STATE OF CALIFORNIA

DUTY STATEMENT
CEC-004 (Revised 2/2022)

Classification(s): Mechanical Engineer
Working Title: Mechanical Engineer
Position Number: 535-330-3583-934
Division/Office: Energy Research & Development / Energy Systems Research
Collective Bargaining Identifier (CBID): R09
Work Week Group (WWG): 2
Effective Date: May 2022

Conflict of Interest (COI): ☒ Yes ☐ No

If yes, this position is responsible for making or participating in the making of governmental decisions that may potentially have a material effect on personal financial interests. The appointee is required to complete Form 700 within 30 days of appointment, which identifies pertinent personal financial information.

Job Description

Under the direction of the Energy Resources Specialist III (Supervisory) and technical guidance of the Senior Electric Engineer in the Energy Systems Research Office (ESRO), the incumbent serves as a technical member of the Long Duration Energy Storage (LDES) research team to evaluate, select, deploy, and monitor the installation and performance of a range of LDES emerging technologies throughout the state.

The incumbent will develop technical knowledge on the capabilities of LDES technologies, including but not limited to advanced chemistry batteries, flow batteries, mechanical energy storage technologies, thermal energy storage systems, gravity-based energy storage, compressed air energy storage technologies, and pumped hydroelectric systems. The incumbent provides advice to ESRO management, the leadership of the Energy Research & Development Division (ERDD), Commissioners, other state agency executives and staff, and key personnel from the academic and industrial LDES community.

The incumbent performs mechanical engineering-related activities in the evaluation, design, construction, operation, and maintenance of emerging energy storage technology systems designed to improve the operations of the California utility grid or to assist in the integration of higher concentrations of renewable generation and distributed energy resources. The incumbent conducts investigations and prepares reports involving engineering economics work, which includes studies of capital costs, financial structures, depreciation, physical plant inspections, valuations, revenues, system performance, and expenses as they pertain to ensuring the
reliability, resiliency, and safety of the utility grid and both behind-the-meter and front-of-meter customer systems. The incumbent performs mechanical engineering work to synthesize research results, identify critical learnings from the research, inform and guide research projects, and identify technology gaps that may inform future program research efforts.

**Essential Duties**

40% **Engineering Assessment.** Under the technical guidance of the Senior Electrical Engineer provides technical and mechanical engineering assessments and reviews of new and emerging mechanical technologies to help achieve California's clean energy goals. Reads, analyzes, and interprets plans, drawings, specifications, and other technical information for research projects, including but not limited to clean-energy microgrids, renewable generation, emerging energy storage technology, vehicle-grid integration, distributed energy resources, and gas infrastructure safety and integrity. Conducts engineering analysis on the performance of emerging and fielded energy storage technologies to assess overall performance and safety. Performs engineering assessments and analysis on the need for short term, long term, and seasonal energy storage technologies to meet future California grid resiliency, safety, and reliability goals. Performs mechanical engineering evaluations and/or reviews of the mechanical system design, material science assessments, thermal efficiency assessments, and other technical results to ensure the mechanical systems perform as expected based on the approved design drawings and engineering specifications. Provides technical assistance to California Energy Commission (CEC) staff in analyzing engineering problems and in the preparation of integrated engineering studies, written reports, and technical assessments. Conducts field surveys, site visits, and inspections of the mechanical systems that are part of ERDD-funded demonstrations to ensure field systems comply with grant and other requirements. Supports the synthesis of research results for diverse technical and non-technical audiences, including the Commissioners, Governor’s Office, Legislature, California Public Utilities Commission and other state agencies, and the public. Supports the development of materials, including presentations and written reports. Supports the team in public forums to describe the team’s research focus. Supports presentations to international delegations on research being conducted in California on emerging technologies.

35% **Agreement Management.** Performs project management activities for complex projects with engineering tasks from research grant negotiation through close out. Works with grant recipients to prepare agreement documents, including negotiating final scope of work, schedule, and funding allocations. Establishes and maintains technical and business relationships with grant recipients and relevant project stakeholders throughout the project. Provides guidance as needed on CEC expectations for grant performance. Monitors progress and verifies performance to grant objectives. Conducts technical reviews of project deliverables and engages with SEE for the most complex deliverables. Verifies appropriateness of all grant charges in invoices against work performed. Works with grant recipients to identify solutions to technical and contractual research challenges, leveraging the expertise of Technical Advisory Committees. Briefs management on the status of the project. Initiates and approves grant amendments with leadership.

10% **Research Development.** Supports the SEE in technology and market analysis to identify the most pressing technological research needs by end use customers and the maturity
levels of new technologies. Supports the development of grant funding opportunities to address the gaps identified. Supports proposal scoring committees. Analyzes proposals to ensure projects address the solicitation criteria, including addressing market needs, advancing science or technology to market adoption, meeting goals and objectives in the grant funding opportunity, and providing a skilled team that can perform the technical tasks within the budget and schedule. Prepares written findings of such evaluations for use by a scoring committee.

10% **Technology Transfer.** Oversees the finalization of project reports, fact sheets, annual reports, and other documents to disseminate research results and lessons learned to technology end users and others with a focus on transferring information that provides public benefits to California and meets the state's energy policies and goals.

**Marginal Duties**

5% Performs other duties as required, consistent with the specifications of the classification.

**Knowledge, Skills, and Abilities**

Knowledge of: Engineering fundamentals and mathematics; designing and preparing plans, layout, specification writing, and estimates for heating, ventilating, instrumentation, pumping, lubrication, piping, air conditioning, refrigeration, plumbing, sanitary, pressure tank, water, water purification and drainage systems, and steam generating plants in common use, including principles of fluid flow, heat transfer, mechanical methods of power and material transmission, thermodynamics, and hydraulics pertaining to the design of water systems, pressure tanks, pumps, sewer systems, and other similar installations; various codes, safety orders, and regulations governing the design and installation of mechanical equipment, including electric motors; procedures of building construction as it relates to the installation of mechanical equipment; principles of leading the work of others.

Ability to: Prepare plans, specifications, and estimates for heating, ventilating, air-conditioning, refrigeration, plumbing, sanitary, water, water purification and drainage systems, and steam generating plants in common use; do mechanical design work; make correct computations; make neat and accurate lettering, drawings, and technical sketches; specify proper equipment materials; accurately interpret drawings and specifications; determine required sizes for radiators, traps, pipes, and other units; direct or inspect field construction operations or make field inspections and tests of mechanical installations; lead the work of others; check drawings and specifications; establish and maintain cooperative relations with employees and with those contacted in the work and whose work is being inspected; analyze situations accurately, and adopt and take effective action; prepare correspondence and make effective oral and written reports.

**Working Conditions**

The California Energy Commission offers a hybrid workplace model that is designed to support a distributed workforce of both office-based and remote-centric workers that relies on a high level of telework. Limited-in person attendance and occasional travel may be required based on the needs of the division. Regular and consistent attendance - whether office-based or remote-centric - is essential to the successful performance in this position. This position is remote-centered, which
means the incumbent works 50 percent or more of their time monthly from an alternate work location (i.e., teleworking).

Diversity and Inclusion Statement

As a state agency serving all Californians, the California Energy Commission is committed to being an organization that embodies diversity, equity, and inclusion. The Energy Commission plays an active and meaningful role in creating an environment that enables each employee to thrive.

Employee’s Acknowledgement: I certify that I am able to perform, with or without the assistance of a reasonable accommodation, the essential duties of this position.

Employee’s Name (Print): ____________________________

Employee’s Signature: ____________________________  Date: __________

Supervisor’s Acknowledgment: I certify this duty statement represents a current and accurate description of the essential functions of this position. I have discussed the duties of this position with and provided the above-named employee a copy of this duty statement.

Supervisor’s Name (Print): Reynaldo Gonzalez

Supervisor’s Signature: ____________________________  Date: __________