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CALIFORNIA ENERGY COMMISSION

CALIFORNIA NATURAL RESOURCES AGENCY

June 25, 2025

Barbara McBride
Calpine Corporation
3003 Oak Road
Walnut Creek, California 94597

**RE: Petition for Post-Certification Modification for Los Esteros Tanager Battery Energy Storage System (BESS) (03-AFC-02C) Project Staff's Data Request Set 1, A1 through A41**

Dear Barbara McBride:

The California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests Set 1 which is necessary for the staff analysis of the Los Esteros Calpine Tanager BESS project petition to amend (TN# 261280). The proposed project changes include:

The project owner seeks approval to modify the LECEF Decision and develop a 200 MW with approximately 1,600 mega-watt hours, lithium-ion phosphate (LFP) battery energy storage system (BESS) on approximately 10 acres.

Data Requests – Set 1 seeks further clarifying information in the areas of Air Quality, Public Health and Greenhouse Gas Emissions, Cultural and Tribal Cultural Resources, Hazardous Materials Management and Worker Safety and Fire Protections based on the contents of the petition to amend.

To assist CEC staff in timely completing its environmental review and to meet the requirements of CEQA (see Cal. Code Regs., tit. 14, §§15108, 15109), CEC staff is requesting responses to the data requests as soon as possible. If you are unable to provide the information requested, please let me know within 10 days of receipt of this letter.

If you have any questions, please email me at John.Heiser@energy.ca.gov.

John Heiser
Compliance Project Manager

Enclosure: Data Requests

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

**Technical Area: Air Quality, Public Health and Greenhouse Gas Emissions**

**Authors:** Huei-An (Ann) Chu, Ph.D., Andres Perez

## CONSTRUCTION IMPACTS ANALYSIS

### BACKGROUND

The construction of the project modifications is expected to last approximately 12 months. However, the petition did not provide a construction emission estimate or a construction impact analysis for air quality and public health.

### DATA REQUESTS

A1. Please provide a construction emission estimate or a comparison of the construction activities with the original project construction. If California Emissions Estimator Model (CalEEMod) is used to quantify construction emissions, please use the most recent version (version 2022.1.1.29 as of April 4, 2025) and provide a JSON file containing the CalEEMod project.

A2. Please provide an ambient air quality impacts analysis for criteria pollutants during construction of the project modifications to show compliance with the California Ambient Air Quality Standards and the National Ambient Air Quality Standards or justify why such analysis is not needed.

A3. Please provide a health risk assessment for toxic air contaminants during construction of the project modifications to show the health risks are below the Bay Area Air Quality Management District (BAAQMD) thresholds or justify why such assessment is not needed.

A4. If the result of cancer risk is greater than 10 in one million, please provide a map containing health risk isopleths, including an isopleth showing the risk value of 10 in one million.

## OPERATIONAL IMPACTS ANALYSIS

### BACKGROUND

Operation of the proposed BESS project may result in additional emissions due to vehicle trips associated with periodic maintenance and battery augmentation events, leakage due to refrigerant loss (and potentially leakage from gas-insulated equipment containing sulfur hexafluoride [$SF_6$]), and other operational activities.

The petition did not discuss whether there would be any new circuit breakers and gas-insulated switchgear that could contain $SF_6$. According to the California Code of Regulations, Title 17, Sections 95350 through 95359.1, which became effective on

January 1, 2022, starting on the applicable phase-out dates, no person may acquire $SF_6$ gas-insulated equipment (GIE) for use in California unless certain provisions apply.

The petition also did not specify if any integrated cooling system would be used for BESS cooling. Staff needs this information to ensure compliance with all laws, regulations, and ordinances. If the project is use any refrigerant for cooling, the use of the refrigerant would need to comply with the regulation Prohibitions on Use of Certain Hydrofluorocarbons (HFCs) in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4).

## DATA REQUESTS

A5. Provide an estimate for the additional operational emissions expected from the proposed BESS project (using CalEEMod if possible). If CalEEMod is used to quantify additional operational emissions, please use the most recent version (version 2022.1.1.29 as of April 4, 2025) and provide a JSON file containing the CalEEMod project.

A6. If the project intends to use $SF_6$ in any new GIE, please provide an estimate for annual leakage from the GIE in metric tons of carbon dioxide equivalent. Further, state how the use of $SF_6$ complies with the $SF_6$ phase-out regulation.

A7. Please confirm whether any refrigerant would be used for BESS cooling. Please provide the specifications if any refrigerants would be used on the project, including an annual GHG emissions calculation due to refrigerant leakage (in metric tons of carbon dioxide equivalent). Please demonstrate that the proposed refrigerant would comply with the HFC prohibition regulation.

## THERMAL RUNAWAY

## BACKGROUND

Lithium-ion batteries can experience thermal runaway due to faults, mechanical damage, or manufacturing defects, potentially leading to fires or other hazards. To mitigate this risk, the BESS enclosures are engineered to prevent fire propagation from one enclosure to adjacent units. As part of the certification process, the BESS enclosures will undergo destructive testing, including fire performance evaluations. According to the petition (TN 261280), extensive testing would undergo extensive testing in accordance with UL9540 and UL9540A standards. UL9540 ensures the overall safety and performance of energy storage systems, while UL9540A specifically tests for fire safety and thermal runaway propagation, confirming that no thermal runaway can extend beyond the unit level.

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

To further assist the CEC staff and the public in their review of the air quality and public health impacts during the battery thermal runaway/fires, staff requests the following information.

## DATA REQUESTS

Please provide a copy of the UL 9540A report, if a specific battery technology/ manufacturer has been chosen, including measured emissions of criteria air pollutants, toxic air contaminants, greenhouse gases (GHG), and hazardous materials. Otherwise, please provide industry average data or a literature review addressing the emissions and exhaust parameters requested in the next data request below.

A8. Provide the exact locations (latitude and longitude or UTM coordinates) and dimensions of the BESS enclosures for modeling purposes. Also include the following input parameters for a dispersion modeling analysis of all potential criteria air pollutants, greenhouse gases, and toxic air contaminants (TACs) that could be generated during combustion: emission rates (in grams/second), exhaust temperature, exhaust diameter, pressure, and exhaust gas velocity resulting from battery damage or thermal runaway of the whole project. Note to include the calculation worksheet, if available.

A9. A copy of the dispersion modeling analysis of all potential criteria air pollutants and TACs for the thermal runaway scenario using a well-validated model (AERMOD preferred).

A10. A comparison of the modeled fire-related TACs concentrations to the U.S. EPA Acute Exposure Guideline Levels (AEGL) and the OEHHA/CARB acute Reference Exposure Levels (RELs) and demonstrate whether the acute hazard Index (HI) of TACs would be higher than the significance threshold of 1 at sensitive receptors. Please demonstrate whether the criteria air pollutant impacts would cause or contribute to any exceedance of ambient air quality standards. If exceedances occur, provide a detailed Emergency Response Plan and outline the applicable regulatory notification requirements.

**Technical Area: Biological Resources**

**Author:** Carol Watson

## BURROWING OWL INCIDENTAL TAKE AUTHORIZATION

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

## BACKGROUND

Based on the petition, burrowing owl (*Athene cunicularia*) has a high potential to occur in the project area, with suitable burrows and habitat identified within 500 feet of the project footprint. In addition, individuals were observed during an April 17, 2024 reconnaissance survey approximately one mile west of the site. There are 32 records in the California Natural Diversity Database (CNDDB) records which document burrowing owl occurrences within five miles of the project. Based on staff's desktop review this species was documented within 500 feet of the project footprint in 2009 (CNDDB 2025).

The project owner has proposed revisions to Condition of Certification **BIO-11** to apply to amendment activities for the Tanager BESS (TN 261280). If pre-construction surveys detect burrowing owls on or adjacent to the project site, the project owner proposes using passive relocation techniques—only if the owls are present and not nesting, and in accordance with seasonal timing and buffer distance requirements set forth in California Department of Fish and Wildlife (CDFW) guidance. The revised **BIO-11** would apply specifically to the proposed amendment activities (TN 261280).

On October 25, 2024, the burrowing owl was designated as a candidate species under the California Endangered Species Act (CESA). As a candidate, it is granted the same level of protection as a species formally listed as threatened or endangered under CESA. With the recent candidate for listing under CESA for burrowing owl, an Incidental Take Permit (ITP) is required for impacts that may result in "take" of burrowing owl. Compensatory mitigation is also required as part of the ITP process, which includes conserving burrowing owl habitat in perpetuity.

Passive exclusion of owls from burrows qualifies as "take" under CESA. While the California Department of Fish and Wildlife's (CDFW's) 2012 *Staff Report on Burrowing Owl Mitigation* offers relevant guidance, additional measures would be necessary to fully avoid take. Condition of Certification **BIO-11** for the project does not provide take authorization should the species be found onsite or within the project disturbance area.

Under the Warren-Alquist Act, the CEC has in lieu permitting authority for projects it certifies, including the ability to authorize take under CESA through its certification process. As such, any revised conditions must demonstrate how the project would comply with CESA protections, including the acquisition of appropriate take authorization for burrowing owl if the species is present. Staff recommends that the project owner apply for incidental take coverage for burrowing owl or full avoidance of the species would be required.

## DATA REQUESTS

A11. If the project owner would like to pursue incidental take coverage, please provide all information that would be required in an ITP application for CESA-listed or candidate species, specifically burrowing owl, including an impacts analysis and proposed mitigation measures (Cal. Code of Regs., tit.14, § 783.2). Information regarding the project description, schedule, and location has already been provided.

Information on what is required in a typical ITP application can be located here: https://wildlife.ca.gov/Conservation/CESA/Permitting/Incidental-Take-Permits

A12. Please describe any existing compensatory mitigation for the Los Esteros Critical Energy Facility (03-AFC-02C) and how this could potentially apply to the amendment activities for the Tanager BESS and issuance of an incidental take for the project.

A13. If the project owner declines to pursue incidental take coverage, please provide a revised **BIO-11** or other avoidance and minimization measures to fully avoid take of burrowing owl.

## REFERENCES

CDFW 2024 – California Department of Fish and Wildlife (CDFW). Petition Evaluation for Western Burrowing Owl (*Athene cunicularia hypugaea)*. Report to the Fish and Game Commission. California Department of Fish and Wildlife, P.O. Box 944209, Sacramento CA 94244-2090. 19 pp. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=225154&inline

CDFW 2012 - California Department of Fish and Wildlife. Staff Report on Burrowing Owl Mitigation. March 7, 2012. Accessed online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843

CNDDB 2025 – California Natural Diversity Database (CNDDB). RareFind [Internet March 3, 2025]. California Department of Fish and Wildlife. [Version 5.3.0].

## Technical Area: Cultural and Tribal Cultural Resources

**Author:** Patrick Riordan

## BACKGROUND: Description and Characterization of Excavation

Assessment of potential impacts on cultural and tribal cultural resources hinges in part on knowing the extent and character of ground disturbing activities associated with a project. The application provides little information about the depth of excavation

required to construct the proposed project modifications, identifying only depths of disturbances associated with the construction of the concrete foundations or elevated platforms for the battery containers and foundations for Gen-tie poles (TN 261280, pp.2).

**DATA REQUESTS**

A14. Please describe and characterize the scale of excavation (particularly depth) required for various project components, including:

1. Demolition of existing site elements and landscaping
2. Site grading
3. Construction of new entrances
4. Construction of internal roads and surface parking
5. Landscaping and fences
6. Stormwater features and site drainage
7. Hydrants and water lines
8. Utility interconnects
9. Security and operational lightning

**BACKGROUND: Subsurface Testing Report**

The Project Owner states in the petition for modification that "Extensive backhoe testing was performed for a Phase 2 environmental site assessment and the testing demonstrated the general lack of buried resources on site." (TN 261280, pp. 4) Staff was unable to locate a report in the petition files regarding sub-surface testing conducted in the Project Area, as alluded to by the Project Owner. However sub-surface testing of three sites in the broader Study Area are reported on in the confidential Cultural Resources Assessment appending the Project Owner's petition (Jacobs 2025, p. 3-24).

## DATA REQUEST

A15. Please clarify for staff, if the Project Owner is referring to subsurface testing that occurred in the Project Area, or if they are referring to previous excavations nearby in the broader Study Area. Provide a reference for the Phase 2 Environmental Site Assessment referred to in the Petition and identify where in the Petition package the referenced report is located. If the report was not included in the Petition documents, provide a copy of the Phase 2 Environmental Site Assessment substantiating the claim of the Project Owner.

## BACKGROUND: Native American Contacts and Efforts to Identify Potential Tribal Cultural Resources

The stated initial goal of the cultural resources inventory undertaken by Jacobs on behalf of the project proponent was "to identify any cultural resources and tribal cultural resources (ethnographic, architectural, and archaeological) located within the Project Area so that effects of the Project could be assessed." (Jacobs 2025, pp. 3-12).

In their efforts to identify traditional cultural resources within or near the project's Study Area, the cultural resources consultant contacted the Native American Heritage Commission (NAHC) and requested a search of the Sacred Lands Files as well as an up-to date contact list for Native American groups and individuals associated with the Project Area (Jacobs 2025, pp. 3-15). The NAHC responded to the Applicant's consultant in a letter dated April 8, 2024, reporting that the results of the NAHC's Sacred Lands File query was positive for tribal resources in the Study Area (Campagne 2024). The NAHC indicated that the consultant should inquire with the Northern Valley Yokut/Ohlone Tribe identified on the contacts list adjoining their letter for information regarding the resource. The Applicant's confidential Cultural Resources Assessment (Jacobs 2025) does not include a copy of the Native American Contacts List provided by the NAHC, nor does it report on the efforts undertaken to contact the identified tribal representatives regarding the identification of Native American traditional cultural resources or potential tribal cultural resources in the Study Area.

## DATA REQUESTS

A16. Please provide a copy of the Native American Contacts List that accompanied the NAHC's response letter.

A17. Provide a narrative description of the efforts made to contact tribal representatives regarding the identification of Native American traditional cultural resources or potential tribal cultural resources in the Study Area.

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

## REFERENCES


Campagne 2024 – Cody Campagne, Letter Regarding Calpine Tanager BESS Project, Santa Clara County. Addressed to Natalie Lawson, Jacobs. Prepared by California Native American Heritage Commission, West Sacramento, CA. April 8, 2024.

Jacobs 2025 – Jacobs Engineering Group Inc. (Jacobs Group). Confidential Cultural Resources Assessment Tanager BESS Project, San Jose, CA. January 2025.

TN 261280
Petition for Modification 2025 – Petition for Modification, TN 261280 – Los Esteros Critical Energy Facility (03-AFC-02C) Petition for Modification Tanager Battery Energy Storage System Project. January 24, 2025.

Los Esteros Critical Energy Facility 2025 – Los Esteros Critical Energy Facility, LLC. (TN 261280). – Los Esteros Critical Energy Facility (03-AFC-02C) Petition for Modification Tanager Battery Energy Storage System Project, dated January 24, 2025. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=03-AFC-02C


## Technical Area: Hazardous Materials Management


**Authors:** Brett Fooks, Kenneth Salyphone, Michele Shi


## BACKGROUND: Site Security

The application does not describe site security measures during construction and operation.

## DATA REQUESTS

A18. Please provide a description of proposed site security measures during the construction and operation phases of the proposed BESS project.

A19. Please clarify whether the proposed BESS project will be amended to the existing Los Esteros Critical Energy Facility Construction Security Plan and Operation Security Plan.

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

## BACKGROUND: Toxic and Flammable Gases Generated, and Explosion Control

The applicant describes potential environmental impacts related to hazardous materials management on p. 4 but does not describe potential hazards during an emergency thermal runaway event.

Thermal runaway is a process in which the lithium-ion cell enters an uncontrollable, self-heating state and can emit toxic gases such as hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, and others. These flammable gases could potentially lead to an explosion within the BESS container.

Staff requires additional information on the hazards and proposed mitigation measures during an emergency thermal runaway event.

## DATA REQUESTS

A20. Please provide a discussion of the toxic vapors/emissions that could be produced if a battery container is damaged, or thermal runaway occurs.

A21. Please provide a schematic of the proposed battery container gas detection systems and a detailed description of these systems.

A23. Please provide a schematic of the proposed battery container explosion control systems and a detailed description of these systems.

A24. Please provide a description of how the proposed battery container explosion control systems will comply with the applicable National Fire Protection Association (NFPA) standards (e.g. NFPA 68, 69, 855, etc.).

## Technical Area: Worker Safety and Fire Protection

**Authors:** Brett Fooks, Kenneth Salyphone, Michele Shi

## BACKGROUND: Battery Energy Storage System (BESS) Technology

The applicant describes the lithium-ion (Li-ion) based BESS containers on pp. 6-7 and Appendix B references Tesla Megapack 2XL battery information
Staff requires additional information on the type of battery technology for the proposed project to analyze the safety controls and inherent hazards associated with these systems, which can vary depending on battery technology.

# Petition for Modification – Los Esteros Tanager BESS Project (03-AFC-02C)

# DATA REQUESTS – SET 1

## DATA REQUESTS

A25. Please provide the BESS manufacturer's specifications, ratings, and listings of the specific containerized BESS technology being proposed.

A26. Please provide the Safety Data Sheet for hazardous materials contained in the BESS technology being proposed, including related to the fire suppression system and air-cooled or liquid-coolant air conditioning system.

A27. Please provide the UL 9540A test report for the BESS manufacturer/model being proposed.

A28. Please provide a description of how the hazard mitigation analysis for the proposed BESS technology will comply with the California Fire Code section 1207.1.4 and the applicable NFPA standards (e.g. NFPA 855).

## BACKGROUND: BESS Location and Installation

The application provides Appendix B Tanager BESS Project Site Plan and describes the BESS installations on pp. 6-7 under the Worker Safety and Fire Protection analysis. The applicant stated "Site internal access roads will meet San Jose Fire Department Fire Apparatus Access Road standards as it relates to width, turn radius, grade, turnaround minimums, and any other pertinent requirements."

A29. Please provide a description of how the proposed BESS project will comply with the 2023 edition of the NFPA 855 Standard for the Installation of Stationary Energy Storage Systems.

A30. Please provide correspondence with the City of San Jose Fire Department detailing the location and installation requirements for the BESS project (e.g. access roads, setbacks, etc.).

A31. Please provide plans of the BESS project that specify the minimum clearances between the BESS containers' exposure hazards including but not limited to buildings, lot lines, and fire barriers if used.

## BACKGROUND: Fire Detection and Fire Suppression Systems for BESS Containers

The applicant describes the lithium-ion (Li-ion) based BESS containers on pp. 6-7 under the Worker Safety and Fire Protection analysis. The application does not detail proposed internal battery container fire suppression systems.

### DATA REQUEST

A32. Please provide a schematic of the proposed battery container fire suppression systems and a detailed description of these systems.

### BACKGROUND: Water-Based Fire Protection Systems for BESS Project

The applicant describes the modifications to the existing LECEF including the extension of the existing LECEF underground fire loop and the addition of hydrants at intervals recommended by the City of San Jose Fire Department on p. 2 and 7. The applicant also proposed COC TANAGER WORKER SAFETY-7 on a fire water supply.

Staff requires additional information on how the applicant has addressed current recommendations by the City of San Jose Fire Department regarding fire safety of the proposed Tanager BESS Project.

### DATA REQUESTS

A33. Please provide correspondence with the City of San Jose Fire Department detailing the fire protection system requirements for the BESS project.

A35. Please provide a description of the amount and hydraulic performance of the additional fire hydrant(s).

A36. Please provide the worst-case fire water flow requirements in GPM (gallons per minute) during emergency conditions.

A37. Please provide a schematic of the water-based fire protection system for the site of the BESS project and a detailed description of these systems, such as locations of fire water pipeline, fire water storage tanks, fire pumps, fire hydrants, etc.

### BACKGROUND: Emergency Response and Emergency Action Plan

A project-specific Emergency Response Plan is mentioned on p. 7. The applicant stated, "A project-specific Emergency Response Plan will be developed and shared with applicable Authorities Having Jurisdiction as required by Senate Bill 38." Senate Bill No. 38 (SB38) pertains to battery energy storage facilities and requires an emergency response and emergency action plan.

## DATA REQUESTS

A38. Please provide a draft outline of the information that would be included in the emergency response and action plan for the proposed BESS project during the construction and operation phases.

A39. Please specify the local emergency management agencies, unified program agencies, and local first response agencies that the applicant will coordinate with in developing the emergency response and emergency action plan.

## BACKGROUND: Fire Prevention Plan

The application does not describe the Fire Prevention Plan during construction and operation.

## DATA REQUETS

A40. Please provide a draft outline of the information that would be included in the Fire Prevention Plan for the proposed BESS project for the construction and operation phases.

A41. Please clarify whether the proposed BESS project will be amended to the existing Los Esteros Critical Energy Facility Construction and Operation Fire Protection and Prevention Plan.