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Filer:	Samantha G. Neumyer
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Petition for Post-Certification Modification Tanager Battery Energy Storage System Project

Data Response Set 3C

Los Esteros Critical Energy Facility 03-AFC-02C

Submitted to
California Energy Commission

Submitted by
Los Esteros Critical Energy Facility, LLC

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LOS ESTEROS CRITICAL ENERGY FACILITY (03-AFC-02C)

Petition for Modification- Tanager BESS Project

DATA RESPONSE SET 3C

Los Esteros Critical Energy Facility, LLC, on behalf of Tanager Power, LLC, provides the following responses to the California Energy Commission (“CEC”) Staff’s Data Request Set 3. These responses address Data Requests A64, A65, A66, A67, and A70, and supplement *Data Response Set 3A*¹ and *Data Response Set 3B*², for the Tanager Battery Energy Storage System (“BESS”) Project (“Project”). This *Data Response Set 3C* completes the responses to CEC Staff’s Data Request Set 3.

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as presented in CEC Staff’s Data Request Set 3³ and are keyed to the Data Request numbers.

BATTERY ENERGY STORAGE SYSTEM (BESS) THERMAL RUNAWAY/FIRE IMPACTS

DATA REQUESTS

A64. *In addition to the toxic air contaminants (TACs) modeled in Table 4 (TN 268268), please also provide a dispersion modeling analysis of the TACs mentioned above using available representative data from the literature review or measured from any BESS test.*

RESPONSE: Updated modeling tables are included as Attachment DR-A64. Modeling files will be submitted electronically to CEC Staff via ShareFile/OneDrive.

A65. *If the modeling data originates from literature review, provide a copy of the referenced literature. If the modeling data come from a BESS test, then provide the specific analytical method(s) for determining the presence of off-gassing constituents in the test, including sample collection methods, laboratory preparation methods, analytical methods, the MDL (method detection limit) or PQL (practical quantitation limit) or RL (reporting limit) for all measured constituents, and all QA/QC (quality assurance/quality control) data including results of a spiked sample.*

RESPONSE: The modeling data originates from a combination of an updated literature review and revised testing data from the proposed manufacturer.

Ramboll was engaged to provide an update of their 2024 literature review, conducted for the offsite consequence analysis (“OCA”) for Vistra Morro Bay BESS Project. In addition to the review, Large Scale Fire Test (“LSFT”) reports and data from the proposed battery supplier was provided to Ramboll for inclusion in their report. The LSFT contained data on three of the requested additional TACs (HF, HCl, HCn). A copy of the report summarizing the data review and selection is provided as Confidential

¹ TN: 269840, docketed May 5, 2026.

² TN: 270953, docketed June 24, 2026

³ TN: 269329, Docketed March 26, 2026.

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Attachment DR-A65, filed separately under application for confidential designation.

A66. *Please compare all the modeled TACs concentrations (the ones modeled in TN 268268 and the ones requested above) to appropriate health-based exposure thresholds, including the U.S. EPA Acute Exposure Guideline Levels (AEGLs), the OEHHA/CARB acute Reference Exposure Levels (RELs), and Emergency Response Planning Guidelines (ERPGs) thresholds but excluding the Immediately Dangerous to Life or Health (IDLH) levels since they are not health protective.*

RESPONSE: A table of modeled concentrations are compared to relevant health-based exposure thresholds below.

EPA AEGLs Significance Criteria (1-Hour Average) at the Maximum Sensitive Receptor Location				
Substance	1-Hr Modeled Concentration (ug/m ³)	1-Hr AEGL 1 ¹ (ug/m ³)	1-Hr AEGL 2 (ug/m ³)	1-Hr AEGL 3 (ug/m ³)
Hydrogen Chloride	24.892	2684	32807	149121
Hydrogen Fluoride	14.858	818	19462	36010
Hydrogen Cyanide	8.120	2210	7848	16580
Phosphoryl Fluoride	4.795	-	-	-
Furane	7.231	-	18,930	-
Carbonyl Fluoride	0.387	-	756	-
Propane	8.693	9,900,000	-	-
Butane (C4 total)	17.830	13,000,000	-	-
Hexane (C6 total)	2.933	10,222	10000000	-
Formaldehyde	4.021	1100	17195	68781
Benzene	0.412	170000	2600000	-
Toluene	0.108	250000	2100000	-
Styrene	0.306	85000	550000	-
Nitrogen Dioxide	23.20	94	22581	37620
Carbon Monoxide	170.141	-	95450	379500
Sulfur Dioxide	7.927	525	1965	78600
PM2.5	22.088	-	-	-
1. EPA Access Acute Exposure Guideline Levels Values (EPA August 2025) Modeled emission rates based on Hithium LSFT Report, 6.25 Mwh, January 23-29, 2026 and Ramboll Report (June 2026).				

The AEGL levels are used for emergency response planning, risk assessment, and decision-making in chemical release incidents. The AEGL thresholds provide accurate response limits to support emergency responders in protecting public health without overly conservative measures.

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RELs are not appropriate benchmarks for evaluating the potential impacts of acute release scenarios, as outlined in DRA10.⁴ Petitioner incorporates that prior response by reference here and further supplements it as follows.

OEHHA establishes RELs under the Air Toxics Hot Spots program, Health & Safety Code §§ 44360 *et seq.*, and the California TAC regulatory framework. Even the “acute” REL (defined as a 1-hour averaging period) is derived through a methodology designed to protect against adverse health effects from repeated or ongoing exposure at a facility with continuous or regularly recurring emissions. The methodology applies standard uncertainty factors — typically ranging from 3 to 10 each for inter-individual variability, interspecies extrapolation, LOAEL-to-NOAEL adjustment, and database limitations — to produce a concentration that is protective with substantial margin under chronic conditions.

The REL is therefore not the concentration at which harm begins. It is a health-protective benchmark well below the threshold of observable adverse effect, calibrated for a different exposure scenario than an unintended accident. As OEHHA's technical support documents make clear, RELs are not intended to serve as the measure of harm from a discrete event.

RELs have admittedly been used to characterize non-cancer inhalation hazards for purposes of land use and permitting decisions, but this has been in instances involving ongoing or repeating emissions. Using RELs as the benchmark to measure the potential impact of an unintended, isolated incident will produce a significance finding that reflects the conservatism of a chronic risk tool applied to an acute scenario that does not take into account the probability of an unintended event in the first instance. A significance determination that treats an accident scenario identically to a chronic, routine emission scenario — using the same threshold derived for the latter — inflates the apparent risk of the former without rational basis. In this context, RELs cannot guide a credible determination that the project could cause a significant environmental impact.

Federal and state emergency response authorities have developed protective benchmarks specifically designed for acute, short-duration, unintended release events. EPA's Acute Exposure Guideline Levels (AEGLs) are tiered to reflect increasing severity: AEGL-1 addresses transient, reversible discomfort; AEGL-2 addresses the onset of irreversible or serious adverse effects or impaired ability to escape; and AEGL-3 addresses life-threatening effects. The American Industrial Hygiene Association's Emergency Response Planning Guidelines (ERPGs) serve an analogous function. Critically, these are the benchmarks that California's own CalARP program and EPA's RMP rule direct lead agencies and facilities to use when evaluating the offsite consequences of

⁴ TN: 268268.

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a worst-case accidental release. 19 CCR §§ 5130 *et seq.* and 40 CFR §§ 68.22 call for use of AEGL-2, ERPG-2, or Immediately Dangerous to Life or Health (IDLH) established by NIOSH (in that order of preference) as the endpoint for worst-case release modeling — not RELs. This regulatory choice reflects a considered policy judgment that acute release consequences should be measured against acute-harm thresholds, not chronic risk benchmarks.

In sum, the appropriate benchmarks for acute release scenarios, as would be the case in the event of a thermal runaway event at the proposed BESS Project, are AEGLs and/or ERPGs not RELs.

- AEGLs/ERPGs are designed specifically for emergency response planning — they reflect the concentration above which acute harm (injury, impaired escape, death) occurs from a single short-duration exposure. They account for worst-case sensitive populations and are built around an emergency scenario premise.
- OEHHA Acute RELs are derived using standard hazard quotient / safety factor methodology, applying uncertainty factors (UFs) to a NOAEL or LOAEL from toxicological studies. They are protective with a margin of safety baked in, not threshold-of-harm values. They are furthermore fundamentally chronic risk characterization tools, even though OEHHA publishes acute (1-hour) and 8-hour variants. An acute REL is not the concentration at which harm begins, but the concentration below which no harm is anticipated with margin based on repeated short-term exposures.

The Commission has used RELs to evaluate modeling results on at least one other BESS project, however whether the suitability of RELs for this purpose was carefully considered is not evident from those records. For the reasons provided above, this is inappropriate and the practice should be discontinued for future projects..

A67. *Please demonstrate whether the acute hazard Index (HI) of TACs would be higher than the significance threshold of 1.0 at sensitive receptors. If the acute HI would exceed 1.0 or the criteria air pollutant impacts would cause or contribute to any exceedance of ambient air quality standards, please explain what mitigation measures are planned to be implemented to reduce the impacts to less than significant.*

RESPONSE: Based on the 1-hour modeling results in the updated results table, there were no exceedances of any of the applicable significance criteria at the sensitive receptors. There were no exceedances of the AEGL-2 at any receptor location throughout the study area, including the sensitive receptors. In areas with concentrations below AEGL-1, no members of the general population,

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including susceptible individuals, are expected to experience any health effects.⁵

⁵ EPA has explained that CA-RELs are “general public reference values” that “tend to over-estimate . . . potential risks from exposures” and are designed to analyze situations where the general public has “potential for a repeat exposure.” *See* EPA, Graphical Arrays of Chemical-Specific Health Effect Reference Values for Inhalation Exposures 5, 16 (Sept. 2009), <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100N7UV.PDF?Dockey=P100N7UV.PDF>. In contrast, “Emergency Response values” like AEGL and ERPG have the “more specific purpose” of addressing “a rare ‘once-in-a-lifetime’ exposure scenario.” *Id.* at 3, 16. Other agencies likewise recognize that RELs are designed to address risks to the general public from routine exposures, not for emergency planning and response. *See, e.g.*, FEMA, Planning and Decision Framework for Chemical Incident Consequence Management 113–14 (July 2022), https://www.fema.gov/sites/default/files/documents/fema_planning-framework-for-chemical-incident-consequence-management-2022.pdf (“In contrast [to AEGLs or ERPGs], the acute CA-RELs developed by the State of California address continuous or short-term emissions of airborne toxicants to which the public living or working in communities surrounding industrial facilities is at risk of being exposed.”); OEHHA, Air Toxics Hot Spots Program Technical Support Document for the Derivation of Noncancer Reference Exposure Levels 81 (Dec. 2008), <https://oehha.ca.gov/sites/default/files/media/downloads/crn/noncancertsdfinal.pdf> (noting that emergency planning guidelines such as AEGL are “seldom comparable to the acute RELs,” because the latter are intended for “routine emissions and exposure”).