

CONTRACT AMENDMENT REQUEST FORM (CARF)

CEC-276 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION



Original Agreement #	600-15-014		2
600 Fuels and Transportation Division		Christopher Jenks	6 916-654-4201
Pacific Northwest National Laboratory Operated by Battelle Memorial Inst. for U.S. DoE			31-4379427

<input checked="" type="checkbox"/> Term Extension	New End Date: 3 / 31 / 2023	Include revised schedule and complete items A, B, C, D, & H below.
<input type="checkbox"/> Budget Augmentation	Amendment Amount: \$ 0	Include revised budget and complete items A, B, C, D, E, F, & H below.
<input type="checkbox"/> Budget Reallocation		Include revised budget and complete items A, B, C, D, & H below.
<input checked="" type="checkbox"/> Scope of Work Revision		Include revised scope of work and complete items A, B, C, D, & H below.
<input type="checkbox"/> Change in Project Location or Demonstration Site		Include revised scope of work and complete items A, B, C, D, G, & H below.
<input type="checkbox"/> DVBE Replacement		Include revised scope of work and complete items A, B, C, D, F, & H below.
<input type="checkbox"/> Novation/Name Change of Prime Contractor/Recipient		Include novation documentation and complete items A, C, D, & H below.
<input checked="" type="checkbox"/> Terms and Conditions Modification		Include applicable exhibits with bold/underline/strikeout and complete items A, B, C, D, & H below.

Business Meeting approval is not required for the following types of Agreements:

<input type="checkbox"/> Operational agreement (see CAM Manual for list) to be approved by Executive Director			
<input type="checkbox"/> Minor amendments delegated to Executive Director per December 2013 Resolution			
Proposed Business Meeting Date	1 / 17 / 2018	<input checked="" type="checkbox"/> Consent	<input type="checkbox"/> Discussion
Business Meeting Presenter	Christopher Jenks	Time Needed:	minutes
Please select one list serve. Altfuels (AB118- ARFVTP)			

Agenda Item Subject and Description

PACIFIC NORTHWEST NATIONAL LABORATORY. Proposed resolution approving Amendment 2 to Contract 600-15-014 with the Pacific Northwest National Laboratory (PNNL) operated by Battelle Memorial Institute for the U.S. Department of Energy to extend the agreement by 24 months until March 31, 2023 and expand the scope of work to allow PNNL to conduct safety plan reviews for additional hydrogen refueling stations and renewable hydrogen transportation fuel production facilities and systems. No additional funds are being added to the contract. Contact: Chris Jenks

<input type="checkbox"/> Non Competitive Bid (Attach CEC 96)
<input checked="" type="checkbox"/> Exempt No-cost time extension

Legal Company Name:	Budget	SB	MB	DVBE
PNNL Hydrogen Safety Panel members (see attachment)	\$ 0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0.00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legal Company Name:

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
Funding Source			\$
Funding Source			\$
Funding Source			\$
Funding Source			\$
R&D Program Area:	Select Program Area		\$ 0
Explanation for "Other" selection			

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CALIFORNIA ENERGY COMMISSION



Reimbursement Contract #:	Federal Agreement #:
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- | | |
|---|------------------------------------|
| 1. <input type="checkbox"/> Exempt (Interagency/Other Government Entity) | |
| 2. <input type="checkbox"/> Meets DVBE Requirements | DVBE Amount:\$ _____ DVBE %: _____ |
| <input type="checkbox"/> Contractor is Certified DVBE | |
| <input type="checkbox"/> Contractor is Subcontracting with a DVBE: <u>Name of DVBE Company</u> | |
| 3. <input type="checkbox"/> Contractor selected through CMAS or MSA with no DVBE participation. | |
| 4. <input type="checkbox"/> Requesting DVBE Exemption (attach CEC 95) | |

- | | |
|---|---|
| 1. Is Agreement considered a "Project" under CEQA? | |
| <input type="checkbox"/> Yes (skip to question 2) <input checked="" type="checkbox"/> No (complete the following (PRC 21065 and 14 CCR 15378)): | |
| Explain why Agreement is not considered a "Project":
Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because Agreement will not cause a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because the agreement is for analytical evaluation to occur on paper and electronically only. | |
| 2. If Agreement is considered a "Project" under CEQA: | |
| <input type="checkbox"/> a) Agreement IS exempt. (Attach draft NOE) | |
| <input type="checkbox"/> Statutory Exemption. List PRC and/or CCR section number: _____ | |
| <input type="checkbox"/> Categorical Exemption. List CCR section number: _____ | |
| <input type="checkbox"/> Common Sense Exemption. 14 CCR 15061 (b) (3) | |
| Explain reason why Agreement is exempt under the above section: | |
| <input type="checkbox"/> b) Agreement IS NOT exempt. (Consult with the legal office to determine next steps.) | |
| Check all that apply | |
| <input type="checkbox"/> Initial Study | <input type="checkbox"/> Environmental Impact Report |
| <input type="checkbox"/> Negative Declaration | <input type="checkbox"/> Statement of Overriding Considerations |
| <input type="checkbox"/> Mitigated Negative Declaration | |

- | | | |
|---|---|--|
| 1. Exhibit A, Scope of Work | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 3. CEC 96, NCB Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 4. CEC 95, DVBE Exemption Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 6. Novation Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 7. CEC 105, Questionnaire for Identifying Conflicts | | <input checked="" type="checkbox"/> Attached |

Agreement Manager _____

Date _____

Office Manager _____

Date _____

Deputy Director _____

Date _____

**Attachment to CEC-276 Contract Amendment Request Form
600-15-014-02**

**Pacific Northwest National Laboratory (PNNL)
Hydrogen Safety Panel (HSP)
Members
as Subcontractors**

The Pacific Northwest National Laboratory (PNNL) Hydrogen Safety Panel (HSP) has the following members which are proposed as subcontractors (November 2, 2017):

Chris LaFleur (Sandia National Laboratories)
Donald Fricken (Becht Engineering)
Eric Binder (Santa Monica Fire Department)
Glenn Scheffler (GWS Solutions of Tolland)
Ken Boyce (UL LLC)
Larry Moulthrop (Proton OnSite)
Livio Gambone (CSA Group)
Miguel J. Maes (NASA-JSC White Sands Test Facility)
Richard Kallman (City of Santa Fe Springs, CA)
Robert Zalosh (Firexplo)
Thomas Witte (Witte Engineered Gases)

Exhibit A
Scope of Work
Hydrogen Refueling Station and 100 Percent Renewable Hydrogen Production
Facility Safety Evaluations
January 17, 2018

This Scope of Work, as amended in Amendment #2, replaces, in whole, the previous Scope of Work under this agreement.

TASK LIST

Task #	Task Name
1	Contract Management
2	"Safety Planning for Hydrogen and Fuel Cell Projects" Webinar
3	Pre-application Consultations
4	Safety Plan Assessments
5	Early Project Design Review
6	Hydrogen Release and Incident Reporting
7	Annual Safety Evaluations
8	Identification of Project and Stakeholder Learnings
9	Web Postings of Hydrogen Safety Plans

ACRONYMS/GLOSSARY

Specific acronyms and terms used throughout this scope of work are defined as follows:

Acronym	Definition
ARFVTP	Alternative and Renewable Vehicle and Technology Program
CCM	Commission Contract Manager
FCEV	Fuel Cell Electric Vehicle
HSP	Hydrogen Safety Panel
Contractor	Pacific Northwest National Laboratory operated by the Battelle Memorial Institute on behalf of the U.S. Department of Energy

BACKGROUND/PROBLEM STATEMENT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008) and later by Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013), authorizes the California Energy Commission (Energy Commission) to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies."

Assembly Bill 8 extends funding for ARFVTP until January 1, 2024 and specifies that the Energy Commission allocate up to \$20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational. The Energy Commission has an annual program budget of approximately \$100 million and provides financial support for projects that:

- Develop and improve alternative and renewable low-carbon fuels;
- Optimize alternative and renewable fuels for existing and developing engine technologies;
- Produce alternative and renewable low-carbon fuels in California;
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability;
- Expand fuel infrastructure, fueling stations, and equipment;
- Improve light-, medium-, and heavy-duty vehicle technologies;
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets;
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors; and
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The Pacific Northwest National Laboratory's (PNNL) Hydrogen Safety Panel (HSP) has done research related to hydrogen refueling station safety, and seeks to apply that research to hydrogen refueling stations and 100 percent renewable hydrogen transportation fuel production facilities under development. Also, the Energy Commission is planning to further prioritize safety under future hydrogen refueling infrastructure and 100 percent renewable hydrogen production facility solicitations. As a result, grant applicants under future funding solicitations will be required to submit a hydrogen safety plan for each proposed hydrogen refueling station and production facility and to participate with the PNNL HSP early design review process. The HSP has the expertise needed to evaluate and direct safety plan development and provide expert feedback on safety issues during the facility design. The Energy Commission's requirement of safety plans and need for technical expertise in hydrogen safety presents an opportunity for a mutually-beneficial arrangement for the HSP to conduct applied research while advising grant applicants and the Energy Commission.

GOALS AND OBJECTIVES OF THE CONTRACT

The Energy Commission seeks to contract with PNNL's HSP to conduct applied research into the safety of materials, equipment, and best practices related to hydrogen refueling stations and 100 percent renewable hydrogen production facilities in California.

The research includes:

- Evaluation of the safety plans proposed as part of applications for hydrogen stations under Grant Funding Opportunity (GFO) "Light Duty Vehicle Hydrogen Refueling Infrastructure" (GFO-15-605), future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems.
- Evaluation of station and facility designs as part of applications for hydrogen stations under GFO-15-605, future GFOs for hydrogen refueling stations, and

future GFOs for renewable hydrogen transportation fuel production facilities and systems.

- Evaluation of any incident or issue that may pose a safety threat as reported by successful recipients under GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems.
- Site visits to examine the hydrogen stations funded under GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems.
- Telephone interviews with station or facility operators regarding their safety practices and experiences.
- Application of research to assist the Energy Commission with evaluation of safety plans submitted with applications to GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems, resulting in station and facility designs which place a greater emphasis on safety being more likely to receive funding from the Energy Commission.
- Provision of feedback to station or facility developers and operators, which will enable those operators and developers to implement improved safety practices as they are discovered and established.
- Publication of the HSP's findings which will allow ongoing application of this safety research to hydrogen refueling stations and 100 percent renewable hydrogen production facilities in general, not just those funded under GFOs or located within California.

The tasks outlined in this Scope of Work will apply past safety research of hydrogen refueling stations and 100 percent renewable hydrogen production facilities to those upcoming through this exempt agreement with the PNNL operated by the Battelle Memorial Institute which manages the HSP. The HSP is comprised of researchers, scientists, and experts who provide recommendations on hydrogen safety issues; assist with identifying safety gaps, best practices and applications of lessons learned; and help integrate safety planning applications to ensure that projects address and incorporate hydrogen and related safety practices.

FORMAT/REPORTING REQUIREMENTS

Deliverables/Reports

When creating reports, the Contractor shall use and follow, unless otherwise instructed in writing by the Commission Contract Manager (CCM), the latest version of the Consultant Reports Style Manual published on the Energy Commission's web site:

http://www.energy.ca.gov/contracts/consultant_reports/index.html

Each final deliverable shall be delivered as one original, reproducible, 8 ½" by 11", camera-ready master in black ink. Illustrations and graphs shall be sized to fit an 8 ½" by 11" page and readable if printed in black and white.

Electronic File Format

The Contractor shall deliver an electronic copy (CD ROM or memory stick or as otherwise specified by the CCM) of the full text in a compatible version of Microsoft Word (.doc).

The following describes the accepted formats of electronic data and documents provided to the Energy Commission as contract deliverables and establishes the computer platforms, operating systems and software versions that will be required to review and approve all software deliverables.

- Data sets shall be in Microsoft (MS) Access or MS Excel file format.
- PC-based text documents shall be in MS Word file format.
- Documents intended for public distribution shall be in PDF file format, with the native file format provided as well.
- Project management documents shall be in MS Project file format.

Software Application Development

If this scope of work includes any software application development, including but not limited to databases, websites, models, or modeling tools, contractor shall utilize the following standard Application Architecture components in compatible versions:

- Microsoft ASP.NET framework (version 3.5 and up) Recommend 4.0
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5
- Visual Studio.NET (version 2008 and up) Recommend 2010
- C# Programming Language with Presentation (UI), Business Object and Data Layers
- SQL (Structured Query Language)
- Microsoft SQL Server 2008, Stored Procedures Recommend 2008 R2
- Microsoft SQL Reporting Services Recommend 2008 R2
- XML (external interfaces)

Any exceptions to the Software Application Development requirements above must be approved in writing by the Energy Commission Information Technology Services Branch.

TERM OF THIS AGREEMENT

The term of this agreement shall be from June 14, 2016 through March 31, 2023.

TASK 1 – CONTRACT MANAGEMENT

The goal of this task is to carry out agreement administration.

TASK 1.1 Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement.

The Contractor shall:

- Attend a “kick-off” meeting with the CCM, the Energy Commission Contracts Officer, and a representative of the Energy Commission Accounting Office. The meeting will be held via WebEx or teleconference. The Contractor shall include their Project Manager, Contracts Administrator, Accounting Officer, and others designated by the CCM, as practicable, who are familiar with this agreement and are capable of addressing any issues that may or may not arise in this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting.
- If necessary, prepare an updated Schedule of Deliverables and Due Dates based on the decisions made in the kick-off meeting.

The CCM shall:

- Arrange the meeting including scheduling the date and time.
- Provide an agenda to all potential meeting participants prior to the kick-off meeting.

Deliverables:

- An Updated Schedule of Deliverables (if applicable)

TASK 1.2 Invoices

The goal of this task is to ensure invoices reflect the Terms and Conditions.

The Contractor shall:

- Prepare invoices for all reimbursable expenses incurred performing work under this Agreement in compliance with the Exhibit B of the Terms and Conditions of the Agreement. Invoices shall be submitted with the same frequency as progress calls (Task 1.5). Invoices must be submitted to the Energy Commission's Accounting Office.

- Submit a request for a final advance under this agreement on or before March 31, 2022. The Energy Commission may not be able to process or honor requests for advances under this agreement after March 31, 2022.

Deliverables:

- Prepare and submit requests for advances.
- Prepare and submit invoices documenting reimbursable expenses incurred and paid for work under this Contract.

TASK 1.3 Manage HSP Member Participation

The goal of this task is to ensure quality products, to enforce subcontractor agreement provisions and, in the event of failure of the subcontractor to satisfactorily perform services, recommend solutions to resolve the problem.

The Contractor shall:

- Manage, coordinate and participate in the HSP activities carried out by a variety of “HSP members” to complete this contract. The Energy Commission will assign all work to the Contractor. The Contractor is responsible for the quality of all HSP work, carried out by HSP members and others related to this contract. A variety of HSP members will be subcontractors who will complete the tasks.
- Inform the Energy Commission if the Contractor decides to add new HSP members based on annual HSP membership evaluations that occur within the term of this agreement. If the HSP replaces an HSP member, the Contractor shall notify the CCM who will follow the Energy Commission’s process for adding or replacing subcontractors, as needed.

Deliverables:

- Updated HSP Member List

TASK 1.4 Final Meeting

The goal of this task is to discuss closeout of this Agreement and review the project.

The Contractor shall:

- Meet with Energy Commission staff prior to the term end date of this Agreement via WebEx or teleconference. This meeting will be attended by the Contractor Project Manager and the CCM. The CCM will determine any additional appropriate meeting participants, as practicable. The administrative and technical aspects of Agreement closeout will be discussed at the meeting.
- Present findings, conclusions, and recommended next steps (if any) for the Agreement, based on the information included in the Final Report which will index and generally summarize the efficacy of Safety Plans posted on <http://h2tools.org>.

- Prepare a written document of meeting agreements and unresolved activities.
- Prepare a schedule for completing the closeout activities for this Agreement, based on determinations made within the meeting.

Deliverables:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

TASK 1.5 Monthly Progress Calls and Quarterly Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement.

The Contractor shall:

- Schedule monthly conference calls to provide project updates and discuss any outstanding issues during the following two Reporting Periods:

Reporting Period One: Immediately following the release of an Energy Commission GFO- and up to the time of the Web posting of the Energy Commission Notice of Proposed Awards (NOPA) which is estimated to take two months ("Safety Plan Assessments"). This activity comprises at least two conference calls.

Reporting Period Two: One month after the start of the "Hydrogen Release and Incident Reporting" and "Annual Safety Evaluations", both of which span three years after the execution of agreements for hydrogen refueling stations and the 100 percent renewable hydrogen transportation fuel production facilities. These activities comprise at least three conference calls per station and per renewable hydrogen transportation fuel production facility.

- Prepare and submit a Quarterly Progress Report which summarizes all Agreement activities conducted by the Contractor for Reporting Periods One and Two, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each Progress Report is due to the CCM within ten days of the end of the Reporting Period. The recommended specifications for each progress report are contained in the terms and conditions of this Agreement.

Deliverables:

- Monthly Progress Conference Calls during Reporting Periods One and Two, and
- Quarterly Progress Reports during Reporting Periods One and Two.

TASK 1.6 – Final Report

The goal of this task is to prepare a comprehensive written Final Report that describes the original purpose, approach, results and conclusions of the work completed under

this Agreement. The Final Report shall be prepared in language easily understood by the public or layperson with a limited technical background.

The Final Report must be completed before the termination date of the Agreement in accordance with the Schedule of Deliverables.

The Final Report shall be a public document. If the Contractor has obtained confidential status from the Energy Commission and will be preparing both a public and a confidential version of the Final Report, the Contractor shall perform the following subtasks for both the public and confidential versions of the Final Report.

TASK 1.6.1 Final Report Outline

The goal of this task is to prepare an outline for a written Final Report that follows the tasks of this agreement, at a minimum, and shows the progress of task completion.

The Contractor shall:

- Prepare and submit a draft outline of the Final Report for review and approval. The CCM will provide written comments to the Contractor on the draft outline. The Contractor shall review the comments and discuss any issues with the recommended changes with the CCM.
- Prepare and submit the final outline of the Final Report (for each station), incorporating CCM comments.

Deliverables:

- Draft Outline of the Final Report
- Final Outline of the Final Report

TASK 1.6.2 Final Report

The goal of this task is to prepare a comprehensive written Final Report that describes the original purpose, approach, results and conclusions of the work completed under this Agreement. The Final Report shall be prepared in language easily understood by the public or layperson with a limited technical background.

The Contractor shall:

- Prepare the draft Final Report for this Agreement in accordance with the approved outline.
- Submit the draft Final Report for review and comment. The CCM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any issues with the recommended changes with the CCM.
- Prepare and submit the Final Report, incorporating CCM comments.

Deliverables:

- Draft Final Report

- Final Report

TASK 1.7 Obtain and Execute Subcontracts

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Contractor's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Contractor shall:

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the CCM for review.
- Submit a final copy of the executed subcontract.
- Notify the CCM if new subcontractors are added.

Deliverables:

- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

TASK 2 - "Safety Planning for Hydrogen and Fuel Cell Projects" Webinar

The goal of this task is to provide applicants to GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems with the findings from safety research in hydrogen refueling and production that was completed by the HSP so applicants can apply the research findings in the development of their Safety Plans in their applications to the Energy Commission.

The Contractor shall:

- Convene a Webinar and present PNNL HSP findings through the Webinar for each GFO. The Webinar shall include slides and materials previously developed by the Contractor based on the most current version of the "Safety Planning for Hydrogen and Fuel Cell Projects" Guideline, located at:

https://h2tools.org/sites/default/files/Safety_Planning_for_Hydrogen_and_Fuel_Cell_Projects-March_2016.pdf

The date of the Webinar shall be mutually agreed upon by the Contractor and the CCM.

There shall be no limitation to the number of participants in the Webinar with the exception of the telecommunication bandwidth, itself.

- Offer opinions during the Webinar as to what materials, technology, equipment, personnel and facility operation procedures would be necessary, and should be specified in the applicant's Safety Plan, to address safety gaps and ensure the safe use and upkeep of a hydrogen refueling station or production facility. The HSP may also suggest improvements to station or facility construction and operations.
- Communicate information about any scheduling issues or concerns, such as timing or the volume of requests for consultations, with the Energy Commission staff following the Webinar.

Deliverables:

- Webinar presentations
- Webinar participant list
- Schedule for follow-up with Webinar participants

TASK 3 - PRE-APPLICATION CONSULTATIONS

Pre-application consultations will be available from the HSP upon a first-come, first-served basis to potential grant Applicants to assist them with developing a Safety Plan before they submit a grant application to the Energy Commission. Safety Plan guidance and pre-application consultation services will be at no cost to the applicant. An example of a pre-application consultation topic is the degree of design variance that signifies the need for multiple Safety Plans.

The Contractor shall:

- Be available for contact and follow-up by at least ten Webinar participants and other potential applicants to GFOs for pre-application consultations about how to apply the Contractor's research in the "Safety Planning for Hydrogen and Fuel Cell Projects" to develop hydrogen Safety Plans to be included as part of applications to GFOs. The pre-application consultations shall occur after the Webinar convened by the HSP in TASK 2.
- Hold all pre-application consultations in confidence.
- Hold consultations on a first-come, first-served basis. During the pre-application consultations, the HSP will base feedback on its research published in "Safety Planning for Hydrogen and Fuel Cell Projects."
- Shall not provide consultation, or any other services under this Contract, to planned, existing, operational and open retail stations, as listed in Table 1 of GFO-15-605.
- Recommend changes to the materials, technology, equipment, procedures, personnel and facility operation to address safety gaps that could potentially affect the safe use and upkeep of a hydrogen refueling station or production

facility that could be proposed in a GFO application. These recommendations will be made through email and telephone communications after the Webinar to those individuals who request and receive pre-application consultations.

- HSP may also make recommendations during pre-application consultations on proposed station or facility design and construction, and they may evaluate the safety of construction and operations and provide safety planning guidance. The changes shall be recommended either through email or telephone communications after the Webinar.
- Shall not communicate with the Energy Commission on the content of pre-application consultations between potential applicants and the Contractor.
- Shall communicate with the Energy Commission regarding any scheduling issues or concerns such as timing or volume of requests.

Deliverables:

- At least ten pre-application consultations for each GFO.
- Communication to the Energy Commission about the quantity of pre-application consultations.

TASK 4 - SAFETY PLAN ASSESSMENTS

The goal of this task is to ensure that applicants to GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems propose projects for funding by the Energy Commission that have adequate Safety Plans according to the HSP's most recent version of "Safety Planning for Hydrogen and Fuel Cell Projects" presentation which is based on previous research by the HSP and which is available at https://h2tools.org/sites/default/files/Safety_Planning_for_Hydrogen_and_Fuel_Cell_Projects-March_2016.pdf.

Each design will differ based on feedstock, pathway or manufacturing process, hydrogen source, storage technology, and dispensing technology. Safety Plans will evaluate items including but not limited to organizational safety policies and procedures, experience in hydrogen and fuel cells on the part of the Applicant, operational safety vulnerabilities and risk reduction plans, equipment and mechanical integrity of the proposed station or facility, sufficiency of process and instrumentation diagrams, sufficiency of safety and alarm systems, sufficiency of the bill of materials with materials' compatibility, and sufficiency of maintenance, testing, calibration and inspection procedures.

The Contractor shall:

- Evaluate, on a first-come first-served basis, at least fifteen Safety Plan Assessments for at least fifteen different hydrogen refueling station designs submitted under GFO-15-605 and future GFOs for hydrogen refueling stations.

- Evaluate, on a first-come first-served basis, at least eight Safety Plan Assessments for the facilities proposed under renewable hydrogen transportation fuel production facilities and systems, submitted to the Energy Commission as part of applications to future GFOs for renewable hydrogen transportation fuel production facilities and systems.
- Provide pre-application consultations.
- Provide to the Energy Commission a written assessment of the Safety Plans (i.e., Safety Plan Assessments).

Deliverables:

- Written Safety Plan Assessments

TASK 5 – EARLY PROJECT DESIGN REVIEW

The goal of this task is to include the HSP in an early project design review for hydrogen refueling stations and production facilities funded under future GFOs for hydrogen refueling stations and renewable hydrogen transportation fuel production facilities and systems. This task does not apply to the hydrogen refueling stations funded under GFO-15-605.

The Contractor Shall:

- Evaluate early project design documentation for up to ten hydrogen refueling stations and hydrogen production facilities funded under future GFOs for hydrogen refueling stations and renewable hydrogen transportation fuel production facilities and systems. The review may include discussions and document review of project hazards, general equipment and facility design, risk analyses and mitigating safety features. The review will be performed at an opportune time early in the project design to provide enough detail to facilitate a beneficial safety review while allowing the project team to consider the HSP's comments without significant project impacts (this is typically in the 30-50% design phase).
- Negotiate and enter into nondisclosure agreement(s) with funding applicants if necessary to facilitate this review.
- Provide to the Energy Commission a written report for each Early Project Design review conducted.
- Conduct one meeting with the Energy Commission by WebEx to discuss what was learned from the Early Project Design Reviews and identify safety issues and gaps requiring remediation by the station or facility owner.

Deliverables:

- Early Project Design Reviews

TASK 6 – HYDROGEN RELEASE AND INCIDENT REPORTING

The goal of this task is to evaluate public reports of hydrogen releases and related incidents that occur at hydrogen refueling stations funded under GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems.”

The Contractor shall:

- Evaluate and explain hydrogen releases and other hydrogen refueling station and production facility or ancillary equipment-related incidents for all grant recipients. Evaluate the grant recipients’ ensuing experiences based on their reports on hydrogen releases and incidents submitted to the HSP by the Energy Commission staff. The reports submitted to the HSP will be the same reports submitted by hydrogen station providers to the Unified Program Agency in accordance with California Health and Safety Code Section 25510(a): <http://cersapps.calepa.ca.gov/Public/Directory>.
- Guide station and facility operators on posting incident reports and summaries of the evaluation of the releases and incidents to the U.S. Department of Energy (DOE) Hydrogen Lessons Learned (H2LL) database-driven website which facilitates the sharing of knowledge and other information from actual experiences using and working with hydrogen: <http://h2tools.org/lessons>.
- When requested by the CAM, the HSP will evaluate information provided by Energy Commission grant recipients on hydrogen releases and other incidents and provide comments and recommendations to the station/facility operator and the Energy Commission.
- Create a “*Report on Hydrogen Incidents*,” which shall summarize the HSP’s evaluation of all releases and incidents annually.

Deliverables:

- Annual Report on Hydrogen Incidents

TASK 7 – ANNUAL SAFETY EVALUATIONS

The goal of this task is to conduct annual safety evaluations of the hydrogen refueling stations funded under GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems for three years after becoming operational. Stations and facilities will be evaluated on conformance with the Safety Plans submitted to the Energy Commission and the PNNL HSP’s “Safety Planning for Hydrogen and Fuel Cell Projects”.

The Contractor shall:

- Evaluate the safety of each hydrogen refueling station funded under GFO-15-605, future GFOs for hydrogen refueling stations, and future GFOs for renewable hydrogen transportation fuel production facilities and systems annually for three years after each station/facility becomes operational as defined in the

corresponding GFO. The evaluation will include the station's/facility's adherence to grant recipients' initial Safety Plans and any recommendations given by the PNNL HSP.

- Conduct a site visit during the first year of operation for each grant recipient whose Safety Plan was originally reviewed by the PNNL HSP.
- Prepare and submit to the CCM findings from site visits in a Safety Evaluation for Year One which shall include a list of recommendations for improved safety.
- Following the site visit that results in Safety Evaluation for Year One, conduct an annual on-site or telephone safety evaluation during the second and third years of operation for each grant recipient whose Safety Plan was originally reviewed by the PNNL HSP.
- Prepare and submit to the CCM findings from these evaluations in Annual Safety Evaluations for Years Two and Three which shall include a list of recommendations for improved safety.
- Conduct one meeting per year with the Energy Commission by WebEx to discuss what was learned from the Annual Safety Evaluations and identify safety issues and gaps requiring remediation by the station/facility owner.
- Immediately notify the station/facility owner and the CCM, in writing, of any safety issues, requiring immediate action found during site visits and evaluation (*"Written Notification of Safety Issues Requiring Immediate Action"*).

Deliverables:

- Annual Safety Evaluations for the first, second, and third year after the station/facility becomes operational.
- Written Notification of Safety Issues Requiring Immediate Action

TASK 8 – IDENTIFICATION OF PROJECT AND STAKEHOLDER LEARNINGS

The goals of this task are to inform the Energy Commission of the results of and learnings from Safety Plan evaluations, incident and station and facility evaluations, and discussions of station and facility evaluations at HSP meetings; and to provide any recommendations on safety management to the Energy Commission.

The Contractor shall:

- Convene the PNNL HSP to discuss results and lessons learned from the Safety Plans' implementation, and incident and station and facility reviews conducted in Tasks 5-7.
- Provide a *Written Summary of HSP Meeting and Recommendations* to the Energy Commission of what was discussed by the HSP at the convened meeting, including lessons learned, results of evaluations, and recommendations

for safety management. Additional comments and/or recommendations on topics beyond those discussed may be included with the summary.

- Invite Energy Commission staff participation in the HSP meetings that will include identification of project and stakeholder learnings.

Deliverables:

- Written Summary of HSP Meeting and Recommendations

TASK 9 – WEB POSTINGS OF HYDROGEN SAFETY PLANS

The goal of this task is to make the Hydrogen Safety Plans available to the public.

The Contractor shall:

- From applications that receive Energy Commission funding, post Safety Plans submitted under: 1) GFO-15-605; and 2) future GFOs for hydrogen refueling stations; and 3) future GFOs for renewable hydrogen transportation fuel production facilities and systems.
- Prior to posting, redact any confidential material.
- Post safety plans to <http://h2tools.org>.

Deliverables:

- Posted Safety Plans on the Hydrogen Tools Portal, <http://h2tools.org>.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: PACIFIC NORTHWEST NATIONAL LABORATORY

RESOLVED, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the Energy Commission approves Amendment 2 to Contract 600-15-014 with the Pacific Northwest National Laboratory (PNNL) operated by Battelle Memorial Institute for the U.S. Department of Energy to extend the agreement by 24 months until March 31, 2023 and expand the scope of work to allow PNNL to conduct safety plan reviews for additional hydrogen refueling stations and renewable hydrogen transportation fuel production facilities and systems. No additional funds are being added to the contract; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on January 17, 2018.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat