

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

A) New Agreement 600-15-014 (To be completed by CGL Office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Christopher Jenks	6	916-654-4201

C) Contractor's Legal Name	Federal ID Number
Pacific Northwest National Laboratory Operated by Battelle Memorial Inst. for U.S. DoE	31-4379427

D) Title of Project
Safety Planning and Assessment for Hydrogen Refueling Stations, Phase 2

E) Term and Amount	Start Date	End Date	Amount
	6 / 14 / 2016	3 / 31 / 2021	\$ 221,333

F) Business Meeting Information			
<input type="checkbox"/> Operational agreement (see CAM Manual for list) to be approved by Executive Director			
<input type="checkbox"/> ARFVTP agreements \$75K and under delegated to Executive Director.			
Proposed Business Meeting Date	6 / 14 / 2016	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Christopher Jenks	Time Needed:	5 minutes
Please select one list serve. Altfuels (AB118- ARFVTP)			

Agenda Item Subject and Description
Proposed resolution approving Agreement 600-15-014 with the Pacific Northwest National Laboratory (PNNL) operated by the Battelle Memorial Institute for the U.S. Department of Energy in the amount of \$221,333 for PNNL's Hydrogen Safety Panel to perform hydrogen safety plan reviews and station evaluations. (ARFVTP Funding) Contact: Christopher Jenks

G) California Environmental Quality Act (CEQA) Compliance
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 it 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

H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)				
Legal Company Name:	Budget	SB	MB	DVBE
Hydrogen Safety Panel members (see Attachment)	\$ 88,573	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I) List all key partners: (attach additional sheets as necessary)
Legal Company Name:



J) Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
ARFVTP	15/16	600.118E	\$221,333
Funding Source			\$
R&D Program Area: N/A		TOTAL:	\$221,333
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

K) Contractor's Administrator/ Officer				Contractor's Project Manager			
Name:	Nick Barilo			Name:	Nick Barilo		
Address:	Pacific Northwest National Laboratory P.O. Box 999			Address:	Pacific Northwest National Laboratory P.O. Box 999		
City, State, Zip:	99354			City, State, Zip:	99354		
Phone:	509-371-7894	Fax:	- -	Phone:	509-371-7894	Fax:	- -
E-Mail:	Nick.Barilo@pnnl.gov			E-Mail:	Nick.Barilo@pnnl.gov		

L) Selection Process Used (For amendments, address amendment exemption or NCB, do not identify solicitation type of original agreement.)	
<input type="checkbox"/> Solicitation Select Type Solicitation #: - - # of Bids: Low Bid? <input type="checkbox"/> No <input type="checkbox"/> Yes	
<input type="checkbox"/> Non Competitive Bid (Attach CEC 96)	
<input checked="" type="checkbox"/> Exempt Other Governmental Entity	

M) Contractor Entity Type
<input type="checkbox"/> Private Company (including non-profits)
<input type="checkbox"/> CA State Agency (including UC and CSU)
<input checked="" type="checkbox"/> Government Entity (i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state)

N) Is Contractor a certified Small Business (SB), Micro Business (MB) or DVBE?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
If yes, check appropriate box:	<input type="checkbox"/> SB <input type="checkbox"/> MB <input type="checkbox"/> DVBE

O) Civil Service Considerations
<input type="checkbox"/> Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)
<input type="checkbox"/> Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER)
<input checked="" type="checkbox"/> The Services Contracted:
<input type="checkbox"/> are not available within civil service
<input type="checkbox"/> cannot be performed satisfactorily by civil service employees
<input checked="" type="checkbox"/> are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system.
<input type="checkbox"/> The Services are of such an:
<input type="checkbox"/> urgent
<input type="checkbox"/> temporary, or
<input type="checkbox"/> occasional nature
that the delay to implement under civil service would frustrate their very purpose.
Justification:
See Attachment: Explanation for Services not Available through Civil Service

P) Payment Method
<input type="checkbox"/> A. Reimbursement in arrears based on:
<input type="checkbox"/> Itemized Monthly <input type="checkbox"/> Itemized Quarterly <input type="checkbox"/> Flat Rate <input type="checkbox"/> One-time
<input checked="" type="checkbox"/> B. Advanced Payment
<input checked="" type="checkbox"/> C. Other, explain: First advanced payment of \$150,000

Q) Retention
1. Is Agreement subject to retention? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
If Yes, Will retention be released prior to Agreement termination? <input type="checkbox"/> No <input type="checkbox"/> Yes



R) Justification of Rates
See Attachment: Justification for Salary for Hydrogen Safety Panel Members

S) Disabled Veteran Business Enterprise Program (DVBE)
1. <input checked="" type="checkbox"/> Exempt (Interagency/Other Government Entity)
2. <input type="checkbox"/> Meets DVBE Requirements DVBE Amount:\$ <u>0</u> DVBE %: _____
<input type="checkbox"/> Contractor is Certified DVBE
<input type="checkbox"/> Contractor is Subcontracting with a DVBE: <u>Name of DVBE Compan</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)

T) Miscellaneous Agreement Information
1. Will there be Work Authorizations? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
2. Is the Contractor providing confidential information? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
3. Is the contractor going to purchase equipment? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
4. Check frequency of progress reports
<input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Other... _____
5. Will a final report be required? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
6. Is the Agreement, with amendments, longer than a year? If yes, why? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
See Attachment: Justification for a Multi-Year Contract

U) The following items should be attached to this CRF (as applicable)
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. Resumes <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Attached
7. CEC 105, Questionnaire for Identifying Conflicts <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Attached

_____ Agreement Manager _____ Date _____ Office Manager _____ Date _____ Deputy Director _____ Date

Attachment to CEC-94 Contract Request Form

Hydrogen Safety Panel Members as Subcontractors

The Hydrogen Safety Panel of Pacific Northwest National Laboratory has the following members which are proposed as subcontractors:

Aaron Harris (Air Liquide)
Chris LaFleur (Sandia National Laboratories)
David J. Farese (Air Products and Chemicals, Inc.)
Donald Fricken (Becht Engineering)
Glenn Scheffler (GWS Solutions of Tolland)
Larry Fluer (Fluer, Inc.)
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)
Steve Mathison (Honda Motor Company)
Steven C. Weiner (Excelsior Design, Inc.)
Thomas Witte (Witte Engineered Gases)
William C. Fort, III (Retired from Shell Global Solutions)

Attachment to CEC-94 Contract Request Form-section O

Explanation for Services not Available through Civil Service

The purpose of this agreement is to arrange hydrogen safety plan reviews and station evaluations by the PNNL's sixteen member Hydrogen Safety Panel (HSP) for the 2016 hydrogen station grant solicitation (GFO-15-605 - Light Duty Vehicle Hydrogen Refueling Infrastructure). This panel has been serving the DOE since 2003 by providing recommendations on hydrogen safety issues; assisting with identifying safety gaps, best practices and lessons learned; and helping integrate safety planning to ensure that projects address and incorporate hydrogen and related safety practices. The HSP has conducted 438 reviews in 286 projects covering vehicle fueling stations, auxiliary power, backup power, combined heat and power, industrial truck fueling, portable power and R&D activities. Through this contract, the HSP's reviews and evaluations will strengthen safety planning of future hydrogen refueling stations and ensure that the proposed Energy Commission projects have adequate safety plans.

The Hydrogen Safety Panel is uniquely qualified and has been the primary source of hydrogen safety expertise for evaluating DOE-funded hydrogen and fuel cell technology projects since 2003. The main purpose for establishing the HSP was to support DOE's efforts to enable the safe and timely transition of commercial fuel cell technologies. This role aligns well with the Energy Commission's efforts to encourage the commercialization of fuel cell electric vehicles (FCEVs) through its grant program to facilitate the development of a hydrogen fueling station infrastructure throughout California.

The safe handling of high pressure and cryogenic hydrogen is a highly specialized and technical area of expertise and the use of hydrogen in transportation is still a very small market in California and globally. Thus, few experts are able to adequately assess hydrogen station safety, including a lack of civil service employees able to sufficiently perform this function. The limited field of experts who are able to assess hydrogen station safety are consolidated in PNNL's Hydrogen Safety Panel.

Attachment to CEC-94 Contract Request Form-section R

Justification for Salary for Hydrogen Safety Panel Members

The safe handling of high pressure and cryogenic hydrogen is a highly specialized and technical area of expertise and the use of hydrogen in transportation is still a very small market in California and globally. Thus, few experts are able to adequately assess hydrogen station safety.

The labor rates for Department of Energy Laboratories are within the standard posted rates for these classifications. The overhead rate is the negotiated overhead rate between the Energy Commission and Department of Energy Laboratories.

Attachment to CEC-94 Contract Request Form-section T

Justification for a Multi-Year Contract

The contract with PNNL for applied research from the Hydrogen Safety Panel in safety reviews must be longer than one year to allow the HSP to follow up with grant recipients funded under PON-15-605 to verify that their operational stations comply with the safety plans which were originally submitted and to address any safety issues or incidents which arose during operation. This follow-up period is designed to coincide with the three-year period of data reporting which follows each station becoming operational. The follow-up visits also allow the HSP to inform grant recipients of improvements in safety practices discovered since their original review, and conversely for the HSP to benefit from the experiences of station operators and apply their increased insight in future safety plan reviews.

EXHIBIT A

SCOPE OF WORK

TASK LIST

Task #	Task Name
1	Administrative Tasks
2	Safety Plan Assessments
3	Hydrogen Release and Incident Reporting
4	Annual Safety Evaluations
5	Identification of Project and Stakeholder Learnings
6	Web Postings of Hydrogen Safety Plans
7	Final Report

ACRONYMS

Specific acronyms follow:

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

BACKGROUND

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.

PROBLEM STATEMENT

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 under development. Also, the Energy Commission is planning to further prioritize safety under future hydrogen refueling infrastructure 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. The HSP has the expertise needed to evaluate and direct safety plan development. 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 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 in California.

OBJECTIVES OF THE CONTRACT

The research includes:

- Evaluation of the safety plans proposed as part of applications for hydrogen stations under GFO-15-605, "Light Duty Vehicle Hydrogen Refueling Infrastructure;"
- Evaluation of any incident or issue that may pose a safety threat as reported by successful recipients under GFO-15-605;
- Site visits to examine the hydrogen stations funded under GFO-15-605;
- Telephone interviews with station 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, resulting in station designs which place a greater emphasis on safety being more likely to receive funding from the Energy Commission;
- Provision of feedback to station 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 in general, not just those funded under GFO-15-605 or located within California.

The tasks outlined in this Scope of Work will apply past safety research of hydrogen refueling stations to upcoming stations 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.

ADMINISTRATIVE TASKS

Task 1 – Agreement 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 1.4). Invoices must be submitted to the Energy Commission’s Accounting Office.

Deliverables:

- Invoices

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.

Task 1.4 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 Energy Commission Grant Funding Opportunity (GFO) Release 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. These activities comprise at least three conference calls.
- 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 1.5 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

TECHNICAL TASKS**Task 2 - Safety Plan Assessments**

The goal of this task is to ensure that applicants to GFO-15-605 propose projects for funding by the Energy Commission that have adequate Safety Plans according to the HSP's "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.

The Contractor shall:

- Evaluate, on a first-come first-served basis, at least eight Safety Plans for at least eight different hydrogen refueling station designs submitted to the Energy Commission as part of applications to GFO-15-605. Design will differ based on feedstock, pathways, 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, sufficiency of process and instrumentation diagrams, sufficiency of safety and alarm systems, sufficiency of bill of materials with materials' compatibility, and sufficiency of maintenance, testing, calibration and inspection procedures.

- Provide to the Energy Commission a written assessment of the Safety Plans along with one of the following designations per Safety Plan (a *Written Assessment and Letter Grade Designation*):
 - A. Good,
 - B. Good, but the Applicant should consider the comments and recommendations in this assessment,
 - C. Marginal, but would be good if the Applicant considered the comments and recommendations in this assessment,
 - D. Not much consideration for safety,
 - E. Incomplete but promising (includes promising safety plans and those without much consideration for safety), and
 - F. Incomplete without much consideration for safety.

Deliverables:

- *Written Assessment and Letter Grade Designation* for each Safety Plan reviewed.

Task 3 - 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.

The Contractor shall:

- Evaluate and explain hydrogen releases and other hydrogen refueling station 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 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 operator and the CEC.

- 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 4 - Annual Safety Evaluations

The goal of this task is to conduct annual safety evaluations of the hydrogen refueling stations funded under GFO-15-605 for each of the first three years after becoming operational. Stations will be evaluated on conformance with the Safety Plans submitted to the Energy Commission and the 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, annually, for three years after the station(s) becomes operational as defined in GFO-15-605. The evaluation will include the stations’ adherence to grant recipients’ initial Safety Plans and any recommendations given by the HSP. Operational status is defined in GFO-15-605 as when a hydrogen refueling station has all of the following characteristics and meets all of the following requirements:
 1. Has a hydrogen fuel supply.
 2. Has an energized utility connection and source of system power.
 3. Has installed all of the hydrogen refueling station/dispenser components identified in the Energy Commission agreement to make the station functional.
 4. Has passed a test for hydrogen quality that meets standards and definitions specified in the California Code of Regulations, Title 4 Business Regulations, Division 9 Measurement Standards, Chapter 6 Automotive Products Specifications, Article 8 Specifications for Hydrogen Used in Internal Combustion Engines and Fuel Cells, Sections 4180 and 4181 (i.e., the most recent version of SAE International J2719).
 5. Has successfully fueled one FCEV with hydrogen.
 6. Dispenses hydrogen at the mandatory H70-T40 (700 bar) and 350 bar (if this optional fueling capability is included in the proposed project).
 7. Is open to the public, meaning that no obstructions or obstacles exist to preclude any individual from entering the station premises.
 8. Has all of the required state, local, county, and city permits to build and to operate.
 9. Meets all of the Minimum Technical Requirements (Section VI) of GFO-15-605.

- Conduct a site visit for each grant recipient whose Safety Plan was originally reviewed by the HSP, during the first year of that station's operationality. Findings from site visits shall be reported to the CAM in a *Safety Evaluation for Year One*, which shall include a list of recommendations for improved safety.
- Conduct annual safety evaluations for each grant recipient whose Safety Plan was originally reviewed by the HSP, via telephone, for the second and third years following a station's operational status. Findings from these evaluations shall be reported to the CAM 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 owner.
- Immediately notify the station owner and the CAM, in writing, of any safety issues, requiring immediate action found during site visits and evaluation ("*Written Notification of Safety Issues Requiring Immediate Action*").

Deliverables:

- *Safety Evaluation for Year One*
- *Annual Safety Evaluations for Years Two and Three*
- *Written Notification of Safety Issues Requiring Immediate Action*

Task 5 - 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 evaluations, and discussions of station evaluations at HSP meetings; and to provide any recommendations on safety management to the Energy Commission.

The Contractor shall:

- Convene the HSP to discuss results and lessons learned from the Safety Plans' implementation, and incident and station reviews conducted in Tasks 3-4.
- 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 6 - 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:

- Post Safety Plans, as submitted in applications to GFO-15-605, of the hydrogen refueling stations that receive Energy Commission funding under GFO-15-605 to <http://h2tools.org>.

Deliverables:

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

Task 7 - Final Report

The goal of this task is to provide a final report on the technical activities of this Agreement.

The Contractor shall:

- Develop a *Final Report* which indexes and summarizes the activities under this agreement. The CAM will be allowed to review the *Final Report* and provide comments before it is posted on <http://h2tools.org>.

Deliverables:

- *Final Report*

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 Agreement 600-15-014 with the Pacific Northwest National Laboratory (PNNL) operated by the Battelle Memorial Institute for the U.S. Department of Energy in the amount of \$221,333 for PNNL's Hydrogen Safety Panel to perform hydrogen safety plan reviews and hydrogen refueling station evaluations; 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 June 14, 2016.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat