

**From:** Kaye <kaye@coopmead.com>  
**Sent:** Monday, August 14, 2023 10:41 AM  
**To:** Lisaida M. Archuleta  
**Subject:** AES partial response to questions on the Rancho Viejo Solar Project  
**Attachments:** Draft CEN Battery Enclosure.pdf; Distance Images.zip; Q\_A for Kaye Cooper-Mead\_Part 1.pdf

**Warning:**

**EXTERNAL EMAIL:** Do not click any links or open any attachments unless you trust the sender and know the content is safe.

This is the AES email of August 4th showing the changes I just mentioned in my email to you earlier today. Please provide this information to the Hearing Officer and Planning Commission so they can see AES' answers to some of my questions on this project and how they have changed the project to make it even more dangerous.

Thank you.

Kaye Cooper-Mead

Sent from my iPad

Begin forwarded message:

**From:** Kaye <kaye@coopmead.com>  
**Date:** August 10, 2023 at 12:52:29 PM MDT  
**To:** joselarra@santafecountynm.gov  
**Cc:** hhughes@santafecountynm.gov, ahansen@santafecountynm.gov, athamilton@santafecountynm.gov, jsgreene@santafecountynm.gov, cbustamante@santafecountynm.gov  
**Subject:** AES partial response to questions on the Rancho Viejo Solar Project

To: The Sustainable Land Development Code (SLDC) Hearing Officer, the Santa Fe County Planning Commission and the Santa Fe County

Below please find the email I received from Rebecca Halford of AES on August 4th that I incorrectly stated was on August 5th in my previous email sent to you today. This is the email with attachments I referred to in my previous email that contain many changes to AES' Conditional Use Permit Application. They did not respond to the water and sound dab questions I asked in my July 9th email that you were copied on.

Thank you for reading this document from AES.

Also I tried to send the previous email to Jeremy Mier, the liaison for the Planning Commission but it bounced back. Is Jeremy no longer there and is there someone else in this role? I would like a working email for the County Planning Commission please.

Thank you.

Sincerely,

Kaye Cooper-Mead

**From:** RanchoViejoSolar <RanchoViejoSolar@aes.com>

**Date:** August 4, 2023 at 5:26:34 PM MDT

**To:** Kaye <kaye@coopmead.com>, RanchoViejoSolar  
<RanchoViejoSolar@aes.com>

**Subject: RE: Follow up on AES email requesting information on Rancho Viejo Solar Project and request for HMA and UL 9540a tests. And battery container specs**

Hello Kaye,

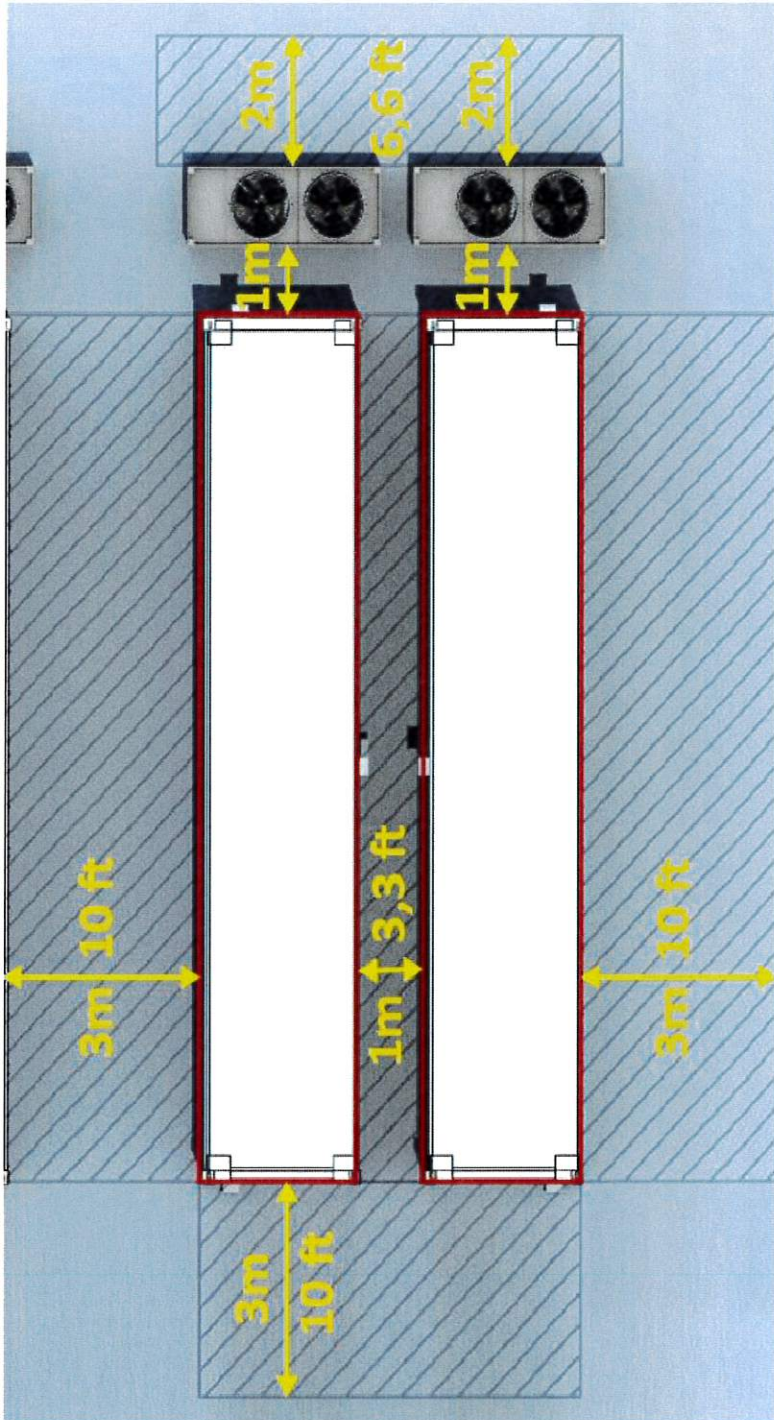
I am sending responses to many of your questions, including image and pdf attachments. We are continuing to gather information related to the sound and water questions. We are sourcing those responses from the engineering teams responsible for transmission work, and the construction team responsible for project construction. Those responses will be delivered in a Part 2 document as soon as possible.

The 30% iteration is the project design stage the team is currently working at. This staged approach is often why you may see changes to our early versions of the proposed design or equipment. The phased approach lays out the major design elements and establishes a cost and timeline. During the 30% stage, the drawing, project scope, and budget will be fine-tuned.

Please let me know if you have any questions about this Part 1 response and know that we are working on finalizing responses to your sound and water questions.

Thank you,  
Rebecca

Rebecca Halford  
Sr. Manager, Stakeholder Relations, WECC  
The AES Corporation  
AES Clean Energy | Louisville, CO 80027  
rebecca.halford@aes.com  
Mobile: 303-204-9348  
Board member, Women of AES Clean Energy  
Visit our WACE SharePoint site!



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| Dimensions of BESS enclosure                   | 40 x 8 x 9.5   | ft  |
| Chiller Dimensions (JC)                        | 2.3 x 1.2 x 2.44   | m (LxWxH)   |
| Enclosure footprint                            | 320  | sqft  |
| Spacing between enclosures                     | see below  |   |
| Door Clearance                                 | 6  | ft (front battery access + 1' 8" side for aux access) |
| Rated power (DC bus BESS-PCS)                  | 4034.016   | kW  |
| Rated Energy (DC bus BESS-PCS)                 | 8068.032   | kWh   |
| Maximum current                                | 1218   | A   |
| Maximum Voltage                                | 1494   | Vdc   |
| Minimum Voltage                                | 1116   | Vdc   |
| Maximum C-rate                                 | 0.5  | CP (0.25 recommended)                                 |
| Degradation Profile of Batteries               | <a href="#">E5S indicative performance.xlsx   Powered by Box</a> |   |
| Electrical Aux load per enclosure              | ~1   | kW  |
| ESS Thermal Heat Generation load per enclosure | 97.0   | kW @ 0.5C (6.8kW @ 0.2C)                              |
| Battery Temperature Requirements               | 18-28  | °C  |
| Ambient Temperature Requirements of Chiller    | -4 - 43  | °C  |
| Estimated Gross Weight                         | 71,000   | kg  |

Notes: Each enclosure is capable of 2 banks (2 DC disconnects) for connection of 2 different PCS per enclosure if desired.

| Question   | Response   |
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| Please provide the complete specs for the Samsung SDI E5D lithium-ion battery you intend to use and the complete environmental testing and rating data for this battery.   | No public data sheet is available for the E5S and without an NDA in place, we are not authorized to share it with the public.<br><b>Draft specifications of the CEN enclosure are included as an attachment.</b>   |
| Where will these thousands of batteries be manufactured?   | South Korea  |
| How and where will these batteries be transported to arrive here for installation?   | Stored individually in cardboard boxes, and loaded on pallets, the batteries will arrive to US port by boat, then arrive to site by truck. Unpacking and loading into secure and climate controlled containers will occur immediately upon arrival on-site by trained technicians.   |
| One of the major fire risks for BESS systems arise from damage to any one battery cell. How are this many battery cells – over 400,000 – going to be inspected prior to installation to ensure there is not even one damaged cell? | All battery cells are inspected during manufacturing. The plant's layered risk mitigation mechanisms are designed for the planned failure of any one battery cell. The systems in place maintain system stability and integrity in the event of a cell failure. It is an unfortunate reality of lithium ion batteries and in order to make use of their benefits, we have taken great care to understand, quantify, and address their risks. We accept the possibility, then design and test safety measures to mitigate probability and severity of the result. |
| How many battery cells will be housed in the revised total of 69 battery containers?   | Each enclosure has 21 strings, each with 720 cells: 15,120 cells/enclosure for a grand total of 1,043,280 battery cells across 69 battery containers.  |
| Please provide an updated map that shows the actual facility and the placement of the BESS system and substation against the actual home placements and streets in the three neighborhoods that were removed from all maps.        | This current site layout is available on the project website:<br><a href="https://www.aes.com/sites/default/files/2023-02/Rancho%20Viejo%20Solar-Site%20Development%20Plan.pdf">https://www.aes.com/sites/default/files/2023-02/Rancho%20Viejo%20Solar-Site%20Development%20Plan.pdf</a><br><br>This map is available on the website and pulled from Google Maps:<br><a href="https://www.aes.com/sites/aesvault.com/files/images/RanchoViejo-2.jpg">https://www.aes.com/sites/aesvault.com/files/images/RanchoViejo-2.jpg</a>                                   |
| Please provide a photo of the actual substation being proposed. If you don't have exactly the same one, provide a photo of a similar sized substation.   | Project is currently advancing design set from conceptual 10 percent design to a more detailed 30 percent design. A representative   |

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|  | <p>photo will be provided at a forthcoming community meeting. Nonetheless, the substation will be located approximately 1.45 miles from 47 Encanto Loop (understood to be the closest property in Eldorado to the substation).</p>   |
| <p>Please provide a photo of the proposed 69 BESS system battery containers. The two HVAC systems on each container are placed where on each container? Do these HVAC systems use any water? Is it correct that only one HVAC unit runs at a time and the other is a backup? Is there any scenario where both HVAC units on each container would run at the same time?</p>   | <p>The latest design includes 0 HVAC and instead uses a dual compressor chiller unit that uses a 50% water-glycol mixture. to maintain even temperatures among the battery modules. These units near 70 dB.</p> <p><b>Image attached – BESS Container_AC.jpg</b></p>   |
| <p>What happens if the power is cut off to the facility for any reason? How is power generated to the HVAC systems if the power is out? are there any backup generators? Are there any plans to add a UPS (Uninterruptable Power Source)?</p>  | <p>All enclosures are equipped with UPS systems to maintain communications and control functions. AES BESS plants can be equipped with black start capabilities to enable self-supply of auxiliary power in the event of an outage. However, wide temperature swings [while not desirable for battery longevity] are acceptable and pose no hazard when the batteries are in shutdown.</p> |
| <p>It is absolutely necessary for you to provide the following actual footage details for:</p> <p>Actual distance in feet of the BESS to the nearest residence in Eldorado. Please state which residence this is or note it on a map placement.</p> <p>Actual distance in feet of the BESS to the nearest residence in Rancho Viejo. Please state which residence this is or note it on a map placement.</p> <p>Actual distance in feet of the BESS to the nearest residence in Rancho San Marcos. Please state which residence this is or note it on a map placement.</p> <p>Actual distance in feet of the substation to each of the communities listed above.</p> | <p><b>Image files provided in zip file as a separate attachment.</b></p> <p>Please note, the substation will be located in the same corner as the BESS containers. The distance from the BESS and Substation are the same for each identified address.</p>   |
| <p>Please provide photos of the solar panels in more than their flat position. These panels move and it is deceptive to not show panels in other positions to evaluate glare and landscape views.</p>  | <p><b>Images are included as an attachment – Solar Panel Height.pdf</b></p> <p>Solar panels include anti-reflective coating and produce negligible glare, as can be observed at currently operating solar facilities.</p>  |

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| <p>Construction Waste Management – page 2-5 of the EIR – you say “Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids and solvents. Please provide complete information on the actual chemicals being used. This is liquid waste so how can it possibly be collected and therefore, prevented from entering the ground water? As you have stated these are hazardous waste and they can not be permitted in any way to enter the groundwater and contaminate our wells.</p> | <p>Hazardous waste would be managed in accordance with federal, state, and local regulations. These are not anticipated release of liquid hazardous waste. Rather, they are containerized fluids within operating vehicles and equipment. Refer to Section’s 3.6, 3.8, and 3.14 for discussion of waste management, including mitigation measures to avoid and minimize impacts to soil resources, health and safety, and water resources.</p>  |
| <p>In the meeting notes from the October 4th you mentioned a solvent may be used in cleaning and the mention of this has been removed from the EIR. What is the solvent and why was this removed?</p>  | <p>Panel cleaning would be limited to just water, if necessary during exceptionally prolonged periods of no rainfall.</p>   |
| <p>Under the new Inflation Reduction Act which offers investment tax credits for battery storage projects, what investment tax credits is AES receiving for the 96MW Rancho Viejo facility with a 48MW BESS?</p>   | <p>The project, not AES directly, anticipates qualifying for a 30 percent investment tax credit, which is sourced from a third-party tax equity investor. This tax credit ultimately contributes to a lowest cost of energy and capacity to benefit PNM and its rate payers.</p>  |
| <p>Why was a meeting never held with Eldorado residents especially since you have placed the BESS with the most risk of a fire potential nearest to our community?</p>   | <p>The three community meetings hosted by AES were open to the public and advertised in the Santa Fe New Mexican, inviting all interested community members to attend. No meeting was hosted for one particular neighborhood; all were welcome to attend either in person or in one instance, virtually. AES is planning to host an additional meeting to be held in a location convenient for Eldorado residents to attend. Details of that meeting will be shared when available.</p>   |
| <p>We would like to see the Hazard Mitigation Analysis that you would have done for this project. I think the details in this report that you must provide to the fire department are really necessary for the County to review in detail the hazards you identified and the mitigation strategies for these hazards before they can make any decision on approving your Conditional Use Permit application.</p>   | <p>A Hazard Mitigation Analysis (HMA) will be performed as part of the detailed engineering process. This HMA will include site and product specific fire risk assessment and a first responder plan. Local first responders will have access to these reports. AES will provide on-site and in-person training to the local responders prior to commercial operation of the system. There are no special materials required to respond to a fire event for the containerized BESS units. Only standard water application to the adjacent BESS containers is required and this is only in the case where all internal fire suppression systems may fail. All information required by the first responders will be included in the first responder plan part</p> |

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|  | <p>of the HMA. To prevent accidents like the Arizona case, the containers are non-occupiable, meaning the first responders do not open or enter any container under any circumstance.</p>  |
| <p>The other report that we would like to request are the UL 9540a tests that were performed on the battery and battery containers you intend to use in the facility. Again, important information that the County should review at this stage concerning safety of materials proposed to be used before they can fully evaluate your application.</p>   | <p>We have UL9540A test results for the cell, module, and unit level tests. These are all that's required due to the successful fire mitigation at the unit level. AES is determining if detailed test reports can be provided publicly, as they are not owned by AES but by the manufacturer.</p> |
| <p>A question that has come up about the battery storage containers you intend to use. The specs say CEN 20' ISO. Can you please tell me if these are the new Centipede containers?</p> <p>The reason I ask for more information on this is because I just finished reading several stories (one attached below) about the Centipede system that was used in a facility in Warwick, NY that just had two battery fires in these containers. I believe they were to have the design that separates the battery cells with in the modules making them less prone to fire? But I guess they did not work as intended.</p> | <p>These are not "Centipedes", but are designed and integrated by AES with battery and enclosure supplier partners. They occupy the same footprint as 40' ISO containers. These use different battery chemistry and different approach to hazard mitigation.</p>                                   |



| <a href="#">Introduction of Samsung Battery System ESS 2022 rev0.17 v0.47.pdf   Powered by Box</a> | Estimates 14 Dec 2022  | Units  |
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| Dimensions of BESS enclosure   | 40 x 8 x 9.5   | ft   |
| Chiller Dimensions (JC)  | 2.3 x 1.2 x 2.44   | m (LxWxH)  |
| Enclosure footprint  | 320  | sqft   |
| Spacing between enclosures   | see below  |  |
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| Maximum C-rate   | 0.5  | CP (0.25 recommended)                                |
| Degradation Profile of Batteries   | <a href="#">ESS indicative performance.xlsx   Powered by Box</a> |  |
| Electrical Aux load per enclosure  | ~1   | kW   |
| ESS Thermal Heat Generation load per enclosure   | 97.0   | kW @ 0.5C (6.8kW @ 0.2C)                             |
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