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ARIZONA CORP. COMM
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IN THE MATTER OF THE APPLICATION OF SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE, INC. FOR A HEARING TO DETERMINE THE FAIR VALUE OF ITS PROPERTY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RETURN THEREON, TO APPROVE RATES DESIGNED TO DEVELOP SUCH RETURN AND FOR RELATED APPROVALS.

DOCKET NO. E-01575A-08-0328

IN THE MATTER OF THE APPLICATION OF SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE, INC. FOR AN ORDER INSTITUTING A MORATORIUM ON NEW CONNECTIONS TO THE V-7 FEEDER LINE SERVING THE WHETSTONE, RAIN VALLEY, ELGIN, CANELO, SONOITA, AND PATAGONIA, ARIZONA AREAS.

DOCKET NO. E-01575A-09-0453

INTERVENORS' BRIEF IN OPPOSITION TO SSVEC'S PETITION UNDER A.R.S §40-252 FOR IMMEDIATE CONSTRUCTION OF A 69KV LINE

INTRODUCTION

This matter is now before Administrative Law Judge Rodda on Petitioner Sulphur Springs Valley Electric Cooperative, Inc.'s ("SSVEC" or "Cooperative") request for immediate construction of the 69kV line through their easement on the Babacomari Ranch located in Cochise and Santa Cruz Counties. On January 14, 2010, SSVEC petitioned the Arizona Corporation Commission ("ACC") for an order amending Decision No. 71274 to modify a condition which SSVEC must comply with before the Cooperative

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1 may begin immediate construction of the 69kV sub-transmission line. Pursuant to a
2 Procedural Order, a hearing on this matter was held on March 24-26, 2010. Additional
3 hearings have been scheduled for July 2010, which may become moot if SSVEC's
4 present motion is granted.

5 **BACKGROUND**

6 The arduous road we – SSVEC members in the Elgin/Patagonia/Sonoita area -
7 have travelled began in the fall of 2006 when community members heard rumors that
8 SSVEC planned to construct a large power line through our community. As a result of
9 these rumors, Susan Scott on behalf of the Sonoita Crossroads Community Forum
10 ("SCCF") attended SSVEC's Board of Directors December 2006 meeting. At the call to
11 public she read a letter from SCCF requesting that SSVEC management share with the
12 community their plans. Two years later, at the March 2008 Board of Directors meeting,
13 Ms. Scott made a second request for community involvement.

14 Finally, in July 2008, SSVEC made a formal presentation to the Sonoita
15 community of their four proposed alternative routes for the 69kV line. No mention was
16 made of any other possible alternatives to the 69kV line at this meeting. Moreover,
17 SSVEC had already decided which route they were going to use, *i.e.*, the route chosen
18 was already a done deal.

19 In June 2009 a group of community members made another presentation to
20 SSVEC's Board of Directors and another presentation in July 2009 to the Cooperative's
21 engineering team. SSVEC Board of Director members did not invite nor encourage
22 dialogue with these community members, either during or after this meeting. SSVEC

1 management finally did respond this time, with a thirteen page rebuttal to the community
2 members' proposal.

3 This rebuttal did nothing more than present SSVEC's justification for the
4 proposed 69kV line. SSVEC has never honestly and openly engaged in any kind of
5 collaborative dialogue with the communities of Patagonia, Elgin and Sonoita, even when
6 ordered to do so by the ACC.

7 Instead, SSVEC moved for relief from the ACC Order so that it could immediately
8 begin construction of the 69kV line. A hearing on SSVEC's motion was held before ALJ
9 Rodda on March 24-26, 2010. At the conclusion of the hearing, Judge Rodda ordered
10 that the parties simultaneously submit written briefs. This Brief in opposition to
11 SSVEC's motion is submitted jointly by the three intervenors in this matter, Sue
12 Downing, James Rowley III and Susan Scott.

14 ARGUMENT

15 I. SSVEC HAS FAILED TO PROVE IMMEDIATE NEED FOR 16 CONSTRUCTION OF THE 69kV LINE 17

18 SSVEC states that the Navigant Feasibility Study ("NFS" or "Study") proves the
19 immediate need for installation of the 69kV line. In fact, it does not. The Executive
20 Summary of the Feasibility Study at page 3 states: "The V-7 customer peak is expected
21 to increase to about 8000 kW by 2029, above the Huachuca substation and V-7 feeder
22 ratings of approximately 7000 kW. What's the rush? That is 1000 kW (only a 14%
23 increase) in 19 years. The Feasibility Study mentions other options for mitigating
24 immediate needs as stated in Ms. Susan Scott's ("Scott") pre-filed testimony:

- 1 • There is evidence that very high voltages may be caused by electrical
2 anomalies that occur under light loading conditions or longer line sections
3 equipped with several voltage regulating devices operating in series.
4 Resolution of voltage anomalies were beyond the scope of this effort but
5 should be addressed. [NFS:2]
- 6 • Relatively small amounts of demand management and judiciously placed
7 generation results in net effective generation of up to 150% of the
8 nameplate rating of the alternative. [NFS:3]
- 9 • Our experience indicates winter peaking utilities often increase
10 transformer ratings by 25% (or higher) for devices in good condition. [NFS:
11 31]
- 12 • Distributed generation connected to the V-7 feeder would reduce effective
13 loads during those hours which is operates. [NFS:51]
- 14 • The injection of the DG output on the V-7 feeder essentially reduces the
15 effective loading on the circuit. The decrease in feeder loads also reduces
16 substation transformer loading, improves feeder voltages and reduces
17 losses. [NFS:58]

18 These are just a few statements from the Feasibility Study which provide
19 evidence that other options could be employed to improve capacity and reliability of the
20 existing power line rather than the immediate installation of a 69kV line. SSVEC
21 accuses Intervenors of "cherry-picking" these statements. Nothing could be farther from
22 the truth. Instead it is SSVEC which misrepresents the facts by representing as fact the
23 ultimate conclusions and recommendations of the Study.

1 On September 18, 2009 SSVEC filed a petition with the ACC requesting a
2 moratorium on future hookups on the V-7 line declaring an emergency on that line.
3 Then in the midst of the winter peaking period, they requested a Motion to Stay that
4 moratorium and a call for the hearing to be continued for the moratorium case. This
5 action clearly demonstrates that no emergency exists. To further delay matters, they
6 agreed that combining the moratorium and rate cases would be in the best interest of
7 the "affected area" and all cooperative members. SSVEC's own conduct destroys the
8 validity of any argument they may make regarding an "immediate" need for a 69kV line.
9 There is simply no immediacy.

10 SSVEC has repeatedly used the figure 270 to show the number of hours per year
11 customers on the V-7 line experience outages. In fact, in Ron Orozco's testimony
12 during the August 2009 Open Meeting before the ACC he even referred to 45 minutes a
13 day of outages on this line (which equals 270 hours per year). However, based on the
14 data provided by SSVEC and using accepted practices in the utility industry, Navigant
15 calculated that the average outage hours for the past ten years on the V-7 line was, in
16 fact, 3 hours, not the 270 hours as reported by SSVEC (NFS:2). Eugene Shlatz, with
17 Navigant Consulting stated in his testimony that a line that has outages of three hours
18 per year is 99.99% reliable (T217:10).

19 In addition, the Study found that most outages affect less than three to five
20 customers, and these were caused mostly by lightening and animal-related events.
21 These causations will continue even with the installation of a 69kV line as admitted by
22 SSVEC witnesses.

1 In Mr. Shlitz's testimony he indicated that Navigant depended heavily on county
2 population projections for determining future energy needs. When asked if Navigant
3 did their own load growth projections he responded: "Yes, we looked at county
4 population projections. Heavily dependent on historical growth." (T343:15-16) Given
5 the current state of our nation's economy, it is unlikely that county population projections
6 based on past growth rates are reliable and should not be given much weight in
7 predicting future needs for electricity.

8 SSVEC has stated that they will lose CREBS and ARRA funds if the 69kV line is
9 not installed immediately. Not true. These funds have a three year window which
10 began on October 2009. And the projects being funded are not irrefutably tied to the
11 construction of a 69kV line.

12 Nowhere in the Feasibility Study does it state the immediate need for
13 construction of the 69kV line. What the Study does say is that SSVEC should take
14 immediate action to address current performance issues and capacity limits. One of the
15 performance issues is voltage anomalies experienced by the current V-7 line. Dr. Linda
16 Kennedy's testimony included graphs that revealed that certain phases were
17 unbalanced causing the overloading of certain phases, in particular the B phase.
18 (Rowley Exhibit 1.2) Ms. Deborah White attempted to discount Dr. Kennedy's graphs
19 with the statements "These graphs average an average. This is not a practical method
20 for determining any type of analysis, but especially power analysis." (T542:18-20) Ms.
21 White lacks Dr. Kennedy's expertise. Further, Ms. White must have forgotten her first
22 year statistics class when she learned the Central Limit Theorum, which clearly states
23 that the mean of means is normally distributed and is commonly used in engineering

1 and other sciences (for example, Engineering Statistics Handbook (NIST: U.D.
2 Commerce Department).

3 **II. THE PUBLIC FORUMS WERE A "JOKE" AND NOT CONDUCTED**
4 **SO AS TO PROVIDE ANY MEANINGFUL COMMUNITY INPUT**
5

6 Webster's Dictionary's definition of a Forum is a public meeting place for open
7 discussion. SSVEC's "Public Forums" were a far cry from that definition. They were
8 nothing more than "dog and pony" shows to support its decision to install the 69kV line.
9 Simply put, they made a mockery of the original intent of the public forums which were
10 to be held over a six month period and include serious discussion and input from the
11 community regarding alternative and renewal energy options.

12 On page one of the Public Forum transcripts Jack Blair responds to a question:
13 "They told us to do the study, we did the study." Sounds like just another checkmark on
14 their "to do" list.

15 SSVEC spent an hour and a half of the two hour plus Forums presenting
16 information to the public. There was no audience participation. During the hearings
17 when Ms. White was asked if she agreed with the accuracy of this description as
18 presented by the Intervenors she replied in her testimony: "No I do not. First there
19 were many members attending these public forums that may have never seen the
20 history of the project or understand the full ACC proceedings." (T 546:23-25; T.547:1).
21 Yet SSVEC expected to have an open discussion over topics many had seen for the
22 first time? Ms. White goes on to say in referring to the "discussion" period, "There was
23 no attempt to delve more deeply into the recommendations of the feasibility study."
24 (T547:15-20) These statements are contradictory: first she says many had not seen
25 the information before, then she criticizes the audience members for not asking in-depth

1 questions. That is an unrealistic and unfair expectation and clearly shows why the
2 Intervenor had requested two Public Forums in each location, one for review followed
3 by a second for input.

4 Initially in SSVEC's October 30, 2009 filing with the ACC, they listed five
5 locations/meetings in the Affected Area where Public Forums "shall be held" including
6 The Elgin School, Sonoita Chamber of Commerce, Sonoita Crossroads Community
7 Forum, Sonoita/Patagonia Association of Realtors and the Patagonia Chamber of
8 Commerce. Then in their notice of filing dated February 10, 2010, they had pared that
9 down to just two Public Forums, one in Patagonia and one in Elgin/Sonoita which were
10 held in March 2010.

11 Why were only two Forums held in the Affected Area when their original intent
12 was to hold five? Again, limiting the Forums to just two prevented the community from
13 having time to review the initial presentations and then contribute in an intelligent way.

14 And SSVEC has stated several times that the Intervenor should have contacted
15 them, made public statements at the Forums, provided detailed plans and computer
16 model results, etc. The community (and the Intervenor) fully expected SSVEC to
17 comply with the ACC ruling of August 2009 in which we anticipated having until July
18 2010 to complete our proposal.

19 In Mr. Magruder's testimony he stated that he attended the Willcox Public Forum
20 (Willcox is outside the Affected Area), the first one held by SSVEC. He said: "It was
21 discussed by the first presenter that it was given in accordance with the requirements
22 and mandated by the ACC order. When I introduced myself I said I would like to be, I
23 would like to make a few comments if you would like to hear the other side and [I was]

1 never called upon". (T757:20-23). Why was Mr. Magruder not allowed to speak and
2 offer alternatives to the 69kV line? No dialogue, no incorporation of ideas on renewable
3 energy – that is the SSVEC way!

4 Each of the public forums held in Elgin and Patagonia were a joke. Carefully
5 scripted and rehearsed by SSVEC and its consultants, the presentations were slanted
6 to present only one alternative to solve the alleged reliability problem – the 69kV line.
7 Consultants gave up all pretense at being independent and clearly stumped for SSVEC.
8 Members of the audience were limited in the number of questions they could pose and
9 were sandwiched in between ringers (SSVEC employees, former board members) that
10 asked no questions, merely making statements that ate up time trumpeting the SSVEC
11 party line.

12 Despite SSVEC's statement in its March 24, 2010 letter "Public Forum Report for
13 Affected Areas" stating that each presenter provided detailed and comprehensive
14 information regarding each slide (p. 4), only cursory consideration was given to the
15 other alternatives discussed in the Feasibility Study. The slide entitled "Supply
16 Alternatives" was in such small type size it was unreadable by anyone in the audience
17 in addition to being totally glossed over by the presenter. Many of the energy
18 alternatives were barely mentioned or not at all.

19 SSVEC determined that TRC would be a neutral representative to present the
20 Independent Feasibility Study and to provide clarification of any questions regarding the
21 subject matter and/or conclusions obtained with the study. The slide presented at the
22 Public Forum that outlined TRC's role limited it to:

23 Ensure Independence of the Third Party Review

1 Identify qualified firms for the review

2 Prepare Scope of work

3 Prepare RFP solicitation

4 Provide buffer between Independent Feasibility Study and SSVEC

5 Review the report for compliance with scope of work

6 Nowhere was TRC involved in the compilation of the report, responsible for its contents
7 or its conclusions, yet it is TRC that was asked to explain the report to the community.

8 And despite its supposed neutrality, Pat Schaarf, with TRC, often defended the Study's
9 findings as shown in the Public Forum Transcripts (PFT:20, 21, 24-26, 29-30). And

10 Tom Engels also with TRC gave his opinion about what will happen during construction
11 of the 69kV line (PFT:12). These were certainly not neutral representations and were
12 clearly outside the scope of TRC's role as it was defined by SSVEC.

13 SSVEC stated that it was excited about its plans for future Demand Side
14 Management ("DSM"). What they planned according to Mr. Orozco's presentation
15 included such programs as "improved time-of-use rates" and "improved member
16 education". That is what they plan to do in the future, why aren't they doing that now or
17 yesterday? They clearly are not interested in reducing demand, only in immediately
18 installing the 69kV line.

19 Indeed, ACC Staff supports the need for customer education about energy
20 efficiency and renewable energy. Mr. Abinah references in his testimony his
21 recommendation for SSVEC to educate and encourage its customers on energy
22 efficiency and renewable energy: "The reason why I included these recommendations,
23 those are options available to the company. And that would help mitigate the need for

1 the line. All they need to address is the need right away, but in the future it may be an
2 option, that the Company can use to mitigate the outage and the need for the power,
3 future power.” (T805:17-23)

4 One of the speakers in the audience at the Public Forum stated: “they have
5 photovoltaic systems in 41 schools and those photovoltaic systems provide almost a
6 megawatt of power”. If the installation at Patagonia High School is any indication of the
7 other 40 systems, they can’t be providing much power. The system at Patagonia High
8 School was installed on carports that were constructed to provide shade for vehicles.
9 But the solar panels are virtually flat on the carport roofs, not angled toward the sun and
10 are facing southwest not south. Even an informed layperson knows that PV panels
11 must be positioned at a certain angle and face south for maximum benefit. SSVEC
12 spent a lot of REST money for what appears to be little benefit – not due to lack of
13 potential, but due to poor planning and implementation by SSVEC.

14 What was presented as the “discussion” portion of the Public Forum was
15 anything but. There was no exchange of ideas, no open dialogue. The moderator
16 herself made statements such as “Let’s see if we can get your questions answered”
17 (PFT:11) and “Okay, I just want to make sure that you all do understand that this, this is
18 the time for questions. If Sulphur Springs at a later time wants another kind of
19 community event, that, that’s fine too.” (PFT:13)

20 During the Public Forums, Jack Blair presented the Independent Public Opinion
21 Poll that was conducted of SSVEC members on January 18-20, 2010. In referring to
22 the poll selection process he stated “every single cooperative member was there” (PFT:
23 25). How were the telephone numbers obtained from Cooperative members, from

1 original applications for service, some of which are many years old? Did it include the
2 many people who rely only on cell phones now and do not have landlines? As we all
3 know, those people tend to be younger and more technically savvy.

4 Mr. Blair explained that the first question asked without any background
5 information was whether or not the member was in favor of the 69kV line. What he
6 failed to mention was the barrage of communications and publicity SSVEC had done
7 immediately prior to the poll, including the robocall mentioned by one of the audience
8 members at the Sonoita/Elgin Public Forum. Wayne Crane (SSVEC employee) made a
9 recorded message to all cooperative members explaining that the December 8, 2009
10 outage would have been minimized with the installation of the 69kV line. What he did
11 not say was this was a high wind event and had it occurred on the 69kV line it would
12 have resulted in the same number of outages. And when asked at the Sonoita forum
13 what impact the 69kV line would have had on this outage Mr. Schaarf responded:
14 "How would the 69kV line have prevented the outage? And the answer is – it would
15 not." (PFT:24).

16 What Mr. Blair failed to mention in his presentation were the misleading and
17 inaccurate statements made to callers about the current line and possible solutions.
18 Such as "270 hours of outage per year on the V-7 line, the line is overloaded or that
19 renewable energy is only a short term fix." The Feasibility Study states that there is an
20 average of three hours of outages per year on the V-7 feeder line and that it is near
21 peak, not "overloaded". And who thinks renewable energy is only a short term fix?
22 Apparently, only the poll taker and Mr. Blair.

1 What is most astonishing, with the timing of the phone poll after the completion of
2 the Feasibility Study, is that no questions were asked of Cooperative members on
3 issues raised in that study that Navigant was not able to answer because needed data
4 were not available. Specifically regarding demand reduction, the Feasibility Study
5 discusses fuel conversion and storage: "Reduction of electric space heating load via
6 fuel conversions or by converting existing baseboard systems to electric storage can be
7 an effective option if SSVEC can achieve sufficient participation levels." **"A survey of**
8 **customers served by V-7 is recommended to determine the number and type of**
9 **space heating load, program design, and level and type of incentives needed to**
10 **ensure sufficient participation."** (NFS:61.) Yet just three weeks after that
11 recommendation, SSVEC conducted a phone survey and did **NOT** ask that question!
12 That just shows SSVEC's lack of interest in any demand reduction and its complete bias
13 for the installation of the 69kV line.

14 Nor was there any discussion in either of the Public Forums in the Affected Areas
15 or the Telephone Opinion Poll about all the simple things consumers can do to reduce
16 demand like turning off lights, changing light bulbs or purchasing energy efficient
17 appliances. As previously stated, Mr. Orozco plans to "improve member education" in
18 the future. Why not in the past? Why not now?

19 SSVEC has done a lot to try to "stack the deck" of public opinion. They
20 conducted the telephone poll with bias. They presented "their side" in the Public
21 Forums. They sent emails out to employees and members urging them, their friends
22 and family members to write letters to the ACC. They bused cooperative members to
23 the March 23-26, 2010 hearing. And most of this public comment came from

1 Cooperative members living outside the "affected area". Why do those not living in the
2 area even care about the 69kV line? Assuming that they are thoughtful, caring folks,
3 why do they want to spend \$14 million for service to their fellow customers when the
4 "problem" we are suffering can apparently be solved more cost effectively?

5 Summing up, nothing in the Public Forums or the Telephone Opinion Poll proves
6 an immediate need to install the 69kV line.

7
8 **III. SSVEC HAS CONSISTENTLY AND PURPOSEFULLY DISREGARDED**
9 **AVAILABLE RENEWABLE ENERGY ALTERNATIVES**

10 SSVEC has consistently and purposefully disregarded available renewable
11 energy alternatives. This is clearly demonstrated by SSVEC's lack of action taken
12 toward building the 750 kW photovoltaic's system in Sonoita. SSVEC received approval
13 for funding this project with Clean Energy Renewable Bonds in October 2009. SSVEC
14 received approval for their 2010 REST plan by the Arizona Corporation Commission on
15 January 13, 2010. SSVEC distributed a Request for Quotations to Develop a Solar
16 Energy Generation Facility for Sonoita on July 7, 2009. The RFQ had an ambitious
17 schedule with the Indicative Proposals due July 17, 2009, contract execution in
18 December 2009 and completion planned for Fall 2010. As of yet, SSVEC has not
19 shown an iota of movement toward accomplishing this project.
20

21 SSVEC indicates the project cannot be built unless the 69kV line and substation
22 is built. This is absurd! The RFQ dated July 7, 2009 states:

23 **"These interconnection requirements apply to those installations that**
24 **will be connected to the SSVEC distribution system (25kV or less) and**
25 **do not back feed onto the transmission system. The proposed project**
26 **is designed so that it would not back feed onto the 69kV transmission**
27 **system."** (RFQ p. 3, para. D.)

1 It is obvious by this requirement that SSVEC does not plan on feeding energy produced
2 on to the 69kV line but to use it locally.

3 Several SSVEC employees and consultants used a water hose analogy during
4 their testimony to support their assertions that locally distributed energy could not be a
5 viable part of the solution. In their descriptions, they intimated that water (or electrons)
6 would be sprayed everywhere at the point of insertion.

7 A better analogy than a garden hose would be an irrigation system. Imagine an
8 irrigation pipe that carries water quite a distance, say from point A to point C. As the
9 water is forced through the pipe, pressure is reduced by friction from the sides of the
10 pipe, and further reduced by small pipes leading off to irrigate plants. By the time the
11 water gets to point C, not only has pressure been reduced, but so has volume – only a
12 trickle may remain. If another source of available water is inserted at point B, midway
13 between A and C, the pressure and volume are both augmented and a steady stream of
14 water is available throughout the irrigation system.

15 SSVEC's REST budget is a total wreck. Customers waiting for REST rebates
16 have been told it will take several years to receive their rebates. This says nothing
17 about the cooperative owner/members that will apply in 2010 and future years. In
18 effect, the REST rebates are not available. It appears that SSVEC has done nothing to
19 improve the situation. SSVEC is not promoting renewables as alternative energy
20 solutions, instead it is doing everything it can to forestall doing so. (While this is
21 understandable given that SSVEC's business is selling electricity, it is also an obvious
22 example of how SSVEC is ordered to do one thing but does another.)

1 Once again, the telephone poll was a great opportunity for SSVEC to determine
2 interest levels its cooperative members have for renewable energy. This is an
3 opportunity SSVEC totally missed. Instead of questions about renewable energy
4 programs or Demand Side Management they asked questions about internet and phone
5 service. Apparently this was more important than Demand Side Management or
6 renewable energy. In discovery received from SSVEC, it reveals that only one
7 customer on the V-7 line is on the Time of Use program. Obviously, SSVEC is utterly
8 failing to promote the Time of Use program as a solution to energy demand.

9 SSVEC states the immediate need for construction of the 69kV line is because
10 the CREB and the ARRA funding will not be available unless the 69kV line is built. This
11 is another manipulation of the facts. SSVEC can still build the photovoltaic system in
12 Sonoita and make improvements in their hardware to implement new Demand Side
13 Management programs as touted in the Public Forums.

14 For at least the past 30 years SSVEC has encouraged the use of electricity and,
15 until required by the Arizona Corporation Commission, has not encouraged energy
16 conservation. This has helped cause the problem on the V-7 feeder. A utility that is "for
17 profit" may not want to encourage Renewable Energy and Demand Side Management
18 programs because these programs may affect the profit margin. However, a
19 cooperative such as SSVEC should be encouraging these types of programs for their
20 member/owners rather than building road blocks.

21 Apparently, the way the Request for Proposal was written by SSVEC it required
22 Navigant Consulting to evaluate each of the alternatives on its ability to correct current
23 deficiencies. Could each provide standing alone, firm capacity? As Mr. Shlatz stated in

1 his testimony: "I agree with the premise that natural gas generation is probably better,
2 lower emissions (than diesel) but it fails the test of providing the solution in terms of
3 providing firm capacity equivalent to a new transmission line." (T218:2-6) This is an
4 unfair comparison and sets up the alternatives for non-consideration based on that
5 requirement.

6 As the Intervenors have shown, the modern solution to the energy load on the V-
7 7 feeder is a hybrid solution. Energy created by photovoltaics with a storage
8 component along with an aggressive Demand Side Management and Incentive Rate
9 Program can work better and with less cost to the SSVEC cooperative owner/members
10 than building the 69kV line.

11 If immediate construction is approved, SSVEC states that it hopes to have the
12 69kV line completed by the Fall of 2011. In testimony from Ms. White, she said only
13 45% of the easements were completed for the last leg of the proposed line. She also
14 stated that if necessary, SSVEC would secure those easements through eminent
15 domain. (T610:1-13) Such procedures often take several years. With having to acquire
16 additional easements and design not yet completed, SSVEC will be lucky to have the
17 line completed by the summer of 2012, thus missing two winter peak loads. So much
18 for immediate need!

19

20 **IV. SSVEC'S ACTIONS THROUGHOUT THIS MATTER SHOW THAT**
21 **IT IS ONLY GIVING "LIP SERVICE" TO ACC ORDERS AND**
22 **ALTERNATIVES TO THE 69KV LINE.**

23 It is paramount to remember that these hearings are the result of SSVEC's
24 request to immediately begin construction of their pet project – a 69kV line through the

1 Babacomari Ranch – rather than comply fully with the ruling by the Arizona Corporation
2 Commission in August 2009. That ruling ordered SSVEC to contract for an independent
3 feasibility study that would examine all viable alternatives, with special emphasis on
4 renewable energy, and would involve the affected community through meaningful
5 dialogue. And SSVEC will have you believe that this is exactly what they have done. In
6 reality, they have simply “gone through the motions” or checked it off their “to do” list.

7 Sulphur Springs has made it clear that it is unable to adapt to the changing
8 needs and technologies of the 21st century, and especially the need to wean itself from
9 dependence to fossil fuels. The virtual bankruptcy of our REST program, the decision to
10 halt rebates on residential wind systems, the fiasco of the overpriced, underperforming
11 school solar program – all indicate that SSVEC is unwilling or unable to change its
12 business model to incorporate clean, renewable energy in any meaningful way.

13 The feasibility study itself was arguably “independent,” and was constrained
14 through the scope of work as to virtually preclude incorporation of renewable energy
15 options. The final RFP (which members of the local community were not allow to
16 examine) clearly reflected SSVEC’s perception of renewable energy as a threat to their
17 business model. Even so, the feasibility study brought out many interesting options that
18 would mitigate or alleviate power issues in the area, options including fuel switching,
19 time of use, demand side management, upgrade of service – none of which have
20 received any attention by SSVEC. In fact, one solution suggested by Navigant in their
21 Draft Report submitted to SSVEC – storage – was removed from the final report at the
22 request of SSVEC! Asking “why” simply begs the question. Nowhere in the feasibility

1 study does it state that a 69kV line is urgent or that construction should start
2 immediately.

3 The feasibility study was further constrained by SSVEC's inability to act quickly in
4 response to the ACC's ruling requiring the Feasibility Study. Community members were
5 not contacted by TRC Solutions until nearly a month after the ruling was issued on
6 September 8, 2009. Bids were not received by SSVEC until October 27, 2009. That
7 gave the winning bidder, Navigant Consulting, just six weeks to complete its study.
8 SSVEC knew they were placing severe time constraints on the process thereby limiting
9 a thorough investigation of all options.

10 An exhibit SSVEC submitted during the hearings that was not part of the pre-filed
11 testimony of any of its witnesses was a letter from Robert Savage, attorney with the
12 Gust Rosenfeld Law Firm discussing prescriptive easements. (Exhibit A-12). While this
13 Exhibit was presented only to show SSVEC's due diligence, the Intervenors were
14 unprepared to respond and determined that it would be best to show our own due
15 diligence in this matter. Therefore, we are presenting the attached letter from Larry
16 Schubart, attorney with Stubbs & Schubart that discusses that "there seems no
17 justification for the abandonment of an existing transmission line, when, in fact,
18 adequate service can be provided by increasing the existing lines (sic) conductivity to
19 meet present and anticipated future areas needs." The attached Exhibit One is
20 provided only to show that we too are diligent in our efforts.

21 SSEVC's actions have not been consonant with their claim that the situation is an
22 emergency and that it is therefore critical that they begin immediate construction of the
23 69kV line. Have they contracted for the study on voltages recommended in the

1 feasibility study? No. Has SSVEC implemented a concerted effort to convince existing
2 customers to switch from electric heat to an alternative, such as suggested by the
3 feasibility study? No. Is SSVEC pursuing their moratorium case? No. And most telling
4 – did SSVEC makes plans to rent a portable generator to aid in anticipated peak
5 periods last winter, and for the next two winters before the new system is brought on
6 line? No.

7 It bears repeating, the answer to all of the above is NO! It appears that SSVEC
8 hopes to ram its pet project through under the guise of an emergency – but has failed to
9 take the steps that reasonable and prudent action would dictate if, in fact, a true
10 emergency exists.

11 The simple facts remain: 1) there is no emergency; 2) the public has yet to be
12 allowed to contribute through meaningful dialogue; and 3) the best option for providing
13 safe, reliable energy to our area has yet to be determined. We believe that an unbiased
14 examination of appropriate alternatives shows that a hybrid approach that includes
15 renewable energy is the best solution, both in the short-term and long run for our
16 community. Allowing the immediate construction of the 69kV line will torpedo this
17 opportunity.

18

19 **V. SSVEC'S ACTIONS PREVENT THE INTERVENORS**
20 **FROM COMPLYING WITH THE ACC'S ORDER TO**
21 **PROPOSE ALTERNATIVE SOLUTIONS**
22

23 Decision No. 71724 issued September 8, 2009 specified that “the public forums
24 shall include an opportunity for community members’ discussion on the feasibility study,
25 including alternatives prior to construction of the project.” “We also require SSVEC to

1 file, by July 31, 2010, a report discussing the outcome of this public process and also
2 discussing how the Cooperative plans to incorporate the reasonable and effective
3 renewable energy proposals resulting from the public forums.”

4 By conducting the Public Forums within a month, submitting the report of the
5 Public Forums to the ACC on March 23, 2010, SSVEC has essentially cut off
6 community members (and Intervenors) from effectively participating in this process. We
7 believed that the July 31, 2010 deadline was not just SSVEC's, it was ours as well. We
8 have been working diligently on alternative proposals. But because SSVEC now feels
9 that it has met its obligations, we are essentially eliminated from the process. If SSVEC
10 is allowed to proceed with the immediate construction of the 69kV line, more viable,
11 more cost effective options incorporating renewable energy will not be considered. That
12 is absolutely inappropriate and contrary to the ACC's order.

13 Attached are two such proposals that effectively provide renewable energy
14 options the community should have the absolute right to consider: Exhibit 2, Chevron
15 Energy Solutions provides a supply alternative for Distributed Generation at a cost of
16 \$2.7 million (approximately \$11 million less than SSVEC's proposed 69kV line); Exhibit
17 3 is a solar PV power project proposed by Avean Engineering and Construction LLC for
18 approximately \$7 million (one-third the cost of SSVEC's proposed 60kV line and solar
19 installation, as well as providing an immediate solution).

20 These are just two examples of the work we have been doing consistent with the
21 ACC's mandate to explore alternative energy solutions. SSVEC has done little in this
22 regard. Yet, if SSVEC has it's way and because SSVEC believes it has completed its
23 "checklist" (conducted the Public Forums, submitted the Public Forum Report), these

1 solutions will NEVER be considered. Why wouldn't SSVEC want to pursue money
2 savings options to the benefit of its members? Why are they so resistant to saving
3 money, maybe up to \$10 million? SSVEC is obviously trying to prevent us from
4 presenting these money saving alternatives to the SSVEC membership. Why?

5 At the August 2009 Open Meeting, ACC Commission Chairperson Mayes was
6 very clear: "And I think Mr. Magruder and Ms. Getzwiller and all of the other folks who
7 have come before us not only today but in two or maybe three other public comment
8 sessions that we have had on this issue will work hard on the issue. The onus is on
9 you, though, now. Okay? And I want to be clear about that. You need to roll up your
10 sleeves and get to work on finding some real concrete alternatives that will work to
11 provide reliable power to your community." (T185:1-10)

12 We took her words to heart. We have been working diligently to comply with her
13 request. SSVEC is trying to truncate that process and prevent our ability to fulfill
14 Chairperson Mayes' direction. Don't let SSVEC's financial train wreck in the guise of
15 the immediate construction of the 69kV line smother the great renewable energy options
16 available to this community.

17 **CONCLUSION**

18
19 SSVEC has not proven the need for the immediate construction of the 69kV line.
20 In fact, they have further work to do before this line is installed. The procurement of
21 additional easements alone will delay the installation, perhaps for several years.

22 Further, SSVEC must wait until the raptor and migratory passerines breeding
23 season has been completed this spring to begin installation of the 69kV line. [NFS 86]

1 The Navigant Feasibility Study suggests that Distributed Generation and
2 Demand Side Management would have a significant impact on the capacity and
3 reliability. That has been the Intervenors' proposal all along, a hybrid energy solution.
4 A natural gas generator to cover peak loads along with energy storage using Sodium
5 Sulphur batteries at the proposed 750 kW solar installation in Sonoita.

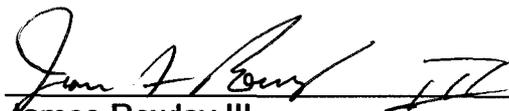
6 SSVEC simply wants to rush this process and is doing everything it can in that
7 regard. They quickly held the six months planned for Public Forums within one month
8 and submitted its "compliance" report document to ACC on the day they were holding
9 their last Public Forum (in an unaffected area), further proof that they had no intention of
10 incorporating input from the community.

11 Let's not further this rush to judgment, let's allow the hearings to continue as
12 scheduled. Let's allow community input with follow up Public Forums in the Affected
13 Areas. The alternatives from the Feasibility Study, now under review, were not
14 discussed in the Cooperative's filings; they referred to them only through rebuttal
15 comments to our testimony.

16 The unanswered question regarding the 69kV line remains: Why? There is no
17 rational reason to approve the petition to immediately construct the 69kV line before the
18 full hearings are held in July. SSVEC's motion must be denied.

1
2
3 Respectfully submitted this 15th day of April, 2010
4
5
6
7
8
9

10 
11 _____
12 Sue Downing
13 HC 1 Box 197
14 Elgin, Arizona 85611
15 Steeldustranch@yahoo.com
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23 James Rowley III
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34 Susan Scott
35 PO Box 178
36 Sonoita, Arizona 85637
37 Scottsonoita@gmail.com
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39
40
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1 Distribution:

2

3 Docket Control (original and 13 copies)

4 Arizona Corporation Commission

5 1200 West Washington Street

6 Phoenix, Arizona 85007

7

8 Jane Rodda, Administrative Law Judge (one copy)

9 Arizona Corporation Commission

10 400 West Congress

11 Tucson, Arizona 85701

12

13 Bradley Carroll attorney for SSVEC (one copy)

14 Snell & Wilmer LLP

15 One Arizona Center

16 400 East Van Buren

17 Phoenix, Arizona 85004

18

19

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21

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23

24

25

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27

28

Exhibit One

Stubbs & Schubart, P. C.

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*also admitted in Pennsylvania

Robert C. Stubbs, ret.

April 14, 2010

MOUNTAIN EMPIRE ENGINEERING PROJECT
c/o Gail Getzwiller
P. O. Box, 815
Sonoita, AZ 85637

Re: Sulphur Springs Valley Electric Cooperative / Sonoita
Valley Reliability Project

Dear Gail:

Due to our focus on condemnation or eminent domain proceedings, you requested my comments to the letter written by Robert Savage on behalf of Sulphur Springs Valley Electric Cooperative (SSVEC). Rather than improve the existing 24.9kV transmission line to meet current and future needs, SSVEC desires to construct a new 69kV line along a different alignment. Your concern that this alternative 69kV transmission line far exceeds present or future residential needs and appears to be designed to furnish electricity for a proposed project, the Harshaw Mine, also known as The Hardshell Project. The letter authored by Robert Savage appears to be an effort to justify abandoning the existing 24.9kV transmission line in order to support the new alignment.

Robert Savage does an admirable job in describing SSVEC's rights for a perspective easement. SSVEC has an existing 24.9kV transmission and, as the letter points out, in some areas there are no memorialized easements acknowledging the right of possession. Nonetheless, possession exists and under the laws of the State, that prescriptive right ripens into a permanent easement with the passage of time. The SSVEC transmission line is openly visible, it has been continuously used and to the extent construction was without the permission of the owner, it is hostile to the title of the true owner. All of the elements for adverse possession exist. Without doubt, this right would be upheld by our courts.

Robert Savage further describes the fact that a prescriptive easement cannot be dramatically expanded beyond the scope of the historical use. The letter fails to analyze, though, whether merely increasing the carrying capacity of the existing transmission line is an unreasonable expansion which would require the acquisition of additional property rights. His case law analogy describing how a wall was prohibited where a mere access right was acquired provides no guidance. Increasing the conductivity of the existing line, by installing new wiring, requires no additional rights.

Stubbs & Schubart, P. C.
Attorneys and Counsellors at Law

MOUNTAIN EMPIRE ENGINEERING PROJECT
c/o Gail Getzwiller
Re: Sulphur Springs Valley Electric Cooperative /
Sonoita Valley Reliability Project

April 14, 2010
Page 2 of 2

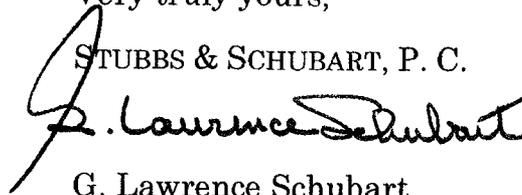
More importantly, even if there was an expansion of the easement, the letter fails to consider the deleterious effect of constructing a new line along a different alignment where one had not previously been contemplated, as opposed to the more minimal effect of improving the line where one has historically existed. Although some of the open space land has already been acquired by SSVEC, that alignment is not complete and requires land within improved neighborhoods. This law firm has been successful in arguing extensive severance damage award for high-voltage transmission lines due to the adverse effect to surrounding properties. See, *Selective Resources v. Superior Court*, 145 Ariz. 151, 700 P.2d 849 (1984). There should be significant resistance and expense in SSVEC seeking to acquire the necessary balance of land for the 69kV alignment.

In the absence of subterfuge to serve the Harshaw Mine there seems no justification for the abandonment of an existing transmission line when, in fact, adequate service can be provided by increasing the existing lines conductivity to meet present and anticipated future area needs.

If you have further questions, please do not hesitate to contact me.

Very truly yours,

STUBBS & SCHUBART, P. C.



G. Lawrence Schubart

GLS/bmmh

Exhibit Two



Energy Solutions

Daniel Musgrove
Business Development
Manager

Intermountain Region
Chevron Energy Solutions
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6635 West Happy Valley Road
Ste. A104-607
Glendale, AZ 85310
Tel 602.697.7222
Fax 623.572.7495
dmusgrove@chevron.com

April 14, 2010

Gail Getzwiller
President
Mountain Empire Energy Project
P.O. Box 815
Sonoita, AZ 85637

RE: Budgetary estimates for components to "Hybrid Distributed Energy Solutions"

Dear Gail,

I apologize for the delay in getting back to you regarding potential options for having Chevron Energy Solutions (CES) assist your community with energy related projects. CES has spent the past year assessing the Arizona market and regulatory environment and developing appropriate initiatives. I hope that in the very near future, CES can share more specifics regarding solution-based initiatives that we can bring to your community – solutions that address your peak power capacity situation.

As for your recent requests for budget cost estimates, I have reasons to be reluctant to supply your organization with cost estimates for potential solutions. First, it is not my area of accountability in our organization. CES has a clearly defined Operations Team who provides cost estimates through formal Feasibility and Investment-grade Analyses conducted for clients.

To date, I have not been able to allocate development dollars for sending members of our Operations Team to your community. At some point, I hope to be able to provide your community with some resources to develop a more detailed assessment of the value CES can deliver.

Secondly, I do not want to represent budget costs in this correspondence that commit CES in any way. This is not a proposal or formal quote. I am providing your organization estimates as a professional courtesy to support your efforts in addressing the Arizona Corporation Commission (ACC). I have taken appropriate steps to support the estimates with members of CES' Operation Team.

Lastly, you may recall that I have represented that CES is technology & vendor agnostic. Meaning we do not manufacture products, represent or promote any one vendor, or promote any one specific type or configuration of solution. As an engineering-based energy services company our goal is to work closely with our clients and deliver custom solutions that work best for their specific needs and circumstances. Therefore, the attached quote is not to be construed as advocating the particular supplier. Rather it is to support the estimates which I'm providing in addressing the past documents submitted to the ACC.

That said, I have made attempts to provide you answers to your inquiry. To recap, you have asked for cost information in areas of; 1) natural gas powered distributed generation, 2) 1 MW of solar, 3) energy storage, either fed from solar, DG, or the grid, 4) fuel switching and 5) other DSM solutions.

- 1) **NG-powered DG:** see attached
- 2) **1-MW of solar:** not at liberty to disclose costs at this time (suggest you seek estimates from industry trade groups and solar advocacy organizations)
- 3) **Energy Storage:** The \$3000/kW figure on page 49 & 50 of the Navigant Consulting, Inc. Feasibility Study has been confirmed by CES engineering staff to be a good, reliable figure.
- 4) **Fuel Switching:** I was unable to secure this information in the time frame given.
- 5) **Other DSM Solutions:** Too broad of a request. Many solutions and hybrid iterations are open for analysis.

Gail, I wish I could be of more service at this time. However, given CES' focus and current work load, I've been unable to gather more detail in the time allotted.

I will be contacting you shortly to present our most recent initiative being launched in Arizona. I believe this initiative can directly impact your community and help address your peak power capacity situation. We will need to work with your organization to identify the potential counter parties to a client relationship with CES. If we can resolve that issue, CES will work with the clients-to-be and establish goals and objectives of our initial Feasibility Analysis.

If you have any additional questions or requests, please do not hesitate to contact me. Again, I wish I could be of more help at this time.

Sincerely,

Daniel A. Musgrove
Daniel Musgrove
Business Development - Contractor

Enclosure

ELITE ENERGY

BUDGETARY PROPOSAL FOR:



Chevron Energy Solutions

SONOITA RELIABILITY PROJECT

(SUPPLY ALTERNATIVE R5: DISTRIBUTED GENERATION)

April 9, 2010

EliteEnergy Systems is pleased to provide a budgetary proposal for a distributed generation solution best suited to the needs of the Sonoita Reliability Project.

EliteEnergy Systems is a supplier of turnkey distributed generation systems. After careful review of the "Sonoita Reliability Project – Public Forums" Document – March 9&11, 2010 and the "Independent Feasibility Study – December 2009" provided by Navigant, our experience suggests that the optimum solution would be the installation of multiple low emissions natural gas powered electric power generation modules.

The studies and opinion polls seem to favor spending \$19M for a new 69kV line and Sonoita sub-station, we believe the more appropriate solution is to address the current transmission shortfall by providing additional power locally as needed to satisfy the growing demand by installing distributed generation, in steps that match the demand growth.

Our solution to resolve the immediate shortfall would be to install 4ea 375kW natural gas fired, extremely low emissions, power generation modules. As the limits of the existing transmission line are approached, the individual units will automatically start up, synchronize to the grid and effectively "remove" 375kW of demand as each one is dispatched. In this way the local demand will never exceed the capacity of the primary source of electricity – the existing transmission line.

The four (4) modules proposed will provide 1,500 kW when all are dispatched at the same time. We would propose that the site for these units be prepared in such a way that more modules can be added as demand increases over time.

The benefits of this distributed generation approach are as follows:

1. \$2,700,000 vs. the \$14M and \$19M for options T1 or T2.
2. Power supply is added slowly as demand increases, not all at one time.
3. The financial burden is a fraction of the cost of the new 69kV line and Sonoita substation. The T2 option is 7 times more expensive than the one we propose.
4. We would be willing to finance the equipment and spread the cost over 10 years, further reducing the upfront financial burden on local residents and businesses.
5. Flexibility. You only dispatch a machine at a time as the demand approaches the available supply from the transmission line, then they shut back down when not needed. With additional growth in demand over time you slowly add additional modules – again only as needed rather than the overkill of a \$19M new transmission line that may not be fully utilized for another 20-30 years.

6. Once demand approaches a level where a new transmission line could be fully utilized, the distributed generation modules could have their use curtailed and supply shifted primarily to the new transmission line.
7. Once the demand grows to the point where a new transmission line could be fully utilized, there will be an adequate number of residents and businesses to share the high cost.
8. By the time demand increases to justify a new transmission line, there may be new storage technologies, renewable technologies or other options that are a better long term solution than simply spending lots of money for old technology (a new transmission line). The distributed generation solution provides a solution for at least the next 10-20 years based on current load growth curves.

Budget Estimate: \$2,700,000

This is a turnkey equipment supply proposal and includes:

- Caterpillar natural gas engine power modules
- Ancillary equipment such as radiators and emissions reduction equipment
- Utility Grid interconnection equipment/breakers/relays/meters/etc.
- Fully automated, remote monitored, unmanned
- Long term service provided by Caterpillar Dealer Organization
- Weather and Sound Attenuated Enclosures
- Installation/Commissioning/Training
- Long-Term "Operation & Maintenance" contract – available if desired

Not included at this price (but available from EliteEnergy):

- Site work (concrete pad, gas line connection, electric connections)
- Step-up transformer (if needed)
- Construction Labor
- Installation Labor for items not listed in turnkey equipment supply
- Project Management

Sincerely,
Paul J. Beck
National Accounts Manager

Exhibit Three

**SONOITA / PATAGONIA
SOLAR PV POWER PROJECT**



**SUBMITTED BY
AVEAN ENGINEERING AND CONSTRUCTION LLC
APRIL 10, 2010**



**Avean**

ENGINEERING & CONSTRUCTION LLC

April 10, 2010

Gail Getzwiller
Save the Scenic Sonoita Grasslands
Sonoita AZ

Dear Gail,

Please find enclosed project pricing to provide a 1 MW Solar PV power system with 1 MW of Lithium Ion Storage Cells. Also included is pricing for a natural gas 1MW Genset to be installed in Patagonia.

Avean Engineering and Construction LLC is a turnkey company that can provide the design, engineering, permitting, project management and construction of both Solar PV power systems and Natural gas Gensets to provide the power needed.

The pricing is for the total turnkey project including fast track project management to bring the project in 6 months or less. Also included in this proposal is a 1 line Engineering drawing for a 1 MW Solar PV system.

We look forward to working with you on this project.

Sincerely,



Michael C. Meyer
Director of Operations
Avean Engineering and Construction LLC

4625 S. LAKESHORE DR.
SUITE 408
TEMPE AZ 85282
Phone: 602 492-7861
Fax: 480 345-4450
E-mail: Avean@q.com

SONOITA / PATAGONIA
SOLAR PV POWER PROJECT

DESIGN, ENGINEERING AND CONSTRUCTION OF A 1 MW SOLAR PV POWER PLANT.

\$ 5,100,000.00 OR \$5.10 PER WATT

This includes the solar panels, fixed ground mounts, combiners, inverters, power connections to the battery system.

DESIGN, ENGINEERING AND CONSTRUCTION OF 1 MW LITHIUM ION BATTERY STORAGE FACILITY.

\$ 1,400,000.00 OR \$1.40 PER WATT

This includes the lithium ion batteries, storage facility, interconnection between Solar PV plant and the grid.

DESIGN, ENGINEERING AND CONSTRUCTION OF A 1 MW NATURAL GAS POWERED GENSET.

\$1,000,000.00 OR \$1.00 PER WATT

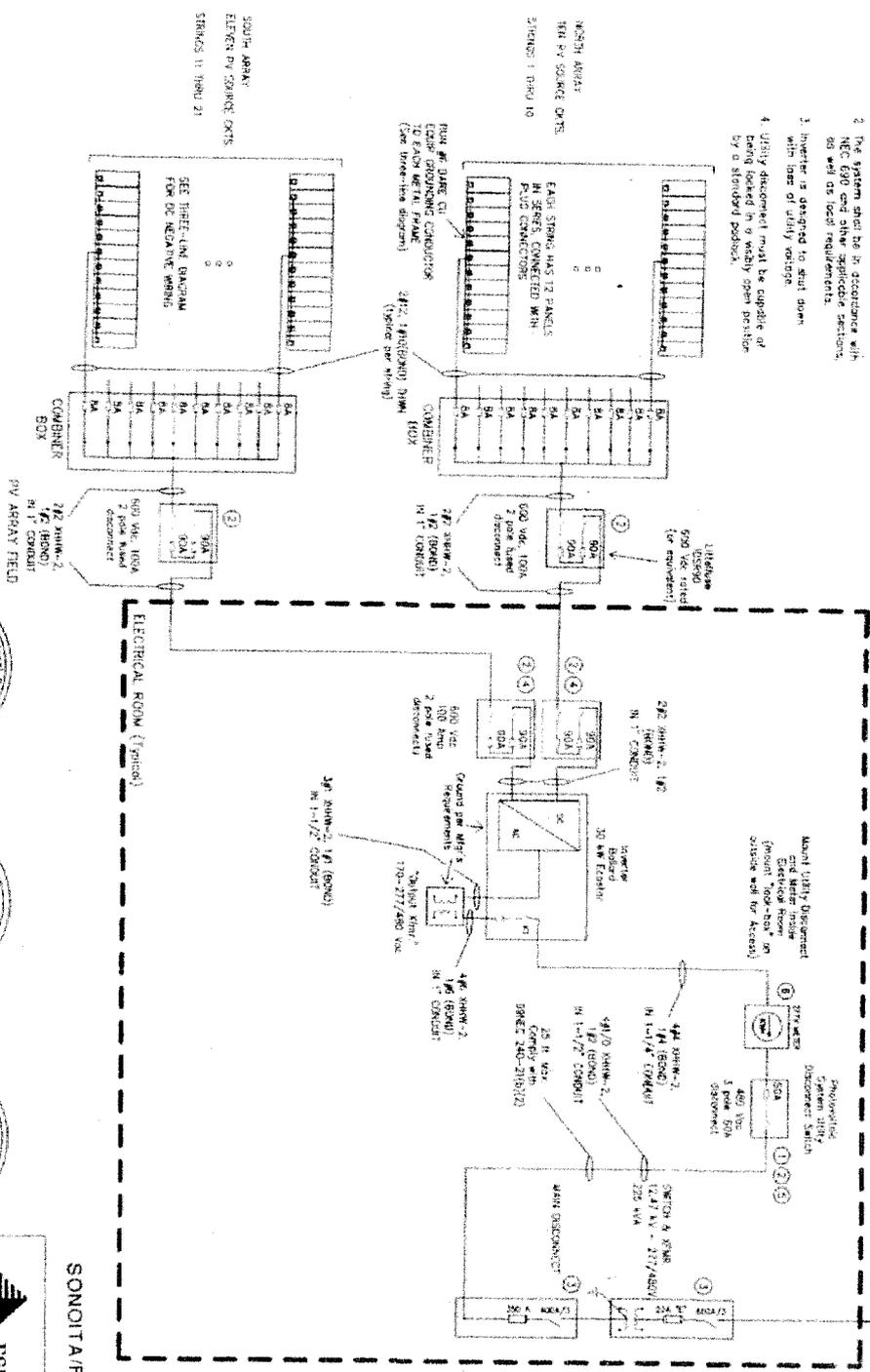
HOWEVER THE SOLAR COULD BE BROUGHT ON BOARD BEFORE THE PEAK SEASON, POSSIBLY ELIMINATING THE NEED FOR THE GENSET. IMPLEMENTATION WOULD GIVE THE AREA THE ADDITIONAL POWER POSSIBLY NEEDED FOR THE FUTURE ELIMINATING THE NEED FOR THE 69KV LINE.

This includes the Genset, interconnection between the natural gas, and the grid. This also includes an enclosure for weather and sound deadening.

THIS PRICING IS PROVIDED BASED ON THE INFORMATION RECEIVED BASED ON THE NEEDS AND THE APPROVALS GIVEN FOR INTERCONNECTION TO THE LOCAL GRID.

NOTES

1. The system uses 250 Unit-Strip PV-136 photovoltaic modules. The system rating is 34.2 kWp (281 kWdc at PMA SA Test Conditions [P.T.C.]).
2. The system shall be in accordance with NEC 690 and other applicable sections, as well as local requirements.
3. Inverter is designed to shut down with loss of utility voltage.
4. Utility disconnect must be capable of being locked in a safely open position by a standard padlock.



TO 24.9KV SYSTEM

LABELING REQUIREMENTS

- ① Warning tags to identify use and de-energize. Pictorially diagrammed from here through the "PHOTOVOLTAIC SYSTEM UNIT" DISCONNECT SWITCH which reads:
WARNING:
ELECTRIC SHOCK HAZARD.
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION!
- ② All dc and ac disconnects to have a warning sign which reads:
WARNING:
ELECTRIC SHOCK HAZARD.
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION!
- ③ Backed switches and transformers to include a name tag. A second power source is connected to the load side of this equipment.
- ④ Photovoltaic Power Source: Mount of the 2.5 ft disconnects in the utility room.
- ⑤ South Array:
 Operating Current: 41.3 Aac
 Operating Voltage: 396 Vdc
 Maximum System Voltage: 554.4 Vdc
 Short-Circuit Current: 51.0 Aac
 North Array:
 Operating Current: 41.3 Aac
 Operating Voltage: 396 Vdc
 Maximum System Voltage: 554.4 Vdc
 Short-Circuit Current: 51.0 Aac
- ⑥ Point of Interconnection Label:
 Maximum ac output current: 41 amps
 Operating ac voltage: 480 volts
 PV Array Rating: 34.2 kWdc at STC
 System Rating: 28.1 kWdc at PTC
- ⑦ Label meter "PV POWER SYSTEM DEDICATED kWh METERS"

SONOITA/PATAGONIA SOLAR PV PROJECT

AYCAN
ESE Engineering LLC
 46211 LAWRENCE DR. SUITE 404
 TEMPE, AZ 85282
 TEL: 480.365.4600 FAX: 480.365.4603

ONE-LINE DIAGRAM

DATE: 4/10/10 SHEET: 1 REV:

