not less than $1,000,000 per occurrence combined single limit coverage. Such coverage shall include, but shall be not be limited to, protection against claims arising from bodily and personal injury, including death resulting therefrom, and damage to property resulting from activities contemplated under the contract. The insurance is to be placed with insurers with a Best's rating of no less than A: VII, shall be with insurers and under forms of policies that is satisfactory in all respects to ECCTA, and shall provide that notice to ECCTA 30 calendar days prior to cancellation or material change. The following endorsements shall be included with the policy:

- The policy shall cover on "an occurrence basis."

- The policy shall cover personal injuries as well as bodily injuries. The exclusion of contractual liability must be eliminated from personal injury endorsement.
- The policy shall cover contractual liability insuring the obligations assumed by contractor under the contract.
- ECCTA, its officers, agents, and employees shall be named as additional insureds, and the policy shall stipulate that this insurance will operate as primary insurance and that no other insurance held by ECCTA will be called upon to contribute.

D. Vehicle Liability

The contractor and subcontractors, at their own cost and expense, shall maintain liability insurance for the period covered by the contract in an amount not less than $1,000,000 combined single limit. Coverage shall include owned vehicles, hired vehicles, and non-owned vehicles, as well as bodily injury, property damage, collision and comprehensive, and include coverage for damage to ECCTA vehicles.

The insurance is to be placed with insurers with a Best's rating of no less than A: VII, shall be with insurers and under forms of policies that is satisfactory in all respects to ECCTA, and shall provide that notice to ECCTA 30 calendar days prior to cancellation or material change.

E. Pollution Legal Liability

The contractor and subcontractors, at their own cost and expense, shall maintain liability insurance for the period covered by the contract in an amount not less than $1,000,000 per occurrence. Such coverage shall include, but shall not be limited to bodily injury (including death) and property damage resulting from accidental release of hazardous waste, as defined in California Health and Safety Code, Section 25117 and listed in the California Administrative Code Title 28 Society Security, Division 4, Environmental Health Section 66680, and the consequential containment, clean-up, disposal and penalties associated therewith.

F. Errors and Omissions

The contractor and subcontractors, at their own cost and expense, shall maintain professional liability insurance for the period covered by the contract in an amount not less than $1,000,000 per occurrence that is appropriate to the contractor's profession.

G. All Risk Property Insurance

The contractor and subcontractors, at its own cost and expense, shall maintain insurance coverage for full replacement cost on the contractor's tools, equipment, or other property whether it is owned or leased, brought onto ECCTA property, or used in connection with the project. The insurance is to be placed with insurers with a Best's rating of no less than A: VII.

Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

A. <u>Separation of Insureds</u>

The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured and the coverages afforded shall apply as though separate policies had been issued to each insured.

B. Additional Insured Status

ECCTA and its member jurisdictions, together with their respective officers, officials, employees, and volunteers are to be covered as additional insureds on the general liability policy with respect to liability arising, directly or indirectly, out of work, operations, services, acts, errors or omissions in performance by or on behalf of the contractor, including services, materials, parts or equipment furnished in connection with such work or operations. General liability coverage must be provided in the form of an endorsement to the contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or both CG 20 10 and CG 20 37 forms, if later revisions are used).

ECCTA and its member jurisdictions, together with their respective officers, officials, employees, and volunteers are to be covered as additional insureds on the vehicle liability policy with respect to liability arising out of contractor's use of vehicles in connection with this RFQ.

C. Primary Coverage

For any claims related to this contract, the contractor's insurance coverage shall be primary and noncontributing insurance as respects ECCTA and its respective officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by ECCTA and its respective officers, officials, employees, or volunteers shall be excess of the contractor's insurance and shall not contribute with it.

D. Notice of Cancellation

Each insurance policy required above shall provide that coverage shall not be canceled, except with 30 calendar days' notice to ECCTA by certified mail. The contractor shall obtain an endorsement to each policy required by this RFQ reflecting the contract by the insurer to provide such notice. In addition, the contractor is responsible to notify ECCTA within 5 business days of any cancellation, non-renewal, reduction in limits, or material change that affects required insurance coverage.

E. Waiver of Subrogation

The contractor will grant to ECCTA a waiver of subrogation of any right to subrogation which any insurer of said contractor may acquire against ECCTA and its respective officers, officials, employees, and volunteers by virtue of the payment of any loss under such insurance, including the coverages required in this RFQ.

The contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not ECCTA has received a waiver of subrogation endorsement from the insurer.

F. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by ECCTA. ECCTA may require the contractor to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. Any deductibles or self-insured retention shall be the responsibility of the contractor to satisfy.

G. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A: VII, unless otherwise acceptable to ECCTA.

H. Verification of Coverage

The contractor shall furnish ECCTA with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by these insurance requirements. The certificates, endorsements and applicable policy language to be provided must include proof of (1) the coverages required; (2) the required limits; (3) separation of insureds; (4) additional insured status; (5) primary coverage; (6) notice of cancellation; and (7) waiver of subrogation. All certificates and endorsements are to be received and approved by ECCTA before work commences, and must be provided annually thereafter for the duration of the contract. However, failure to obtain the required documents prior to the work beginning or thereafter shall not waive the contractor's obligation to provide them. ECCTA reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

Subcontractor Insurance

All subcontractors shall maintain the same insurance required to be maintained by the contractor with respect to their portions of the work unless otherwise indicated in contract documents, and the contractor shall cause the subcontractors to furnish proof thereof to ECCTA within ten days of ECCTA's request. At the contractor's discretion, the contractor may cover subcontractor under the contractor's own insurance policy.

Indemnity

To the furthest extent permitted by law (including, without limitation, Civil Code Section 2782), the contractor shall defend, indemnify, and hold harmless, ECCTA and each of its officers, officials, employees, consultants and agents including, without limitation, the governing board, project manager and each ECCTA representative, from claims, suits, actions, losses and liability of every kind, nature and description including, without limitation, claims and fines of regulatory agencies and attorney's fees and consultant's fees, directly or indirectly arising out of, connected with, or resulting from performance of the work, failure to perform the work, or condition of the work that is caused in whole or part by any act or omission of the contractor, subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, resulting from any cause whatsoever except for liability for loss, damage, or expense arising from ECCTA's sole negligence, willful misconduct, or active negligence.

With respect to third-party claims against the contractor, the contractor waives any and all rights to any type of express or implied indemnity including, without limitation, costs of defense, against ECCTA and each of its officers, officials, employees, consultants and agents including, without limitation, ECCTA, the governing board, project manager and each ECCTA representative. ECCTA shall provide timely notice to the contractor of any third-party claim relating to the contract documents, in accordance with Public Contract Code section 9201.

Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of the contractor, its subcontractors of any tier, or the officers or agents of any of them.

To the furthest extent permitted by law (including, without limitation, Civil Code section 2782), the indemnities, releases of liability and limitations of liability, claims procedures, and limitations of remedy expressed throughout contract documents shall apply even in the event of breach of contract, passive negligence, fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the work or the terms of contract documents. If the contractor fails to perform any of these defense or indemnity obligations, ECCTA may in its discretion back charge the contractor for ECCTA's costs and damages resulting therefrom and withhold such sums from progress payments or other contract moneys which may become due.

Bonds

A. Performance Bond

The successful proposer shall furnish a performance bond. The bond shall be executed in an amount equal to at least 100% of the contract price. This bond shall guaranty the faithful performance of the contract by the contractor. No alteration, extension of time, extra and additional work, or other change authorized by the contract documents will affect the obligations of the surety or sureties on the performance bond, and no notice to the surety or sureties shall be required. Any bond required herein shall be issued by a corporate surety admitted to transact surety business in the State of California and holding a valid certificate of authority to transact surety insurance in the State of California.

B. Labor and Materials Payment Bond

The successful proposer shall furnish a labor and materials payment bond. The bond shall be executed in an amount equal to at least 100% of the contract price. This bond shall secure the payment for all work, labor, materials, equipment or services furnished in connection with the hydrogen fuel station contract. No alteration, extension of time, extra and additional work, or other change authorized by the contract documents will affect the obligations of the surety or sureties on the labor and materials bond, and no notice to the surety or sureties shall be required. Any bond required herein shall be issued by a corporate surety admitted to transact surety business in the State of California and holding a valid certificate of authority to transact surety insurance in the State of California.

C. Additional Sureties

If, at any time during the continuance of the contract, the sureties, or any of them shall, in the opinion of ECCTA, become irresponsible, ECCTA shall have the right to require additional and sufficient sureties which the contractor shall furnish to the satisfaction of ECCTA within 10 business days after notice.

Compliance with Applicable Laws and Regulations

The contractor shall keep fully informed concerning all requirements of law including, but not limited to, all federal, state, and local laws, regulations, and ordinances which affect the performance of work under the contract.

The contractor shall at all times observe, and shall cause all employees and subcontractors to observe, all such requirements of law and shall protect, indemnify, and hold harmless ECCTA, its directors, officers, agents, and employees against all claims and liabilities arising from, or based on, the violation of any such requirement of law whether by the contractor or their employees or subcontractors.

If any discrepancy or inconsistency is discovered in the contract documents of the work in relation to any such requirements or laws, the contractor shall immediately report the same to ECCTA.

The contractor shall, if requested by ECCTA, provide certification and evidence of such compliance. If any part of the contract documents is declared invalid by a court of law, such decision will not affect the validity of the remaining portion, which shall remain in full force and effect.

Prior to award of a contract, the proposer shall furnish upon ECCTA's request verification of payment to its employees California's minimum wage as required by law. In addition, upon ECCTA's request, the proposer shall promptly furnish verification that its employees have legal rights to work in the United States of America and in the State of California.

Labor

General

The final project will be a public works contract within the meaning of Part 7 of Division 2 of the California Labor Code (Sections 1720 and following), and the contractor and any subcontractor shall pay not less than the specified prevailing rates of wage to all workers employed. Pursuant to the provisions of Section 1770 of the Labor Code of the State of California, the Board of Directors of Eastern Contra Costa Transit Authority has obtained the general prevailing rate of wages and employer payments for health and welfare, vacation, pension, and similar purposes in ECCTA, a copy of which is on file in the office of ECCTA and shall be made available for viewing to any interested party upon request. Contractor shall also cause a copy of this determination of the prevailing rate of per diem wages to be posted at each worksite.

Attention is directed to the provisions in Section 1777.5 and 1777.6 of the California Labor Code concerning the employment of apprentices by the contractor or any subcontractor under the contractor. It shall be the responsibility of the contractor to effectuate compliance on the part of itself and any subcontractors with the requirements of said sections in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

Pursuant to the requirements of Division 4 of the California Labor Code, the contractor will be required to secure the payment of worker's compensation to its employees in accordance with the provisions of Section 3700 of the California Labor Code.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

Pursuant to Labor Code Section 1771(a), as amended by SB 854, contractor represents that it and all of its subcontractors are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. The contractor covenants that any additional or substitute subcontractors will be similarly registered and qualified.

Prevailing Wage Requirements

Pursuant to Labor Code Section 1771(a), contractor represents that it and all of its subcontractors are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. The contractor covenants that any additional or substitute subcontractors will be similarly registered and qualified.

This project is subject to prevailing wage compliance monitoring and enforcement by the Department of Industrial Relations (DIR). The contractor and subcontractors must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman apprentice, worker, or other employee employed by him or her in connection with the Work. Each payroll record shall contain or be verified by a written declaration as required by Labor Code Section 1776. On a weekly basis, the contractor shall also deliver certified payrolls to ECCTA, and concurrently therewith directly to the Labor Commissioner in the format prescribed by the Labor Commissioner.

The payroll records enumerated above must be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor as required by Labor Code Section 1776.

a. Contractor shall inform ECCTA of the location of records enumerated above, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.
b. Contractor or subcontractor has 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated above. In the event that the Contractor or subcontractor fails to comply with the ten-day period, he or she shall, as a penalty to ECCTA on whose behalf the contract is made or awarded, forfeit $100.00 for each calendar day, or portion thereof, for

each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Contractor is not subject to a penalty assessment pursuant to this paragraph due to the failure of a subcontractor to comply with this paragraph.

Contractor shall forfeit, as a penalty to ECCTA, $200.00 for each laborer, worker, or mechanic employed in performing labor in and about the Work provided for in the contract documents for each day, or portion thereof, that such laborer, worker or mechanic is paid less than the said stipulated rates for any Work done under the contract documents by him or her or by any subcontractor under him or her, in violation of Articles 1 and 2 of Chapter 1 of Part 7 of Division II of the Labor Code. The sums and amounts that are forfeited pursuant to this paragraph and the terms of the Labor Code shall be withheld and retained from payments due to Contractor under the contract documents, pursuant to these General Conditions and the Labor Code, but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the State Department of Industrial Relations or by ECCTA. The Labor Commissioner pursuant to Labor Code Section 1775 shall determine the final amount of forfeiture.

Contractor shall insert in every subcontract or other arrangement which Contractor may make for performance of Work or labor on Work provided for in the contract, provision that subcontractor shall pay persons performing labor or rendering service under subcontract or other arrangement not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed in the Labor Code.

Questions regarding prevailing wage and apprenticeship

Questions pertaining to pre-determined wage rates should be directed to:

Division of Labor Statistics and Research
P.O. Box 420603
San Francisco, CA 94142-0603
Phone: (415) 703-4774

Questions pertaining to apprenticeship crafts should be directed to:

Division of Apprenticeship Standards
P.O. Box 420603
San Francisco, CA 94142-0603
Phone: (415) 703-4920

Any contractor who is awarded a public works project and intends to use a craft or classification not shown on the general prevailing wage determinations may be required to pay the wage rate of the craft or classification most closely related to it as shown on the general determinations effective at the time of the call for proposals.

The wage rates for any classification not listed in the foregoing publications will be the prevailing wage for such work.

All above wage rates will be subject to any recent negotiations.

General Labor Code Requirements

Contractor and its Subcontractors shall be responsible for compliance with Labor Code Sections 1810-1815.

A. Eight hours of labor performed in execution of the contract constitutes a legal day's work. The time of service of any worker employed on the project is limited and restricted to 8 hours during any one calendar day, and 40 hours during any one calendar week.
B. Contractor and its subcontractors shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the project. The record shall be kept open at all reasonable hours to the inspection by Owner and the Division of Labor Standards Enforcement.
C. Contractor or its subcontractors shall, as a penalty to Owner, forfeit twenty-five dollars ($25) for each worker employed in the execution of the contract documents by the respective Contractor or subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Labor Code Sections 1810-1815.

Work performed on the project by employees of Contractor or its subcontractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.

Fair Employment Practices: California State Fair Employment Housing Act

The contractor shall comply with the State Fair Employment and Housing Act (California State Government Code Sections 12900 through 12996), and the regulations promulgated by the California State Fair Employment and Housing Commission to implement said Act.

The contractor shall comply with Section 1735 of the California State Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works in violation this section is subject to all the penalties imposed for a violation of this chapter."

The contractor shall include, and shall cause all sub-consultants to include, the provision of California's Fair Employment Practices Article in every subcontract entered into, related to this contract.

Nondiscrimination

In the performance of the contract, the contractor agrees that it shall not discriminate against any employee or applicant for employment because of race, color, national origin, ancestry, sex, gender, sexual orientation, gender expression, gender identity, religious creed, age, medical condition, disability, genetic information, marital status, or military and veteran's status in any manner prohibited by law.

The contractor shall take affirmative actions to ensure that applicants are hired and that employees are treated during employment in accordance with this non-discrimination obligation.

Such action shall include, but not be limited to, employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this article.

Violation of the State Fair Employment and Housing Act

Upon finding a violation of the California State Fair Employment and Housing Act by contractor, or a finding in a final judgment by a court of competent jurisdiction in an action to which contractor is a party, that contractor has unlawfully discriminated against any employee or applicant for employment, ECCTA will notify contractor that unless it demonstrates to the satisfaction of ECCTA within a stated period that the violation has been corrected, contractor's right to proceed with the work may be suspended or terminated, in whole or in part. ECCTA will deem a finding of violation of the California State Fair Employment and Housing Act to have occurred in performance of this contract upon receipt of written notice from the California State Fair Employment and Housing Commission that it has investigated and determined that contractor has violated this act in performance of this contract, and that said Commission has issued a final order under California State Government Code Section 12970 or obtained a final judgment under California State Government Code Section 12973; provided, however, that for purposes of this Fair Employment Practices Article, a judgment, order or injunction shall not be considered final: (a) if, and for the period that, the same is stayed or subject to further administrative or judicial review, or (b) if the same is vacated, reversed or set aside in whole or in substantial part as a result of subsequent administrative or judicial proceedings.

Travel and Subsistence Payments

The contractor shall make travel and subsistence payments to each worker needed to execute the work in accordance with the requirements in Section 1773.8 of the California State Labor Code.

Payroll Records

The contractor shall comply with the provisions of California State Labor Code Sections 1776 and 1812, and shall be responsible for compliance by its subcontractors. The penalties specified in subdivision (f) of California State Labor Code Section 1776 for noncompliance may be deducted from any monies due or which may become due to the contractor.

Apprentices

The contractor shall fully comply with the requirements of section 1777.5 of the California State Labor Code and the regulations of the California Apprenticeship Council. In accordance with section 1777.5, the contractor shall secure the necessary certificates and shall contribute to the apprenticeship fund or funds, as provided for therein. The contractor shall require each subcontractor who will perform work or labor or render service to the contractor in or about the construction of the work to comply fully with section 1777.5. Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Director of Industrial Relations, office of the Administrator of Apprenticeship, State

Building Annex, 455 Golden Gate Avenue, San Francisco, or from the California State Division of Apprenticeship Standards and its branch offices. It is ECCTA's policy to encourage the employment and training of as many apprentices on ECCTA contracts as may be permitted under applicable apprenticeship standards.

Skilled and Training Workforce

The contractor and all of its subcontractors at every tier shall fully comply with the requirements of sections 2600 et. seq. of the California Public Contract Code.

Contractor Responsibilities

Contractor's Licensing Laws

Attention is directed to California Business and Professions Code Sections 7000 et seq. concerning the licensing of contractors. All bidders and subcontractors shall be licensed in accordance with the laws of this State and any proposer or subcontractor not so licensed is subject to penalties imposed by such laws. The contractor must possess a California Class A contractor's license.

Safety

The contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property on or near the project or adjacent to the site of the work during the performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

The duty of ECCTA to conduct review of the work does not include review or approval of the adequacy of the contractor's safety program, safety supervisor, or any safety measures taken in, on or near the job site.

Safety provisions shall conform to Cal-OSHA Safety Orders, and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The contractor's failure to thoroughly familiarize itself with the aforementioned safety provisions shall not relieve it from compliance with the obligations and penalties set forth therein.

The contractor shall develop and maintain for the duration of this contract, a safety program that will effectively incorporate and implement all required safety provisions.

The contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program. The safety program shall be posted at the project site.

Records/Audit

The contractor and subcontractors shall establish and maintain records pertaining to this contract. The contractor's accounting systems shall conform to generally acceptable accounting principles and all records shall provide a breakdown of total costs charged under this contract, including properly executed payrolls, time records, invoices and vouchers.

The contractor shall permit ECCTA and its authorized representatives to inspect, audit, and examine the contractor's books, records, accounts, and any and all data relevant to this contract at any reasonable time for the purpose of auditing and verifying statements, invoices, or bills submitted by the contractor pursuant to this contract. The contractor shall provide such assistance as may be reasonably required in the course of such inspection.

Contractors shall in no event dispose of, destroy, alter, or mutilate said books, records, accounts, and data in any manner whatsoever for three years after the termination of this contract. ECCTA further reserves the right to examine and re-examine said books, records, accounts, and data during the three-year period following the termination of this contract.

Pursuant to California Government Code, the parties to this contract shall be subject to the examination and audit of a representative of the Auditor General of the State of California for a period of three years after the termination of this contract. The examination and audit shall be confined to those matters connected with the performance of this contract including, but not limited to, the cost of administering the contract.

Where ECCTA has reason to believe that such records or documents may be lost or discarded due to dissolution, disbandment or termination of contractor's business, ECCTA may, by written request, require that custody of the records be given to ECCTA and that the records and documents be maintained at ECCTA's facility. Access to such records and documents shall be granted to any party authorized by contractor, contractor's representatives, or contractor's successor in interest.

Claims Procedures

Should it appear to the contractor that the work to be performed or any of the matters relative to the contract documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the contract documents, or should any dispute arise regarding the true value of any work performed, work omitted, extra work that the contractor may be required to perform, time extensions, payment to the contractor during performance of this contract, performance of the contract, and/or compliance with contract procedures, or should contractor otherwise seek extra time or compensation FOR ANY REASON WHATSOEVER (collectively, "Disputed Work"), the contractor shall seek resolution as otherwise provided in contract documents or, if no procedures are specified, through regular project communication procedures. If a dispute remains, the contractor shall give submit a written claim to ECCTA. Routine contract materials, for example, correspondence, RFI, change order requests, or payment requests shall not constitute a claim. The contractor shall bear all costs incurred in the preparation and submission of a claim.

The contractor's written claim must identify itself as a "claim" under this Claims Procedures section and must include the following: (i) a narrative of pertinent events; (ii) citation to contract provisions; (iii) theory of entitlement; (iv) complete pricing of all cost impacts; (v) a time impact evaluation of all time delays that shows actual time impact on the critical path; (vi) documentation supporting items (i) through (v); and (vii) a verification under penalty of perjury of the claim's accuracy. The claim shall be priced like a change order, and must be updated monthly as to cost and entitlement if a continuing claim.

Any claim shall be decided by ECCTA's CEO, who shall reduce their decision to writing and mail or otherwise furnish a copy thereof to contractor. The decision of the CEO shall be final and conclusive unless within 30 calendars days from the date of receipt of such copy, the contractor mails or otherwise furnished a written appeal to ECCTA's Board of Directors.

Notwithstanding any dispute, Disputed Work or claim, the contractor shall continue to prosecute the Work and the Disputed Work in accordance with ECCTA's determinations. The contractor's sole and exclusive remedy for Disputed Work is to file a written claim within the time limits set forth in this Article setting forth the contractor's position as required herein.

Public Contract Code Section 9204 specifies provisions on resolving contract claims of any size, and Public Contract Code Section 20104, et seq., specifies required provisions on resolving contract claims less than $375,000. Those statutes constitute a part of this contract. In the event any other contract provision violates such statutes, the applicable statute controls.

Conflict of Interest

No employee, director, officer, or agent of ECCTA shall participate in selection, award or administration of a contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when the employee, officer, agent, any member of their immediate family, their partner, an organization which employs, or is about to employ, any of the above interest in the firm is selected for award.

ECCTA's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from contractors, potential contractors, or have a financial or other interest in the firm selected for award.

Prohibited Interest

By submitting a SOQ, the contractor represents and warrants that neither the CEO, nor any director, officer, agent, nor employee of ECCTA, has in any manner any interest, contractual or non-contractual, financial or otherwise, in this transaction or in the business of the contractor. If any such interest comes to the knowledge of the contractor at any time, a full and complete disclosure of all such information shall be made in writing to ECCTA, even if such interest would not be considered a conflict of interest under Article IV Division 4 (commencing with Section 1090) or Division 4.5 (commencing with Section 3600) of the Government Code of the State of California.

No member, officer, or employee of ECCTA or of any of its member jurisdictions during their tenure of office, or for one year thereafter, shall have any interest, direct or indirect, in this contract or the proceeds therefrom.

No member or a delegate to the Congress of the United States shall be admitted entitled to any share or part of the contract awarded under this SOQ or to any benefits arising therefrom.

Penalty for Collusion

If at any time it shall be found that the person, firm or corporation to whom a contract has been awarded has, in presenting any proposal or proposals colluded with any other party or parties, then the contract so

awarded shall be null and void and the proposer shall be liable to ECCTA for all loss or damage which ECCTA may suffer thereby and the Board of Directors may advertise for a new contract for said labor, supplies, materials, or equipment.

Legal and Miscellaneous

Severability Clause

If any provision or any part of any provision of these contract documents is, for any reason, held to be invalid, unenforceable, or contrary to any public policy, law, statute, regulation or ordinance, then the remainder of these specifications shall not be affected thereby and shall remain valid and fully enforceable.

Governing Law

California law (including that state's statutes of limitation but excluding its choice of law rules) shall govern all matters arising under the contract.

Section 5

Scope of Work

Scope of Work

Hydrogen Fuel Station Consultant

RFQ #2025-01

1 - GENERAL

1.01 SUMMARY OF EQUIPMENT AND WORK REQUIREMENTS

A. Summary Scope. This Specification includes requirements for the process equipment and capabilities for the installation of a hydrogen fueling facility at the EASTERN CONTRA COSTA TRANSIT AUTHORITY (ECCTA). The system is intended to and shall be sized to dispense hydrogen fuel to fuel cell electric (FCE) buses that will be deployed at ECCTA. The system shall be configured to require no directly buried appurtenances, except for direct bury hydrogen lines, construction equipment and wall foundations, electrical wires and conduits, and the installation of mechanical anchor bolts in the concrete pavement.

B. Summary Technical Approach.

1. The hydrogen fueling system is intended to use liquified hydrogen stored on site that is then pumped to high pressure, gasified, and dispensed to the FCE buses.

C. Related Specifications & Documents.

1. Drawing set identified with project # 2045312200.

2. Other specification sections, per table of contents of project-specification manual.

D. Other Contractor Responsibilities for Hydrogen Fueling System.

1. General. Contractor shall construct the work according to the approved project drawings, or as otherwise.

E. Additive Alternates.

1. Gaseous Hydrogen Recovery Compressor. **If elected** for procurement by the ECCTA, provide complete compressor skid, VFD, inlet-valve control and equipment pad, as further specified in Part 2 of this document. Provide space for such a compressor skid as part of the base scope.

F. Summary Contract Requirements. Work under this Technical Specification requires preparation of 100% engineered construction documents for all disciplines needed for this facility including ECCTA and Authorities Having Jurisdiction (AHJ) approvals, all site construction, furnishing, delivering, and starting equipment as required to make the systems functional, and a five-year warranty covering all parts, labor, and travel, following acceptance by the ECCTA, including all consumable materials and parts. Consumable materials and parts

are those items that are expected to be replaced or replenished during construction and commissioning, and under normal operation, per the replacement schedules published by the respective component or system manufacturers.

1.02 COMMERCIAL REQUIREMENTS

A. Site and Inter-Equipment Electrical Scope. All non-process equipment and materials shall be provided to ECCTA as part of the project scope. This includes items such as electrical wiring and appurtenances, data wiring and connections, fuel-management terminal, k-rails, signage, bump stops, remote electrostatic discharge (ESD) buttons and other appurtenances that are exclusive of the hydrogen storage, processing, and dispensing equipment.

B. Hydrogen-Process Scope. The equipment that contains or conveys hydrogen or is a direct appurtenance associated with the storage, processing and dispensing of liquid or gaseous hydrogen, shall be included as part of the project scope. Title and ownership of the equipment and materials described herein shall be turned over to ECCTA at the completion and acceptance of construction.

C. Basis of Award. ECCTA will evaluate technical and cost proposals and will award the contract to the firm that provides the best value, based on consideration of the following factors:

1. Quality of proposed equipment, including its appropriateness for the project and alignment with the preliminary design.

2. Experience providing engineered design of this project type.

3. Experience constructing and commissioning projects of this type.

4. Bid price.

D. Buy America. All equipment and materials provided under this project shall comply with U.S. FTA Buy America requirements.

E. Design Build. The hydrogen fueling-station project indicated in this specification and accompanying drawings shall be constructed on a design-build basis, which calls for the Contractor to prepare a set of complete, engineered and approved construction drawings for all required disciplines, including mechanical, electrical and structural, as well as appropriate cover sheet. The Contractor's design and construction shall be approved by ECCTA and by Antioch Building Services Division, and shall also comply with the project plans and specifications, except where deviations are approved by ECCTA.

1. Contractor shall be responsible for constructing the facility per the listed codes and standards, and shall comply with the requirements of the Authorities Having Jurisdiction. Contractor shall provide all equipment, components, material, labor, documentation and warranties required to comply with the plans and specifications.

2. If the Contractor seeks to change any design elements as indicated in the drawings or specifications, the Contractor shall describe and request the changes to ECCTA, in writing, and execute any such design changes only after ECCTA approves of them, in writing. Contractor shall be responsible for design drawings and details for all such changes that deviate from the approved construction drawings. All drawings and details shall be sealed by a California-Registered Professional Engineer (PE). The design revisions shall be approved by the authorities having jurisdiction (AHJs), when warranted.

1.03 STANDARDS

A. The latest editions of the following listed codes, specifications and standards shall be considered an integral part of this specification. Compliance with the following documents is mandatory:

1. ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, latest edition with latest addenda.

2. ANSI/ASME B31.3 -2020- Process Piping.

3. ANSI/ASME B31.12 -2020- Hydrogen Piping and Pipelines

4. ANSI/ASME B16.5 Steel Pipe Flanges and Fittings.

5. National Electrical Code (NFPA 70) with State amendments.

6. International Mechanical Code with State amendments.

7. International Building Code with State amendments.

8. International Fire Code with State amendments, including Chapter 23.

9. National Fire Protection Association NFPA 2 (2020), Hydrogen Technologies Code.

10. National Fire Protection Association NFPA 30A (2018), Code for Motor Fuel Dispensing Facilities and Repair Garages.

11. Occupational Safety and Health Act, Standards, 29 CFR - Occupational Noise Exposure, 1910.95.

12. Society of Automotive Engineers, SAE J-2600 (2015), Compressed Hydrogen Surface Vehicle Fueling Connection Devices.

13. Society of Automotive Engineers, SAE J-2601-2 (2014) Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles.

14. Society of Automotive Engineers, SAE J-2719 (2020), Hydrogen Fuel Quality for Fuel Cell Vehicles.

15. Society of Automotive Engineers, SAE J-2799 (2019), Hydrogen Surface Vehicle to Station Communications Hardware and Software

B. The following documents form a part of the Specification to the extent that their respective content is pertinent to the products and methods contained herein and to the extent that work required under this project applies to the documents.

1. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section V: Nondestructive Examination.

2. American Petroleum Institute (API) Specification 11P.

3. American Society for Nondestructive Testing (ASNT) SNT-TC-1A: Recommended Practice.

4. American Society for Testing and Materials (ASTM)
   a. ASTM A 36: Standard specification for structural steel.
   b. ASTM A213: Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes.

5. American Welding Society (AWS) D1.1-88: Structural Welding Code - Steel.

6. National Electrical Manufacturers Association (NEMA) NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum), latest edition.

1.04 SUBMITTALS

A. Stamping By Professional Engineer. All drawings and drawing modifications provided by the Contractor shall be stamped by an appropriate California-licensed Professional Engineer, in accordance with the California Administrative Code.

B. Bill of Materials. A bill of materials, including at least the following: high-pressure tubing, tube fittings and valves; piping; conduit for electrical wiring, electric wire and switches.

C. Manufacturers' Warranties. All manufacturers' original standard warranties for material, components, and assemblies. These are in addition to the comprehensive Facility warranty that is the responsibility of the Contractor.

D. Approvals. Prior to shipping to site, ECCTA shall approve all information required under article 1.04.D.1 and 1.04.D.2.

E. The Contractor shall submit all equipment submittals listed below and specified in the construction documents for approval by both ECCTA and the Engineer of Record (EOR).

   a. LH2 tank
   b. LH2 cryogenic pumps
   c. Pump prime movers

d. Ambient vaporizers
e. Assembled pump skids
f. Ground GH2 storage pressure vessels
g. Priority valve panel and ESD-isolation panel
h. Plc hardware set and control / program
i. Motor VFDs
j. Master control panel
k. Communication panel
l. TVSS hardware for motor VFDs
m. Hydrogen dispensers.
n. Fluid heat exchanger(s)
o. Chiller
p. Air compressor
q. Compressed air dryer
r. Vacuum-jacketed piping
s. Vent stack(s)
t. Junction boxes
u. Fuel-management terminals

2. Parts & Materials. Submittals are required for all listed components and materials installed between packaged equipment and used in manufacture of prepackaged equipment and are subject to approval by ECCTA. Submittals shall include, at a minimum:
   a. Actuated and manual valves.
   b. Pressure relief valves.
   c. Stainless steel tubing and unions.
   d. Hydrogen-gas detectors.
   e. Remote ESD buttons.
   f. Flame/fire sensors.
   g. Civil items including bollards, fencing, gates, groud-marking paint and walk-over bridges.
   h. Structural items including concrete and rebar.
   i. Electrical items, including wire, conduit, conduit seals, jboxes, supports, switch panels and other electrical devices and materials
   j. Particulate filters.

F. Tests. Provide test procedure for review and approval prior to performing any test. Provide tests results and reports for review and approval of all tests.

G. Required documentation.

1. The following are required as applicable for each size or type of item listed in article 1.04.D.1 of this Section, as applicable.
   a. Manufacturers' data sheets with dimensional drawings, with pressure rating and testing data for dispensers and other hoses, piping, tubing, and valves.
   b. Installation and operating instructions and test procedures.

c. Recommended maintenance instructions and schedules.
d. Listing of special tools required for maintenance and testing.
e. Warranties, including those of the original manufacturer.
f. Piping and instrumentation shop drawings.
g. Electrical and wiring-termination schematics.
h. Test data indicating compliance with all normal and specified functions and processes, including dispenser authorization, dispenser valve-flow control, dispenser pulse-count output for mass, pump start-stop, pump ESD, and faults for low- and high-pressure pump suction, high-pressure pump discharge, high-temperature pump discharge, low and high pump-oil pressure.
i. Buy America certifications.

2. Submittal books shall be grouped and tabbed by assembly or logical system, including a front index of contents. All data for a particular packaged system shall be grouped, i.e. Piping and Instrumentation Diagrams, required sub-component listings, shop drawings, test data, etc. Cut sheets or catalog sheets containing multiple product listings shall include marks to clearly indicate actual unit(s) proposed for use, and all submittals shall include a mark or reference indicating intended location of use or application, i.e. '3rd stage pressure relief valve', 'pump inlet manual ball valve', etc.

H. Design-Construction Drawing Package.

1. General. The Contractor shall prepare the engineered design-construction drawings consistent with the general location and configuration of the equipment and systems shown on the preliminary Hydrogen Fueling Facility drawing set. Deviations shall be subject to approval by ECCTA. Contractor's drawings shall include all procured alternates.

2. Drawings Provided by ECCTA.
   a. CAD Files. ECCTA will provide the Contractor with all CAD files used to prepare the preliminary project drawings
   b. The CAD will be provided as-is, and shall be field verified by the Contractor.

3. Prepare at least the following drawings.
   a. Cover sheet showing drawing list, project information, site map, project-team information and other information required by AHJs.
   b. Site and Equipment Plans showing the location of adjacent structures and property lines, new process and fueling equipment, defueling station, civil/structural work, electrical equipment and other pertinent site features. Differentiate between new and existing items using black and shaded line styles respectively.
   c. Piping and instrumentation diagram for entire proposed hydrogen-fueling facility, including compressed-air system. Indicate pipe/tubing diameters and materials on a Piping and Tubing Schedule.
   d. Piping plan showing routing of all new piping, tubing and related mechanical connections and systems, including compressed air.

e. Electrical drawings, including a single-line diagram, load schedule, block wiring diagram, grounding-bonding plan, conduit and cable schedule, electrical conduit plan, required utility details, and hazardous-area plan. Includes depiction of electrical upgrade, backup genset, transfer switch, motor starters/VFDs and power distribution and wiring for all hydrogen, controls and lighting loads. Also provide details for electric-utility upgrades as required by and coordinated with PG&E electric utility.
f. Structural drawings showing equipment foundation for all new equipment, walls and other load-bearing items.
g. Civil drawings showing project-plan location, horizontal control, property lines, adjacent roadways, vehicle ingress/egress, revised pavement contours as required, sections and details for demolition, paving, trenching, fencing, gates, bollards and safety signs/equipment.

4. Drawing-Submittal Sequence. Provide drawing submittals at the following development levels:

    a. 30% schematic design
    b. 60% design development
    c. 95% construction documents (plan check submittal)
    d. 100% construction documents (plan-check corrections / approved drawings)

5. Other Design Requirements
    a. Stamping By Professional Engineer. All drawings called for under article 1.04.G shall be stamped by an appropriate California-licensed Professional Engineer, in accordance with California law.
    b. Format. All drawings shall be prepared on 'D' sheets at 24" x 36" or 30" x 42" 'E' sheet. All plan drawings shall include a graphic scale, and a statement of the scale used.
    c. AHJ Corrections. Design revisions and corrections required by AHJ's shall be provided by the Contractor as part of the project scope. The contractor shall submit PE-stamped drawings to City of Antioch Department for review, make corrections as required, and obtain approval for construction from the AHJs.

I. Haz-Op Analysis.

1. The scope items listed below shall be provided as deferred submittals. These deferred submittals shall reflect the actual equipment, components and integrated system being provided by the awarded contractor and are subject to review and approval by ECCTA and the AHJ.
    a. Submit a Hazop analysis of the entire hydrogen fueling system to the AHJ as required for plan review. ECCTA's engineer of record shall participate in all phases of the Hazop study.

b. The Contractor's bid shall include a stated dollar allowance to accommodate changes to the design, equipment and site installation resulting from the Hazop analysis. If the actual cost of the modifications differ from the bid allowance, the incremental cost increase or decrease will be negotiated between the Contractor and the ECCTA, to include backups for labor and materials costs.
c. Submit a hazardous material inventory statement (HMIS) and hazardous material management plan (HMMP) as required by NFPA 2 and the AHJ.
d. Submit a 'cause & effect' diagram that details all permissiveness, alarms, and emergency shutdowns due to an ESD in accordance with NFPA 2 and the AHJ. The diagram shall be based on the project design and any design revisions as agreed by the Contractor and ECCTA.
e. Submit an operations & maintenance manual as required by NFPA and the AHJ.
f. Submit documents for all packaged equipment that includes: general arrangement, piping & instrumentation diagram (P&ID), wiring schematics, and bill of materials.
g. Submit design plans and documentation for a manual fire alarm and fire alarm control panel as required by NFPA 2 and the AHJ.
h. Submit shop drawings for all vacuum jacketed piping.

2. Third Party Coordination. The Contractor shall engage and pay for a third party to supervise and verify the Hazop process. The third party shall be approved by the Contractor and ECCTA. Contract with the Hydrogen Safety Panel or approved equal.

1.05 QUALITY ASSURANCE

A. Provide all materials, components, and services in accordance with a quality control program that assures compliance with the applicable codes, standards, and this specification.

B. Provide qualified test personnel to perform test and inspection functions. Personnel qualifications shall be made available to ECCTA upon request.

C. All instruments, controls, and other electrical equipment must be qualified for the hazardous area classification where the equipment is to be installed.

1.06 PREPARATION AND COORDINATION

A. Although such work is not specifically indicated, furnish, and install all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure and complete pre-packaged component.

B. Coordinate accepted equipment changes from those scheduled or specified with other equipment affected.

1.07 PRODUCT DELIVERY AND HANDLING

A. Materials shall be delivered in the manufacturer's original unopened packaging, labeled to indicate the manufacturer's name and product identification.

B. Delivered materials shall be handled to ensure that the packaging and labeling remain intact until installation of material. Materials shall be stored and protected from ground contact and from the elements.

C. All containers, including internal containers, shall be indelibly labeled with item description(s) per title.

D. Misdelivered equipment, material and packages shall be corrected at the Contractor's expense.

1.08 PAINTING AND FINISH

A. All packaged and manufactured equipment shall be delivered to the work site with specified factory finish. Should the finish be damaged in transit or during the installation, it shall be finished to present a neat workmanlike appearance to the satisfaction of the ECCTAprior to acceptance.

B. All other materials and components installed or fabricated on site shall have a suitable multi-coat industrial-grade finish applied, as specified elsewhere in this Specification.

1.09 RECOMMENDED SPARE PARTS LIST (RSPL)

A. Prepare a listing of all parts on a RSPL form for each individual piece of equipment or system that is of a maintenance significant nature.

B. Submit the RSPL to the ECCTAfor approval. Upon receipt of the approved RSPL, procure, expedite, receive, inspect, check, and store spare parts at a location designated by ECCTA. Procurement of spare parts will be under a separate contract than the facility procurement described herein.

1.10 INSPECTION, TESTING AND ACCEPTANCE

A. General. The Contractor shall be responsible for proving to the satisfaction of ECCTAthat the minimum specifications for the Equipment and installation work, as described herein, have been met. ECCTAwill require the execution of various inspections and tests, including their documentation, prior to accepting the Equipment as complete and in compliance with these specifications. Such inspections and tests shall be based on recommendations by the Contractor, as well as the hydrogen process-skid manufacturer and manufacturer/vendors of various components and systems of the Facility. If ECCTAdetermines that such recommended inspections and tests are not adequate, ECCTA shall require additional inspections and tests as needed. Inspections, witnessing of tests, or waiving of any such procedure by ECCTAshall not release the Contractor, or other vendors from full responsibility for compliance with equipment, material, and functional requirements according to the project specifications.

B. Requirements. Contractor shall supply ECCTA all recommended acceptance and testing procedures of main vendor and other vendor in-process manufacturing, factory pre-delivery

functional demonstration, installation, and start-up for at least the components and systems described as:

1. Hydrogen process/pump skids.
2. Dispensers.
3. Priority Valve Panel.
4. Controller/PLC.
5. Fuel-management terminal
6. Fluid Heat Exchanger used for precooling dispensed hydrogen.
7. Performance test demonstrating satisfactory flow rate of hydrogen-fueling system.
8. ESD system.
9. Flame and gas detection systems.
10. Temperature compensation of dispensers.

C. Contractor shall also provide test equipment, material, and labor to conduct on-site testing and start-up procedures. Such procedures will be provided to ECCTA to include each of the above components and systems. All tests shall be made available to be witnessed by ECCTA to determine compliance with specifications.

D. Documentation and Notification. Recommended procedures for main-vendor manufacturing acceptance and testing shall be submitted in writing to ECCTA not more than thirty days after contract award, or not later that two weeks prior to start of tests, whichever occurs first. Complete pump skids, dispenser, storage-vessel assemblies must be accompanied with factory test, inspection reports and manufacturer warranties at or before delivery to site. Notification that such procedures will be witnessed by ECCTA will be given at least 48 hours prior to start of construction test/inspection, and at least two weeks prior to factory test, unless otherwise agreed to by vendor; additionally, ECCTA will give notice of required modifications to inspections and tests originally recommended, if any, at this time.

E. In-Process Manufacturing Inspections. Included shall be recommendations for inspections and tests, if any, to be performed at 50-percent completion, and again at 100-percent completion, of cryogenic tank and of pump-skid manufacture/assembly at manufacturers' site. Purpose of inspections shall be to confirm schedule and design compliance, and at 100-percent complete inspection and testing, for functional verification of all relevant components and systems. Inspections and tests may be conducted by ECCTA or ECCTA's representative at ECCTA's discretion.

F. Criteria. All design performance pass/fail criteria to be recommended by the Contractor and other vendors shall be submitted with the Contractor bid proposal as limits of acceptability for performance requirements of all equipment provided as required herein.

G. Acceptance. ECCTA will only accept facility as complete after Contractor provides compliance with the requirements under article 1.10, and article 3.08.

1.11 WARRANTY

A. General. The Contractor shall provide a written 12-month warranty that the equipment and related materials specified herein and as shown on the associated project drawings be free from defects in design, installation, workmanship, and construction for a period of 12 months commencing with the final acceptance of the equipment package by ECCTA as being complete. The Contractor shall also provide a written warranty that all components, systems, and materials specified herein shall be free from defects in design and manufacture for a period of five years, commencing with the acceptance of the Facility by ECCTA as being complete. Contractor shall pay all costs for parts, labor and travel as required to satisfy warranty claims.

B. Original Component Warranties. All manufacturers' original standard specifications and warranties for material, components and assemblies shall be forwarded to ECCTA. These are in addition to the comprehensive Facility warranty that is the responsibility of the Contractor. Contractor shall design the system and complete all work in such manner to not invalidate any applicable Original Component Warranties.

C. Warranty Enforcement. In case warranty is invoked, Contractor shall ensure that the appropriate installer, supplier, and/or manufacturer, i.e. component manufacturers and/or sub-vendors and suppliers(s), shall respond with suitable repair within 48 hours of notification. This shall be provided with no cost to ECCTA including any cost for labor, parts, and tools.

D. Consumables. All consumable parts and material including lube oil for normal operation of equipment shall be provided by contractor during construction and commissioning process until substantial completion of project.

2 - PRODUCTS

2.01 GENERAL

A. New Equipment. Equipment to be supplied by the Contractor shall be in new condition unless otherwise permitted by ECCTA, in writing, and shall include all components and systems necessary to operate the respective system or component, pumps, prime movers, gas-storage vessels, dispensers, gas-flow control systems, safety systems, skid, frame, heat exchangers, and other related components and systems as described herein.

B. Pressure Ratings. All piping, tubing, unions, vessels, valves, filter bodies and appurtenances shall have a manufacturer's rated normal working pressure that is equal to or above its respective normal duty pressure, with a burst-safety factor as specified by either ASME B31.12, or the ASME Boiler and Pressure Vessel Code, as appropriate. Such ratings shall be indicated on component and material submittals to be approved by ECCTA.

C. Electrical Classifications. All electrical and electronic components shall be installed and configured appropriately for their respective service conditions and locations. All such

installations shall comply with NFPA 70 standards for Class I, Group B, Divisions 1 and 2, and as stipulated in NFPA 2, 2020, or other requirements as called for by AHJs.

D. Material Compatibility. Contractor shall be responsible for providing and installing components and materials throughout the entire Facility that are compatible with, and do not adversely react to other components or material that could be expected to come in contact during normal operation.

E. Operating Environment. All equipment, components, materials, displays, and systems provided shall be designed for normal operation in an un-shaded environment with ambient temperatures ranging between 20ºF and 115ºF, unless explicitly excepted elsewhere in this specification section.

2.02 BULK LIQUID HYDROGEN (LH2) TANK

A. General. These requirements apply to the cryogenic tank used for the storage of bulk liquid hydrogen (LH2).

B. Design. The tank MAWP shall not be less than 150 PSIG with a design temperature range of -253°C to 93°C. The inner vessel shall be constructed in accordance with ASME Boiler and Pressure Vessel code, Section VIII, Division 1 and CGA-341. All surfaces in contact with hydrogen shall be thoroughly cleaned for oxygen service. The outer vessel shall be designed to withstand 30 PSIG critical collapse pressure per CGA-341. Head and shell materials of construction to qualify for use in -40°C.

C. Storage capacity. Shall have a minimum storage capacity of 15,000 gallons (US water volume). The corresponding total product weight at 93% (CGA-341) shall be 3,760 kg of hydrogen.

D. Tank insulation. The inner vessel shall be super insulated with a vacuum pressure of 10^{-6} torr. A vacuum thermocouple gauge tube shall be provided for measurement and verification of the vessel vacuum level.

1. Evacuation valve: Saunders

2. Thermocouple tube: Hasting

3. Thermocouple Isolation Valve: Hoke

E. Boil-off rate. The boil-off rate shall not exceed 0.75% by volume in a 24-hour period.

F. Pressure-build coil. Tank shall include a side-mounted vaporizer rated for 280 kg/hr at 5 PSID sub cooling and 30 PSIG operating pressure.

G. Piping. All annular piping shall be made of 304/316 stainless steel, schedule 10, SA240. All exterior piping with threaded connections shall be 304/316 stainless steel, schedule 80. All nozzle connections shall be no higher than 6 feet from the base of the tank legs.

H. Nozzles. The cryogenic tank shall, at minimum, include the following nozzle types and their corresponding quantities. Some nozzles will need to be prepackaged with factory installed manual isolation and pneumatically actuated isolation valves.

1. (QTY.1) Top Fill – shall include a dedicated vacuum jacketed manual and pneumatic actuated isolation valves.

2. (QTY.1) Bottom Fill – shall include a dedicated vacuum jacketed manual and pneumatic actuated isolation valves.

3. (QTY.2) Pump Liquid Feed – shall include a dedicated vacuum jacketed manual and pneumatic actuated isolation valves. This line shall have a 10-degree downward slope from the outer vessel to the bayonet.

4. (QTY.2) Pump Vapor-Return – shall include a dedicated vacuum jacketed manual and pneumatic actuated isolation valves.

5. (QTY.1) Pump Vapor Auxiliary - shall include a dedicated vacuum jacketed manual isolation valve.

6. (QTY.1) Primary Safety Vent – shall be tied to a manually operated 3-way diverter valve and redundant safety relief valves and redundant rupture discs.

7. (QTY.1) Secondary Safety Vent

8. (QTY.1) Pressure-Build Feed

9. (QTY.1) Pressure-Build Return

10. (QTY.1) Full Trycock

11. (QTY.1) Vapor Pressure and Liquid Level Sensing Port

I. Acceptable manufacturers:

1. Chart Industries

2. Taylor Wharton

3. Or approved equal.

2.03 VACUUM-JACKETED PIPING

A. General. Provide pipe fabricated with an inner pipe to carry LH2 and an outer pipe to support a vacuum jacket around the inner pipe. The space between the pipes shall be evacuated and filled with a vacuum shield to protect the liquid from heat loss. Provide rigid and flexible VJ piping sections as required, including engineered pipe sizing for tank-fill, pump-supply and pump-return lines.

B. Materials. Fabricate jacket pipe from stainless steel, schedule 10 or other approved WT. The inner pipe shall be fabricated from stainless steel and wrapped with multiple layers of insulation, using alternating layers of a heat barrier and a non-conductive spacer.

C. VJ Piping Systems and Bayonets. VJ piping systems shall be vacuum-sealed sections that are connected by cryogenic bayonets to form a continuous piping segments, spools and systems as required by the approved design. Provide quick-connect bayonet fittings that allow for fast and secure connections where appropriate.

2.04 MECHANICAL-FOAM INSULATION

A. General. This requirement applies to the cryogenic flexible Aerogel Insulations.

B. Requirements:

1. Composition: Flexible aerogel blanket laminated to a vapor retarder.

2. Density: 10 lb/ft3

3. Max use Temp: 275° F

4. Thickness: 1”

C. Performance:

1. UL 1709 – Rapid Rise Fire Test: Up to 150 min of protection

2. OTI-95-634 - Jet Fire Protection: Up to 120 min of protection

3. ISO 15665 - Acoustic Insulation for Pipes, Valves, and Flanges: Configurations meeting Class A2, B2, C2, and Shell D2 possible

D. Acceptable manufacturer:

1. Cryogel

2. Approved Equal with aluminum reflective casing.

2.05 LIQUID HYDROGEN CRYOGENIC PUMP

A. General. These requirements apply to the cryogenic hydrogen pump skid and related equipment on a skid, intended for Fuel Cell grade hydrogen.

B. Design. The cryogenic pump shall be sized to generate not less than 2 kilograms per minute of hydrogen at a minimum discharge pressure of 45 MPa and suitable for H35 dispensing. The exit temperature at the pump discharge shall be at minimum, -190°C. The pump shall be designed to operate continuously for 8-hours without interruption and run with a minimum NPSH (net-positive suction head) of 1 bar(g) at subcooled or saturated temperatures within the LH2 tank.

C. Mechanical Process.

1. All cryogenic process connections shall be a vacuum-jacketed "bayonet" type to allow for removal during maintenance and servicing. The suction and vapor-return lines shall include a vacuum-jacketed, manual globe valve with an extended stem, to allow for manual isolation during maintenance.

2. The pump discharge shall include an over-pressure protection device set to relieve pressure at or below the lowest rated component in the process. This exhaust piing from the over-pressure protection device shall be separated from all drain, manual vent, or bleed valves used for maintenance and troubleshooting.

3. The pump discharge shall include a backflow prevention device.

4. The pump discharge shall terminate with a ¾" medium pressure, cone, and thread connection.

5. A pump seal leak detection system shall be provided and send a signal to the PLC.

D. Instrumentation. At minimum, a pressure and temperature sensor with either a local or remote transmitter shall be installed at the pump suction, vapor-return, and discharge. The pressure and temperature sensor shall be suitable for hydrogen rated for the pressure and temperature at the process conditions. All instrumentation shall terminate in an outdoor rated NEMA 4X junction box, mounted on the skid.

E. Electrical hazard: all electrical components shall be rated for Class 1, Division 2, Group B. The pump motor shall have a protection degree of IP55 with a cooling method per IC 411-TEFC.

F. Power. The main cryogenic pump motor and any auxiliary equipment on the prepacked skid shall have maximum power consumption of 125 HP (93 kW) at 480 VAC, 50-60 HZ, 3 phase.

2.06 HEAT EXCHANGERS

A. General. A combination of a fluid heat exchanger and an ambient vaporizer shall be used to raise the hydrogen temperature at pump discharge, to ambient conditions. The exchange of

heat will occur between "cold hydrogen" from the pump discharge with "warm hydrogen" from ground storage. "Warm" hydrogen flowing from ground storage shall be cooled during this process prior to dispensing into vehicles. Electric heating shall be avoided.

B. Fluid heat exchanger types: The following types of mechanisms can be used for the cold hydrogen to warm hydrogen, fluid heat exchanger:

1. Shell and tube heat exchanger

2. Plate heat exchanger

3. Diffusion bonded heat exchanger

C. Fluid Heat Exchanger.

1. Heating removal capacity. The fluid heat exchanger shall be capable of removing up to 150 kW of heat from ambient gaseous hydrogen at 0°C to +40°C to be cooled down to -40°C to -20°C at a max flow rate of 7.2 kg/min.

2. Design pressure. Shall have a minimum MAWP of 1,000 bar(g).

3. Design temperature. The fluid heat exchanger must exchange heat between cold hydrogen coming from the pump discharge with warm hydrogen coming from ground storage. The inlet and outlet design temperatures at the designated flowrate is summarized below.

a. Cold Hydrogen Side:

1) Design inlet temperature: -190°C (minimum) at 3kg/min (maximum)

2) Design outlet temperature: 0°C (minimum) at 3kg/min (maximum)

b. Warm Hydrogen Side:

1) Design inlet temperature: ambient temperature (0°C to +40°C) at 7.2kg/min (maximum)

2) Design outlet temperature: -20°C to -40°C (T20 to T40 precooling per SAE J2601/2) at 7.2 kg/min (maximum)

D. Ambient Vaporizer.

1. Construction. Shall be constructed of 304/316 stainless steel piping (SA 312) and tubing (SA 213) with aluminum fins (SB221-6063-T5) in accordance with ASME code Section VIII Division 1 2019 edition, with "U" designator.

2. Process connections: inlet and outlet connections shall be ¾" medium pressure, cone, and thread.

3. Design Pressure & Temperature.

    a. Operating temperature range: -253°C to +66°C

    b. MAWP: 7,251 PSIG (500 bar(g)) at +66°C

    c. MAMT: 7,251 PSIG (500 bar(g)) at -253°C

2.07 CHILLER

A. General: Gaseous hydrogen shall be precooled to 20°C up to -40°C before dispensed into vehicles using a gas-condition system or chiller.

B. Fluid. The heat exchanger fluid used shall be Freezium-60, Dynalene HC-50, or an approved equal. Any substitutions shall be non-toxic and non-flammable.

C. Heat Removal Capacity. The chiller shall provide variable cooling up to 50 kilowatts of heat removal from the gaseous hydrogen flowing to the dispensers.

D. Heat Exchanger. A shell and tube, diffusion bonded, or plate heat exchanger shall be used as the mechanism for cooling gaseous hydrogen. Design conditions:

    1. MAWP: 1,000 bar(g) or 14,500 psi(g)

    2. Hydrogen design inlet temperature range: 0°C up to +40°C

    3. Hydrogen design outlet temperature range: -40°C to +20°C.

2.08 MEDIUM-PRESSURE TUBING

A. General. All lines downstream of LH2-pump discharge and GH2-comoressor discharge shall be MP tubing fabricated from austenetic, cold drawn stainless-steel tubing.

B. Material. Tubing shall be manufactured in accordance with ASME B31.3 Chapter IX standards using UNS S31600/S31603, 316/316L stainless steel material.

C. Operating Conditions. Tubing shall be listed for -423ºF and 14,500 PSIG, or as approved by ECCTA.

D. Fittings for MP Tubing. All fittings for MP tubing shall be cone and thread type.

    1. General. High-pressure tube fitting that creates a seal by using a male cone on the tube end which is inserted into a female cone with threads on the fitting body, creating a tight metal-to-metal seal through a combination of the conical shape and threaded connection.

2. Installation. Tubing shall be carefully prepared with a specific and matched cone shape and thread before connecting to the fitting, requiring specialized tools and techniques. Include gland nut that is tightened to compress the collar onto the tubing.

2.09 GASEOUS COMPRESSED HYDROGEN (GH2) GROUND STORAGE

A. Stamping. All vessels requiring ASME stamping shall also be stamped with the following:

1. MAWP.

2. The water volume of the vessel.

3. ASME U-stamp.

4. Test Pressure

5. Leak Test Pressure

6. Test Date

B. Design. Each vessel shall be suitable for hydrogen with a minimum MAWP of 7,252 PSIG at 23°F. Vessel assembly shall be tested 110% above design pressure using 100% nitrogen. Package shall be shipped with 20 PSIG of nitrogen.

C. Process. Each vessel shall be prepacked with manual isolation valve, pneumatic-actuated automatic emergency shut-down valve.

D. Valve. Each vessel shall have an ASME-stamped, pressure-relief protection device and can be isolated from storage without blowing down the vessel for maintenance and replacement.

E. Fire-protection. All primary manual and automatic isolation valves shall be installed within an outdoor-rated, NEMA 3 or valve cabinet for which a gas and flame detector can be installed within to detect either a leak or fire. The interior valve cabinet shall be paired with a 2-hour fire rated, intumescent coat. A ½" process connection for a nitrogen purge shall be supplied to purge oxygen from the cabinet if a fire is detected.

F. Frame construction. Vessel frame shall comply with AISC, ASCE 7-16, IBC 2020, CBC 2020.

G. Acceptable manufacturers:

1. FIBA Technologies

2. CP Industries

3. Approved equal

2.10 PRIORITY PANEL

A. Definition. The Priority Panel shall serve the function of directing high-pressure, ambient gaseous hydrogen to high, medium, low bank storage or to the dispenser(s). This will be accomplished by using a combination of control valves, check valves, pressure transmitters, and stainless-steel medium-pressure lines configured in a manner that will allow for refilling individual storage banks and directing flow to a specific dispenser. All control valves, check valves, instrumentation, tubing, and joint connections making up the Priority Panel shall be housed inside a NEMA 3R enclosure. Refilling each gas storage bank will be based on a user-defined and adjustable pressure set-point. Each gas storage bank must have a dedicated pressure indicator and pressure transmitter used for logic control.

B. Control Valves. Control valves shall be either pneumatic or electric actuated valves. If pneumatic actuation is used, all solenoid pilot valves shall be housed in a separate NEMA 4X enclosure and remotely located outside of the hazardous area, unless suitable for Class 1, Division 2, Group B. Air, nitrogen, or an inert gas must be used for pneumatic actuation, no exception. If electric actuation is used, voltage input shall be limited to 24VDC or 120VAC for each control having a cumulative maximum current draw of 20A.

   Control valve will be from any of the listed manufacturers below.

   1. Parker Autoclave
   2. High Pressure Technologies
   3. Maximator
   4. Butech
   5. Tescom
   6. Seitz
   7. Or approved Equal

C. Fittings. The standard fitting type installed shall be 316 stainless steel, medium-pressure, cone and thread fittings suitable for hydrogen and will be from one of the listed manufacturers below.

   1. Parker Autoclave
   2. Swagelok
   3. High Pressure Technologies (HiP)
   4. Maximator
   5. Butech
   6. SPIR STAR
   7. Or approved equal

4. Size. The Priority Panel shall have a maximum dimension of 72” (height) x 60” (width) x 24” (depth).

D. Flame and Leak Detection. hydrogen gas and flame detector(s) mounted within the NEMA 3R enclosure and when triggered will activate the ESD system.

E. Design. 316 stainless steel, medium pressure rated to a minimum of 15,000 psig tubing shall be installed for all hydrogen lines. The standard fitting type shall be medium-pressure, cone and thread . The fittings shall be of the same manufacturer type. All valves and components in contact with hydrogen shall be suitable for hydrogen at the Maximum Allowable Working Pressure (MAWP) of 15,000 psig between -40°C to +40°C. All field connections shall have an upstream manual isolation, needle-type, valve.

F. Performance. All valves, components, and piping that make up the Priority Panel shall be suitable for gaseous hydrogen and adequately sized for a peak flow rate of 7.2 kg/min per dispenser, having less than a 2% pressure drop across the entire operating pressure range. The Maximum Allowable Working Pressure (MAWP) shall be designed to 15,000 psig, minimum. A protection relief device shall be provided for each inlet at the MAWP. The design temperature range shall be rated for -40°C to +85°C.

2.11 INSTRUMENTS AND CONTROLS FOR PROCESS SYSTEM

A. General. pump-system controls, including start and shutdown shall be electronic and shall operate automatically and unattended.

B. Control System. Remote Programmable Numerical Control systems in a NEMA 3-R enclosure shall be used to control all pumps, valve panels, and dispensers. System shall be a master type and be installed in a non-hazardous area. Modify program to accommodate and comply with all equipment and required functions. System shall be designed in accordance with the following:

1. General. Provide an Allen Bradley (or equivalent) PLC-based controller for monitoring of digital or analog system functions and states as recommended by pump-skid manufacturer. PLC shall connect to and monitor the following items at minimum:

   a. Suction pressure
   b. Suction temperature
   c. Discharge pressure
   d. Discharge temperature
   e. Hydrogen gas-leak detection

2. Performance Specification. This controller shall be capable of controlling operations of the pumps as required. All set points for this controller shall be modifiable at a remote input/output display panel and shall also be modifiable remotely by computers through Ethernet. Each pump shall be controlled by the remote master PLC as required.

3. Programmability & Software. ECCTA shall have unimpeded access to modify set points and operating parameters upon completion of the Work. Contractor shall provide PC-host software (or similar) as required to modify controller program, that resides on ECCTA's network, including providing training and any specialized PC-interface connector. Contractor shall provide complete and annotated source code for PLC-control program to ECCTA in electronic format upon completion. Software-development platform for PLC program shall be commercially available at the time of commissioning.

4. Local Display. Provide local touch-type LCD HMI. Screen shall be 7" color with sun protection as required.

5. Remote Supervision. Provide web-based access to master PLC for supervision at any time via the ECCTA's local network as well as via the Internet. ECCTA shall have the ability to view set points, view all system reports and logs, and view real-time status of all available processes. PLC shall be able to generate reports on demand. These reports shall include fault history, ESD events, gas detection events, etc. and shall provide date, time, and location ID of each event.

C. Telecom. All set points for the PLC shall be modifiable at a local input/output display panel and by Internet-based IP access. Controller system shall also provide automatic dial-out function SMS or auto-voice notice in case of fault. Automatic fault annunciation function shall include fault-code indication in message.

D. Performance Specification. Logic in PLC shall allow all pumps to operate concurrently, based on demand from the dispensers and on storage pressure, which shall be adjustable. Controller shall facilitate incremental pump startup based on threshold-storage pressure. The number of pumps allowed to start shall be limited based on time of day.

E. Data Collection. The PLC system shall gather operating data per specification article 2.07.B.1 on a scheduled selectable time (default as 2 minutes) and log data for trending analysis. Provide up to seven continuous days of trending data in retrievable memory. This data shall be retrievable remotely via IP connection by ECCTA.

F. Shutdowns, Alarms and Annunciators.

1. General. All shutdowns, alarms and annunciators shall be monitored by the master PLC, and shall be electronic and adjustable.

2. Specifications. The first column, below, lists the relevant component or system. The second column lists the corresponding required action (i.e. shutdown, alarm, indicator):

3. Pumps:
   a. Low suction pressure: Shutdown
   b. High suction temperature: Alarm
   c. Low discharge pressure: Shutdown
   d. High discharge pressure: Shutdown

e. Low lube oil pressure: Shutdown

f. High vibration:

- Pump skid frame exceeds 0.8” ips for >1sec. Shutdown
- Pump skid frame exceeds 0.6” ips for >1sec. Alarm

g. 20% LEL hydrogen detection level: Alarm

h. 50% LEL hydrogen -detection level: Shutdown

G. Additional Requirements. In addition to the devices previously listed, the panel shall include:

1. Manual shutdown switch.

2. Key lockout.

3. Lights to indicate main power is energized, condition light for each pump indicating “running”, “standby” or “fault.

4. Pump automatic-start-cycle failure.

5. First-out fault annunciation.

6. An emergency shutdown switch shall be provided at the control panel. The ESD switch shall shut off the pump motor power supply and close the actuated suction valve at each pump. ESD system shall be expandable to other locations on a common 24VDC or 120VAC circuit.

7. Hour meter. Each pump shall have a non-resettable hour meter to record cumulative time of operation and may be part of a multi-functional digital display with a backup battery.

8. Motor overload. The annunciator need not specifically call out "pump motor overload" or "cooler motor overload". Rather the annunciator may indicate a message such as "pump motor failure".

9. Temperature for high discharge temperatures shall be measured at the outlet of each cylinder.

H. Instrumentation.

1. Temperature Measurement. Thermocouples or resistance thermometer devices (RTDs) shall be used to sense temperature for control functions.

2. Pressure Measurement.

• Required Pressure Gauges. Pressure gages shall be provided for pump suction, and final pump discharge for each pump.

- Calibration Valve. All pressure switches and transducer/transmitters shall have a dedicated block-and-vent valve to facilitate pressure calibration. The block valve should be lockable with a wire and lead seal.

I. Timer Control. PLC system shall include ability to program the start/run of any pump based on time of day (i.e., no start unit B between 5:30 AM and 6:00 PM daily).

J. Acceptable Manufacturers.

1. Allen Bradley.

2. Or approved equal.

2.12 EMERGENCY SHUTDOWN SYSTEM

A. General. An emergency shutdown system shall be provided that, when activated, shall interrupt the power supply to the pump motors, shut off the inlet hydrogen supply valve to the pumps and shutoff the electrical power and the discharge of hydrogen to the dispensers. The system shall be controlled in the control panel, common to all pumps, be on a normally closed circuit and shall be expandable so that additional switches may be added. Buttons shall be push-in mushroom-head type and appropriately rated as required by location.

B. Specification.

1. Circuit. ESD shall be 120VAC normally closed serial-type circuit, so that the opening (activation) of any ESD switch shall cause an ESD fault. Control panel shall require manual reset from ESD activation.

2. Buttons. ESD buttons shall be red mushroom-headed press-to-open type and must be pulled out to reset. Button shall have a protective fence flush with its face to minimize accidental pressing. Buttons shall be rated for class-1 division-2 service if located within a hazardous area.

3. Locations. Install one ESD button on or adjacent to fuel-management terminal, and one 25-75 ft from dispenser.

4. Wiring. Provide serial wiring (normally closed / fail open) for 120V ESD circuit through each ESD button and terminate at PLC I/O.

2.13 HYDROGEN DISPENSERS

A. General.

1. Dispensers shall have backlit displays and indicate flow and hose pressure indication and total dispensed. Dispenser shall be 3rd party approved for hydrogen service and comply with. CSA- HGV-4.3. All dispensers shall be from a common manufacturer. All mechanical and electrical POC's shall be at top of dispenser cabinet. Dispenser shall be

capable of delivering H35 fills (350 Bar temperature compensated to 15°C, based on control logic housed in the dispenser.

2. Interface With Fuel-Management Terminal. Dispenser shall be configured for connection to a fuel-management terminal, so that terminal must authorize the dispensing of fuel, and so that hydrogen fuel consumption mass is transmitted to the terminal. Furnish connections between each dispenser and the fuel management terminal for the following signals: handle switch, low-voltage meter pulser and 120V 'authorize' signal. Conductors of different voltages shall be routed in separate conduits.

3. Pulse Calibration. Dispenser shall generate 1000 pulse-counts per kg of hydrogen dispensed.

4. Vent. Provide 1" SS bulkhead outlet fitting for PRV and nozzle vent.

B. Transit Dispenser One-Hose. One-hose one-meter high-flow transit PLC control hydrogen dispenser with one-line supply.

1. Specifications. Dispenser shall include one Coriolis-type mass-flow meter calibrated for hydrogen, and vehicle (hose) pressure indication for each hose at exterior of cabinet and shall have a backlit data display. Except as allowed otherwise, all hydrogen tubing and fittings shall be 3/4" x 0.516" wall. Vent tubing shall be 3/4" x 0.516" wall. A means of preventing the escape of hydrogen from the fast-fill system in case the dispenser is knocked from its base shall be provided, such as a vibration switch mounted inside the cabinet. Dispenser-control valves shall be ball valves. The transit dispenser shall be capable of 7.2 kg/min. hydrogen fueling rate for H35 bus fills.

2. Filters.
   a. Particulate Filtration. Dispensers shall at least one final 5-micron filter and a block and bleed valve arrangement to facilitate servicing of filters. Filters shall be located upstream of the fueling hose assembly no greater than 1 m from the hose pressure and temperature sensors.
   b. Startup Cleaning and Filtration. Contractor shall submit a recommended pipe-cleaning method for approval by ECCTA prior to startup.

3. Hoses And Nozzles. Primary hose shall be ¾" x 14 ft. long with no less than 7100 PSIG MAWP, shall have retractor and breakaway mechanisms with check valves, and be electrically conductive. Retractor shall keep hose from contacting ground when nozzle is in its keeper. Nozzle shall be SAE J-2600 compatible and rated for high flow for heavy duty vehicles.

4. Operation. Dispenser shall be controlled by internal logic controller and shall include internal one-bank buffer-type operation with 1" tubing connections and flow path throughput, except for the meter.

5. Controller. Furnish with local PLC controller and proportioning valves system to preauthorize each pair of dispensers upon start-up with internal fill logic for delivering two simultaneous fills at a pair of dispensers.

C. Acceptable Manufacturers:

1. Gilbarco/ANGI Energy Systems
Janesville, WI
Telephone: (800) 955-4626

2. Bennett Pump Company
Norton Shores, MI
(231) 798-1310

3. Or approved equal.

D. Compatibility. Dispenser shall be certified as compatible with the control system of the pump skids and by the manufacturer of the dispensers.

2.14 FUEL MANAGEMENT TERMINALS

A. General. Provide one terminal at each fueling island and connect each to one-product H35 hydrogen dispenser. Terminal shall be class-1 divisionn-2 rated throughout.

B. Performance Requirements.

1. Each dispenser shall be configured and wired to the fuel management terminal so that the terminal limits the dispensing of fuels to authorized transactions. Dispenser valves shall remain closed until authorized to open by the fuel management terminal.

2. Fueling authorization shall be achieved by keypad entry, proximity card and mag card. Terminals shall record the volume of fuel dispensed at each service lane by reading and recording pulses generated by the respective product dispensers. All fueling records shall include employee ID number, date, time of day, vehicle ID number, fuel fill volume, odometer reading, and product reel volumes.

C. Installation requirements:

1. All conduit and wires between the fuel management terminals and other connected equipment shall be installed in PVC-coated rigid-galvanized steel. This includes AC power to the fuel island terminals, 120 VAC control wiring and low-voltage pulser wiring between the terminal and dispensers. All low-voltage pulser wiring shall be installed in a dedicated conduit.

D. Final Terminations. Final terminations and hookups of terminal wiring and initialization of terminals shall be performed exclusively by personnel trained and authorized by the fuel management system manufacturer.

1. Approved fuel-management terminal model:

a. Syntec / Fuel Master 2500.

2.15 PUMP PRIME MOVER

A. General. Each gas pump prime mover shall be a 460V AC, 60 Hz, 3-phase squirrel cage induction motor. Prime movers shall be totally enclosed and fan cooled (TEFC), having a minimum continuous power rating as required to deliver a nominal flow rate of 2 kg per minute and that can be powered by a 480V 200 A circuit breaker, with a 1.15 service factor. Prime movers shall be designed, constructed, and tested in accordance with NEMA Standard MG1-1998. Motors shall also comply with the applicable portions of the Energy Policy Act of 1992 and meet NEMA Premium Efficiency design and performance standards.

B. Ratings. Prime movers shall be rated for continuous duty at 60 HZ, single voltage with across-the-line full voltage start at 460 VAC. Prime movers shall have a 1.15 service factor. Torque characteristic shall be NEMA Design B. Motors shall have 4 poles, and a full load rated speed of 1,785 RPM. Motors shall be listed for use in Group D, Class 1, Division 2 hazardous atmospheres.

C. Service Conditions. Motors shall be suitable for continuous duty operation without de-rating under the following service conditions:

1. Exposure to ambient temperatures from 20ºF to 115ºF, plus temperature rise resulting from friction, compression, and normal system operation.

2. Exposure to elevations up to 2500 feet.

D. Electrical Design. Motor efficiency shall be evaluated in accordance with IEEE standard 112-1991, Subclause 6.4, Method B. The nominal efficiency, 3⁄4-load efficiency and guaranteed minimum efficiency shall be stamped on the motor's nameplate.

E. Motor Insulation. Motor insulation shall be a non-hygroscopic, chemical and humidity resistant system. The minimum thermal rating of the system shall be Class F, as defined in NEMA MG1-1998. The stator windings shall meet or exceed NEMA MG1-1998, Part 31. Stator shall be double dipped and baked in varnish to form a heavy build that exceeds the test criteria of moisture resistance per NEMA MG-1. When operated at rated horsepower, voltage and frequency, the temperature rise of the stator winding shall not exceed 80°C, when measured by winding resistance. Motor insulation shall be designed and tested to withstand 2000 Volt transients without premature motor failure and have no cable limitations in motor application.

F. Service Factor. Motors shall be rated for a 1.15 service factor on sine wave power in a 40°C ambient temperature.

G. Mechanical Design. Motor shall be totally enclosed, and fan cooled (TEFC). Motor bearings have a degree of protection of IP54, from moisture and foreign material. Motors shall be equipped with ball bearings or roller bearings. Ball bearings shall be the same size on both ends. Bearings shall be re-greaseable without disassembling the fan or fan cover and provide for the elimination of purged grease through fittings extending beyond the fan cover. Inner bearing caps shall be provided for bearing retention and to prevent harmful amounts of lubricant from entering the motor interior. For direct-coupled motors, stabilized bearing temperature shall not exceed a temperature rise of 45°C, as measured by a thermocouple on the surface of the bearing house. Wire analog TC to PLC via Point I/O and set as shutdown fault per manufacturer's recommendation for excess temperature.

1. Bearings shall provide for an L-10 life of at least 26,000 hours per ANSI/AFBMA 9-1990, based on NEMA belting application limits per NEMA MG1-1993, section 14.41. The insulation system and motor leads shall be compatible with mineral oil.

2. Condensation drain holes shall be provided at the low points in the end brackets and shall be supplied with corrosion resistant breather drain plugs.

3. Ventilating fans shall be of non-sparking conductive plastic material. The proper fan rotation direction shall be indicated by a permanent label on the outside of the motor.

4. The motor's conduit box shall be equipped with a ground lug. Gaskets shall be provided between the conduit box and frame, and between conduit box base and cover, to provide a moisture resistant barrier.

5. Shouldered eyebolts with a minimum safety factor or 10 shall be provided for motor lifting. All fastening hardware shall be hex-head bolts or socket head cap screws with zinc plating. Cast iron motor components shall be primed and painted to surpass a 250-hour salt spray test per ASTM B117-90.

H. Nameplate. Motor nameplate shall be stainless steel and shall contain the following information in addition to that noted in section 10.40 of NEMA MG1-1993.

1. AFBMA bearing ID.

2. Manufacture date code.

3. Motor weight.

4. Guaranteed minimum efficiency.

I. Airborne Sound. Motor sound power level, when measured at a no-load condition, shall not exceed 90 dBA, when determined in accordance with IEEE Standard 85-1973.

J. Production Tests. The motor manufacturer shall perform production tests according to NEMA MG-1-12 and ANSI/IEEE Standard 112, Method B.

1. The following test information shall be recorded and inserted in the motors' shipper.
   a. Winding Resistance.
   b. No load current and speed at rated line voltage and frequency.
   c. Current input at rated frequency with rotor at stand-still.
   d. High-potential test.
   e. The following five unfiltered vibration readings, measured as described above: drive end (horizontal, vertical, and axial) and opposite drive end (horizontal and vertical).

K. Warranty. Motor components shall have a full five-year performance warranty when operated on sine wave power and five-year warranty on inverter power.

L. Approved Manufacturers and Models.

1. TECO Westinghouse MAX-E1 Premium Efficiency Severe Duty TEFC.

2. Siemens – Medallion Motors, Premium Efficiency Severe Duty TEFC Type CZ.

3. WEG Severe Duty TEFC.

4. US Motors Catalog No. C50P2C.

2.16 CONTROL-AIR/GAS SYSTEM

A. General. For any valves that require pneumatic drive to power the actuators, the Contractor shall install ¾" and ½" SS tubing with compressed-nitrogen supply cylinder and 100 PSI nitrogen regulator, such as at pump, valve panel or dispenser. Regulators and actuators shall be listed for compressed N2/air service, be adjustable and have a min. MAWP of 200 PSIG. Provide a ball valve immediately upstream of each regulator to facilitate regulator servicing.

B. Regulator and PIs. Provide a pressure gauge scaled to 200 PSIG immediately downstream of each regulator.

C. Nitrogen Supply. Provide two nitrogen cylinders. Each cylinder shall be 9" OD x 58" tall with 3000 PSI MAWP. Provide with 4000 PSI pressure gauges, control valves and fully charged. Include support mechanism that allows exchange of cylinders and integrate nitrogen cylinders as part of process-container system.

2.17 SITE ACCESSORIES AND EQUIPMENT

A. Safety Signs.

1. Contractor shall provide a complete safety sign package per NFPA 2 requirements as needed for the new or modified equipment. Signs shall be fabricated from metal and all materials and finished surfaces shall be listed for outdoor use and shall be UV resistant.

2. All new signs shall be bilingual with English and Spanish wording.

B. Fire Extinguishers. Provide (1) 4A:20BC fire extinguisher co-located within 20 ft of each s=dispenser and three inside equipment compound.

C. Grounding and Bonding. Ground skid at least two points and bond all metallic equipment and components on the skid, as well as the dispenser and fuel-management terminal.

D. Protection. See article 3.04.A for requirements for protection of equipment.

E. Walk-Over Bridges. Provide per drawings.

2.18 GASEOUS HYDROGEN-RECOVERY COMPRESSOR SYSTEM

A. General. This system is intended to recover GH2 from the LH2-tank ullage and compress it for storage in the GH2-storage vessels.

B. Additive Alternate and Base Scope. Provide system only if elected as alternate by ECCTA. If the system is not procured by ECCTA, base scope shall include:

1. Space provision for future installation of compressor skid.

2. Suction-supply outlet at LH2 tank with manual ball valve and capped port.

3. GH2 inlet line at priority panel with manual ball valve and capped port.

4. Control I/O port capacity to accommodate future control of system.

5. Electrical power to accommodate future installation of system with VFD.

C. Sizing and Function. Compressor shall be diaphragm type for high-purity operation and shall be sized to maintain a tank pressure of between 50 and 75 PSIG, and discharge pressure of 10,000 PSIG.

D. Configuration and Control. The compressor suction shall be connected to a dedicated tank-outlet port common to the top of the LH2-tank primary vessel, and shall include an automatic ball valve. The valve shall be controlled to automatically open upon the tank-ulage pressure reaching 75 PSIG, and shall close when the pressure falls to 40-50 PSIG, with these values being adjustable. Include a 200 PSI pressure gauge and manual ball valve immediately upstream of the supply-control valve. Compressor shall include suction- and discharge-check valves. Furnish with weather-tight enclosure, blowdown recovery, inlet regulator, interstage and discharge cooling, inverter-duty TEFC drive motor(s), and matching VFD(s) as required.

E. Discharge. Route compressor discharge to inlet of priority-valve panel and protect other pump-discharge sources with check valves. Include 10,000 PSIG pressure gauge and manual ball valve on discharge line.

3 - EXECUTION

3.01 GENERAL

A. Execution is described in the respective Product description of this section, except as otherwise described within article 3 of this section.

B. All components and equipment shall be installed according to the respective manufacturers' instructions and recommendations. Industry-standard practices shall apply if no manufacturer instructions exist.

C. Contractor shall coordinate location and timing of all excavation and open trench work that may affect the normal movement of vehicles and personnel on the job site. Contractor shall also provide trench plates as required for the traffic they may be exposed to until trenches are repaired to match surrounding grade.

3.02 WORKMANSHIP

A. Labor shall be performed by mechanics skilled in their particular trade. Pipe and equipment shall be installed square and plumb accessible for proper operation and service. Installation shall be consistent with completeness and appearance whether concealed or exposed.

B. Seals and Sealants. Seals and sealants that are exposed to hydrogen shall be compatible with hydrogen as well as the diester-type pump-lube oil as applicable.

3.03 SAWCUT AND REPAIR

A. Demolition. All concrete and AC pavement that is excavated shall be saw cut in neat and straight lines. No saw overcuts will be allowed.

B. AC Pavement Repairs. Repairs in any disturbed AC pavement, including for trench work, shall be made to match pre-demolition conditions, including thickness and approximate color. Apply new pavement over 6-inch Class II aggregate base, 95% compacted.

C. Concrete Repairs. Repairs, including for trench work, shall be made to match pre-demolition conditions, including thickness and approximate color. See specification section 033000 for additional requirements for concrete repairs.

3.04 PROTECTION OF EQUIPMENT

A. General. Hydrogen pumping, compression, storage and dispensing equipment shall be protected against vehicular impact. The hydrogen equipment compound and dispensers shall be protected by concrete-filled pipe bollards as located on the drawings, or by means otherwise required by the AHJ’s.

3.05 PIPING AND APPURTENANCES

A. General. Seamless stainless-steel tubing and piping shall be used to conduct hydrogen. Cap any unused (i. e. future) tubing and/or piping.

1. Service Pressure. Piping, tubing, and appurtenances downstream of pump discharge shall have a manufacturer-rated working pressure of 15,000 PSIG, in accordance with ASME B31.12, *Hydrogen Piping and Pipelines*.

2. Shipping. While in transit, all hose and flexible metal hose and tubing, including their connections, shall be protected from wear or injury, and shall be capped.

3. Markings. Hose, metallic hose, flexible metal hose and tubing shall be distinctly marked either by the manufacturer's permanently attached tag or by distinct markings every 5 feet indicating the manufacturer's name or trademark, material grade, service and working pressure.

4. Dissimilar Metals. Connections between dissimilar metals shall include dielectric insulation. This includes piping and other metallic connections.

5. Blowdown Tees. Within specified equipment, piping and high-pressure tubing systems and sections shall be equipped with blocking ball valves and blowdown tees or needle valves to facilitate equipment maintenance and lock out- tag out procedures. Blowdown valves shall discharge in a manner that directs the discharging gas safely away from the person using the blowdown valve. Discharge lines on blowdown valves shall be equipped with threaded end caps to seal the line in normal service, to prevent accidental line depressurization and gas release. Block valves and blowdown tees shall be provided at all filter locations for safe depressurization of filter housings.

B. Pipe Routing. All gas, hydrogen and control-air piping inside the hydrogen-equipment compound shall be located and routed aboveground, unless shown as dashed piping on the plan drawings.

C. Medium-Pressure Tubing.

1. Tubing Specification. Gas tubing shall be stainless steel ASME A269 cold drawn, 1/8 hard condition, seamless tubing. Tube material shall be Type 316 stainless steel.

2. Installation of Tubing and Tube Fittings. Tube fittings shall be approved for use on industrial hydrogen fueling stations. Contractor shall use tube fittings from a single manufacturer throughout a prepackaged component, to simplify use and consistency of appropriate repair parts. Type 316 stainless steel fittings shall be used with stainless steel tubing. Manufacturers’ personnel who install tubing and tube fittings shall be trained and certified by the fitting manufacturer for such activity, and proof shall be provided. Tubing shall be installed neatly and, in a workman,-like manner as per manufacturer’s design and

recommendation. All tubing shall be properly anchored, supported, or pitched and shall be protected from impact.

3. Acceptable manufacturers for cone and thread and other medium-pressure fittings:

    a. Parker Autoclave

    b. Swagelok

    c. Maximator

    d. HiP

    e. Butech,

    f. Or approved equal.

4. Valve Clearance. All valves shall be accessible for easy operation and maintenance.

D. Instrument Piping. Provisions shall be made in installation of piping and tubing to accommodate field servicing and calibration of instruments.

E. Valves.

1. General. All valve bodies shall be permanently marked by the manufacturer with their service pressure ratings.

2. Shut-off Valve. A full-port manual ball valve shall be installed immediately downstream from the connection to each pump-discharge line and the skid outlet line, to facilitate servicing.

3. Pump Discharge Check Valve. A backflow preventer (check valve) shall be provided at each high-pressure outlet, to prevent backflow into the pumps from ancillary equipment. Backflow preventers shall be suitable for use at the maximum pressure to which they are subjected.

4. Pressure Relief Valves. Pressure relief valves installed to protect each isolated piping system shall have sufficient capacity and shall be set to open at a pressure not exceeding 100% of system MAWP. Pressure relief valve (PRV) shall be fabricated with components suitable for hydrogen service, having an orifice size appropriate for the pressure and volume/rate that it is protecting.

5. Stamping. All relief valves shall be ASME rated and stamped with their set pressure and date of setting by manufacturer. Date stamp shall be less than 3 months from date of delivery to site.

6. Control. There shall be no shutoff means in the discharge line of a pressure-limiting device or between the relief valve and the pressure source that it controls.

7. Relief Valve Venting. Each relief valve shall be connected to a vent pipe constructed of schedule 80 stainless steel pipe. The vent pipe system shall be designed and constructed in accordance with CGA-G5.5, and exhaust to a safe location and shall be properly anchored and supported against anticipated vent force. Escaping gas shall not impinge on a vessel, valves, or fittings. Except for safety valves that are integral with service valves, relief-valve vent pipes on tanks shall be installed in a vertical position and shall be fitted weep holes at the low point of the pipe.

8. Relief Valve Vents. Each vent pipes shall NOT be capped with rain caps but be designed such that the entry of water and debris is prevented.

9. Prohibited Pressure Relief Devices. Fusible plugs and/or rupture plugs are prohibited for primary relief devices.

10. Actuated Valves. All valves requiring automatic actuation shall be globe type for cryogenic and needle type for gaseous hydrogen, with port sizes not smaller than the largest line connection. Actuators shall be electric or pneumatic, and matched to valve, subject to ECCTA approval.

3.06 LABELING

A. Major Equipment. The manufacturer shall provide a stainless steel or brass nameplate on each major item of equipment. The nameplate shall be mechanically affixed and shall be embossed with the manufacturer's name, address, model number, serial number, pressure rating and flow capacity.

B. Valves. The Contractor shall provide a uniform brass or stainless-steel embossed nameplate on or adjacent to valves located as listed below. The nameplate shall be mechanically affixed.
   1. Gas and hydrogen connections at the exterior perimeter of the pump skid.
   2. Hydrogen valves and connections at the valve panel.
   3. All valves for the control-air system.
   4. Hydrogen connections at the dispensers.

3.07 FIELD-STARTUP SERVICES

A. General. Contractor shall provide field-startup services from manufacturers’ authorized representatives and vendors, including on-site assistance as required for the following equipment at each of the two project sites:

   1. Pump-process skid.
   2. Dispensers.
   3. PLC controller, HMI, and remote connectivity.
   4. Valve panel.

5. Motor-starter panel.
6. Emergency-shutdown system.
7. Hydrogen gas and flame detection systems.

B. Joint Vendor Meetings. Contractor shall facilitate joint, on-site meeting(s) consisting of technicians from the Contractor, Contractor's electrical subcontractor, Contractor's subcontractor, hydrogen-skid manufacturer, dispenser manufacturer, and fuel-management vendor. First joint meeting shall be conducted upon completion of all mechanical connections, final terminations and energizing of all systems listed herein, for the purpose of coordinating debugging activities. Contractor shall facilitate as many such joint meetings as may be required to achieve final acceptance and test compliance as described under article 1.10 and article 3.06.

C. Repair and Maintenance Items. Prior to start of field work, the Contractor shall provide a complete list of repair and maintenance items to be assumed by the Contractor during construction for all hydrogen equipment and systems in scope of this contract, as well as a complete commissioning checklist that includes master PLC and retrofitted equipment with point I/O's.

3.08 ADJUSTING, BALANCING AND TESTING

A. After completion of the installation, start, regulate, adjust, and test all equipment and devices.

B. Functional Tests.

1. Leak tests of high-pressure hydrogen piping sections, systems and appurtenances shall be performed by maintaining a nitrogen charge of 110 percent of its respective working pressure for a duration of 30 minutes with charge source disconnected. The tests shall use a gauge that is scaled to between 110 percent and 300 percent of the test pressure. Piping and tubing shall also be subject to soap-bubble testing. See Mechanical General notes for test procedure.

2. Functional Testing. At minimum, successful completion of the following functional tests shall be required.
   a. ESD / emergency shutdown at all button/station locations, including required valve closures.
   b. Low suction pressure, each skid (close skid-supply ball valves).
   c. Temperature-compensated dispenser fill for each dispenser, including correct dispenser start on button, auto-stop on fill completion, and verify 'settled' fill pressure vs. ambient temperature two hours following fills. Must be within 4% of design-fill pressure, temperature compensated to 70ºF.
   d. Correct operation of fuel-management system at each dispenser, including authorization of transaction, energizing of dispenser, and recording of transaction data (fill volume, time/date stamp, event ID, and pump number).

e. Correct annunciation on controller / PLC shall be required for all test events, as appropriate.
f. Observe pump operation, including stage pressures and temperatures, and verifying function of controller, including triggering selected faults, such as high discharge pressure.

C. Reliability Test. Reliability test shall consist of fueling under normal-use conditions for 5 consecutive workdays. System shall have no failures of pump operation, normal dispenser operation, or operation of the fuel-management system during the test period. If any failure occurs, the test shall be repeated in its entirety. Final acceptance of the facility shall only be declared upon successful completion of the test. Contractor shall be responsible for all onsite coordination of troubleshooting and coordination of suppliers and trades during test.

1. Failure is defined as the occurrence of any of the following:
   a. Inability of the hydrogen system to dispense hydrogen at the pressures and rate specified, including accounting for temperature compensation at settled conditions.
   b. Failure of a pump to start and run within factory-listed operating pressures and temperatures.
   c. Failure of the controller/PLC, valve panel, fuel-management system and/or dispensers to operate as specified.
   d. Presence of an audible or visible gas or hydrogen leak.
   e. Occurrence of an auto-fault shutdown of either or both hydrogen pumps, except those caused by ESD-button activation, gas-detection system outside of skids, variations in gas supply pressure, or damage to the facility beyond the Contractor's control.

2. Contractor may take equipment offline for scheduled maintenance during the test period, provided maintenance is consistent with manufacturer's recommendations, and does not impinge on ECCTA's ability to fuel vehicles during the normal daily fueling window between 7:00AM and 6:00PM. Contractor shall be responsible for maintenance through successful completion of test, including provision of consumables.

3. Corrective work conducted by the Contractor and all subcontractors and suppliers preceding and during the performance test shall be documented at the time of the repair by the technician performing the repair. If the technician suspects a cause of fault that is beyond the scope of his respective firm or responsibility, technician shall notify ECCTA immediately and shall not implement repairs until condition of failure has been documented and the other firm(s) have been notified and been provided documentation of the condition. ECCTA shall not pay Contractor for any work or repair that is implemented during testing above of the contract amount, unless the work or condition is beyond the control of the Contractor, the Contractor's subcontractors, or the Contractor's suppliers. Contractor shall notify ECCTA in writing of intent to perform any work that the Contractor deems to be outside of the contract scope, prior to performance of any such work.

3.09 HYDROGEN SYSTEM CONTROLS

A. The contractor shall furnish control logic tailored to the specific operations outlined below and referenced in the construction documents. These operations include but are not limited to –

   a. LH2 offload

   b. LH2 tank venting

   c. LH2 pump selection

   d. Priority panel sequence

      1) Refilling of low-,medium-, high-bank storage

      2) Direct hydrogen flow to active dispenser(s)

      3) Precooling gaseous hydrogen from storage

   e. ESD system

      1) Flame detection

      2) Gas detection

      3) Activation of ESD buttons

      4) Nitrogen purge of GH2 Isolation Valve Compartment

   f. Chiller start and stop

   g. Compressed air system start and stop

B. The provided control logic must align precisely with the requirements delineated in the construction documents and specification manual. Furthermore, the contractor is responsible for submitting these control logic documents for thorough review and approval by the engineer prior to implementation.

3.10 OPERATION AND MAINTENANCE DATA AND TRAINING

A. Maintenance Manuals: Organize maintenance and operating manual information into suitable sets of manageable size, and bind into individual binders, properly identified and indexed (thumb-tabbed). Examples: Hydrogen pumps, pump drivers, hydrogen dispensers, etc. Include emergency instructions, safety procedures, spare parts listings, warranties, guarantee, wiring diagrams, recommended maintenance intervals, inspection procedures, shop drawings, product data, and similar applicable information. Use a standard method for highlighting safety procedures. Bind each manual of each set in a heavy-duty 2-inch, three ring vinyl-

covered binder and include pocket folders for folded sheet information. Mark identification on both the front and spine of each binder, including "Volume ## of ##" information.

1. Data:
    a. Manuals shall cover the hydrogen facility as a complete system.
    b. Include instructions by manufacturer's representatives where installers are not expert in the required procedures.
        1) Review of maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning, and similar procedures and facilities for operational equipment to demonstrate start-up, shut-down, emergency adjustments, and similar operations.
        2) Review of maintenance and operations in relation to applicable guarantees, warranties, agreements to maintain bonds, and similar continuing commitments.
2. Printed Copies: Supply three (3) complete copies of all manuals for approval with the commencement of the delivery of the equipment to the site.

3. Electronic Copies: Supply (3) complete and copies of manual in electronic PDF format, with matching content and organization vs. printed copies. PDF shall be text searchable, and media shall be USB flash drive with label or tag.

B. Hydrogen Fueling Operation and Maintenance Training.

1. General:
    a. At least 60 days prior to scheduled date for commencement of training, submit training syllabus with time allotments per topic and instructional materials to ECCTA for review and approval. Upon review of syllabus, ECCTA may require additional time be allotted to certain training topics.
    b. Where specified, develop and conduct a program to train selected ECCTA personnel in the safe operating procedures, and maintenance of equipment and systems furnished during the hours required by ECCTA. Also include in the training program key hazards and their protectors, and corrective actions for violation of safety rules.
    c. Furnish instructors, instructional materials and audio-visual aids and equipment.
    d. ECCTA is to furnish physical facilities and equipment.
    e. Begin instruction upon successful completion of Testing as specified in this Section.

2. Program content: At a minimum, instruction will include material covered in the operation and maintenance manuals as well as the following:

    a. Theory of operation of hydrogen system.
    b. Practical aspects of operation.
    c. Description of system, equipment, and components.
    d. Functional characteristics of system, equipment, and components.

e. Emergency operating procedures.
f. Maintenance procedures.
g. Servicing intervals and schedules.
h. Diagnosis and problem solving (troubleshooting).
i. Repair.
j. All segments characterizing hydrogen equipment.
k. Instruction manual will contain measurable training objectives.
l. Hazards relative to Hydrogen Facility operations.
m. Conduct preventive maintenance checks and services.
n. Perform general and location Emergency Response.
o. Perform personal precautions in Emergency Situations such as Fires, Leaks or Spills.
p. Perform corrective actions to respond to Emergency Situations such as Fires, Leaks or Spills.
q. Operations and Safety personnel will perform hydrogen Shop Operations such as Prepare Maintenance Request; Maintain Records for Hazard of Hydrogen Operations.
r. Perform hydrogen vehicle fueling.
s. Operation, reading, interpretation and resetting of Murphy control panel.

C. Special tools or equipment.

1. Contractor will supply special tools or equipment.
   a. The special equipment or tools are defined as, other than those nominally found in a mechanic's toolbox, necessary for the general upkeep, maintenance and overhaul of the equipment or products contained in equipment and components delivered under this contract.
   b. A list of special tools or equipment will be provided to ECCTA. The list must be submitted for approval no later than 60 days after awarding contract.
   c. Any tools not found in the catalogue or over the counter of a local supply company is considered a specialty tool or equipment.

D. Duration.
1. Training for maintenance, facility operation and troubleshooting shall be 8 total hours.
2. Actual durations for each type of training may be reduced at the discretion of ECCTA.

E. Emergency response training.

1. Contractor shall provide emergency response training and facility familiarization to Fire Department personnel as related to faults that may occur during operation of the hydrogen system and during the fueling of hydrogen fuel cell buses at all dispensers. Contractor shall provide up to two sessions lasting 45 minutes each and shall include familiarization of overall facility layout and function, location of service disconnects for gas and electrical connections, and demonstration of ESD function.

Section 6

Proposal Form

PROPOSAL COVER FORM
For
RFQ #2025-01

Eastern Contra Costa Transit Authority (ECCTA)
Antioch, CA

DATE SUBMITTED: _____

NAME OF INDIVIDUAL SUBMITTING STATEMENT: _____

CONTACT PERSON: _____

NAME UNDER WHICH BUSINESS IS CONDUCTED: _____

STREET ADDRESS: _____

MAILING ADDRESS, IF DIFFERENT: _____

TELEPHONE: _____

FAX: _____

CONDITIONS:

1. The Request for Qualifications, Information for Interested Firms, General Conditions, Scope of Work, Proposal Forms, Required Certifications, and Addenda, if any, are made a part of this SOQ.
2. The undersigned understands that any clarification made to the proposal form or any new and different conditions or information submitted in or with the proposal form, other than that requested, may render the proposer unresponsive.
3. The undersigned acknowledges the receipt of the following addenda:

   _____

   _____

   _____

4. The undersigned understands that ECCTA reserves the right to reject any or all SOQs or to waive any informality or technicality in any SOQ in the interest of ECCTA.
5. The undersigned understands that all SOQs shall remain in effect for sixty calendar days from the due date of the SOQ.
6. The undersigned has carefully examined the location of the proposed work, the annexed proposed form of contract, and the contract documents therein referred to.
7. The undersigned will place the proposal package in one or more sealed envelopes marked and deliver them to ECCTA in manner, and by the times, provided in the RFQ.

IF INDIVIDUAL OR SOLE OWNER OF BUSINESS:

_____

Signature and Printed Name

IF PARTNERSHIP OR JOINT VENTURE:
The undersigned certify that we have full and proper authority to sign this proposal form.

Partnership or Joint Venture Composed of:

_____

Signature, Printed Name, Title, and Company Name

_____

Signature, Printed Name, Title, and Company Name

Partnerships and Joint Ventures must complete and submit the Power of Attorney form included with these SOQ documents.

IF CORPORATION:
The undersigned certify that we sign this proposal form with full and proper authorization to do so. We also have included a fully executed Power of Attorney form identifying the Managing Sponsor in our SOQ packet.

_____

Signature, Printed Name, and Title

_____

Signature, Printed Name, and Title

The Corporation is incorporated under the laws of the State of: _____

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS. That _____(name of partnership/joint venture/corporation) which is desirous of entering into a contract with the Eastern Contra Costa Transit Authority, do so hereby designate and appoint_____ (one of the general partners/ventures' or officer of the corporation) hereinafter called the "Managing Sponsor," as their true and lawful attorney with the power, on their behalf and in the name and on behalf of the _____ (name of partnership/joint venture/corporation), to execute a SOQ for RFQ #2025-01 and to execute and enter into a contract with the Eastern Contra Costa Transit Authority, and to represent and bind the partnership/joint venture/corporation, in all matters in connection with such SOQ and contract, and the undersigned specifically acknowledge and agree that the execution of such SOQ or contract by the Managing Sponsor shall constitute the agreement of each general partner/venturer/corporation to be jointly and severally liable for any and all of the duties and obligations of the partnership/joint venture/corporation arising from such SOQ or contract.

In witness whereof the undersigned have executed this Power of Attorney this _____ day of _____, 20___.

Company Name: _____

By:_____

Title: _____

Subscribed and Sworn to before me

This _____ day of _____, 20___.

_____

Notary Public in and for State of _____

Residing at _____

Section 7

Required Certifications

Required Certifications

All forms must be properly signed and notarized (as required) and returned with the Proposal Form.

- ☐ Certification Regarding Workers' Compensation
- ☐ Contractor's Experience and Qualifications
- ☐ List of Subcontractors
- ☐ Non-Collusion Affidavit

CERTIFICATE REGARDING WORKERS' COMPENSATION

Contract with the EASTERN CONTRA COSTA TRANSIT AUTHORITY, 801 Wilbur Avenue, Antioch, California 94509, for the consultation services for the design and installation of a hydrogen fuel station.

RFQ #2025-01

Labor Code Section 3700:

"Every employer, except the State, and all political subdivisions or institutions thereof, shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation by one or more insurers, duly authorized to write compensation insurance in this State.
(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to employees."

I am aware of the provisions of Section 3700 of the Labor Code, which require every employer to be insured against liability for worker's compensation or to undertake self-insurance. In accordance with the provisions of that code, I will comply with such provisions before commencing the performance of the work of this contract.

DATE: _____, 20___.

BY: _____

OFFICIAL TITLE: _____

(SEAL)

(Labor Code Section 1861, provides that the above certificate must be signed and filed by the proposer with the Authority prior to performing any work under this contract.)

Contractor's Experience and Qualifications

The following statements as to the experience and qualifications of the bidder are to be submitted with the bid, as a part thereof. The truthfulness and accuracy of the information is guaranteed by the bidder.

1. The bidder has been engaged in the contracting business, under the present business name, for _____ years. Experience in work of a nature similar to that covered in the bid extends over a period of _____ years.
2. The bidder, as a contractor, has successfully completed at least two projects of like magnitude, comparable difficulty and rates of progress to the work, including:

LIST TWO OR MORE PROJECTS

_____

_____

_____

_____

_____

3. The bidder, as a contractor, has never failed to satisfactorily complete a contract awarded to the contract, except as follows:

NAME ANY AND ALL EXCEPTIONS AND REASONS THEREFORE

_____

_____

_____

_____

_____

_____

4. The bidder has satisfactorily completed the following contracts in the last three years, for the owner indicated, and to whom reference is made,

LIST THREE CONTRACTS AND PROVIDE CONTACT PERSON AND TELEPHONE NUMBER FOR EACH PROJECT

Year	Type of Work	Contract Amount	Contact (Name and Number)

5. The names of all persons interested in the foregoing bids as principals are as follows:

(If bidder of other interested person is:

- A corporation: state the legal name of the corporation, along with the names of the president, secretary, treasurer, and manager thereof.
- A general partnership: state true name of the firm, as well as the names of all individual partners composing the firm.
- A limited partnership: state the names of all general partners and limited partners.
- An individual: state first and last names in full.)

_____

_____

_____

_____

Contractor's License Number: _____

License Expiration Date: _____

Department of Industrial Relations (DIR) Registration Number: _____

LIST OF SUBCONTRACTORS

Pursuant to California Public Contract Code Section 4100 et seq., the following list gives the name, business address, and portion of work (description of work to be done) for each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvements, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of one percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater.

Bidders' attention is directed to page ___ of the General Conditions. All subcontractors (DBEs and non-DBEs) are subject to the requirements of this section.

Attach additional copies of this form if more space is needed and paginate the forms (i.e., Page ___ of ____).

Name and Location of business	**Description of Portion of Work or Services Subcontracted**	**Value of Subcontracted Work or Service**

Authorized Signature: _____ Date: _____

NON-COLLUSION AFFIDAVIT

PUBLIC CONTRACT CODE SECTION 7106

NON-COLLUSION DECLARATION TO BE EXECUTED BY PROPOSER AND SUBMITTED WITH PROPOSAL

The undersigned declares:

I am the _____ of _____, the party making the foregoing proposal.

The proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The proposal is genuine and not collusive or sham. The proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham proposal. The proposer has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the proposal price of the proposer or any other proposer, or to fix any overhead, profit, or cost element of the proposal price, or of that of any other proposer. All statements contained in the proposal are true. The proposer has not, directly or indirectly, submitted his or her proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, proposal depository, or to any member or agent thereof, to effectuate a collusive or sham proposal, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a proposer that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the proposer.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____[**date**], at _____[**city**], _____[**state**].

PROPOSER'S SIGNATURE: _____ _____ DATE: _____