

FRONTLINES DATA REQUEST #4 TO THE NEVADA HYDRO COMPANY

- 1) What maximum energy storage (in MWhr) is LEAPS is capable of? Please show how this value is calculated, and document all assumptions.

- 2) Please provide FRONTLINES with a copy of the agreement executed between the parties in 2005 that is referenced in paragraph 1 of Part 2 of Appendix I “Financial Statements For Talega-Escondido/Valley-Serrano 500 kV Interconnect Project”

- 3) Please provide FRONTLINES with copies of all electronic mail (including attachments), handouts, letters and other communications between representatives of (or agents for) TNHC and Mr. Larry Rannals (Community Plans and Liaison Officer for U.S Marine Corps Base Camp Joseph H. Peldleton) and any other representative of (or agent for) the U.S Marine Corps, U.S. Navy, the U.S Department of Defense, the federal government and the Fallbrook Land Conservancy regarding placement of the proposed “Case Springs” substation on the Camp Pendleton Marine Corp base or on property adjacent thereto. This includes communications both from and to TNHC as well as information that may have been subsequently used by the USMC in subsequent discussions with the FLC.

- 4) Please provide details of all conversations and meetings between representatives of (or agents for) TNHC and Mr. Larry Rannals (Community Plans and Liaison Officer for U.S. Marine Corps Base Camp Joseph H. Peldleton) and any other representative of (or agent for) the U.S Marine Corps, U.S. Navy, U.S Department of Defense, or Federal government before, during and after April 5, 2010 regarding placement of the proposed “Case Springs” substation on the Camp Pendleton Marine Corp base or on property adjacent thereto. This includes the dates of all such communications from or to TNHC’s agents/representatives as well as the names and contact information for all individuals that either received or submitted these communications or were present during meetings that addressed these matters.

- 5) Please provide FRONLINES with a copy of any application submitted by TNHC to the U.S. Forest Service which designates TNHC as the applicant for a Special Use Permit to construct the proposed TEVS line.

- 6) TNHC’s revised PEA states (on page 3-96):
“ To interconnect the TE/VS Interconnect, a new Case Springs 500/230 kV Substation, at MP 31.2 will be built looping in the existing Talega – Escondido 230 kV lines. The existing line is a single circuit on double circuit towers. The second line position on that circuit will be added. The Talega – Case Springs portion of the existing line will be upgraded to handle up to 912 MVA to match the new second line, also to be rated 912 MVA rating. The existing and additional circuit from Case Springs to Escondido line will be rated 456 MVA each circuit and built using the existing tower structure. Those upgrades and ROW were previously permitted by SDG&E and provide for reconductoring as proposed in this PEA & LGIA. In addition, 3M ACCR conductors are proposed (see Attachment 2).”

a) Is it correct that, upon completion of all the upgrades described, the capacity of each of the two ACCR lines from Case Springs to Talega will be 912MVA?

b) What is the maximum combined transmission capacity (in MW) of the two proposed Case Springs-Talega lines assuming all lines in service, 1,750 MW of new renewable capacity (assumed by witness Vangelatos), and all upgrades proposed by TNHC are completed?

c) Is it correct that, upon completion of all the upgrades described, the capacity of each of the two ACCR lines from Case Springs to Escondido will be 465MVA?

d) What is the maximum combined transmission capacity (in MW) of the two proposed Case Springs-Escondido lines assuming all lines in service, 1,750 MW of new renewable capacity (assumed by witness Vangelatos), and all upgrades proposed by TNHC are completed?

7) FRONTLINES is unable to find any TEVS cost estimates that address permitting, land acquisition, site preparation (Lake, Santa Rosa and Case Springs substations) and access roads. Please provide individual and detailed costs estimates for each of these elements.

8) FRONTLINES previously requested that witness Vangelatos provide modeling and analysis details demonstrating that TEVS will deliver renewable energy absent Path 42 upgrades. Witness Vangelatos responded that her model included “approximately 1750 MW of new renewable capacity interconnecting to the 500/230 kV system enhancements planned with Palo Verde-Devers #2 Project”.

a) Does witness Vangelatos assume this 1750 MW capacity will come from the Imperial Valley? If so, how much of comes from the Imperial Valley and does this assumption require completion of the Path 42 upgrades? If not, where does it come from?

b) Is the assumed 1,750 MW interconnected to the 500/230 kV system enhancements of the Verde-Devers #2 Project considered delivered to SCE’s service territory?

c) Is the assumed interconnection of 1,750 MW to the 500/230 kV system enhancements planned with Palo Verde-Devers #2 Project dependent on the TEVS? If so, how is TEVS necessary to interconnect 1,750 MW to the 500/230 kV Palo Verde-Devers #2 system?

9) FRONTLINES seeks to distinguish which elements comprise the “Path 42 upgrades” referred to in witness Vangelatos’ testimony and which elements comprise the “system enhancements” referred to in witness Vangelatos’ response to FRONTLINES question 9.

a) Please Identify individually each specific elements that comprises the “500/230 kV system enhancements planned with Palo Verde-Devers #2 Project” referred to by witness Vangelatos.

b) Please identify individually each specific element that comprises the Path 42 upgrades.

10) In response to FRONTLINES question whether or not the Path 42 upgrades will make the resources in Imperial North available to the SCE system irrespective of TEVS, Witness Vangelatos provides a partial citation of CAISO'S errata to rebuttal testimony provide in the Sunrise Project. The full citation states "the CAISO found that mitigating the Miguel transformer loading limit and upgrading Path 42 was not an adequate plan of service to accommodate 2700 MW of generation in Imperial County, due to several reliability criteria violations produced by this model. Specifically, the most restrictive criteria violation was the transient frequency dip problem that the new generation would create in the Mexico CFE system". It is not clear how Witness Vangelatos' response addresses FRONTLINES question of whether or not the Path 42 upgrades will make the resources in Imperial North available to the SCE system irrespective of TEVS, so further clarification is requested:

a) Isn't the purpose of CAISOs testimony here to point out that accommodating 2,700 MW of generation from the Imperial Valley cannot be accomplished merely by mitigating Miguel and upgrading Path 42 because it creates reliability criteria violations which are addressed by including Sunrise and the Path 43/Miguel system changes? If not, what does witness Vangelatos believe is the purpose and intent of the CAISO testimony she cites? If so, how does it address FRONTLINES question?

b) Does Witness Vangelatos concur with CAISO's conclusion (found on the same page as the testimony she cites) that adding 2700 MW of generation in Imperial County without Sunrise would result in several reliability criteria violations? If not, why not?

c) Witness Vangelatos also states "It cannot be assured that Path 42 alone will allow renewable to be reliably delivered to SCE without additional upgrades". Is witness Vangelatos "assured" that the Path 42 upgrades referred to in her testimony will deliver at least 1,400 MW of generation to SCE territory from the Imperial Valley? If not, why does testify that it will (See Page 9 line 17 of her testimony)?

11) In response to FRONTLINES question 10c, witness Vangelatos asserts: "CAISO's assessment is relied upon with regards to the understanding that additional transmission upgrades would be required to reliably deliver renewable energy via Path 42" Please identify specifically what additional transmission upgrades CAISO deemed necessary in their assessment in order to reliably deliver renewable energy via Path 42.

12) Specifically how does TEVS ensure delivery of energy from Imperial Valley resources to SCE via Path 42?

13) In response to FRONTLINES data request, witness Vangelatos asserts "If the CECPP were to be included in the basecase, this would provide a source of natural gasfired energy in the San Diego area that could likely be displaced (at lower cost) with renewable energy imports via TE/VS. However, further studies would need to be run to confirm this". Couldn't renewable energy imports via Sunrise also displace the natural gas-fired energy produced by the CECPP?

14) In response to FRONTLINES data request Witness Vangelatos provided Table 1: Path 42 Import Summary for the “base case” (which assumes a 600 MW capacity) and the “TEVS case” (which assumes a 1300 MW capacity and includes Path 42 upgrades and TEVS).

a) The results in Table 1 do not seem to factor in TEVS; how are the results reported in Table 1 dependent on TEVS and how would they change if TEVS were omitted from the TEVS case?

b) If TEVS were omitted from the TEVS case, would the renewable resources imports from Path 42 be used to address SCE’s LCR? If not, why not?

15) In response to FRONTLINES’ data request, Witness Bergman states “TE/VS enables SDG&E to access the capacity, energy and RPS credits from the resources that help meet its net short RPS requirement that cannot be served over Sunrise.”

a) Assuming the Tradable REC limit sunsets in 2013, What SDGE net short RPS requirement is not met by a combination of Sunrise, Path 42 upgrades, and other system additions/upgrades assumed in CAISO’s 2011 Statewide Conceptual Transmission Plan ? (<http://www.caiso.com/2b0a/2b0aec5d58d70.pdf>)

b) Assuming the Tradable REC limit sunsets in 2013 and given the fact that TEVS does not bring renewable power to grid, how does TEVS enable SDGE to meet its net short RPS requirement?

16) In response to question 20d from FRONTLINES’ prior data request, Witness Bergman cobbled together individual statements from portions of CAISO’s Phase 1 reply brief from Sunrise. FRONTLINES requests further clarification of this response:

a) Is witness Bergman aware that the cited CAISO brief actually states “According to UCAN, SDG&E concedes that up to 2700 MW of renewable generation in the IV area could be imported into San Diego, but without Sunrise the cost of purchasing and delivering these renewables will be so high that they won’t be developed”?

b) It appears to FRONTLINES that this statement is merely CAISO’s paraphrase of UCAN’s position in Sunrise; it is not CAISO’s position in Sunrise. Why does witness Bergman believe this excerpt actually represents CAISO’s position in Sunrise?

17) Relying on other portions of CAISO’s brief in response to FRONTLINES question 20, witness Bergman asserts “Using the same reasoning that SDG&E and CAISO used in the Sunrise proceeding, the combined loss in value from not building TE/VS is the cost of congestion management incurred by the renewables in serving SDG&E, plus the value of capacity”. Regarding this statement, does witness Bergman concur that reducing the cost of congestion management incurred by renewable generation is typically achieved by increasing transmission capacity to the renewable generation itself? If not, why not? If so, how does TEVS reduce the cost of congestion management incurred by renewable generation since it does not increase transmission capacity to any renewable resources?

18) In response to FRONTLINES' data request, witness Bergman states: "Currently, transmission between the SCE and SDG&E areas is constrained at times". Regarding this statement, please provide supporting documentation conclusively demonstrating that transmission between SCE and SDGE areas is so constrained that, in addition to Sunrise, supplemental transmission between SCE and SDGE is necessary to reliably serve SDGE customers. [Note: CAISO's draft 2011 LCR analysis for SDGE does not raise concerns that transmission into SDGE territory is so constrained that it is problematic for SDGE to serve its customers (see <http://www.caiso.com/274e/274ee49f6bd00.pdf>) nor does CAISO's draft 2011 Statewide Conceptual Transmission Plan indicate new transmission into SDGE is necessary beyond the addition of Sunrise and upgrading existing infrastructure.]

19) FRONTLINES previously asked witness Bergman (in Question 26) how TEVS is useful in bringing an additional 4,062 GWh (revised to 3,030 GWh) of Imperial Valley energy to the grid when it is already deemed "delivered to the grid" when it is placed onto Path 42. In response, witness Bergman simply states that "the renewable projects are not likely to be developed unless TE/Vs is built" and refers to his answer to Question 20 which cites CAISO testimony that assumes Sunrise is not in service (and is therefore not relevant to this proceeding). FRONTLINES deems witness Bergman's reply to this question to be non-responsive. The following is a second attempt to get a responsive answer:

- a) Is power that is placed on Path 42 considered to be "delivered to the grid"? If not, why not?
- b) Is power flowing on SCE's existing Valley-Serrano line considered to be already "delivered to the grid"? If not, why not?
- c) Is power flowing on SDGE's existing Talega-Escondido line considered to be already "delivered to the grid"? If not, why not?
- d) Specifically what power does TEVS deliver to the grid?

20) In response to a previous question posed by FRONTLINES (question 26b), witness Bergman clarifies that reconductoring Path 42 will increase transmission capacity [into the SCE system] by 800 MW (from 600 MW to 1400 MW).

- a) IF TEVS withdraws 1,000 MW of power from SCE's service area, and Path 42 provides only 800 MW of new renewable resources to SCE's service area, won't SCE's LCR increase by 200 MW? If not, why not?
- c) How does witness Bergman conclude that the 800 MW of additional clean renewable power provided by reconductoring Path 42 will travel onto TEVS and not remain in SCE's service area to displace inefficient, costly local generation in the Los Angeles Basin?

21) In response to FRONTLINES' prior data request (question 27) witness Bergman clarifies that, according to CAISO, without transmission between generation and load,

generation projects are not likely to be developed. FRONTLINES understands that reconductoring Path 42 will provide additional transmission capacity between Imperial Valley generation and SCE load. However, it is not clear how witness Bergman concludes that TEVS is also transmission between generation and load. FRONTLINES seeks clarification on this:

a) Does TEVS connect SCE load to SDGE load? If not, why not?

b) What generation project(s) will remain undeveloped if the Path 42 upgrades are constructed, but TEVS itself is not built?

22) In response to FRONTLINES' prior data request (Question 28) witness Bergman states that his approach for quantifying TEVS benefits is "as similar as possible to that which CAISO used to demonstrate the benefit of Sunrise to ratepayers. In both proceedings a base case of no subject transmission project is compared to an alternative case that includes the development of the subject transmission project"

a) Does witness Bergman agree that CAISO's alternative analysis in Sunrise incrementally considered the benefits of each transmission element both individually and in combination (such as Sunrise alone, TEVS alone (Case ED1), TEVS + Green Path (Case ED2), Sunrise + TEVS (ED3), Sunrise + TEVS +Green Path (Case ED4), etc.)? If not, why not?

b) If the response to question a is yes, then doesn't CAISO's methodology demand that TNHC incrementally analyze the benefits of TEVS only (case 1), Path 42 upgrades only (Case 2) and TEVS +Path 42 upgrades (Case 3)? If not, why not?

23) Regarding witness Bergman's response to question 30 submitted in FRONTLINES prior data request, does TNHC intend to submit revised testimony to address these changes?

24) On page 19 of his testimony, witness Bergman is asked "It appears as if only the Path 42 Reconductoring is necessary to connect the 4,062 GWh of geothermal energy production to the California grid. Why include the benefit of TE/VS, which is much more costly?" Regarding this question, can the Path 42 upgrades alone (without TEVS) bring this 4,062 GWh of geothermal energy production to the California grid?

25) Witness Bergman states: "CAISO also studied TE/VS in combination with the Green Path North project, which is electrically similar to the instant case of TE/VS in combination with the reconductoring of Path 42. In the TE/VS + Green Path North project, the increase in Los Angeles LCR from TE/VS is more than offset by the decrease in Los Angeles LCR that results from access to Imperial Valley renewable"

a) Does the CAISO analysis of TEVS + Green Path cited here by witness Bergman assume Sunrise is in service?

b) Does the “TEVS + Path 42 upgrades” case considered in the testimony offered by TNHC’s witnesses assume Sunrise is in service?

c) If the answer to question 25a is yes, and the answer to question 25 b is no, why does witness Bergman believe that CAISO’s testimony in Sunrise regarding LA Basin LCR (assuming Sunrise is not in service) is in any way applicable to TNHC’s “TEVS case” (assuming Sunrise is in service)?

d) Isn’t it true that the CAISO analysis cited by witness Bergman demonstrates that Sunrise reduces Los Angeles LCR substantially more than TEVS + Green Path without Sunrise? (see Table 1.B from the cited CAISO testimony).

26) In response to FRONTLINES data request, witness Bergman clarifies that Sunrise will only be able to deliver 2,890 GWh of the SDGE’s Net Short of 5,920 GWh, leaving 3,030 GWh of Net Short that cannot be served by Sunrise.

a) FRONTLINES understanding of witness Bergman’s response and testimony is that the Path 42 upgrades will provide access to new renewable resources in the Imperial Valley which can be delivered to from SCE territory to SDGE territory via TEVS to serve the 3,030 GWh Net Short which Sunrise cannot deliver. Is this correct?

b) Does SDGE have any other option for the delivery of 3,030 GWh of renewable generation to SDGE load to serve the Net Short? If so, what are they?

27) In response to FRONTLINES data request, witness Bergman states: “TE/VS provides SDG&E with access to energy, capacity, and renewable credits from renewable resources that otherwise could only be delivered to SP15. Without these bundled sales, CAISO has asserted that these renewable projects would not be developed”.

a) Please provide a citation for CAISO’s assertion.

b) Just to clarify, can the “bundled sales” that CAISO asserts are necessary for the development of these renewable projects be made to IOU’s other than SDGE? (For example, PGE or SCE?)

c) Does witness Bergman believe that these “bundled sales” will not happen without TEVS? If so, why?

28) Regarding witness Bergman’s response to FRONTLINES question 32: Will the Path 42 upgrades enable delivery of increased Imperial Valley Generation to SCE? If so, precisely how is increased generation from Imperial Valley constrained by transmission into San Diego?

29) In response to FRONTLINES question 34, witness Bergman states that, in the TEVS case “the LA Basin LCR decreases”.

a) Would this statement be true if the Path 42 upgrades were included in the Base Case rather than in the TEVS Case? If not, why not?

b) Won't the LA Basin LCR decrease with just the Path 42 upgrades regardless of whether TEVS is constructed? If not, why not?

30) In response to FRONTLINES question 35, witness Bergman provided tabulated results of a new analysis of RPS benefits for two scenarios related to the limit on tradable RECs.

a) How were the values presented in these tables derived and where did they come from?

b) Wouldn't the RPS benefits claimed in the first table occur even if TEVS were not constructed? If not, why not?

31) When does TNHC anticipate FRONTLINES will receive responses to the questions submitted to witness Depenbrock and witness Ramsay?

32) To insure FRONTLINES full comprehension of witness Medla's response to FRONTLINES question 67, please clarify whether the following summary is accurate; if it is not accurate, please provide a correction:

TNHC proposes a 50/50 debt equity structure, but the source of the equity funds supplied by the equity provider(s) may flow from equity provider(s) debt obligations. As much as 40% of the equity provided for the TEVS project may be secured by debt obligations of the equity provider(s).

33) Regarding witness Ramsay's response to FRONTLINES question 86:

a) If the purpose of TEVS is merely to connect SCE territory to SDGE territory, why include all the tunneling and additional lines described in the question?

b) Can TEVS be configured like any other overhead transmission line that is simply strung from point A to point B, which would avoid the tunneling and infrastructure described in question 86? If not, why not?

34) Regarding TNHC's response to FRONTLINES question 106:

a) Please provide copies of all communications (including email, handouts, written correspondence) pertaining to the matters addressed in TNHC's response which were prepared or issued by, or received by, TNHC or any agent or representative of TNHC.

b) Please provide the dates of all the communications from TNHC, its agents, and representatives pertaining to the matters addressed in TNHC's response as well as the names and contact information for all individuals that either received these communications or were present during meetings that addressed these matters.

c) Please provide the dates of all the communications received by TNHC, its agents, and representatives pertaining to the matters addressed in TNHC's response as well as the names and contact information for all individuals that provided these communications.

35) Has any employee or agent of TNHC ever communicated that legislation has been adopted or rulemaking or policy development has occurred which facilitates, approves, ensures, or in any way supports the TEVS interconnect project or the LEAPS project to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, the U.S. Department of Defense or the federal government? If so, please provide details of these communications, as well as copies of all correspondence (including email, handouts, written correspondence) pertaining to this communication that were prepared or issued by, or received by, TNHC agents/representatives. Also, please provide the dates of all the communications from or to TNHC agents/ representatives pertaining to these communications as well as the names and contact information for all individuals that either received or submitted these communications or were present during meetings that addressed these matters.

36) Has any employee or agent of TNHC ever communicated that a local, state, or federal agency either supports or approved of the TEVS interconnect project or the LEAPS project to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, the U.S. Department of Defense or the federal government? If so, please provide details of these communications, as well as copies of all correspondence (including email, handouts, written correspondence) pertaining to this communication that were prepared or issued by, or received by, TNHC agents/representatives. Also, please provide the dates of all the communications from or to TNHC agents/representatives pertaining to these communications as well as the names and contact information for all individuals that either received or submitted these communications or were present during meetings that addressed these matters.

37) Has any employee or agent of TNHC ever communicated that a local, state, or federal agency has approved or assented to any portion of the TEVS interconnect project or the LEAPS project to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, the U.S. Department of Defense or the federal government? If so, please provide details of these communications, as well as copies of all correspondence (including email, handouts, written correspondence) pertaining to this communication that were prepared or issued by, or received by, TNHC agents/representatives. Also, please provide the dates of all the communications from or to TNHC agents/representatives pertaining to these communications as well as the names and contact information for all individuals that either received or submitted these communications or were present during meetings that addressed these matters.