

DOCKETED

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August 22, 2024

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Re: CURE Data Requests Set 1 for Willow Rock Energy Storage Center (21-AFC-02)

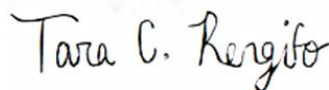
Dear Mr. Harris:

California Unions for Reliable Energy (“CURE”) submits this first set of data requests to Hydrostor, Inc. for the Willow Rock Energy Storage Center Project (“Project”), pursuant to Title 20, section 1716(b), of the California Code of Regulations. The requested information is necessary to: (1) more fully understand the Project; (2) assess whether the Project will be constructed and operated in compliance with all laws, ordinances, regulations, and standards; (3) assess whether the Project will result in significant environmental impacts; (4) assess whether the Project will be constructed and operated in a safe, efficient, and reliable manner; and (5) assess potential mitigation measures.

Pursuant to section 1716(f), written responses to these requests are due within 30 days. If you are unable to provide or object to providing the requested information by the due date, you must send a written notice of your objection(s) and/or inability to respond within 20 days.

Please contact us if you have any questions. Thank you for your cooperation with these requests.

Sincerely,



Tara C. Rengifo

TCR:ljl

STATE OF CALIFORNIA

**State Energy Resources Conservation
and Development Commission**

In the Matter of:

**WILLOW ROCK ENERGY STORAGE
CENTER**

Docket No. 21-AFC-02

**CALIFORNIA UNIONS FOR RELIABLE ENERGY
DATA REQUESTS SET 1**

August 22, 2024

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Attorneys for California Unions for
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The following data requests are submitted by California Unions for Reliable Energy (“CURE”). Please provide your responses as soon as possible, but no later than Monday, September 23, 2024, to:

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Please identify the person who prepared your responses to each data request. If you have any questions concerning the meaning of any data requests, please let us know.

**WILLOW ROCK ENERGY STORAGE CENTER
CURE Data Requests Set 1 (Nos. 1-104)**

PROJECT DESCRIPTION

BACKGROUND: PROJECT OWNERSHIP

The Supplemental Application for Certification (“SAFC”) states that the Willow Rock Energy Storage Center Project (“Project” or “WRESC”) “will be located on an approximately 88.6-acre portion of an approximately 112-acre parcel that is currently owned by Zevsar Concepts, LLC, a Nevada limited liability company. GEM has obtained site control of the entire 112-acre parcel by virtue of an optional purchase and sale agreement with the landowner.” (TN 254806 at p. 1-12) Furthermore, GEM A-CAES LLC (“Applicant”) “has entered into, or is in the process of completing, pending purchase and sale agreements with each of the parcel owners [for the Project’s construction and laydown areas] that provides the project with full access and site control.” (*Ibid.*) A complete list of properties associated with Project development is included in Tables 2-1 and 2-2 in the SAFC.

DATA REQUESTS:

1. Describe the status of the Applicant’s access and site control over the Project’s construction and laydown areas.
2. Discuss the status of any pending purchase and sale agreements with each of the parcel owners.
3. Discuss the Applicant’s access to and site control over the Project Area, as defined on page 3-1 of the SAFC. (TN 254806)
4. Discuss the Applicant’s access to and site control over the Project Boundary, as defined on page 3-1 of the SAFC. (TN 254806)
5. Identify any areas in the Project Area and Project Boundary where the Applicant still does not have access.
6. Describe any areas that have not been surveyed for biological resources due to lack of access.
7. Describe any areas that will eventually be surveyed but have not yet been surveyed for geologic resources due to lack of access.

BIOLOGICAL RESOURCES

BACKGROUND: SURVEY AREAS AND DATES

There is inconsistent information regarding whether the entire Project study area was surveyed for biological resources, why certain areas were not surveyed, and the timing for the surveys. First, the SAFC defines the Project study area to include the Project area (TN 254806 at p. 5.2-1) and the surrounding buffer area (*Id.* at p. 5.2-2). Certain areas of the study area were not surveyed in 2023, and additional biological resource surveys were conducted in 2024. The results were provided in survey report addendums released on August 5, 2024. (TN 258308 to TN 258316)

Whether the entire Project study area has been surveyed is inconsistently addressed in the addendums filed to the docket on August 5, 2024. Some of the addendums suggest that some portions of the Project study area still have not been surveyed due to private property access issues. For example, page 4 of the Desert Tortoise Survey 2024 Addendum (TN 258309) states: “[a]reas that biologists could not safely survey or did not have permission to access, such as private property, were scanned from the perimeter using binoculars.” Other addendums, however, suggest the entire Project study area was surveyed. For example, in describing the sensitive plant surveys, the 2024 Biological Resources Assessment Report Addendum (“BRAR Addendum”) states: “[s]urveys were conducted by walking 33-foot- (10-meter-) wide parallel transects throughout the entire project area,” which was defined as: (a) “additional project areas that were added for the additional 2024 BRAR addendum,” and (b) “P2 North (47 acres) and P2 South (10 acres), as well as approximately 3.69 miles of additional gen-tie alignments.” (TN 258316 at p. 1)

Additionally, the BRAR Addendum (pp. 12-13) states that desert tortoise, sensitive plants, and burrowing owl burrow data collection occurred during the same survey. Since the Desert Tortoise Survey 2024 Addendum (TN 258309) states that portions of the study area were not surveyed for desert tortoise, it is unclear why the biologists were able to survey the entire Project area for sensitive plants, but not for desert tortoises due to safety or private property restrictions.

Second, the SAFC states that some areas were not surveyed in 2023 because the biologists could not “safely survey” or gain permission to access areas due to private property restrictions, although the BRAR Addendum states these areas were not surveyed because: “[i]n September 2023, Hydrostor updated the WRESC project design to include additional project features following the completion of the 2023 biological survey season.” (TN 254806 at p. 5.2-20; TN 258316 at p. 1)

Finally, the BRAR Addendum and survey report addendums provide inconsistent information on when surveys were conducted. The BRAR Addendum (Table 2) indicates the Crotch's bumble bee surveys were conducted on March 26-27, April 2-4, April 29-30, and May 1-3, 2024. However, Table 1 in the Crotch's Bumble Bee Survey 2024 Addendum (TN 258314) indicates the surveys were conducted on March 26-27, April 8-9, May 7-8, and June 5-6, 2024. The BRAR Addendum (Table 6) indicates the sensitive plant surveys were conducted on April 2-4, April 8-9, and June 5-7, 2024. However, page 3 of the Sensitive Plant Survey 2024 Addendum (TN 258313) indicates the surveys were conducted on April 22, and June 3-5, 2024.

Moreover, based on the survey dates provided in the BRAR Addendum, many of the biologists conducted surveys for multiple different resources on a given date. For example, according to the BRAR Addendum (Tables 2 through 6), biologists MB and PC conducted surveys for desert tortoise, Crotch's bumble bee, burrowing owl, Swainson's hawk, and sensitive plants on April 2, 2024. Further information is needed to understand whether this would have been feasible. Except for the Burrowing Owl Survey 2024 Addendum, the Applicant has not identified the survey effort (e.g., hours) each biologist devoted to a particular survey on a given date.

DATA REQUESTS:

8. Identify and provide high resolution maps that clearly depict which portions of the Project study area (i.e., WRESC site, staging areas, Preferred Gen-tie Route, alternative gen-tie route options, and associated buffer areas) were not surveyed in either 2023 or 2024. If necessary, provide separate maps for each biological resource that was surveyed.
9. For the areas identified in response to the data request above, estimate the acreage of each portion of the Project study area that was not surveyed in either 2023 or 2024.
10. Explain the safety issues that precluded biologists from surveying certain portions of the Project study area in 2024.
11. Describe and provide a high-resolution map of the Project features that were added to the Project design after completion of the 2023 surveys.
12. Discuss how the Applicant will collect information on sensitive biological resources in areas that cannot be safely surveyed.

13. Explain why the biologists were able to survey the entire Project area for sensitive plants and Joshua trees in 2024, but not for Crotch's bumble bee, desert tortoise, burrowing owl, Swainson's hawk, jurisdictional waters, and vegetation communities.
14. State the dates when surveys were conducted for Crotch's bumble bee.
15. State the dates when surveys were conducted for sensitive plants.
16. Identify which biological resources were surveyed concurrently and the dates on which such surveys occurred.
17. Provide the start and stop times for each biological resource survey, by date, and by biologist, for all surveys conducted in 2023 and 2024.

BACKGROUND: NIGHT LIGHTING

The SAFC at page 5.13-18 states: “[c]onstruction-related lighting is anticipated to be limited to the period of the cavern excavation process, which is estimated to last for 41 months during which there will be intermittent localized 24-hour construction activities. This would result in a temporary increase in perceivable light sources and light levels at viewing locations adjacent to the Project.” Additional information is necessary to assess the amount of ecological light pollution that would be generated during construction of the Project, and consequently, the potential for significant impacts on wildlife due to lighting.

DATA REQUESTS:

18. Identify the number of trucks that would be a source of light at the Project site during nighttime construction activities.
19. Identify the heavy equipment that would be a source of light at the Project site during nighttime construction activities.
20. Describe the types of night lighting that would be implemented during construction of the Project, including, but not limited to, information on the number of lights, the luminosity of the bulbs, and the height and angle of light fixtures.

BACKGROUND: ACCESS ROADS FOR GEN-TIE LINE

The SAFC at page 2-2 indicates the Project would require construction of up to 1.75 miles of unpaved service access road along the gen-tie line corridor. The SAFC at page 6-18 states: “[t]he Preferred Gen-Tie Route includes five named road segments and two segments that do not follow existing roads, which are located at the SR 14 crossing and the SCE Whirlwind Substation interconnection area.” The SAFC does not provide a map that depicts the specific areas where new roads would be constructed to access the Preferred Gen-Tie Route. In addition, the AFC does not discuss whether construction of new access roads would be required for the gen-tie route alternatives.

The SAFC at page 5.2-41 states: “[c]onstruction of the gen-tie line alignment will occur in areas that contain a mix of previously developed/disturbed and undeveloped land and will follow already existing overhead powerlines.” This statement is inconsistent with Google Earth imagery, which does not show existing overhead powerlines along substantial portions of the Preferred Gen-Tie Route and Route Options.

DATA REQUESTS:

21. Provide high resolution maps that identify the specific areas that would require construction of access roads (including spur roads) along the Preferred Gen-Tie Route and provide the dimensions of these new access roads.
22. Discuss whether any of the existing roads that would be used to access the Preferred Gen-Tie Route or alternative gen-tie route options would require widening, grading, or other improvements.
23. Discuss which alternative gen-tie route options would require construction of new access roads (including spur roads).
24. If construction of new access roads would be required for any of the alternative gen-tie route options, provide analysis of the impacts on biological resources associated with the construction of new access roads.
25. Provide high resolution maps that identify the specific areas that would require road construction along the alternative gen-tie route options.
26. Provide high resolution maps that identify the locations of existing overhead powerlines along the preferred gen-tie route and alternative route options.

27. Describe the environmental effects during construction of the gen-tie line in areas where there are existing powerlines as compared to areas where there are no existing powerlines, if any.
28. Provide the analysis of impacts on biological resources in areas where there are no existing overhead powerlines along the preferred gen-tie route and/or alternative gen-tie route options.
29. Identify the setback distance that would be implemented between the Project's powerlines and existing overhead powerlines.

BACKGROUND: GEN-TIE LINE FIRE HAZARD ABATEMENT

The SAFC at page 3-10 states: “[t]he gen-tie corridor and immediate area will be maintained in accordance with existing regulations and accepted industry practices that will include identification and abatement of fire hazards.” Information on the specific maintenance activities for fire hazard abatement that will be conducted along the gen-tie corridor is needed to analyze the environmental impacts of those activities.

DATA REQUESTS:

30. Identify the width of the gen-tie corridor.
31. State the total acreage of the gen-tie corridor and “immediate area,” as described on SAFC page 3-10, that will be maintained in accordance with existing regulations and accepted industry practices.
32. Discuss the vegetation management activities that would or might be conducted in the gen-tie corridor and immediate area.

BACKGROUND: IMPACTS TO JURISDICTIONAL AQUATIC RESOURCES

The 2024 Jurisdictional Waters Delineation Report defines the jurisdictional delineation study area as the energy storage facility, gen-tie alignment, additional workspace, and additional areas beyond the limits of the Project site, both upstream and downstream. (TN 258308 at p. 2) The report states: “[f]ield surveys were completed by walking or driving the entire study area (with some exceptions due to private property access) ...” (*Id.* at p. 4) However, the report does not identify, or quantify the size of, the areas that could not be surveyed due to private property access issues. In addition,

although the maps provided in the report suggest there were “no right of entry areas” in the study area, the extremely small scale of the maps precludes the ability to discern where those “no right of entry areas” are located.

The 2024 Jurisdictional Waters Delineation Report states that 19 ephemeral drainages were documented in the study area. (TN 258308 at p. 9) The report further states that “jurisdictional waters within the study area are situated in the footprint of the additional workspace areas or transmission line alignments.” (*Id.* at p. 15) The ephemeral drainages are mapped in Figure 8 of the report. However, the extremely small scale of the map precludes the ability to discern where drainages are located in relation to the workspace areas and other Project components. In addition, although the report (p. 9) states: “[s]ite photos of representative portions of the on-site drainages are included in Appendix B,” the appendix omits photos for drainages C, P, Q, and S. (*Id.* at p. 9)

The SAFC does not incorporate data from the 2024 jurisdictional delineation. However, the SAFC determined one drainage feature would be potentially impacted by the Project within the P2 south Staging Area. (TN 254806 at p. 5.2-8) According to the SAFC, the Applicant has agreed to avoid this drainage feature. (*Ibid.*) In addition, the Applicant has also agreed to avoid drainage features potentially impacted by the gen-tie poles. (*Ibid.*) The single drainage feature referenced at page 5.2-8 of the SAFC diagonally bisects the P2 south Staging Area. The Applicant’s site plans suggest this drainage feature would be directly impacted by a parking area (TN 254813, Figure 2-1). Additional information is necessary to determine the significance of indirect impacts on the jurisdictional drainage feature. Specifically, it cannot be determined whether using the southwest half of the P2 south Staging Area would require vehicles and equipment to drive across (through) the drainage, whether the drainage feature could be indirectly impacted by the architectural berm (which would be constructed north and east of the drainage), and whether the drainage feature would be impacted by vegetation removal within the Staging Area. The SAFC states: “[c]onstruction of the WRESC will include complete vegetation removal within the WRESC Site as well as P1 and P2 Staging Areas.” (*Id.* at p. 5.2-41) The SAFC does not include analysis of these and potentially other indirect impacts.

DATA REQUESTS:

33. Provide maps at a minimum scale of 1:6000 (1 inch = 500 feet) that depict the 19 drainages documented in the study area.
34. Provide maps at a minimum scale of 1:6000 (1 inch = 500 feet) that depict the portions of the study area that could not be field surveyed.

35. Identify the acreage of the areas that were not field surveyed.
36. Provide a high-resolution map that shows the parking area depicted in the site plan (TN 254813, Figure 2-1) in relation to the drainage feature that bisects the P2 south Staging Area.
37. Explain how impacts to the drainage feature in the P2 south Staging Area will be avoided during activities in that staging area.
38. Provide the analysis of the Project's indirect impacts on the potentially jurisdictional aquatic resources.
39. Describe the impacts on the drainage feature within the P2 south Staging Area from moving vehicles and equipment usage.
40. Describe the impacts on the drainage feature within the P2 south Staging Area from the construction of the architectural berm.
41. Describe the impacts on the drainage feature within the P2 south Staging Area from vegetation removal within the Staging Area.
42. Provide site photos for drainages C, P, Q, and S.

BACKGROUND: VEGETATION CLASSIFICATION AND MAPPING

It is unclear what methods were used to classify vegetation communities in the Project study area. The SAFC states: “[v]egetation maps were taken from the CDFW Vegetation Classification Reports (CDFW 2021b).” (TN 254806 at p. 5.2-10) However, the SAFC states:

“Vegetation mapping was conducted to determine the vegetation communities and habitat suitability for special-status and listed species within the Study Area. Mapping was completed following the National Vegetation Classification System per the Manual of California Vegetation (MCV), Second Edition (Sawyer et al. 2009). Biologists drove throughout the entire Study Area, where accessible, and accessed areas as needed on foot.” (*Id.* at p. 5.2-18)

With regards to Joshua Tree specifically, there is conflicting information on the presence of Joshua Tree Woodland (*Yucca brevifolia* alliance) at the WRESC site and staging areas. According to the 2023 Mohave ground squirrel survey report, Joshua Tree Woodland occurs at the “Ansel Properties,” which encompasses the WRESC site, and staging areas P1, P2N, and VH. (TN 254818) The 2024 Mohave ground squirrel survey report identified Joshua Tree Woodland in the two trapping grids, which were

located in the P2N Staging Area and along a portion of Gen-Tie Route Option 2b. (TN 258310) According to the SAFC, Joshua Tree Woodland occurs in portions of Gen-Tie Route Option 2b corridor, but not at the WRESC site, or in the P1, P2N, and VH staging areas (TN 254806, Figure 5.2-5 series). The membership rules for the *Yucca brevifolia* alliance are: “*Yucca brevifolia* evenly distributed at $\geq 1\%$ cover, *Juniperus* and/or *Pinus* spp. $< 1\%$ absolute cover in the tree canopy.” (CNPS 2024) The SAFC does not provide cover values for *Yucca brevifolia* in areas where vegetation communities were classified; however, the Biological Resources Assessment Report at page 54 states the Project site has “moderate to high concentrations of this species.”

DATA REQUESTS:

43. State the methods that were used to classify vegetation communities in the 2023 and 2024 Project study areas.
44. Provide the CDFW Vegetation Classification Reports referenced on page 5.2-10 of the SAFC since the reference provided (i.e., CDFW 2021b) does not identify the specific reports that were used.
45. Discuss the specific methods that were used in areas where the Applicant’s biologists independently classified vegetation communities (as opposed to using the CDFW Vegetation Classification Reports). This should include:
 - a. the minimum mapping unit;
 - b. the sampling protocol (e.g., CDFW and CNPS 2024); and
 - c. the methods used to estimate cover of dominant plant species.
46. Identify and provide high resolution maps of the vegetation *associations* within the 2023 and 2024 study areas in accordance with the state and national classification standards.
47. Provide high resolution maps that delineate the specific areas where vegetation communities were not surveyed in 2023.
48. Provide high resolution maps that delineate the specific areas that were not surveyed in 2024.
49. Identify the portions of the 2023 and 2024 study areas where there is $\geq 1\%$ cover of Joshua trees.
50. Describe the methods utilized to estimate the cover of Joshua trees.

51. Describe the methods utilized to estimate the cover of other dominant plant species.
52. Explain the reason for the discrepancy between the SAFC and the Mohave ground squirrel survey reports with respect to presence of Joshua Tree Woodland at the WRESC site and staging areas.

REFERENCES:

[CDFW] California Department of Fish and Wildlife. 2024a. Survey of California Vegetation, Classification and Mapping Standards. [accessed 2024 Aug 7]. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=102342&inline>

California Department of Fish and Wildlife. 2024b. Natural Communities [web page]. [accessed 2024 Aug 8]. <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>

[CDFW and CNPS] California Department of Fish and Wildlife and California Native Plant Society. 2024 Apr 16. CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form. [accessed 2024 Aug 14]. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18599>

[CNPS] California Native Plant Society. 2024. A Manual of California Vegetation Online. How to Read the Alliance and Other Descriptions [web page]. [accessed 2024 Aug 8]. <https://vegetation.cnps.org/overview/descriptions>

Reyes E, Glass A, Menke J, Evens J, Sikes K, Keeler-Wolf T, Johnson D, Winitzky S, Hepburn A. 2021. California Vegetation Map in Support of the Desert Renewable Energy Conservation Plan, Contract L17PX00036. Final Report. Prepared for the U.S. Bureau of Land Management. Aerial Information Systems, Inc., Redlands, CA.

BACKGROUND: JOSHUA TREE CENSUS

According to the Joshua Tree Census Report, 3,196 Joshua trees were documented during the 2023 census, of which, 2,718 would be either removed or relocated. (TN 254820 at p. 4 and Appendix B) An additional 253 western Joshua trees were documented during the 2024 census. (TN 258311 at p. 4). Approximately 153 of these trees would be directly impacted by the Project; the remaining 100 trees would be avoided because they are located east of the railroad and Sierra Highway. (TN 258311 at p. 5). The Biological Resources Report 2024 Addendum's description of the Joshua tree census states: "[t]he entire project footprint was systematically searched using parallel survey transects spaced approximately 5 meters apart to achieve thorough coverage of the project area, including a 1,000-foot survey buffer." (TN

258316 at p. 18) The addendum does not explain why it was possible to survey Joshua trees throughout the entire Project area and 1,000-foot buffer, but not possible to survey the entire Project area for other biological resources due to private property restrictions.

The SAFC and associated survey reports do not address the Project's indirect impacts on western Joshua trees. In its comment letter on the original WRESC Project, CDFW indicated that Joshua trees within 290 feet of the Project site and linear features would be indirectly impacted. (TN 245782)

DATA REQUESTS:

53. Explain how Joshua tree surveys were performed throughout the entire Project area and 1,000-foot buffer without access or safety limitations.
54. Provide the analysis of the Project's indirect impacts on Joshua trees.
55. State the total number of Joshua trees within 290 feet of the Project site and linear features (including staging areas and gen-tie line routes).

BACKGROUND: IMPACTS TO SENSITIVE NATURAL COMMUNITIES

The SAFC states that one of the criteria that was assessed to determine the significance of the Project's impacts on biological resources is whether the Project would "[h]ave a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS." (TN 254806 at pp. 5.2-39—40) However, the SAFC does not provide an assessment of the Project's impacts on sensitive natural communities. For example, the White Bursage Scrub alliance occurs at the WRESC site and within other portions of the study area. (TN 254806, Figures 5.2-5-1 through 5.2-5-16) All of the associations in the White Bursage Scrub Alliance are considered sensitive natural communities. (CDFW 2023)

DATA REQUESTS:

56. Provide the analysis of the Project's direct and indirect impacts on sensitive natural communities.
57. Quantify the acreage of sensitive natural communities that will be impacted by the Project.

REFERENCES:

California Department of Fish and Wildlife. 2023 Jun 1. California Natural Community List. [accessed 2024 Aug 8].
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline>

BACKGROUND: SWAINSON'S HAWK SURVEYS

In 2023, biologists conducted surveys for Swainson's hawks within the Project site and 0.5-mile buffer. (TN 254816, Table 1) In 2024, biologists conducted surveys for Swainson's hawks within additional project areas that were added after the 2023 surveys. (TN 258312 at p. 1) Similar to the 2023 surveys, the 2024 surveys also included a 0.5-mile buffer.

The Swainson's Hawk Survey 2024 Addendum states:

"CDFW staff (Jeremy Pohlman) was contacted prior to conducting the surveys to confirm the survey limits would include a 0.5-mile buffer around the project site. This revised survey buffer is allowed under the protocol based on the known recorded Swainson's hawk nest within 7 miles of the project site. CDFW allowed the 0.5-mile buffer per the protocol, but in addition requested a general nest survey with a 5-mile buffer around the project site, which was completed (Figure 5, Swainson's Hawk Sightings and Nest Locations)." (TN 258312 at p. 3)

Guidance issued by the CEC and CDFW for renewable energy projects in the Antelope Valley, however, states:

"The Department considers a nest site to be active if it was used at least once during the past 5 years. Impacts to suitable habitat or individual birds within a five-mile radius of an active nest will be considered significant and to have the potential to "take" Swainson's hawks as that term is defined in §86 of the Fish and Game Code." (CEC and CDFG 2010)

The BRAR Addendum states: "Swainson's hawk are known to have an active nest 7 miles west of the project site. Since the project area is not within 5 miles of the nest, no mitigation measures are required for foraging habitat impacts." (TN 258316 at p. 53) The BRAR Addendum provides the following discussion of the active nest: "[o]n June 5, 2024, a pair of Swainson's hawks were documented near the nest reported by WSP during the desert tortoise survey (2024c), which is located off site (Figure 10)." (*Id.* at p. 47) However, according to the Desert Tortoise Survey 2024 Addendum (Table 1), no desert tortoise surveys were conducted on June 5, 2024 (they concluded on April 9, 2024) and the Addendum has no mention of the Swainson's hawk nest. Also,

the nest is located approximately 1.5 miles from the Project's gen-tie line route, which means it is 1.5 miles from the Project area. (TN 254806 at p. 5.2-33) Finally, Figure 10 is omitted from the BRAR Addendum.

The Swainson's Hawk Survey 2024 Addendum provides no information on the "general nest survey with a 5-mile buffer around the project site." According to the survey report: (1) during Survey Period I, biologists drove through the Project site and 0.5-mile buffer area to identify suitable nesting locations; (2) Survey Period II encompassed the same survey area covered in Survey Period I, but the report does not describe what survey methods were implemented; (3) during Survey Period III, the biologists monitored known/identified active nests identified during Survey Periods I and II; and (4) during Survey Period IV, additional nest monitoring was conducted and the biologists conducted another complete survey of the Project site and buffer area. (TN 258312 at pp. 3-4) Thus, the Swainson's Hawk Survey 2024 Addendum suggests that surveys during all 4 survey periods were confined to the Project site and 0.5-mile buffer area. Additional information is needed regarding the 2024 survey effort.

The Swainson's Hawk Survey 2024 Addendum states that focused surveys resulted in mapping a total of 119 nest sites within the 0.5-mile buffer surrounding the Project site. (TN 258312 at pp. 5-6) One nest was of suitable shape and size for Swainson's hawk, 2 were occupied by red-tailed hawks, 83 were occupied by common ravens, and the occupants of the remaining 33 nests were unknown. (*Ibid.*) This suggests no nests were detected within the Project site, and that only 1 of the 119 nests could have been associated with a Swainson's hawk. The addendum does not explain how the biologists were able to determine that Swainson's hawks were not associated with the 33 nests having unknown occupants. In addition, the figures depicting the locations of the nests (TN 258312, Figure 4) and Swainson's hawk observations (TN 258312, Figure 5) are at an extremely small scale, which precludes the ability to determine where these nests and birds were located in relation to the WRESC site and staging areas.

DATA REQUESTS:

58. Provide reports, documents, and/or studies that support the determination that the protocol allows a 0.5-mile survey buffer if there are known recorded Swainson's hawk nest sites within 7 miles of the Project site.
59. Provide documentation (e.g., notes, emails, memo) regarding the conversation with CDFW to allow the revised 0.5-mile buffer for Swainson's hawk surveys.

60. Identify the data relied upon to determine whether there are any active Swainson's hawk nests within 5 miles of the Project site.
61. State the date on which a pair of Swainson's hawks were documented near the nest reported by WSP during the desert tortoise survey.
62. Provide a copy of Figure 10, as referenced on page 47 of the BRAR Addendum (TN 258316).
63. Explain why the pair of Swainson's hawks documented near the nest reported by WSP during the desert tortoise survey were not disclosed in the Desert Tortoise Survey 2024 Addendum.
64. Explain what surveys were being conducted on June 5, 2024, when the pair of Swainson's hawks were documented near the nest reported by WSP.
65. Explain why a desert tortoise (or other) survey was being conducted in an area well beyond the boundaries of the survey areas described in Table 1 of the BRAR Addendum.
66. Provide a high-resolution map of the roads that were driven during Survey Period I of the 2023 and 2024 Swainson's hawk surveys.
67. Describe the methods that were implemented in Survey Period II.
68. Describe the methods that were implemented to conduct the "general nest survey with a 5-mile buffer around the project site," including the surveys dates and personnel.
69. Provide the results of the "general nest survey."
70. Provide high resolution maps depicting the areas that were surveyed for Swainson's hawks in 2023 and 2024.
71. Provide high resolution maps depicting the areas that were not surveyed for Swainson's hawks in 2023 and 2024 due to safety or private property access issues.
72. Explain how the biologists determined that 83 of the nests were occupied by common ravens. Specifically, discuss whether ravens were observed at all 83 of the nests or if biologists made their determination based on other variables.

73. Provide photographs of the 33 nests with unknown occupants, if available.
74. Provide high resolution maps depicting the locations of the nests detected during the 2023 and 2024 surveys.
75. Provide high resolution maps showing the locations of Swainson's hawks detected in 2023 and 2024.

REFERENCES:

[CEC and CDFG] California Energy Commission and California Department of Fish and Game. 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California.

BACKGROUND: BURROWING OWL SURVEYS

The Burrowing Owl Focused Survey Report states: "WSP biologists (Table 1) walked a maximum of 30-meter-wide belt transects within the project site, including a 150-meter (500-foot) survey buffer, herein referred to as the burrowing owl 'study area', allowing for 100 percent visual coverage within the study area (Figure 4, Survey Transects)." (TN 254817 at p. 7) The survey report also states: "survey methods followed the guidelines per the Staff Report on Burrowing Owl Mitigation (CDFG 2012)," except with respect to the timing of the surveys, which was approved by CDFW. (*Id.* at p. 7) However, the 30-meter transect spacing implemented during the surveys is inconsistent with CDFW's Staff Report on Burrowing Owl Mitigation, which states: "[c]onduct surveys by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density." The survey report does not discuss whether CDFW approved this modification to the survey methods.

The Burrowing Owl Focused Survey Report further states that: "[i]n deciding the size of a suitable burrow, the entrance must be larger than four (4) inches (11 cm), the burrow must have a sloping entrance (no vertical holes), and the burrow should be more than 36 inches deep (91 cm) to provide cover." (*Ibid.*) The survey report does not provide a scientific citation to substantiate this information.

The survey report concludes that "[t]he surveys resulted in a total of 29 unoccupied suitable burrowing owl burrows, the majority of which were found in the energy storage facility area (Figure 5, Burrowing Owl Observation and

Suitable Burrow Locations).” (*Id.* at p. 8) This statement is inconsistent with Figure 5 in the survey report, which only depicts one or two burrows at the WRESC site.

Figure 5 in the survey report shows 3 locations where burrowing owls were observed. The survey report states these 3 burrowing owls “were incidentally observed by WSP biologists during the 2023 survey efforts.” (*Ibid.*) The 3 locations where burrowing owls were observed, and many of the potential burrowing owl burrows, are mapped well outside of the burrowing owl study area. This has implications on the burrowing owl survey effort and the accuracy of the information provided in the survey report and SAFC.

DATA REQUESTS:

76. State whether CDFW approved the 30-meter transect spacing implemented during the 2023 burrowing owl surveys.
77. Provide a scientific citation for the Burrowing Owl Focused Survey Report’s statement that suitable burrowing owl burrows must have an entrance larger than 4 inches, the burrow must have a sloping entrance (no vertical holes), and the burrow should be more than 36 inches deep.
78. Explain the discrepancy between the Burrowing Owl Focused Survey Report’s statement that most of the 29 unoccupied burrows were found in the energy storage facility area, and the data depicted on Figure 5 of the survey report.
79. Discuss whether the entire burrowing owl study area, as defined on page 7 of the Burrowing Owl Focused Survey Report, was surveyed for burrowing owls during each of the four survey passes identified in Table 1 of the survey report.
80. If some of the survey passes were limited to surveys of previously identified burrows, identify the number and locations of burrows that were surveyed during each survey pass.
81. Explain why the 2023 burrowing owl surveys included surveys of burrows outside of the study area, including burrows on the northwest side of Willow Springs Butte, a burrow north of the Rosamond Solar Project, and burrows southeast of the WRESC site along 10th Street W.

HAZARDOUS MATERIALS AND HAZARDS

BACKGROUND: CHEMICAL INVENTORY AND WATER TREATMENT

An estimated 1,400 acre-feet of water (incorporating approximate 20 percent contingency) over a 5-year period will be needed throughout the construction and startup period. (TN 254805 at p. 5.15-11) Most of the water will be used for cavern development and filling the hydrostatically compensating reservoir. (*Ibid.*) Other uses include surface works (hydrotesting and general purpose washdown) and fire system testing.

Water used for hydrotesting will be reused for hydrotesting other systems, including the spheres, pipe circuits, and initial fill. (*Id.* at p. 5.15-12) A temporary pumping sub-system with screening and filtering capabilities will be utilized to re-use this water. (*Ibid.*) After all testing, the volume of hydrotest water (losses at flange breaks, nozzle spray tests, etc.) will be screened and filtered to a suitable cleanliness level to supplement the initial fill volume of the cold thermal storage tanks and/or reservoir. (*Ibid.*)

The Antelope Valley East Kern Water Agency (“AVEK”) supply water will be used for make-up to the plant water system, fire protection, and general needs such as equipment and surface washdown. (*Id.* at p. 5.15-14)

Project wastewater will be diverted to the zero-discharge evaporation pond. The oil-free evaporation pond will be maintained, and the remaining “sludge” will be hauled offsite by an approved waste disposal company to an approved disposal facility. (*Id.* at p. 5.15-13)

Water in the system will be treated with hazardous water treatment chemicals. (TN 254806 at p. 5.5-2) Those chemicals include eye and skin irritants, corrosives, and acutely toxic compounds when ingested or inhaled. At least two of the compounds used on site, ChemTreat BL1280 and ChemTreat BL1559, are federally or state regulated substances. (*Id.* at p. 5.5-7)

Table 5.5-2 in the original AFC set forth the operational chemical inventory and description of hazardous materials to be stored on site during operations. (TN 240751-1 at p. 5.5-4) The table disclosed the types of compounds to be used and their regulatory constraints. (*Ibid.*) Several of the chemicals disclosed in the initial AFC were not included in the more limited chemical inventory identified in the SAFC. (TN 254806 at p. 5.5-5) Table 5.5-2 in the SAFC also discloses information regarding Proposition 65 list of

chemicals. (*Id.* at p. 5.5-4) ChemTreat BL 1280, for example, is labeled as “No” under Prop 65 yet the MSDS from ChemTreat shows that BL 1280 contains catechol (CAS Number 120-80-9) and benzophene (CAS Number 119-61-9), which are listed under Prop 65. (ChemTreat 2023)

DATA REQUESTS:

82. Explain why Table 5.5-2 in the SAFC identifies fewer chemicals to be stored onsite as compared to Table 5.5-2 in the initial AFC.
83. Discuss which chemicals, if any, will be added to the surface reservoir to control potential growth of microbes in the reservoir.
84. Describe how the water-filled subterranean cavern will be treated to prevent fouling of the system.
85. Explain how ChemTreat BL 1280 will be used and added to the thermal management system water treatment.
86. Explain how ChemTreat BL 1559 will be used and added to the thermal management system water treatment.
87. Explain how ChemTreat CL 2900 will be used and added to the cooling water treatment.
88. Explain how ChemTreat CL 2150 will be used and added to slimicide.
89. Explain how sodium hypochlorite will be used and added to the oxidant wash, chlorination, pre-chlorination.
90. Provide the material safety data sheets (“MSDS”) of each compound that will be used, stored, or transported to the facility.
91. State whether the Prop 65 information in Table 5.5-2 is based on the chemical constituents in each trade name product.

REFERENCES:

ChemTreat. 2023. Safety Data Sheet: BL1280. Version #02 Revision Date 06-05-2023

BACKGROUND: RADON

Table 5.17-1 contains the construction hazard analysis for the Project. (TN 254805 at p. 5.17-2) The SAFC discloses that during shaft drilling, explosive gas mixtures may be encountered. (*Id.* at p. 5.17-4) In addition to the presence of explosive gases, underground excavations can release radon, a naturally occurring radioactive noble gas. Radon is a decay product of uranium found in varying concentrations in all soils and rocks in the earth crust. (Tukkaraja. et al., 2021) It is colorless, odorless, tasteless, and a leading cause of lung cancer death in the USA.

Radon exposure has been documented in the workplaces of miners and ancillary workers in structures built over or connected to underground caverns. Multiple studies of miners, including those involved in uranium mines (Hu et. al. 2012; Sahu et al., 2020) and non-uranium mines (Dehnert, 2020), reported high radon concentrations in the workplace. A study of underground miners (65,000 subjects) showed that 40% of lung cancer deaths may be due to radon progeny exposure. (Lubin, et. al., 1995) In underground mines, radon monitoring and exposure standards help in limiting miners' exposure to radioactivity. (Tukkaraja. et al., 2021)

In May 2014, the U.S. National Park Service ("NPS") requested an evaluation of employee exposure to radon gas at a national park. NPS was concerned about the potential for elevated radon concentrations to affect workers and visitors at the park within the main cavern, the attached visitors center, a cave that had periodic guided tours (Spider Cave), and other administrative buildings within the park. NPS measured radon levels repeatedly (four times) to assess the seasonal variation of radon. The study concluded that radon gas was entering the visitors center primarily via the elevator shaft connecting the visitors center to the main cavern below it. Tracer gas studies showed a slow and steady migration of air from the elevator lobby and elevator exit areas to the rest of the visitor's center. A dose assessment of workers onsite site found that employees working in the cavern had the potential to exceed the OSHA whole body ionizing radiation dose limits, depending upon how much time they spend in the cave. As a result, several engineering controls were recommended, including modifications to the ventilation systems, and administrative controls were identified to ensure workers' exposures to radon were limited.

DATA REQUESTS:

92. State whether the impacts from radon have been evaluated.
93. Discuss the frequency and duration that workers would be underground during construction.

94. Discuss the frequency and duration that workers would be underground during operations.
95. Explain how the Project will monitor worker exposure to radon that may be released during construction and operations.
96. Describe how the Project will monitor for explosive gases during construction and operations.

REFERENCES:

Dehnert J. 2020. Radon exposures of miners at small underground construction sites in old mining. *Health Physics*. 118(1). DOI: 10.1097/HP.0000000000001117

Tukkaraja, P., R. Bhargava and S.J. Sridharan. 2021. Radon in Underground Mines. *Mining Technology*. IntechOpen. doi: 10.5772/intechopen.101247

Sahu P, Panigrahi DC, Mishra DP. 2014. Sources of radon and its measurement techniques in underground uranium mines – an overview. *Journal of Sustainable Mining*. 13(3):11-18. DOI: 10.7424/jsm140303

Hu P, Li X. 2012. Analysis of radon reduction and ventilation systems in uranium mines in China. *Journal of Radiological Protection*. 32(3):289-300. DOI: 10.1088/0952-4746/32/3/289

Miller KJ, Coffey MA. 1998. Radon and you: Promoting public awareness of radon in Montana's air and groundwater. Montana Bureau of Mines and Geology.

Lubin JH et al. 1995. Lung cancer in radon-exposed miners and estimation of risk from indoor exposure. *JNCI Journal of the National Cancer Institute*. 87(11):817-827. DOI: 10.1093/jnci/87.11.817

BACKGROUND: ODORS

Waste streams from wastewater will be generated from sanitary waste, excavation water, stormwater, hydrotest water, equipment washdown water, and dewatering activities from general construction activities. (TN 254805 at p. 5.14-2) Approximately 1,350,000 gallons of used water will be generated from testing equipment and piping integrity. (*Ibid.*)

According to the SAFC, the WRESC is not expected to emit or cause to be emitted any substances that could cause nuisance odors. (*Id.* at p. 5.9-13) Most odorous substances can be classified as either inorganic gases or organic

vapors. The principal odorous gases that can be emitted from industrial processes are sulfurous: hydrogen sulfide, carbonyl sulfide, carbon disulfide, and mercaptans. To a lesser extent, various organic vapors, ammonia, and formaldehyde can also be emitted in odor-inducing amounts (Yorke 2024) Some fungi can occasionally produce odors as well as corrosion in wastewater and water networks. Fungi are heterotrophic organisms that have no roots, stems, or leaves. Lacking chlorophyll, these organisms are unable to synthesize organic materials and thus are compelled to live on organic matter, such as dead animals and plants, or as parasites on or inside living cells. (Talaiekhazani, et al. 2016) These organisms use organic materials and produce considerable amounts of organic acids such as oxalic acid, acetic acid, and citric acid, which can lead to odor production and corrosion in wastewater installments. (Talaiekhazani, et al. 2016)

Evaporation and degassing are the two primary methods for the emission of odor-causing agents from wastewater collection and treatment systems. During the wastewater collection and treatment operations, odor-producing compounds are generated through the anaerobic decomposition of organic matter containing sulfur and nitrogen. (Nielsen, et. al., 1998; Zhang et. al., 2008; Hvitved-Jacobsen et al., 2002; Talaiekhazani, et al. 2016)

Health impacts associated with exposure to odorants include headaches, irritation in eyes, nose, and respiratory system, dizziness, nausea, vomiting, seizures, lack of coordination, damage to central nervous system, damage to liver, damage to kidneys, anemia, respiratory paralysis, and coma. (ATSDR, 2015)

Industrial sources that commonly cause odor impacts include wastewater treatment facilities. According to the SAFC, the septic waste from the administration/control building will be handled by one of these two methods: (1) sanitary waste from the administration/control building will be directed to a nearby underground septic storage tank, pumped out periodically by truck, and trucked offsite to an approved disposal facility, or (2) the sanitary sewer system will consist of a lateral septic system containing a lateral line from the structure to a septic tank. From there, the waste will flow to the lateral system of pipes that allows the waste from the septic system to discharge via perforations in the lateral pipes. (TN 254805 at p. 5.15-13)

DATA REQUESTS:

97. Describe the analytical techniques and/or odor panels to be used during operations to identify sources of odors onsite.
98. Explain how the Project will control sources of odorous emissions from the septic system.

REFERENCES:

Yorke Engineering, LLC. 2024. Odor Analysis. <https://yorkeengr.com/services/ceqa/odor-analysis>

Talaiekhosravi, A. M. Bagheir, A. Goli, M. R. Talaei Khoosravi. 2016. An Overview of Principles of Odor Productions, Emission, And Control Methods in Wastewater Collection And Treatment Systems. *Journal of Env. Manage.* 170(1): 186-206.

P.H. Nielsen, K. Raunkjaer, T.H. Hvitved-Jacobsen. 1998. Sulfide production and wastewater quality in pressure mains *Water Sci. Technol.*, 37:97-104

Hvitved-Jacobsen, T., J. Vollertsen, J.S. Matos. 2002. The sewer as a bioreactor – a dry weather approach. *Water Sci. Technol.*, 3:11-24

Zhang, L., P.D. Schryver, B.D. Gusseme, W.D. Muynck, B. Nico, W. Verstraete. 2008. Chemical and biological technologies for hydrogen sulfide emission control in sewer systems: a review. *Water Res.*, 1:1-12

ATSDR. 2015. Environmental Odors and The Physiology of The Sense of Olfaction. https://www.atsdr.cdc.gov/odors/health_care_providers.html#resources

GREENHOUSE GAS EMISSIONS

BACKGROUND: INDIRECT GHG EMISSIONS

As outlined in SAFC section 2.1.19, the Project site would be connected to the Southern California Edison (“SCE”) electrical grid via a predominately overhead 230 kV single-circuit gen-tie line, which will extend approximately 19 miles from the SCE Whirlwind Substation to the WRESC site. (TN 254806 at p. 2-29) The 230 kV line will terminate at a dead-end tower before the main power transformers, which will step down the voltage to 13.8 V and 5 kV, suitable for distribution within the WRESC. (*Ibid.*) This grid connection is designed to facilitate power import and export, with a capacity to accommodate all operating scenarios. (*Ibid.*) The SAFC states that the electric power necessary for system charging will be drawn from the electrical grid, along with additional power for the auxiliaries. (*Id.* at p. 2-19) According to the SAFC, “[t]he facility will typically cycle between Charging Mode (compression/energy storage) lasting approximately 14 hours and Discharging Mode (decompression/power production) lasting 8 hours at nameplate capacity. (*Id.* at p. 1-11) “The facility will be designed to achieve an average round trip efficiency of 55 to 60 percent. This means that the facility will return 55 to 60 percent of the electric energy used to complete the storage cycle as useful power output during the discharge cycle....” (*Id.* at p. 2-13)

Additional information is needed regarding the energy used to charge the Project across various scenarios, including periods of high and low demand. This information is directly related to the Project’s indirect greenhouse gas (“GHG”) emissions as well as the Project’s overall electricity requirements.

DATA REQUESTS:

99. Provide the data and calculations for CO₂ emissions from charging the system.
100. Discuss how frequently the system will charge.
101. Provide the percentage of fossil fuel energy that will be used from the grid to charge the system during “Charging Mode.”
102. Provide the percentage of renewable energy that will be used from the grid to charge the system during “Charging Mode.”

GEOLOGIC HAZARDS

BACKGROUND: GEOLOGIC DATA

In February 2024, three deep test borings were drilled to the estimated target depth for cavern construction (between 2,000 and 2,500 ft below ground surface) to provide geotechnical design parameters. The drilling core samples indicated decreasing rock quality as depth increases through the cavern target horizon. Since the cavern will be subjected to daily cycles of water infiltration and hot compressed air, the degree and extent of rock fractures could impact the volume of water lost to surrounding rock formations. Geophysical and water injection testing was performed during the February geotechnical study, but key data is missing from the report.

DATA REQUESTS:

103. Provide the following data on the packer testing for the Project:
 - a. Packer testing elevation intervals for each borehole.
 - b. Water injection volume and water level monitoring data for each test.
 - c. Optical televiewer results for each tested packer interval.

104. Discuss the schedule and work plan for performing the hydrogeological study to assess the cavern's water and gas containment properties as described in the report by Lane Power and Energy Systems dated February 2024 entitled, *Bases of Design: Compensated Hard Rock Caverns For Compressed Air Energy Storage*.

Dated: August 22, 2024

Respectfully submitted,

Original Signed by:

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