

FRONTLINES DATA REQUEST #3 TO THE NEVADA HYDRO COMPANY:

REGARDING WITNESS KAHLEN'S TESTIMONY:

Note – if any of the following questions are not within witness Kahlen's purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

- 1) Please describe how witness Kahlen "became aware" that the Fallbrook Land Conservancy ("FLC") was "willing to consider placement" of a 500 kV substation and associated transmission lines on their property and the circumstances around which this "awareness" occurred [see page 1 line 7 of Kahlen testimony].
- 2) Please provide details of all conversations pertaining to the potential use of FLC property that have occurred between members or representatives of the U.S. Government (including representatives from the Department of Defense, Marine Corps, or the U.S. Navy) and representatives of (or agents for) the Nevada Hydro Company (including witness Kahlen or any other contractor, employee, or agent of the Nevada Hydro Company "TNHC"). Details must include names, dates, and issues discussed.
- 3) Please identify the height of each tower proposed for installation on FLC property.
- 4) Please identify what is meant by areas designated as "RCA" on Exhibits 3 and 4 appended to witness Kahlen's testimony.
- 5) Please provide FRONTLINES with a single figure depicting the revised alignment for towers 130 to 140 and the new proposed location of the substation on FLC property as well as the configuration of the Talega-Escondido line connection to the substation. In addition, please identify the property lines of the FLC, Marine Corps and US Forest Service lands.

REGARDING WITNESS VANGELATOS' TESTIMONY

Note – if any of the following questions are not within witness Vangelatos' purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

- 6) According to the Imperial Irrigation District website (<http://www.iid.com/index.aspx?page=266>), IID's energy service area includes all of Imperial County. According to the CAISO interconnection Queue dated December 21, 2009 (<http://www.caiso.com/2826/2826b8435fe20ex.html>), there are at least 2 renewable energy projects located in Imperial County (and therefore within IID's service area) that have requested interconnection to the SDGE Sunrise project (see Queue positions 493 and 643AP). Thus it appears that at least 2 renewable resource projects totaling 550 MW that are located in IID's service territory seek interconnection via Sunrise.

a) Please reconcile these facts with witness Vangelatos' testimony that she was "unable to identify any planned renewable interconnections or Power Purchase Agreements from IID service area into Sunrise" and "Per the latest CAISO interconnection Queue, all requested renewable interconnections that would utilize the Sunrise are located outside the IID service area".

b) Does the circumstance that these renewable projects will be interconnected Sunrise necessitate a change in witness Vangelatos' underlying assumptions, baseline conditions, analysis or conclusions? If not, why not?

7) Witness Vangelatos testifies (on page 8 line 28) that, in the TEVS case, she modeled increased available capacity from geothermal resources in the Imperial North area. Isn't it true that the increased capacity from geothermal resources will be made available by the Path 42 upgrades whether or not TEVS is built? If not, why not?

8) The base case developed by witness Vangelatos excludes the Path 42 upgrades since "absent TEVS. Renewable energy from Imperial North via Path 42 could not be delivered to the San Diego area due to a lack of transmission outlet" (Page 9 line 10).

a) Does witness Vangelatos' understand or believe that the purpose of the Path 42 upgrades is to deliver renewable energy to the San Diego area?

b) If the answer to question 8a is no, what does witness Vangelatos understand the purpose of the Path 42 upgrades to be?

9) Witness Vangelatos is asked (on page 10, line 3) "Can the TEVS project deliver renewable energy to San Diego absent Path 42?" Witness Vangelatos responds "Yes". Please provide the results of all modeling and analysis conducted by Witness Vangelatos to support her contention that TEVS will deliver renewable energy absent Path 42 upgrades, and please explain why the results of this analysis was not included with her testimony.

10) Witness Vangelatos asserts that she "chose to include the Path 42 upgrades [in the TEVS analysis] since (1) according to CEC, RETI, CTPG and IID, the resources in Imperial North are available, (2) transmission is planned at reasonable cost, (3) the cost of the renewable energy from this area is competitive, and (4) the location of these resources are within California."

a) Please provide specific citations (including page numbers) for all CEC, RETI, CTPG and IID documents that support witness Vangelatos' statements regarding the availability of "resources in Imperial North".

b) Will the Path 42 upgrades make the resources in Imperial North available to the SCE system irrespective of whether TEVS is approved?

c) If the answer to Question 10(b) is no, please provide analysis and modeling results which conclusively demonstrate that SCE will be unable to access resources in North Imperial even with the Path 42 upgrades.

11) Regarding witness Vangelatos' testimony that the Path 42 upgrades are "planned at reasonable cost", please provide copies of all final planning reports from the CEC, CPUC, CAISO and IID as well as all approved CAISO and IID transmission plans that indicate that the Path 42 upgrades have been considered and approved.

12) Witness Vangelatos is asked (on page line 9): "Absent TEVS, can renewable energy be delivered to the San Diego area?" Witness Vangelatos responds "In my opinion, in order to meet the 33% RPS requirement for SDGE, a new transmission line will need to be built to access renewable located outside San Diego. I believe that the TEVS project will serve this need".

a) Does any portion of the TEVS project access one or more renewable resources?

b) if the answer to question 12a is yes, please identify the individual renewable resources that are accessed by TEVS.

c) if the answer to question 12b is no, please explain how the TEVS line (which does not access any renewable resources) is able to serve the need for accessing renewable resources located outside San Diego.

13) According to Figure 1 of Exhibit 2 of witness Vangelatos' testimony, the CEC adopted 2010-2020 Energy Demand Forecast reports that PGE's and SCE's Peak Demand in 2015 will be 24,537 MW and 27,062 MW, respectively. FRONTLINES has reviewed the referenced CEC report (located at: <http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-CMF.PDF>), but found no reference to these numbers anywhere. Similarly, FRONTLINES found no reference to the GWh energy assumptions by utilities that are reported in Figure 1 of Exhibit 3.

a) Please confirm whether FRONTLINES is looking at the correct document.

b) If the answer to question 13a is yes, please provide specific citations for the values reported in Figure 1 of Exhibit 2 of witness Vangelatos' testimony.

c) If the answer to question 13b is no, please provide the internet site for the correct report.

14) Figure 4 of witness Vangelatos' Exhibit 2 indicates that the PLEXOS model assumes that the Encina 1-3 generators are retired. Figure 5 indicates that Encina 1-3 capacity will be replaced by the Carlsbad Energy Project (558 MW CECPP). Exhibit 3 of Witness Vangelatos' testimony indicates that CECPP generation was not included in the PLEXOS model.

a) Does witness Vangelatos include the CECPP in the PLEXOS model? If yes, where is it indicated in Exhibit 3 appended to witness Vangelatos' testimony?

b) Does witness Vangelatos agree with witness Depenbrock's testimony that, if approved, the CECPP project is likely to come into service by early 2015? (See Page 11 line 19 of witness Depenbrock's testimony)

c) If the answer to question 13a is no, please explain why the CECPP is excluded from the PLEXOS results and describe how the PLEXOS results would change if the CECPP were included?

15) According to Section 1.4.4 of Exhibit 2 of witness Vangelatos' testimony, natural gas fired generation resources are addressed in the PLEXOS model. What new large thermal generation units (located both inside and outside the San Diego area) are included in the PLEXOS model and how are they considered?

16) FRONTLINES understands from Witness Vangelatos' testimony that the "TEVS case" includes the following elements that were not included in the base case:

- TEVS + associated SCE/SDGE upgrades
- Additional renewable generation in North Imperial
- The Path 42 upgrades

a) Please identify all other elements, parameters, or conditions assumed in the TEVS case that differ from, or were excluded from, the base case.

b) Please identify all elements, parameters, and conditions assumed in the base case that were excluded from the TEVS case.

17) Please identify the power flow (in MW) on Path 42 that was assumed for both the PLEXOS base case and the PLEXOS TEVS case.

18) Please explain the derivation of the 4008 MW capacity level identified on Page 7 line 20 of Witness Vangelatos' testimony.

19) Please identify the TEVS power flow (in MW) and the power flow direction assumed in witness Vangelatos PLEXOS model results for the TEVS case.

REGARDING WITNESS BERGMAN TESTIMONY

Note – if any of the following questions are not within witness Bergman's purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

20) In the “Post-2015” qualitative analysis of TEVS, witness Bergman asserts (on page 10, line 8) that TEVS will help SDGE meet the 33% RPS standard because the SDGE area is transmission constrained.

- a) What renewable resources does witness Bergman believe are accessed by TEVS ?
- b) In order to meet their RPS obligation, is it necessary for SDGE to deliver renewable resources to the SDGE load? If so, please cite a reference or source for this requirement.
- c) If the answer to question 20b is no, does witness Bergman concur that TEVS is not needed for SDGE to meet their RPS goals?
- d) If the answer to question 20 c is no, how is TEVS useful to meeting SDGE RPS goals if SDGE is required to bring renewable power to their load in order to meet the RPS goals?

21) In the “Post-2015” qualitative analysis of TEVS, witness Bergman asserts (on page 10, line 10) that TEVS has the effect of “lowering energy production costs”. How does TEVS have this effect since it does not access any energy resources?

22) In the “Post-2015” qualitative analysis of TEVS, witness Bergman asserts (on page 10, line 10) that TEVS has the effect of “substituting renewable energy for gas-fired energy”. How does TEVS substitute renewable energy for gas-fired energy if TEVS does not actually bring any energy to the grid?

23) Witness Bergman asserts (page 10, line 5) that a higher load is likely to make local RA requirements more stringent, and that TEVS will mitigate that effect.

- a) By “local RA requirements”, is witness Bergman referring to San Diego RA requirements?
- b) Does witness Bergman agree with CAISO’s testimony in Sunrise that TEVS can reduce the LCR in San Diego, but the corresponding reduction in SDGE’s local generation will increase the Los Angeles Basin LCR requirements by a corresponding amount? If not, why not? (See page 12 of Errata to Part V of CAISO’s Initial Testimony in Sunrise)
- c) Isn’t it true that TEVS will mitigate the San Diego area’s RA requirements at the expense of the Los Angeles basin’s RA requirements? If not, why not, particularly since TEVS provides no access to new generation sources?
- d) If the answer to question 23c is yes, isn’t the net effect of TEVS on RA in Southern California actually negligible?

24) In the “Post-2015” qualitative analysis of TEVS, witness Bergman ostensibly addresses 5 variables that impact the TEVS benefit calculation (see page 10 line 2 and page 11 line 3). However, FRONTLINES only finds 4 variables are addressed. What is the fifth variable and what is its “impact”?

25) Please show the derivation of the \$35.4 million, the \$34.9 million, and the \$44.9 million values reported on lines 3, 4 and 9 of page 16 of witness Bergman's testimony.

26) On page 17, line 10, witness Bergman indicates that TEVS and the Path 42 upgrades will enable the delivery of an additional 4,062 GWh of energy production beyond what is assumed in the base case.

a) By "delivery", does witness Bergman mean delivery to the grid? If so, how is TEVS useful in that regard, since renewable energy placed on Path 42 is already deemed delivered to the grid?

b) Does witness Bergman believe that the Path 42 upgrades will increase the transmission capacity to SCE from Imperial North by more than 800 MW?

27) Page 19, line 4 indicates, "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". On page 20, line 1, witness Bergman asserts that the geothermal resources in Imperial North are "the least-cost approach" to meet SDGE's RPS. Does witness Bergman believe that the 4,062 GWh of geothermal energy production can be connected to the grid if TEVS is not built? If not, why not?

28) In the discussion of TEVS RPS benefits, witness Bergman asserts "The inclusion of Imperial Valley North resources and Path 42 reconductoring is consistent with CAISO's approach in analyzing TEVS benefits during the Sunrise Proceeding. At that time CAISO modeled TEVS in conjunction with the proposed Green Path North Program. Since Green Path North is now cancelled, we used the Path 42 upgrade..." (See Footnote 16):

a) How is Witness Bergman's analysis of the "TEVS + Path 42" scenario consistent with the CAISO's approach in analyzing the benefits of a stand-alone TEVS project in the Sunrise Proceeding? (CAISO identified the case as ED1: CAISO Base Case + TE/V/S - see INITIAL TESTIMONY OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION, PART V).

b) In Sunrise, CAISO determined that TEVS provided no RPS benefits. How is witness Bergman's analysis (which claims TEVS provides substantial RPS benefits) consistent with CAISO's analysis in Sunrise (which shows TEVS provides no RPS benefits)? (See page 54 of the Errata To Rebuttal Testimony Of The California Independent System Operator Corporation July 12, 2007).

29) In footnote 17 on page 17, witness Bergman expects that, of the 4,370 GWh per year generated by Imperial North resources that will be connected to the grid via the Path 42 upgrade, 4,062 GWh (or 92%) will serve the SDGE load via TEVS. On what basis does witness Bergman conclude that 4,062 GWh from Imperial North will flow along TEVS to SDGE's territory?

30) Considering page 20 of witness Bergman's testimony: Assuming a total RPS obligation of 7175 GWh per year (line 4), "on line" generation of 1,858 GWh (line 5), and "in development" generation of 3,270 GWh (line 6), how is the 4,062 GWh of "SDGE net short" reported on line 7 calculated?

31) Witness Bergman asserts that, to meet their "net short", SDGE can "contract with other renewable resources using TEVS, and then the same geothermal resources will be available to meet RPS requirements of other LSEs". Specifically how does SDGE use TEVS to contract with any renewable resources if TEVS is not connected to any renewable resources?

32) On Page 21, line 7, witness Bergman states that TEVS provides benefits to SCE and/or PGE by transporting energy from Imperial Valley.

a) How does TEVS transport energy from the Imperial Valley? Provide substantiating studies

b) How does transporting energy from the Imperial Valley benefit PGE? Provide substantiating studies

33) How does TEVS provide an additional source of energy? (see page 31 line 11)

34) Witness Bergman testifies that TEVS provides SDGE area RA compliance cost benefits of \$34.9 million (page 16 line 4) based on the argument that TEVS reduces LCR requirements in San Diego (pages 14-15). How does witness Bergman's RA analysis account for the increase in SCE area RA compliance costs that will occur due to increased LA Basin LCR requirements attributed to TEVS?

35) Please indicate the level of uncertainty (or error) implicit in the numbers indicated in the table provided on page 19. Alternatively, witness Bergman can provide the height of the error bar in the figure provided on page 19.

REGARDING WITNESS DEPENBROCK'S TESTIMONY

Note – if any of the following questions are not within witness Depenbrock's purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

36) Witness Depenbrock asserts that LEAPS is able to "store energy produced by renewable generation facilities at one time period such as at nighttime low load periods, via the northern portion of TEVS...". Provide copies of all studies and analytical results that demonstrate renewable generation from facilities north of LEAPS will flow through the TEVS to be stored by LEAPS.

37) Please identify all the in-basin sources (and their respective capacities) that were assumed to derive the 2,517 MW of residual generation within the San Diego Basin reported on Page 6, line 8.

38) Witness Depenbrock states that the Imperial Valley to Miguel substation section of the Southwest Power link (SWPL) has been in service for several years.

a) When was the Imperial Valley to Miguel substation portion of the SWPL put into service?

b) When was the remaining portion of the SWPL put into service?

c) Since SWPL went into service, how many times has the 36 mile-long portion of the SWPL corridor located west of the Imperial Valley substation experienced the type of corridor failure described on page 8 (an initiating event of a non-three phase fault with normal clearing). Please identify when these failures occurred and what their circumstances were.

39) Why does witness Depenbrock consider development of the Carlsbad Energy project to be “not a sure bet” (page 11 line 20)?

40) What is witness Depenbrock’s understanding of the general dispatch rates that have occurred for the Encina 1-3 generators over the last 3 years and whether these resources have been relied upon to serve SDGE load?

41) Are retrofit options available for Encina generator 4 and 5 to address the OTC compliance issue? If not, why not?

42) Please provide legible copies of Exhibits 8, 9, 11, 12, 13, 14, 16, 17, 18, 19 and 20 of witness Depenbrock’s testimony.

43) Please derive the 946 MW capacity loss assumed for Encina generation in Exhibit 10 and identify which generation units are included in this assumption.

44) Please derive and justify the 995 MW import capacity increase assumed for the “with TEVS” case under the N-2 condition in Exhibit 10.

45) Please derive and justify the 979 MW import capacity increase assumed for the “with TEVS” case under the G-1/N-1 condition in Exhibit 10.

46) Witness Depenbrock states (on page 14 line 10) : “In applying the corridor failure test for the loss of both the Imperial Valley-Miguel 500 kV line and Sunrise line, the maximum possible import capability of the remaining paths of Tijuana to Otay Mesa and Path 44 would be a total of 3,195 MW with the contingencies”. Please clarify why 3140 MW of import capability are assumed under this condition in Exhibit 10.

47) Regarding the N-2 condition, Witness Depenbrock asserts (on page 15 line 11) that SDGE would have an LCR shortfall of 221 MW if Encina were not operating at all for whatever reason.

a) Does this situation assume that all the Encina generators fail simultaneously?

b) If the answer to question 47a is yes, then isn't it correct to say that this situation represents either an N-2/G-5 condition or perhaps even an N-3 condition (with the third transmission loss being the connection to Encina itself)?

48) Witness Depenbrock asserts that "the very high percentage of the total SDGE in-basin load that must be supplied from elsewhere via 230 kV lines suggests a high probability that the San Diego area may have a blackout, not just a brownout or load shedding event if all or most of Encina were not operable".

a) How does SDGE's reliance on 230 kV lines for energy inputs from elsewhere create a high probability for blackout conditions?

b) Isn't it true that TEVS is proposed to supply power to SDGE from elsewhere via 230 kV lines?

c) Why wouldn't the TEVS 230 kV connection contribute to this problem?

49) To clarify Witness Depenbrock's testimony on Page 16 line 13 pertaining to the possible "retirement of the Encina units" prior to 2015:

a) On what basis does witness Depenbrock conject that **all** the Encina units would be retired before 2015?

b) Is witness Depenbrock aware of any plan to retire on Encina units 4 and 5 before 2015?

c) If the answer to question 49b is no, why does witness Depenbrock consider this possibility in his testimony?

50) Isn't it true that if the CEPP is brought online by 2015, the generation capacity of the Encina facility would be greater than 1,000 MW until Encina 4 and Encina 5 are retired? If not, why not?

51) Witness Depenbrock asserts: "It should be noted that NRG is not bound by the needs of SDGE for generation and may have other ideas on how to use the Encina site that has nothing to do with power generation. It may decide to do whatever it chooses at its own timing". (Page 17 line 9)

a) Does witness Depenbrock concur that the 530 MW CECP project located on the Encina site?

b) If the answer to question 51a is yes, why does witness Depenbrock conject that the Encina site may be used for any purpose other than power generation?

c) In witness Depenbrock's opinion, would executed LGIAs with SDGE indicate that NRG has plans to use the Encina site to produce power for the purpose of addressing SDGE generation needs?

52) In reference to witness Depenbrock's testimony on page 17 line 14-15, hasn't NRG already made plain their intention to replace units 1-3 with a combined cycle plant, as evidenced by CEC docket 07-AFC-06?

53) In reference to witness Depenbrock's testimony on page 17 line 20, how is NRG's recent decision to partner with Brightsource on the 390 MW Ivanpah project relevant to the Encina facility?

54) Please derive the 1,820 MVA flow capacity of TEVS witness Depenbrock asserts will be available during "contingency situations not involving one of the three transformer strings or the 500 kV line" (see page 18 line 22).

55) Please provide all studies and analytical results supporting witness Depenbrock's assertion that TEVS plus a new 500 kV line between the Central substation and TNHC's proposed Case Springs station "has reliability benefits to both SDGE and SCE" (page 19 line 7-8) and please identify quantitatively what these reliability benefits are.

56) Please provide all assumptions, supporting data, analytical methods and results used to derive Exhibit 16.

57) The figure provided in Exhibit 16 is not legible.

a) Does Exhibit 16 include Sunrise? If so, what is the power flow on Sunrise?

b) Does Exhibit 16 include Path 42 and if so what is the power flow on Path 42?

c) Are all five of the Encina generators assumed to be out of service in Exhibit 16? If so, why does witness Depenbrock consider this to be a reasonable assumption?

58) The figure provided in Exhibit 17 is not legible.

a) Does Exhibit 17 include Sunrise? If so, what is the power flow on Sunrise?

b) Does Exhibit 17 include Path 42 and if so what is the power flow on Path 42?

c) Which Encina generators are assumed operational in Exhibit 17, what are their assumed generation capacities, and why does witness Depenbrock consider these Encina assumptions to be reasonable?

59) The figure provided in Exhibit 18 is not legible. Regarding this figure, witness Depenbrock asserts "The diagram labeled Exhibit 18 shows the system in the SDGE area in the summer of 2015 with TEVS in service and flowing 1171 MW into SDGE prior to the corridor failure with Encina out of service and then the corridor failure and SDGE imports are maximized"

a) Which condition does Exhibit 18 depict, before the corridor failure or after the corridor failure?

b) If Exhibit 18 depicts a condition before the corridor failure, does it include Sunrise and the Path 42 upgrades and if so, what is the power flow on these lines?

c) If Exhibit 18 depicts a condition after the corridor failure, does it include the Path 42 upgrades? If so, what is the power flow on this line?

d) Are all the Encina generators assumed to be out of service in Exhibit 18? If so, why does witness Depenbrock consider this to be a reasonable assumption?

60) The figure provided in Exhibit 19 is not legible.

a) What condition does Exhibit 19 depict, before the corridor failure or after the corridor failure?

b) If Exhibit 19 depicts a condition before the corridor failure, does it include Sunrise and the Path 42 upgrades and if so, what is the power flow on these lines?

c) If Exhibit 19 depicts a condition after the corridor failure, does it include the Path 42 upgrades? If so, what is the power flow on this line?

d) Which Encina generators are assumed operational in Exhibit 19, what are their assumed generation capacities, and why does witness Depenbrock consider these Encina assumptions to be reasonable?

61) The figure provided in Exhibit 20 is not legible

a) Does Exhibit 20 include Sunrise? If so, what is the power flow on Sunrise?

b) Does Exhibit 20 include Path 42, and if so, what is the power flow on Path 42?

c) Are all the Encina generators assumed to be out of service in Exhibit 20? If so, why does witness Depenbrock consider this to be a reasonable assumption?

62) Regarding witness Depenbrock's analysis depicted in Figures 16-20, would the systems depicted in these Exhibits perform differently if Encina's generation rate is never assumed to be less than 550 MW? If so, how?

63) On page 21 line 8, witness Depenbrock refers to the shutdown of many “once through cooling” generators along the Pacific Coast and their replacement with lower capacity alternatives.

a) Please identify all the “Once through cooling” generators that witness Depenbrock is aware of in the SDGE LCA that will be shut down by 2015.

b) Please identify the name, location, and capacity of all the new proposed generation projects that witness Depenbrock is aware of which are intended to replace the units identified in response to Question 63a.

REGARDING WITNESS MEDLA’S TESTIMONY

Note – if any of the following questions are not within witness Medla’s purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

64) How does witness Medla’s testimony constitute evidence that TNHC will indeed have the requisite financial capability to construct the project?

65) When asked how the “Network Upgrades” will be financed, witness Medla responds “The Network Upgrades will be financed as part of the project” and “Revenue produced by the project and costs of the project will be part of the overall transaction”. Does witness Medla anticipate that TNHC will accrue revenue from the portions of SDGE’s system addressed by the project (i.e. the “network upgrades”?).

66) In reference to witness Medla’s testimony regarding the “factors that will impact the ability to raise capital for TEVS” (page 3 line 13)

a) Will these factors impact TNHC’s ability to raise capital for the “Network Upgrades” as well?

b) To what degree will each of the factors identified impact TNHC’s ability to raise capital for TEVS?

c) How did you quantify the response to Question 66b?

d) What is the probability that the conditions surrounding each factor will be advantageous to TNHC by mid 2011?

e) How did you quantify the response to Question 66d?

67) Witness Medla estimates a \$545 million of construction debt from banks (page 5 line 11), a 50%-50% debt-equity structure (page 3 line 2), and a total project debt and equity capital of approximately \$780 million (page 2 line 17). Please explain how a 50%-50% debt-equity structure is achieved if the bank construction debt is 70% of the total project capital value?

68) Regarding assertions pertaining to the conversion of a construction loan to an amortized term loan (page 7 line 16) on what basis does witness Medla anticipate TNHC's fiscal situation will be able to accommodate a five year maturity?

69) Regarding testimony on page 7 line 17:

a) In witness Medla's opinion, does an amortizing term project loan generally cost more than a project bond?

b) Will ratepayers be affected if market conditions at project completion are such that bank accommodations are more attractive? If so, how?

70) How much commitment in equity capital for the project has witness Medla and others "gathered" via the market assessments and confidentiality agreements referred to on page 8 lines 10-13?

REGARDING WITNESS RAMSAY'S TESTIMONY

Note – if any of the following questions are not within witness Ramsay's purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

71) Regarding witness Ramsay's project description and his testimony pertaining to Chapter 3 and Appendix B of TNHC's PEA:

a) Does the TEVS project include two separate and distinct substations at Case Springs or is it a single substation as depicted in Figure 3.6.3-2 of the PEA? (Page 2 lines 20 and 21).

b) If the answer to question 71a is yes, what is the size of each of the Case Springs substations?

c) Please provide a single labeled schematic diagram that is superposed on either 1) an aerial photograph of the project area or a 2) a topographical map of the project area which indicates the configuration of components 2-8 identified on page 2 of witness Ramsay's testimony.

d) If TNHC and Siemens are not in a planning phase for developing an EPC contract, what phase are they in?

e) Please provide details and calculations that demonstrate TEVS has a nominal 1,500 MW design capacity (described in Section 3.1 of the PEA).

f) Is witness Ramsay aware that the SDGE's Talega substation in San Clemente is actually located in Orange County, not San Diego County? (see PEA 3-1)

g) Regarding statements reported on PEA 3-99 is witness Ramsay aware that both the proposed project and the project alternative actually traverse private property in-holdings in the Cleveland National Forest and do not "skirt" them?

h) Section 3.5.1.1 of the PEA refers to an "existing Talega-Case Springs 230 kV line". What is this existing line and how does it relate to the existing Talega-Escondido 230 kV line?

72) Section 3.3.4.2 of the PEA indicates (on page 3-96) that, to accommodate TEVS, SDGE's system will require modification to loop in the Talega-Escondido line, reconductor the looped-in line to Talega with 912 MVA rated ACCR, add a second line to Talega (also conductored with 912 MVA rated ACCR), reconductor the looped-in line to Escondido with 456 MVA ACCR and add a second line to Escondido (also conductored with 456 MVA ACCR). In contrast, Section 3.6.3.2 of the PEA (page 3-173) asserts that additional changes to the SDGE system will be necessary to accommodate LEAPS, such as adding a second Case Springs – Talega line that is conductored with ACSR and reconductoring Talega-Case Springs #1 line with ACSR and bundling it to provide 912 MVA capacity and adding a Case Springs – Escondido #2 conductored with ACSR. The bottom of PEA 3-173 states that the second Talega – Case Springs Escondido line will be conductored with ACSR, and the 230 kV portion of this line is to have a 912 MVA capacity, but the 230 kV #2 lines capacity will be 456 MVA.

a) Why is it necessary to construct the SDGE lines with ACCR to support TEVS (as described on PEA 3-96), only to have them replaced with ACSR (as described on PEA 3-173) to accommodate LEAPS if it is ever constructed?

b) If the second Talega-Case Springs-Escondido line is not necessary until LEAPS is constructed, then why does TNHC proposed to construct it as part of the TEVS project?

c) These descriptions are not consistent; please provide a detailed description of the elements necessary for SCE-owned, SDGE-owned, and TNHC-owned transmission line and substations infrastructure proposed to accommodate TEVS and a separate description of the additional changes to these facilities that will be required to later accommodate LEAPS (if it is ever built)

73) Figure 3.6.11 indicates that that Santa Rosa Substation will occupy approximately 2.5 acres. How large a piece of property does TNHC intend to acquire for the Santa Rosa substation if a CPCN is granted, and from whom does TNHC intend to acquire it?

74) Line items 20 to 30 of Exhibit 1 appended to witness Ramsay's testimony address "OHL Lake Switchyard to GIL North Transition" and "GIL"

a) Does this include the cost of the OHL from the Lake substation to the northern GIL transition station located at MP 11.5? If not, where is the cost of this OHL segment of the TEVS line identified in Exhibit 1 and what is the cost for just this segment?

b) Does this include the cost of the GIL line from the northern GIL transition station at MP 11.5 to the "T" located at MP 12.3? If not, where is the cost of this GIL segment of the TEVS line identified in Exhibit 1 and what is the cost just for this segment?

c) Does this include the cost of the GIL line from the "T" located at MP 12.3 to the Santa Rosa substation? If not, where is the cost of this GIL segment of the TEVS line identified in Exhibit 1 and what is the cost for just this segment?

75) Line item 55 of Exhibit 1 appended to witness Ramsay's testimony is for \$46,678,116 and addresses "OHL GIL South Transition to Case-Springs substation"

a) Does this include the cost of the GIL line from the Santa Rosa substation to the "T" at the top of the mountain located at MP 12.3? ? If not, where is the cost for GIL segment of the TEVS line shown in Exhibit 1 and what is the cost for just this segment?

b) Does this include the cost of the GIL line from the "T" at MP 12.3 to the southern GIL transition station at MP 13.2? If not, where is the cost for this GIL segment of the TEVS line shown in Exhibit 1 and what is the cost for just this segment?

c) Does this include the cost of the OHL from the southern GIL transition station at MP 13.2 to the Case Springs substation? If not, where is the cost for this OHL segment of the TEVS line shown in Exhibit 1 and what is the cost for just this segment?

76) Why does line item 31 of Exhibit 1 appended to witness Ramsay's testimony indicate a connection to a pump house? Is a pump house included in the proposed TEVS project? If so, why is it necessary to the TEVS line and where is the pump house cost estimate?

77) What are "miscellaneous works" (line items 17, 35, 47, 68, and 76)

78) What are "civil works" and what are the associated costs for them? (line items 18, 36, 48, 69, and 77)

79) What is the length of the GIL line from the "T" in the TEVS corridor on top of the ridgeline to the Santa Rosa substation?

80) Regarding Section 3.6.1.4.2 of the PEA,

a) The Case Springs substation will include three 500 kV bays, with each bay consisting of a breaker and a half assembly. Is this correct? If not, please clarify.

b) Please identify what infrastructure occupies each position provided on each of the three 500 kV bays at the Case Springs substation and identify which (if any) are blank positions.

c) What could occupy the blank positions (if any) provided on the proposed Case Springs 500 kV switchgear?

d) The Case Springs substation will include four 230 kV bays, with each bay providing two line positions. Is this correct? If not, please clarify.

e) Please confirm or correct the following summary obtained from PEA 3-137 and Figure 3.6.1-17 page 2:

- One 230 kV bay position will be occupied by the Talega 1 line and the phase shifter 3 connection,
- One 230 kV bay position will be occupied by the Talega 2 line and the phase shifter 2 connection,
- One 230 kV bay position will be occupied by the Escondido 1 line and the phase shifter 1 connection
- One 230 kV bay position will be occupied by the Escondido 2 1 line and a spare (unused) position.

f) Please provide a copy of Figure 3.6.1-17 with each of the 12 230 kV circuit breakers referred to on page 3-137 circled.

g) Why is the Case Springs substation sized and configured to allow a fifth 230 kV bay position and what would it connect to if constructed?

81) Regarding Page 3-112 of the PEA:

a) The 500 kV switchgear at the Lake substation will consist of four bays, each bay containing a breaker and a half assembly. Is this correct? If not, please clarify.

b) How many 500 kV lines can be accommodated by each bay position?

c) The first bay will be occupied by the TEVS line. Please identify what other infrastructure will occupy the first bay position.

d) Please identify what other infrastructure will occupy each of the three remaining 500 kV bay positions at the Lake substation.

82) Regarding the size of the Case Springs substation:

a) Please provide complete dimensions for the Case Springs substation (note that Figure 3.6.1-16 only provides one dimension of 822 feet).

b) What size area (in acres) does TNHC intend to acquire for the Case Springs substation?

83) Regarding Page 3-123 of the PEA:

a) Please provide all documents, studies and analytical results demonstrating that the 115 kV circuits connected to SCE's Skylark and Elsinore substations require reinforcement.

b) Why does TNHC propose to reinforce SCE's distribution grid as part of the TEVS interconnect project?

c) How is reinforcing SCE's distribution grid in the City of Lake Elsinore a necessary part of the TEVS project?

d) Why does TNHC consider itself responsible for reinforcing any part of SCE's distribution system?

e) According to the single line diagram provided in the PEA (figure 3.6.1-13), the Santa Rosa station does not connect to any of SCE's 115 kV distribution lines, so please explain precisely how TEVS is connected to SCE's 115 kV distribution system and how TEVS "reinforces" it.

84) Does TNHC plan to install the three 525/20kV transformers depicted in PEA Figure 3.6.1-13 as part of the TEVS project? If yes, why are these transformers necessary to the TEVS interconnect project and where are their costs reflected in witness Ramsay's testimony?

85) To construct and operate a transmission line between SCE's Valley-Serrano line and SDGE's Talega-Escondido line, is the Santa Rosa substation necessary? If so, describe in detail why all the elements included in the Santa Rosa substation are necessary for a transmission line interconnection project.

86) To construct and operate a TEVS transmission line between SCE's Valley-Serrano line and SDGE's Talega-Escondido line, is it necessary to install a "T" in the middle of the line, then run a 500 kV GIL underground from the TEVS corridor (located on a mountain ridgeline) down to the foot of the mountain, then run another 500 kV GIL line underground from the foot of the mountain back up to the TEVS corridor on the ridgeline, and connect it back into the "T"? If so, describe in detail why all the additional tunneling and underground 500 kV GIL infrastructure is necessary for a transmission line interconnection project.

87) According to the first paragraph of Section 3.3.4.2 of the PEA, TNHC proposes to add a new line and reconductor the existing line on SDGE's Talega-Escondido system between Talega and Case Springs with a 3M ACCR product that provides a 912 MVA transfer capacity on each of the two new lines. TNHC also proposes to add a new line and

reconductor the existing line on SDGE's Talega-Escondido system between Case Springs and Escondido with a 3M ACCR conductor that achieves 456 MVA on each of the two new lines.

- a) Is this an accurate summary ? If not, please provide detailed corrections.
- b) What will be the final import capacity on each of the Case Springs -Talega lines if configured as described above (with corrections as necessary)?
- c) Is Talega currently configured to accommodate the combined flows indicated in the response to question 87b?
- d) What will be the final import capacity on each of the Case Springs -Escondido lines if configured as described above (with corrections as necessary)?
- e) Is Escondido currently configured to accommodate the combined flows indicated in the response to question 87d?
- f) Why is the MVA rating of the double circuits proposed for the Talega-Case Springs line twice as high as the MVA rating of the double circuits proposed for the Case Springs-Escondido line?

88) Does the \$47,262,000 estimated cost of SDGE system upgrades provided on page 4 line 7 include all costs necessary to accommodate 1000 MW of transmission from TEVS?

89) Exhibit 1 line item 63 indicates 1 set of phase shifting transformers. How many phase shifters does this include?

REGARDING WITNESS DRZEMIECKI'S TESTIMONY

Note – if any of the following questions are not within witness Drzemiecki's purview, FRONTLINES instructs TNHC to direct such questions to the appropriate experts for a response.

90) Why is a 35 year depreciable life reasonable for TEVS?

91) What depreciable life is assumed for the SCE/SDGE upgrades and the Path 42 upgrades and why are these reasonable values?

92) Pursuant to Witness Dzremiecki testimony beginning on Page 2, line 2:

- a) Please provide a detailed breakdown of all the "hard" costs for TEVS, including impact mitigation fees and land acquisition.
- b) Please provide a detailed breakdown of all the "hard" costs for the SCE/SDGE upgrades, including impact mitigation fees and land acquisition.

- c) Please provide a detailed breakdown of all the “hard” costs for the Path 42 upgrades, including impact mitigation fees and land acquisition, including impact mitigation fees and land acquisition.
- d) Please provide a detailed breakdown of the “soft” costs for TEVS.
- e) Please provide a detailed breakdown of the “soft” costs for the SCE/SDGE upgrades.
- f) Please provide a detailed breakdown of the “soft” costs for the Path 42 upgrades.

93) In Exhibit 2, why does witness Dzremiecki assume 12% to be an appropriate ROE for the SCE/SDGE and Path 42 upgrades?

94) What ROE does witness Dzremiecki consider to be the upper end of FERC’s “zone of reasonableness” for the TEVS Project?

95) Please derive the maintenance expenses assumed for the TEVS project, the SCE/SDGE upgrade project and the Path 42 upgrade project, showing the “scaling” (described on page 4 line 16) that was employed.

GENERAL QUESTIONS:

96) Please provide all testimony in a searchable PDF format.

97) Please identify all reliability criteria violations/overload conditions and potential mitigations identified in the CAISO system for the base case and the TEVS + Path 42 upgrades case under all WECC conditions considered.

98) Is TNHC proposing to construct the Path 42 upgrades as part of the TEVS project? If not, what certain proof does TNHC offer that the Path 42 upgrades will be constructed within the timeframe as the proposed TEVS project?

99) If TNHC provides no proof indicating certainty of the Path 42 upgrades, please revise all witnesses testimonies to exclude any reliance on the Path 42 upgrade project.

100) Please confirm that the Path 42 upgrades assumed by all TNCH witness consists of the following:

- Reconductoring Coachella to Ramon #1
- Reconductoring Ramon to Mirage #1
- Reconductoring Mirage to Devers #1
- Reconductoring Coachella – Mirage #2
- Reconductoring Mirage – Devers #2

101) PEA Section 3.6.1.4.3 asserts that “ This new [Case Springs] substation and associated transmission upgrades will provide a total, **bi-directional** nominal capacity of 1,500 MW to San Diego. In addition, it will be able to provide 1,000 MW under contingency (G-1/N-1) conditions, and can be dispatched in real-time by the CAISO”

a) Does this mean that, under non-contingency conditions, the project can provide the Talega substation with a nominal 1,500 MW import capacity? If not, what does this mean regarding imports to Talega?

b) Does this mean that, under non-contingency conditions, the project can provide the Escondido substation with a nominal 1,500 MW import capacity? If not, what does this mean regarding imports to Escondido?

c) Does this mean that, under non-contingency conditions, the project can provide a combined total flow of 1,500 MW into the Escondido and Talega substations? If not, what does this mean regarding total combined inputs to Talega and Escondido?

102) Does the TEVS project provide a phase shifting capability on each of the following 4 lines? If not, which lines have a phase shifting capability?

Talega-Case Springs #1
Talega-Case Springs #2
Case Springs- Escondido #1
Case Springs-Escondido #2

103) Please identify the TNHC witness(es) or agent(s) that wrote each section of the PEA.

104) Has any employee or agent of TNHC ever represented to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, or the U.S. Department of Defense that TNHC’s proposed interconnection to the existing SDGE Talega-Escondido transmission line has been approved or secured through federal legislation? If so, please provide details of the communication.

105) Has any employee or agent of TNHC ever represented to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, or the U.S. Department of Defense that TNHC’s proposed interconnection to the existing SDGE Talega-Escondido line has been approved by any federal or state agency? If so, please provide details of the communication.

106) Has any employee or agent of TNHC ever communicated any certainty that the TEVS interconnect project to the SDGE system will occur to any member, agent or employee of the U.S Navy, the U.S. Marine Corps, or the U.S. Department of Defense? If so, please provide details of the communication.

107) Has any employee or agent of TNHC ever communicated any certainty that the TEVS interconnect project to the SDGE system will occur to any member, employee or agent of the Fallbrook Land Conservancy? If so, please provide details of the communication.