

ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION



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

Docket No. E-01575A-08-0328

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

Docket No. E-01575A-09-0453

15 April 2010

14 **NOTICE OF FILING**

15 **MARSHALL MAGRUDER'S TESTIMONY SUMMARY WITH RESPONSES TO ORAL**
16 **TESTIMONIES AND PUBLIC COMMENTS IN SUPPORT OF INTERVENOR SUE DOWNING**

17 This filing contains a summary of my testimony and responses to oral testimonies and
18 public comments in support of Intervenor Sue Downing who requested that I be a witness
19 during this A.R.S. §40-252 petition review for Sulphur Springs Valley Electric Cooperative.

20 My testimony supports solutions without an "immediate construction" of a proposed 69 kV
21 transmission line to meet the 1-1.5 MW demands by 2019 and other concerns. Combinations of
22 alternatives in the Feasibility Study are more cost-effective with renewable energy, distributed
23 generation and demand side management than a 23-mile line 69 kV line.

24 The Cooperative cannot have the 69 kV line operable until late fall 2011 if relief was granted
25 on 1 May this year. Unfortunately, the Feasibility Study rejected almost all alternatives if they
26 could not be implemented by the winter of 2010, a year earlier than the 69 kV line. Therefore,
27 **validity of the "build" alternatives denied in this Study must be reconsidered** when
28 compared to the 69 kV by 31 July. This includes the renewable energy, distributed generation,
29 demand side management, and even some distribution and transmission line alternatives.

1 The Cooperative petitioned the Commission on 14 January 2010 to amend Decision No.
2 71274. The recommended opinion and order (ROO) should deny the proposed amendment
3 because it can be shown that other combinations of alternatives can meet the short-term and
4 longer-term solutions put in place for the affected communities than "immediate construction."

5 My direct and oral testimonies and this response have evidence that "exigent reliability
6 circumstances" do not exist based on the Feasibility Study ordered by Decision No. 71274.

7 I was placed on the witness stand after 5 PM on Friday. We were all tired. I started with "I
8 might need to be here until midnight" to orally rebut prior witnesses and Public Comments
9 My responses need a fair and reasonable hearing. As a witness, I could not object when asked to
10 "summarize" my testimony as I was just getting started to respond to many Public Comments
11 and oral testimonies by the Cooperative and Commission Staff. This is that response.

12 This response speaks for itself with a firm recommendation that the Cooperative's petition
13 be denied as there is no basis for its claims to not follow the existing procedure as, outlined by
14 the Administrative Law Judge, as no "emergency" exists.

15 I certify this filing has been mailed or delivered to parties on the Service List this date.

16 Respectfully submitted on this 15th day of April 2010.

17 MARSHALL MAGRUDER

18 By 

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MARSHALL MAGRUDER
TESTIMONY SUMMARY
WITH
RESPONSES TO ORAL TESTIMONIES AND
PUBLIC COMMENTS
IN
SUPPORT
OF
SUE DOWNING
INTERVENOR
15 APRIL 2010
IN THE MATTERS OF
THE APPLICATION[S] 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.
AND
FOR AN ORDER INSTITUTING A MORATORIUM ON THE NEW CONNECTIONS TO THE V-7
FEEDER LINE SERVING THE AREAS OF WHETSTONE, RAIN VALLEY, ELGIN, CANELO, SONOITA,
AND PATAGONIA, ARIZONA.

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SECTION 2

CLOSING ARGUMENTS AND POSITION

2.1 The Matter Before of these Proceedings.

The matter before hearings is not the same as quoted on the filing sheet or the title page of this Brief. The issues being decided in this petition by the Cooperative is to immediately construct a proposed 69 kV line because it has "completed" three "compliance" items is without merit.

First, these compliance items were to complete and file a Feasibility Study, to hold Public Forums, and to file a report after the forums. The action verbs "complete", "file" and "hold" are very simple checklist kinds of actions without performance criteria; however, it is the **quality** of the Study, forum, and its resultant report that is of concern to these communities. The Study, is considered as excellent but **it was based on an assumption that short-term implementation was required by the next winter (late fall of 2010), however, the 69 kV line can not be installed prior to late fall of 2011, one year later. The rejection of all the renewable energy, distributed generation, and demand side management programs based on the criteria used in the Study is invalid.** [Tr. 253, 7-14; 811, 7-11] **These rejections need to be re-assessed by 31 July 2010.**

The forums were unsatisfactory; however, I hope the Cooperative can ensure the next round has all sides equally represented, especially with new results. A town hall atmosphere was not created to discuss the issues as it was held just to complete a "checklist". The third action, the report, was submitted before some of the events had been completed. A revised report is necessary.

Second, the public forums were planned to be for six months of interaction; however, only two "public forums" were held within three days in the affected communities, that decreased the understanding and knowledge needed by the public to make informed decisions.

Third, the resultant forums were public relations shows put on by the company to tell everyone how great they were and that they were always right. I have found that no company is "always" right; just as electricity distribution systems are never 100% reliable.

Fourth, the continual use of non-standard, bogus numbers, such as "270 hours of annual outage" for reliability in the area is deplorable. The Study did not agree as it showed 3.0 hours of outage per customer per year. The company's explanation for "270" is not convincing.

1 Based on these and other statements from testimonies herein, the performance by the
2 Cooperative remains questionable with respect to the issues at hand; especially concerning their
3 demands for “urgency” to “immediately construct” the proposed 69 kV line.

4 There are serious and immediate actions that should be taken right now, actually long ago;
5 however, until all 20 Alternatives from the Study have been reviewed before the Commission,
6 along with enhancements to make additional improvements, then the planned, orderly and
7 expected schedule should be followed, as ordered, in these proceedings

8
9 **2.2 This Testimony Summary of my Direct and Oral Testimonies.**

10 My Direct and Oral Testimony dealt with four topics.

11 First, reliability improvements in terms of fewer outages with a 69 kV line are minor. Most
12 reliability improvements necessary include correction of unexpected pole transformer fuse
13 failures, continuing installation of lightning arrestors, reactive crew stationing assignments
14 during storms, constructing a distribution substation in Sonoita with five feeders offloading a
15 long rural existing distribution line, and using weather-dependent ratings for the existing line’s
16 transformer. The health of the existing distribution area is below par. Many local improvements
17 will improve reliability, again, that are independent on a 69 kV line.

18 Second, meeting near-term and long-term demands required with a 69 kV line can easily
19 be achieved with 1 to 2.5 MW of additional power for two decades. A 23-mile line is the most
20 expensive solution. There are additional short-term winter capacity capabilities with the existing
21 transformer and conductors. Adding a conductor or two on a few single-phase line segments can
22 equalize phase loading. Further, local generation reduces line energy losses with savings for both
23 the company and customers and when tied to a new substation and a 750-1,000 kW solar PV and
24 storage system increases for this distribution system using firm backup “peaker” systems.

25 Third, meeting the area’s performance requirements is based on ample evidence in
26 testimonies and the Study that show combinations of some alternatives adds diverse renewable
27 energy sources with energy storage and distributed generation to reduce peak loads with DSM
28 programs in the Study. However the Cooperative’s “screening criterion” appears to have caused
29 all renewable systems would be rejected. This was most unfortunate. The study was clear, the
30 alternatives are significantly less expensive to implement than the 69 kV line alternatives.

1 Fourth, the exaggerated claims by the company and its attorney have been a smoke screen
2 to keep their long-time, subtransmission line program "alive". Saving "face" by management
3 appears to dominate their action plans away from serving customers and inward as a mechanism
4 for gratification that says "we are always right". The "270 outage hours" mantra in letters to the
5 Commission, customers, the press in "OpEds" is a company-directed program to polarize this
6 issue into two camps before the Commission. These "dive and conquer" tactics are desperate
7 management tricks. We, like David before Goliath, without large pockets to fund "buses with free
8 box lunches" and a full-court press by a legal and marketing team, makes me and should also
9 make the Commission wonder, "Why is this such a big deal?"

10 **2.3 Closing Arguments.**

11 My argument is simply that this process does not have to be rushed to a haphazard
12 conclusion led by an attorney who has reaped hundreds of thousands of dollars for himself and
13 his firm by his continual disruptive filing practices. He conducting an expedited offensive but that
14 is not how a "fair and reasonable" decision is made. His tactics have been brutal to three
15 intervenors who just cannot understand why there is NO POSSIBLE WAY for any renewable
16 energy program to "work" for these three rural communities of Patagonia, Elgin and Sonoita.
17 As an engineer, I know my profession can do anything from sending a person to the moon to the
18 bottom of the seas, so why can't any of these "professional" engineers come up with another
19 viable solution? They do not want to, it is plain and simple, and it appears this is also being
20 promoted at the direction by this company's top management. When these engineers could not
21 come up with another second-best option during cross-examination, this opinion solidified.

22 Late in writing this document, I noted the disconnect between the study which assumed
23 projects to be implemented for next winter (late fall of 2010) compared to the earliest
24 installation date for the 69 kV line being late fall of 2011. This invalidates the study's results.

25 There are six arguments I will use to support denial of this petition to allow for immediate
26 construction of the proposed 69 kV line by amending Commission Order No. 71274.

27 **2.3.1 Reliability Arguments.**

28 My Direct Testimony has many statements from the Study that steps need to be taken to
29 improve reliability for the V-7 circuit.

30 Although not the worst performing SSVEC distribution circuit, the Study pointed to several
procedural changes including crew pre-positioning during a storm or peak conditions to reduce

1 crew travel times. The worst performing reliability index is Customer Average Interruption
 2 Duration (CAID), below average for 9 of the past 10 years, due primarily to extensive “travel
 3 time.” Consideration of changes to the pole transformer in order to conform to industry
 4 standards may reduce this highest equipment-caused failure element with an average of 75
 5 failures a year. The Study stated that four feeder lines from the substation can improve reliability
 6 by 15% to 30%, thus construction of the substation improves reliability. However, construction
 7 of a 69 kV line just adds another 23 miles to the 350 miles of existing lines that might fail.

8 **2.3.2 Capacity, Demand/Load and Peak Power Arguments.**

9 The Study shows how renewable energy with storage plus demand side management, all
 10 improve the ability to achieve the 1-1.5 MW of additional capacity needed by 2019 to meet the
 11 next ten year demands, or 2.5 MW by 2029. The use of “peaker” natural gas generation, a
 12 potential to intertie with TEP’s 46 kV for backup, and even tie with UNS Electric all add second
 13 independent and redundant electricity sources for the affected area. If just 100 (or 5.5%)
 14 customers switched from the most expensive electric heating to natural or propane gas or wood
 15 for heating the resultant reduce demands will solve today’s capacity needs. The Cooperative does
 16 not market its Time of Use (TOU) program. None of these individual alternatives “passed” the
 17 “screening criterion” set by the Cooperative; however, combining various sets of alternatives can
 18 meet such criteria. Combinations of alternatives were not in the analysis. Viable alternatives
 19 exist to meet capacity needs for short-/long-term demands including peak without a 69 kV line.

20 **2.3.3 Cost Arguments.**

21 The excitement to use renewable energy to counter the costly 69 kV line at lower costs was
 22 enhanced by this Study. Three renewable alternatives were assessed in terms of Net Present
 23 Value (NPV), all considerably less than the 69 kV. These are in Table ES-2 from the Study below

24 **Table ES - 2: Economic Comparison of Alternatives**

Alternative	Capital Investment	Fuel and O&M Cost	Line Loss Savings	Total NPV
New 69kV to Sonoita: Along SIDB Ranch	\$13,424	\$231	\$879	\$ 12,776
New 69kV to Sonoita: Along SR 82	\$17,004	\$288	\$879	\$16,413
Diesel Generation	\$2,277	\$3,892	\$418	\$5,751
Electric Heating Conversion	\$1,386	\$1,428	\$460	\$2,355
Electric Storage Heating	\$1,788	\$ 350	\$77	\$2,061

1 There are significant energy line losses in the existing system. A combination of [diesel]
2 natural gas generation and electric hearing conversion saves some \$878,000 in 20 years, as much
3 as a 69 kV line, thus "wasted" electricity is saved that all now customers pay, or about \$43,000
4 per year in the affected area, over \$17 a customer a year. Using all three renewable/DG/DSM
5 alternatives, including fuel costs, the 20 year costs above are approximately \$10.1 million
6 compared to \$12.8 to \$16.8 million for a 23-mile line. Looking at these costs, especially in light of
7 "stimulus rebates," can significantly save more for the Cooperative's ratepayers. The forthcoming
8 Sonoita 750 kW solar-plant in Sonoita uses ARRA funds to add more capacity in this distribution
9 area. The 69 kV line is the most expensive alternative. Other alternatives, even those with "wires,"
10 are less expensive. Cost remains as an open issue right now.

11 **2.3.4 Future Short- and Long-Term Options Arguments.**

12 The most critical short-term requirement is to increase capacity to meet a winter morning
13 peak of about 1 MW during a six to eight week period between mid-December and mid-February.
14 As suggested, a solution as simple as a truck-mounted generator could be leased to for the short-
15 term "peaker" needs on several hours notice from Tucson dealers. Presently there is no
16 substation in Sonoita in which to interconnect a distributed generator. At a distance of ten meters
17 from the 60 dB noise level cited by SSVEC's lead engineer, this noise level is equivalent to that
18 inside a "quite library." There are no adjacent residential customers near the 2.7-acre Sonoita
19 substation site, thus such noise should not be significant. It could be mounted in an anechoic
20 room thus eliminating all external noise, except when the door is open. The Study indicates a
21 concern about obtaining an ADEQ air pollution permit. This part of Santa Cruz County is not in an
22 EPA-designated "non-attainment" area, such as exists for the City of Nogales. In Nogales, recently
23 a 20 MW, LM-2500 diesel and natural gas turbine-generator was installed without issue. There
24 are no real concerns about an enclosed installation in Sonoita or in Patagonia SSVEC site there.

25 Short-term options include the ARRA funded 750-1,000 kW solar-array at the Sonoita
26 substation with "smart meters and in-home displays". This provides the Cooperative's control
27 center real time loads, outages, and renewable energy generation. Combining this with a peaker
28 plant, a large number of roof-mounted PV systems, there should be a high level of confidence that
29 these three communities can meet the 1.0-2.5 MW growth challenges between now and 2029.
30

1 Longer-term options should consider expansion of the UNS Gas distribution lines to the
2 business sector of Sonoita, and throughout the entire Patagonia area.

3 Further, energy efficient homes designated for the Tres Mountains and X Bar (both
4 presently bankrupt) developments near Patagonia will have lower loads than existing residential
5 units. Incentives for “less-electric” in terms of water and space heating where natural gas is not
6 available should be a high priority SSVEC DSM program. The Commission has a goal for at least a
7 22% electricity reduction with various Energy Efficiency (EE) and DSM programs by 2020. Thus,
8 future growth in this area can be easily managed for lower electricity demands. The two political
9 entities, Santa Cruz County and the Town of Patagonia, both have aggressive energy savings
10 programs. New housing developments are now required to construct ENERGY STAR®-certified
11 homes. Further, UNS Gas has an active DSM program targeted at commercial and business users,
12 with another DSM program to replace heating units with high efficiency AFAE ratings above 95.

13 **2.3.5 Urgency Arguments.**

14 Increased capacity is a critical reliability concern and electrical quality is, at best, marginal.
15 The separation from one long 350 mile-long feeder to four or five feeders of about 75 miles each
16 greatly reduces outages and system restoration times. “Smart” 2-way meters give accurate
17 locations and instant feedback, thus reducing the time required to restore electricity. Both
18 construction of the distribution substation and implementation of the “smart” meter programs
19 appear the most effective reliability improvements, and both should be treated as urgent.

20 Capacity to meet demand can easily be increased, from simple leased units, to installed-
21 distributed generation with natural gas turbines and renewable electric generators. Installation
22 of a storage capability ensures the morning peak demands can always be met. A group of four
23 storage units, at 99% reliability each, give an over reliability for an availability for three of these
24 units above 99.999% that exceeds the Study’s “screening criterion”. The Study’s DG example has
25 four 500 kW generators for 2 MW. This approach permits additional units can to be brought on
26 line, as needed, thus with units not required in standby saves operational and maintenance cost.
27 Two MW of generation exceeds the anticipated peak demand through 2019.

28 **2.3.6 Other Arguments.**

29 There is a very positive atmosphere in these communities to move forward with
30 alternatives that make them more sustainable, using as much renewable energy as is reasonable.

1 These communities are not interested in large power plant sized systems, just enough to serve
2 their needs, in their quest for freedom from outside power, but not to take them "off-grid". The
3 grid has mutual benefits that the "smart grid" programs should capitalize soonest.

4 A distribution system with renewable and distributed generation and strong DSM
5 programs can reduce demands through objective energy efficiencies, can make this "end of the
6 line" rural area a model so other rural areas on radial lines to emulate. This should be an area
7 that SSVEC wants so "show off" as they showed they were able to avoid a higher 69 kV line costs.

8 **2.4 My Position**

9 My position should be clear. This situation is not so urgent that only one alternative can be
10 immediately decided as the "only" cost-effective solution for this distribution area. The petition
11 proposed by the company should be denied as it has taken much attention away from the
12 communities understanding the alternatives in the Study.

13 The only one benefiting from this drill is the company's attorney. The local development
14 community is very concerned about the proposed moratorium to limit new connections. A
15 "moratorium threat" is baseless, as there were less than a dozen new homes in this area last year,
16 with others empty due to foreclosures.

17 **2.5 Conclusion.**

18 Unfortunately, the Study denied most alternatives because they were not "short-term",
19 for next winter (fall of 2010). The earliest the 69 kV line can be installed is a year later, in late fall
20 of 2011. **The Study rejected many alternatives because they had more than a year lead-**
21 **time or could not be implemented by the fall of 2010.** Therefore, **most rejections of various**
22 **alternatives are invalid.** The Study must be reassessed in terms of this one-year difference.

23 **This must be completed by 31 July**, as presently planned. During this time detailed and
24 firmer designs can be developed for combinations of renewable and distributed generation with
25 storage and demand side management programs, to compare with installing a 69 kV line.

26 **2.6 Recommendations.**

27 It is recommended that the Commission deny the "expedited" A.R.S. §40-252 petition to
28 amend Decision No. 71274 and deny the Motion requesting a Moratorium.
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1 **Section 3**

2 **Response to the Applicant's Testimonies**

3 **3.1 Introduction**

4 This section provides a more comprehensive response to issues raised by the
5 Cooperative's witnesses that were not fully answered during the brief time on the stand. Major
6 topic areas, similar to other sections herein, group these responses.
7

8 **3.2 Comments Concerning the Testimony of Mr. Jody Severson,**

9 Mr. Severson, self-employed by Severson and Associates, conducted a Cooperative-
10 commissioned telephonic poll. His testimony covers the members feelings regarding quality of
11 service and rebuts claims about the use of misleading questions in this poll [Tr. 110, 19-24]
12

13 **3.2.1 Response to Magruder's Testimony Concerning Misleading Questions.**

14 Mr. Severson quoted the Magruder Testimony (p. 63) that states

15 "The 'poll' questions above and the verbal responses are a clear examples how
16 using misleading information can extract the desired answer."

17 Mr. Severson testified he had two horse races, using question 4 for the first and questions
18 12 and 13 (Q12/13) for the second; the rationale for the wording in Q12/13 was clarified. [Tr.
19 146, 17 to 149, 19] Unfortunately, his "270 hours of outage" in background information leading to
20 Q12/13. This was issue and intention of the Magruder Testimony in paragraph 6.2 [p. 66]. My
21 testimony also cited Q15 and being similarly worded with misleading information frequently
22 used by the Cooperative. The "270 hours of outage" is discussed later.

23 **Response:**

24 I am satisfied with his response that the second horse race has misleading information.

25 **3.2.2 Response to Magruder's Background in Public Opinion Polling.**

26 Upon cross-examination by the Cooperative's attorney, when questioned about
27 Magruder's "background and his expertise" concerning my background in conducting a poll.

28 **Response:**

29 My formal education includes an Operations Analysis/Research course at a Midshipman,
30 which started me on using numerical analysis to assess issues and to arrive at the "best" solution.
During my first graduate degree, I took courses in probability and statistics, including forecasting

1 future results based on past results and numerical analysis. My second master's course included
2 additional behavioral analysis, using statistics, including conducting polls in my human
3 engineering specialty, individual and group psychology courses concerning behavioral attitudes. I
4 have published survey reports to my commands when serving as a Naval Officer. During my
5 Naval instructor-training course, we learned how to write knowledge and skill-oriented
6 questions, using difficulty and question discrimination indices to evaluate results from the
7 examinations based on each question's results. When searching for Soviet submarines, at one
8 duty station, I had a full-time Mathematics PhD working for me primarily using Bayesian
9 probability models. As a systems engineer at Hughes Aircraft Company, we used several "polling"
10 techniques for human and equipment behavior modeling for design of training systems. As a MBA
11 Instructor, I taught "Operations Management", a course designed to provide a meaningful
12 measures to assess progress (or lack thereof) for all business and operational processes.

13 The importance of writing the "question" is the key to the answers. This is difficult and
14 takes a long time to perfect this technique, which was done almost daily for the seven years I was
15 a Naval instructor and several years as an MBA instructor. I agree with Mr. Severson that
16 experience is required in understanding a question as much as evaluating its result.

17 **3.2.3 Response to "Reliability" Scores in the Poll.**

18 Mr. Severson further testified that

19 "[T]he reliability scores that SSVEC received in the Sonoita/Elgin/Patagonia area
20 were literally the worst I have ever seen.... 30 to 50 points below what cooperatives
21 ordinarily score." (Tr. 142, 17-24)

22 Several pages of "outage and reliability" verbal comments are in the Magruder Testimony.
23 [p. 64-66]

24 **Response:**

25 Unfortunately, the reliability measurements by the standard IEEE indices, in Magruder
26 Testimony paragraph 3.1.2, clearly and objectively prove that the V-7 feeder area is nearly
27 average but not the "worst" of the SSVEC feeder's areas. This is discussed in more detail in my
28 responses to Ms White below; however, the extract of verbal comments in his report related to
29 "outages" [Magruder Testimony, p. 64-66] confirms what the public feels about "outages" and
30 must of this was debunked by the reliability data for the past ten years in the Feasibility Study.

3.2.4 Response to Magruder's Overall Comments on this Poll.

Marshall Magruder Response to Public Comments, to SSVEC's Testimonies, and
Summary of this Witness's in Support of Intervenor Sue Downing.

1 Mr. Severson also indicated that I had

2 "[F]astened upon a shard or two, a snippet of information from which they might draw
3 some sore of comfort in the face of overwhelming numbers arrayed against their
4 position in the poll." [Tr. 150, 12-15]

4 **Responses:**

5 I have no disagreement with the actual conduct of the poll other than the words used in
6 background and the actual question wording. {Tr. 751, 10-13] The extensive prior public
7 relations propaganda campaigns by this Cooperative with misleading information almost
8 guaranteed the results of this poll.

9 An extensive listing of nearly three pages of comments concerning reliability and outages
10 shows how effective this campaign has been, contrary to the measured outage reliability indices
11 reported in the Feasibility Study.

12
13 **3.3 Comments Concerning the Testimony of Mr. Eugene Schatz, Navigant,**

14 Mr. Eugene Schatz, a member of the Navigant Consulting Incorporated (NCI) study team
15 discussed the award of the contract and concerns about the study's conclusions and
16 recommendations. I have no comments about the "award" of this contract to this well-qualified
17 company as its reputation continues to remain in the highest class.

18
19 **3.3.1 Responses to Reliability Comments.**

20 These responses are with respect to testimony by Mr. Schatz concerning reliability and
21 outage issues including

- 22 • Feeder Performance
23 • Overall Performance and Reliability

24 **a. Feeder Performance.**

25 Mr. Schatz testified:

26 "[T]he current v-7 feeder performance is poor, it is unacceptable, and short-term action is
27 needed to mitigate current and expected future problems on this line." [Tr. 188, 19-22]

28 **Response:**

29 Concur; and obviously will be corrected in some way based on these proceedings.

30 **b. Overall Performance and Reliability.**

Mr. Schatz testified:

Marshall Magruder Response to Public Comments, to SSVEC's Testimonies, and
Summary of this Witness's in Support of Intervenor Sue Downing.

1 "We also found that there were deficiencies in terms of overall performance and
2 reliability. The feeder effectively is right at the edge in terms of its ability to be able to
3 serve load during high load conditions. Reliability is subpar. Performance problems
4 exist with regard to sustained momentary type interruptions. Power quality has been a
5 problem." [Tr. 189, 11-17]

6 **Response:**

7 Concur. These are all deficiencies that need corrections.

8 **3.3.2 Responses to Demand/Load and Peak Comments.**

9 These responses are with respect to testimony by Mr. Schatz concerning demand/load and
10 peak issues that include:

- 11 • Capacity Limits
- 12 • Renewable Constraints
- 13 • TEP's 46 kV as a Backup Capability

14 **a. Capacity Limits.**

15 Mr. Schatz testified

16 "The capability of the existing equipment on the V-7 feeder was either at or very near
17 or, in some cases, exceeded capacity limits. And when we speak of capacity limits, it is
18 not merely the rating of the line. When you define capacity limits, capacity limits also
19 mean that the equipment has the capability to be able to meet performance
20 requirements, which would include things such as amount of variation to voltage,
21 power quality impacts. So a lot of factors enter into what is defined as reliable firm
22 capacity." [Tr. 188, 23 to 189, 8]

23 **Response:**

24 Concur. It should be noted that "ratings" can be exceeded under defined performance
25 conditions by the manufacture. In general, the user should consider these performance
26 conditions as an upper limit. Mr. Oroczo testified that exceeding the capacity of the 69/24.9
27 transformer might reduce its life cycle. I am not an advocate for exceeding any "redlines" but am
28 aware that, under very specified conditions, the rated capacity can be exceeded. The term
29 "capacity limits" used by Mr. Schatz, it is assumed, includes excursions within all manufacture's
30 specifications. Equipment capacity limits can also be "de-rated" or downgraded based on the
31 manufacture's specifications or operational conditions.

32 **b. Renewable Constraints.**

33 Mr. Schatz testified:

34 "We took a careful look at renewable options, wind, solar technologies and others, and
35 effectively, our findings determined that they didn't provide sufficient firm capacity

1 consistent with current acceptable and prudent utility practices. And that's important to
2 emphasize. To solve the capacity problems on the V-7 feeder means that capacity has
3 to be **firm, reliable, and available** when needed." [Tr. 191, 10-18, emphasis added]

4 **Response:**

5 In general, this is a reasonable statement; however, the emphasis concerning "firm" needs
6 additional discussion. As a response to the definition of "firm" during cross-examination, he said
7 that firm might not be "all the time". The applicable Study "screening criterion which appears to
8 best define the V-7 feeder requirements reads as:

9 "All solutions should have the same level of effective firm capacity as conventional
10 feeder expansion or upgrade options. Generally, the net availability should exceed
11 99.9 percent." [FS p. 55]

12 Upon additional cross-examination and when asked, "would you expect to get firm
13 electricity delivered [purchased] 100 percent of the time?" Mr. Schatz stated, "No utility meets
14 that standard." [Tr. 259, 4-6] But, as quoted above, all the renewable options were deemed to be
15 inconsistent with the "screening criterion".

16 **c. Use of TEP's 46 kV as a Backup Capability.**

17 After several questions concerning the TEP 46 kV line Tap, Alternative T4, including,
18 "would this be an alternative that you would totally reject", Mr. Schatz stated

19 "We would have to study that further. The limited studies we did conduct shows there
20 were significant voltage problems. When we put a five megawatt load on the line at
21 Sonoita, or in the general area, we found there was [a] fairly significant voltage drop,
22 and that indeed was a concern. Then when coupled with the base load, we found
23 severe problems." [Tr. 262, 13-19]

24 **Response:**

25 There was additional discussion on this issue; however, Mr. Schatz did not know the latest
26 plans for that line. This line's can carry at least 19 MW at this time, Fort Huachuca has a peak
27 demand of 10 MW, and therefore at least 9 MW remain about its load requirements, adequate
28 through 2029 for the V-7 area. Other issues remain open concerning this line; however, for
29 backup, when there is an outage in the V-7 area, with a three-breaker ring bus switching
30 mechanism, there would be no loss of power to the Sonoita substation if this alternative were
implemented. There is a cost element of about \$1.5 million and several hundred thousand for the
four miles from where this 46 kV line crosses the existing 24.9 kV lines. The Cooperative is
concerned that 46 kV is not an SSVEC-standard; however, if contractual arrangements were made
for TEP to maintain this line and transformer, for a negotiated fee, then 46 kV could be delivered

1 to the Sonoita substation instead of the 69 kV. If only a "tie" were needed, then all the 46 kV
2 equipment could be maintained at the Sonoita substation, as there would not be a new substation
3 in Elgin.

4 With only 4 miles for new 46 kV line, when compared to 23 miles for a new 69 kV line, the
5 cost for the three-breaker ring bus switch becomes less significant. In addition, it is possible for
6 the 46 kV line to bring electricity from the Fort's 138:46 transformers when there is an outage
7 between Sahuarita and Sonoita. The Study indicated a new 46 kV substation would be needed but
8 only 2 residences are within 0.25 miles. Also, this line passes less than 425 yards from the La
9 Cienegas National Conservation Area, which could be avoided by shifting about this distance to
10 the south for about 0.5 miles to avoid a federal nexus and NEPA requirements. Further, the Study
11 states the 46 kV line has the least visual impacts of any of the "line" options.

12 One major concern expressed several times in the testimony by Mr. Schatz was the
13 importance of a higher and more robust voltage to enter the substation. The 46 kV line provides
14 that capability that will improve power quality issues.

15 This alternative still needs additional information.

16 **3.3.3 Responses to Cost Comments.**

17 Mr. Schatz did not discuss any cost issues that involved my testimony.

19 **3.3.4 Responses to Future Comments.**

20 Mr. Schatz comments concerning future and growth issues are in the next paragraph.

21 **3.3.5 Responses to Urgency Comments.**

22 These responses are with respect to testimony by Mr. Schatz concerning the urgency issue.

- 23 • Short versus Long-Term Solutions.
- 24 • Does Short-Term Mean Implemented by late Fall of 2010 or 2011?
- 25 • Impacts of the definition of "short term" in this Study.
- 26 • Some Possible Solutions involving Load Reduction.

27 **a. Short versus Long-term solutions.**

28 Mr. Schatz was asked

29 "Q. ... Is there no other alternative whatsoever that could ever work other than the
30 proposed T-1 Alternative (e.g., the 69 kV line)?

1 "A. There are other solutions but none in my view, or at least I am aware of, which are
2 going to provide immediate relief which is needed now. Other options, for example,
3 building another distribution line, would provide some modest capacity support,
4 building [a] 69 kV line along the existing corridor.

5 "But one of the things we encountered in looking at these options from a
6 practicability standpoint, many of them had long lead times. So they don't really
7 represent a short-term solution. So we have a fairly long window where there
8 certainly could be a problem, meaning next winter, what solutions might be available
9 to be able to serve next winter's load, especially if it were to grow. [Tr. 252, 23 to
10 253, 14]

11 **b. Does "Short-Term" mean implemented by late fall of 2010 or 2011?**

12 It seems that "short-term" in Mr. Schatz view, is intended to be for solutions by "next
13 winter". Later in these hearings, as SSVEC's attorney Mr. Carroll, states

14 "[A]s of right now Sulphur Springs believes that, if it started the project on May 1, the
15 Sonoita Reliability project, if the relief was granted, that it could be completed by late
16 fall of 2011 in time for the '11/'12 winter season." [Tr. 811, 7-11, emphasis added]

17 If Mr. Schatz considered next winter "short term" and anything longer as "long-term" then
18 his entire report is suspect since so many alternatives, as shown below, were rejected because
19 they were "long term options." To be operable for the winter after next is the earliest the 69 kV
20 project appears possible.

21 **c. Impacts of the "short" term definition in this Study?**

22 As noted, above, Mr. Schatz has produce a Study that rejected alternatives that could not
23 be completed by the winter of 2010, in the "short-term".

24 **This is a serious, there is at least one year, difference between the criteria used by
25 Mr. Schatz in the Study and what it is possible with the 69 kV project.** The elimination of
26 many alternatives based on this difference is shown in greater detail as he continues and
27 states

28 "There is not a single solution I could point to which I would rely on as being a good
29 solution.

30 "Q. You use the word single solution. Do you see combinations of the 20 options that
might work?

"A. Well, most of the options we looked at, certainly any of the build options,
most if not all of them have fairly significant lead times. For example, siting a local
generator has to go through the state permit approval process, and certainly that can
be lengthy. So that's - I don't deem that to be a short-term solution. [Tr. 253, 14-24,
emphasis added]

1 **“Most of the options if not all”** surely does change the outcome(s) of this Study. I
2 wonder what the Study results would have been if “near-term” was defined by Mr. Schatz as
3 November 2011 instead of November 2010 in this study?

4 Based on two local water companies I have worked with, neither complained of
5 difficulties in siting a 250 kW (as a truck trailer, near a housing area) and a 500 kW (standalone,
6 in a housing area) as backup generators to maintain water pressure during an outage, and the
7 UNS Electric 20 MW LM-2500 generator in Nogales (commercial area), which has a serious
8 violations of the Clean Air Act. Actually, such a generator should be able to meet the capacity
9 requirements for next winter.

10 **d. Some Possible Solutions Involving Load Reduction.**

11 He continued with

12
13 “The ones which **might be deemed to be possible solutions** would be those **related**
14 **to load reduction.**

15 “Q. And **load reduction** and **demand-side management** is one of the possible
16 solutions that was recommended in your study, too?

17 “A. It is one of the solutions we looked at. We don’t – didn’t recommend it as a solution
18 because of the limited relief and supplies, which especially with the customer base.

19 “One of the things we did look at, of course, was **fuel switching**. I don’t believe
20 that’s an overnight solution as well. And plus it raises a whole set of new challenges in
21 terms of customer participation rate, the cost to replace those systems, and whether or
22 not there is even a sufficient number of suitable systems for conversion.” [Tr. 253, 24
23 to 254, 14, emphasis added]

24 Finally, he finds a possible solution, in particular, those related to load reduction. These
25 are all Demand Side Management programs. With customer cost-effective incentives that have
26 realistic characteristics, then with customer-contact marketing, results maybe achieved even in
27 time for next winter. Unfortunately, this Cooperative’s track record is subpar when it comes to
28 DSM program effectiveness. For example, there is only ONE SSVEC residential customer on Time-
29 of-Use (TOU) in this entire feeder service area. Other Arizona utilities, such as APS, have a
30 majority of their customers on various TOU programs. This is where the rubber meets the road;
you pay more during peak or less during off-peak. With sufficient pricing, results will reduce
peak. UNS Electric is even considering a “super-peak” rate (nearly twice the normal rate) to help
customers reduce their loads during certain peak times.

3.4 Comments Concerning the Testimony of Mr. Ron Orozco, SSVEC,

Marshall Magruder Response to Public Comments, to SSVEC’s Testimonies, and
Summary of this Witness’s in Support of Intervenor Sue Downing.

1 Mr. Ron Orozco, the Cooperative's lead engineer, discussed the Sonoita Reliability Project
2 (SRP) and technical analysis undertaken by the Cooperative. He also testified about potential loss
3 of American Recovery and Relief Act (ARRA) and Clean Renewable Bond (CREB) funds.

4 **3.4.1 Responses to Reliability Comments.**

5 These responses are with respect to testimony by Mr. Orozco concerning reliability and
6 outage issues.

- 7 • Outage Records.

8 **a. Outage Records.**

9 Mr. Orozco was questioned by his attorney with respect to

10 "he [Magruder] also questions your outage records." [Tr. 392, 25]

11 Mr. Orozco's response was that "he presents no outage information and continues to
12 question outage reports."

13 Response.

14 All of the outage information in the Magruder Testimony was from either the Feasibility
15 Study or from company applications or testimonies. Tables 2 and 3 in the Magruder Testimony
16 [p. 20] followed the reports used by the Commission Staff format used in another rate case.
17 Additional comments on this under Mr. Shlatz concerning Reliability Indices and Ms. White
18 testimonies concerning the "270" hours of outage issue.

20 **3.4.2 Responses to Demand/Load including Peak Comments.**

21 This paragraph provides responses that pertain to comments concerning demand, load and peak,
22 including his testimony concerning the following:

- 23 • The 69 kV line is not needed
- 24 • Additional Phase Wires
- 25 • Substation and Conductor Capacities
- 26 • Inject a 750 kW solar system into the V-7 feeder

28 **a. Thee 69 kV line is not needed.**

29 Mr. Orozco was first questioned with respect to:

30 "Throughout Mr. Magruder's prefiled testimony, he states that the 69 kV line is not
needed, basically." [Tr. 388, 5-6]

1 **Response.**

2 I was very careful and did not once say in my prefiled testimony that the “69 kV line is not
3 needed”. I did say that many of the problems in the V-7 feeder area will not be solved by this 23-
4 mile long line. Further, in accordance with the Procedural Order for this hearing, I emphasized
5 the fact that the petition and subject of this hearing concerned the “immediate construction” of
6 this line. My arguments were against the term “immediate” and not intended to be all directed
7 against the 69 kV line, itself, because there are many V-7 feeder issues that are not resolved by
8 just this line.

9 Apparently, the company’s attorney misread and then misquoted my prefiled testimony in
10 his question to this witness.

11 I have no issue with Mr. Orozco’s discussion of this company’s planning process and
12 procedures. All good companies should have and use written policies, processes and procedures
13 (what I’ve known as the 3-Ps), which is appears that Mr. Orozso does. The 3-Ps are usually
14 internal work process documents, and most are privileged “confidential” documents, that
15 describe how the company will meet its objectives while being compliant with best practices and
16 industry standards. Any outsider would have difficulty in following this Cooperative’s 3-Ps
17 without being an employee.

18 **b. Additional Phase Wires.**

19 Mr. Orozco was then questioned with respect to “Mr. Magruder also suggests in his
20 testimony that additional phase wires be added to some circuits to optimize system
21 performance.” The only Magruder Testimony discussion concerning this issue is quoted below:

22 **“Q. Are there voltage variations between the Phases?”**

23 **“A. Yes.** A long single-phase (B-Phase) line serves Canelo and areas south of the
24 Babacomari Land Grant. The B-Phase is the only phase that has exceeded 2.333 MW in the
past three years, other than one hour when the A-Phase was greater than 2.333 MW.

25 “Some possible solutions, not included in the FS, could include adding a second-
26 phase line partway along this long one-phase feeder to off-load the B-Phase, or to use other
methods to reduce the B-Phase loads. Action is necessary to reduce voltage imbalances.”
27 [Magruder Testimony, p. 39]

28 **Response:**

29 The long response by Mr. Orozco about voltage regulators has no bearing on this single-
30 phase line [Tr. 390, 17 to 392, 20]. The 69 kV line has no impact on this long single-phase line
miles away from a new substation. This one phase is overloaded. By adding one or two

1 conductors (wires) several additional miles, many customers could be removed from the B-Phase
2 and tied to a different phase. This reduces voltage drops.

3 The Feasibility Study confirms, "Long lines can create power quality events." [FS p. 2]

4 The solution and discussion given by Mr. Orozco clearly missed this point because this line
5 to Canelo is not getting any shorter, no loads are reduced, and adding another phase line reduces
6 the degree of voltage relegation required for the overloaded B-Phase. Even through he disagrees
7 with this option, his statement actually confirms that it is the "length of the line" that matters:

8 "[V]oltage regulators are what **boost up the voltage after a length of line**. So in order
9 to keep the voltage at acceptable levels along this long line, we use voltage regulators"
[Tr. 391,20-23, emphasis added].

10 **c. Substation Transformer and Conductor Capacities.**

11 Mr. Orozco was then questioned with respect to "Mr. Magruder claims that the
12 existing transformer has more capacity and the line conductors can take more load." [Tr.
13 392, 22-24] His response did not answer this specific quote but did provide his five
14 planning criteria.

15 Mr. Orozco also was later questioned that in "Section 4 of Mr. Magruder's testimony
16 he discusses in depth that you can load this transformer over the seven megawatt value
17 that Sulphur says it the capacity of the unit." [Tr. 406, 1-6]

18 **Response.**

19 My testimony quoted directly from the Feasibility Study the following:

20 **"6.3 'The Capacity has been exceeded' or similar expressions.**

21 **"Q. Can you provide instances of when this or similar expressions have been
22 used?"**

22 **"A. A careful review of the entire Feasibility Study has resulted in NO instances
23 where any claims or facts presented indicate that the capacities of the system
24 (transformer or lines) have been exceeded.**

24 **"In addition, as presented above in 4.1, the FS states: 'the capacity of the
25 transformer typically is higher than nameplate due to ambient cooling.' [FS p. 31]**

25 **"Further, NCI has not and apparently the Cooperative also has not computed
26 the weather-adjusted transformer ratings. The FS also states: an additional 1000 kW
27 [1 MW] of substation transformer capacity would be available at Huachuca [at Mustang
28 Corners] substation if the winter rating is increased by at least 16 percent above the
29 nameplate rating." [Magruder Testimony, p. 63, underlined in original]**

30 **Also the Magruder Testimony also states:**

**"FS indicates that the V-7 maximum capacity is limited by the Mustang Corner
substation transformer capacity with a rating of 7.0 MW [FS p. 37] and with a
nameplate rating of 7.0 MVA when the power factor is 1.0 [FS p. 30]. The FS goes on
and states:**

Marshall Magruder Response to Public Comments, to SSVEC's Testimonies, and
Summary of this Witness's in Support of Intervenor Sue Downing.

1 ... utilities often adjust the rating of substation transformers based on
2 ambient conditions and load patterns, and reasonable reduction of
3 equipment life.¹ Because the V-7 feeder and the Huachuca substation are
4 winter peaking, the capacity of the transformer typically is higher than
5 nameplate due to ambient cooling. This is in contrast to substation peak
6 in the summer, in which case maximum transformer loading is closer to
7 nameplate.

8 'NCI did not independently calculate the weather-adjusted transformer rating,
9 but notes that other utilities will apply rating above nameplate for devices
10 experiencing short-duration cold weather loading.² Notably, the 2008 V-7
11 summer peak was about 5800 kW [5.8 MW], about 16 percent lower than the
12 most recent winter peak of 6903 kW. Hence, **an additional 1000 kW [1 MW]**
13 **of substation transformer capacity would be available at Huachuca [at**
14 **Mustang Corners] substation if the winter rating is increased by at least**
15 **16 percent above the nameplate rating.'** [FS p. 31, emphasis added]

16 'During a recent discussions with the Cooperative, an additional capacity limitation of
17 2.333 MW per phase was also indicated, or equal to one-third of the 7.0 MW equally
18 allocated to each of the three distribution line phases: A, B, and C.' {Magruder
19 Testimony, p. 35}

20 The above and other statements in the Feasibility Study confirm that the company
21 might be able to use a higher rating for the transformer.

22 Apparently Mr. Orozco does not agree with the study. I also noted that neither
23 transformer nor line exceeded their ratings, except for the B-phase issue discussed above.

24 **d. Inject a 750 kW solar system into the V-7 feeder.**

25 Mr. Orozco stated "Mr. Magruder also suggested a 750,000 kW [six] solar electric tied
26 system that Sulphur Springs has acquired some funding for, but he assumed we could simply
27 inject that right into the V-7 feeder instead of onto a substation bus." [Tr. 401, 1-5]

28 Response.

29 The Magruder Testimony states "The fifth feeder line will be for renewable energy
30 generated from a 750kW solar array adjacent to the substation" [Magruder Testimony, 28] does

31 ¹ IEEE, an industry group that develops guidelines and standards for electrical equipment, has published
32 guidelines that enable electric utilities to determine the increase in transformer rating as a function of a device
33 pre-loading, ambient temperature and expected increase in loss of equipment life. Our experience indicates
34 winter-peaking utilities often increase transformer rating by 25 percent (or higher) for devices in good
35 condition. In contrast, transformers known to have operational or design constraints often are limited to the
36 nameplate capacity ratings. [FS Footnote 17, p. 31, emphasis added]

37 ² The determination of acceptable transformer loading is utility and location-specific. The value typically is based
38 on a combination of several factors including average ambient temperature, transformer pre-loading,
39 transformer design, condition, performance history (including number of high current through-faults), and
40 acceptable loss of life. [FS Footnote 18, p. 31]

1 not agree with his comment. Additionally, one of my conclusions was that the “Sonoita
2 distribution substation with its feeders and 750 kW solar generation source should be
3 constructed as soon as possible” which is a recommendation [Magruder Testimony, 41].

4 I am not sure where Mr. Orozco derived his statement but he continued on several
5 paragraphs about sticking another hose onto a hose and water squirts. [Tr. 401, 9 to 402, 6]

6 **3.4.3 Responses to Cost Comments.**

7 Mr. Orozco did not testify about cost concerns.

9 **3.4.4 Responses to Future Comments.**

10 This paragraph responds to comments that pertain to future long-term impacts in the
11 affected area including:

- 12 • New technologies
- 13 • Magruder proposed technologies
- 14 • Sodium Sulfur Battery Storage
- 15 • Try some New Technologies

16 **a. New Technologies.**

17 Mr. Orozco was questioned with respect to “did he present any new technologies in his
18 prefiled testimony beyond what he has already presented in previous presentations?” [Tr. 399,
19 19-22] Mr. Orozco’s response was “I find none.”

20 **Response.**

21 My Testimony was my first document, other than in Exhibits MM-2, my public comments
22 before the Commission on 17 August 2009 and a letter to the Commission (and docket control)
23 dated 27 January 2010 as Exhibit MM-3. I also made comments during the February 2009 Public
24 Comments session in Sierra Vista. My two presentations to the company were several hours on
25 one day in July 2009 and a “five-minute” presentation to the SSVEC Board of Directors a few
26 months earlier.

27 Mr. Orozco’s response was not correct.

28 The Magruder Testimony of 16 March 2010 presents many new technologies, including
29 new storage devices including the Sodium Sulfur (NaS) storage and electric heater storage.
30 Further, most, if not all, of the concepts we discussed during the only real productive dialog we’ve

1 had with the company in July 2009, were also included in the Feasibility Study. The tracking solar
2 PV system output curves were very encouraging. In fact, I am planning on purchasing a solar
3 tracking system based on those curves (what I call planting "solar trees" in my back yard).

4
5 **b. Magruder Proposed Technologies.**

6 Mr. Orozco was questioned with respect to "what technologies does Mr. Magruder
7 propose." [Tr. 399, 24]

8 **Response.**

9 I did not "propose" any specific solutions in that testimony. On page 59, under various
10 alternative paragraph titles, "The selection of Alternatives in not the purpose of the A.R.S. §40-
11 252 hearings."

12 **c. Screening Criterion and Sodium Sulfur Storage.**

13 Mr. Orozco discussed this technology as "certainly not available for the timeline we have
14 for this particular project." [Tr. 401, 12-13]

15 However, the Feasibility Study states:

16 "Of the technologies considered, sodium sulfur appears best suited for meeting V-7
17 capacity needs, as the storage capacity and discharge hours conform to feeder *peak*
18 *load intervals*. Sodium sulfur batteries have been used domestically to support or
19 defer distribution upgrades at a cost of about \$3000/kW. American Electric Power
20 (AEP) is among the leaders in the US. in applying NaS to T&D systems. Utilities in
Japan have successfully applied NaS systems for several years, with over 50
installations." [FS p. 49, italics in original, other emphasis added; Magruder
Testimony, 48]

21 **Response:**

22 This is an important issue. Is the company only looking at immediate solutions for the
23 long-term? A combination of short and long term solutions are in the Feasibility Study under a
24 paragraph titled "Timing and Implementation" that states:

25 **"Timing and Implementation**

26 "The six-month public review of alternatives outlined herein suggests the installation
27 of longer term options could create short-term capacity constraints. Action needs to be
28 taken *immediately* by SSVEC to avoid equipment overloads. Accordingly, the impact of
29 new service applications on V-7 and Huachuca substation loading should be carefully
30 evaluated.

"The availability of diesel generation should not be a factor, as many devices are
available for immediate purchase. However, if an air quality permit is needed for diesel
generation, then sufficient lead time is needed to ensure devices are available for the
next peak season.

"The timing of fuel switching or storage heating could be an important factor, as a
relatively high participation level likely is needed to achieve sufficient peak capacity

1 reductions. 100 or more participants likely would be needed by 2010 for the program
2 meet capacity needs." [Feasibility Study, 64, emphasis in original]

3 This states longer term options could create short-term capacity constraints. The
4 Magruder Testimony addresses several readily available ways to increase short-term capacity
5 some as simple as renting a small generator for several weeks of winter peak season and
6 supported by the Study's comment that availability of diesel generation should not be a factor.

7 "Peaker" plants are used by almost every utility in Arizona; however, it appears this
8 concept is not acceptable to SSVEC. It's the long-term solution that would involve storage to
9 cover these peak hours that is where Sodium-Sulfur or other equivalent storage system is
10 necessary. Unfortunately, the "screening criterion" now became the factor that caused NCI to
11 change its recommendation "for consistency" and not include renewable energy with storage as a
12 viable alternative. The criterion used states:

13 "All solutions must utilize technology that is commonly available and deemed to be
14 mature; that is, the technology has advanced beyond the pilot or demonstration
15 phase." [FS p. 54]

16 And the Energy Storage Alternative R4 was screened as not viable because

17 "The limited number of installations beyond the demonstration or pilot phase, and the
18 few suppliers of sodium sulfur energy storage systems preclude this option as a
19 commercially available, mature technology." [FS, p. 57]

20 As articulated in the Magruder Testimony, and using the initial quote above, shows this
21 technology is being implemented by 50 utilities, and there is a waiting list of subscribers. This
22 and several other storage technologies shown in Figure 13 of the Magruder Testimony (p. 47)
23 also are readily available, including simple alkaline batteries (and not recommended by NCI).
24 Storage does exist in case two years from now delivery of a NaS storage system could be
25 delivered. A local leased generator also is within another "screening criterion" that states:

26 "Any individual component or program where several measures are considered should
27 be able to meet capacity needs for at least five years; for example, DSM options
28 should be able to defer capacity upgrades for at least three to five years (to provide
29 sufficient time to implement other solutions - i.e., a hybrid option - before capacity
30 shortages occur)." [FS p. 55]

d. Try Some New Technologies.

Mr. Orozco was questioned with respect to "why doesn't Sulphur try come of the new
technologies Mr. Magruder suggested that you didn't otherwise cover?" [Tr. 403, 7-12] Mr.

1 Orozco's response was "we are trying to provide safe and reliable power and do it smartly, do it
2 reasonable. We are not cutting edge researchers....I find Mr. Magruder's proposal unfounded
3 technically, and a mixture of mumbo-jumbo of technologies that are neither proven nor
4 commercially available, simply not a solution for a rural feeder of this sort." [Tr. 403, 7 to 405, 25]

5 **Response.**

6 My Testimony did not contain a proposal because that was not the aim of these hearings to
7 determine if there was justification to immediately order construction of the proposed 69 kV line.
8 With very few exceptions, my Testimony contained information from the Feasibility Study, which
9 I would not class as "mumbo-mumbo" by any imagination. Again, my Testimony showed there
10 were ways to reduce outages, to meet peak demand and to use renewable energy alternatives as
11 a way to resolve the issues in the V-7 service area.

12 **3.4.5 Responses to Urgency Comments.**

13 This paragraph responds to comments that pertain to the issue in these hearings, that is
14 the urgency for starting construction of the 69 kV line. That is the subject of the Cooperative's
15 petition. This petition did not demand that any other solution be considered; only the proposed
16 69 kV and immediate construction were necessary. My testimony was based on the issues in this
17 hearing and will be expanded to cover the other alternatives for the July hearings. The following
18 are discussed:

- 19 • Magruder's Plan for the Affected Area.
20 • Why not construct the substation now?

21 **a. Magruder's Plan for the Affected Area.**

22 Mr. Orozco was then asked, "to describe your understanding of what Mr. Magruder's plan
23 is for the affected area." [Tr. 398, 2-4]

24 **Response.**

25 My "plan" was not given in this Magruder Testimony, because only the urgency for
26 "immediate construction" was the issue at hand. What my testimony did accomplish is to show
27 that the Feasibility Study did not make a statement that "immediate construction" of the 69 kV
28 line had to be started right now and not several months from now, after comprehensive hearings
29 will go through all the combinations and mix of options.
30

1 Mr. Orozco questioned if the Magruder plan had "any technical information that would
2 imply how I would get gas from whatever company in Patagonia over to a location where he
3 intends to put a two megawatt gas turbine" [Tr. 399, 4-7] First, he knows that UNS Gas has the
4 CC&N for all of Santa Cruz County, that there is a UNS Gas line adjacent to one of the SSVEC
5 property boundaries in Patagonia, and that all he has to do is request natural gas from UNS Gas,
6 just like any other customer for such service. This kind of detail is not relevant to the petition for
7 "immediate construction" of a proposed 69 kV line.

8 The whole premise, when writing my Testimony was to show that

- 9 (1) Reliability in terms of decreasing outages was showing some improvements and that
10 actions would be necessary to make better reliability improvements, and that
11 (2) Capacity issues are available by several means other than the 69 kV line, and that
12 (3) Combinations of renewable energy, demand side management, and distributed
13 generation actions should be able to solve the problems in the affected area, probably
14 without the 69 kV line.

15 The Magruder "plan" has been outlined in my testimony on pages 59 and 60 to be
16 completed and filed before the July hearings. The "trade-off" section will be where
17 alternative are assessed for various common attributes and scored to determine that will
18 be the best for the affected his area.

19 **b. Why not construct the substation now?**

20 Mr. Orozco was then asked, based on Mr. Magruder's testimony on pages 28 and 29, he
21 asks "why Sulphur did not proceed with the construction of the new Sonoita substation or... why
22 didn't the company continue with this construction?" [Tr. 407, 5-11] Mr. Orozco responded with
23 "it was very clear that the Commission did not want Sulphur Springs doing a darn thing on this
24 project." [Tr. 407, 12-24] He continued with "putting in a substation in without a source doesn't
25 make any sense." [Tr. 407, 1-2]

26 **Response.**

27 Upon careful reading of the Commission Decision No. 71274, I only read about
28 prohibitions concerning the 69 kV line. Below are the relevant ordering paragraphs from 71274:

29 "IT IS FURTHER ORDERED that Sulphur Springs Valley Electric Cooperative, Inc.
30 as a matter of compliance, shall docket by October 30, 2009, a report setting forth the
manner and dates is shall conduct public forums in the communities served by the
planned 69kV line and associated upgrades. This report shall also discuss the topics

1 to be addressed at the public forums and the topics shall include, but not be limited to,
2 addressing how renewable energy generation (in particular distributed generation)
3 could be incorporated into the generation plans to serve the area covered by the
planned 69kV line and associated upgrades.

4 "IT IS FURTHER ORDERED that by July 30, 2010, Sulphur Springs Valley Electric
5 Cooperative, Inc., as a matter of compliance, shall docket a report discussing the
6 outcome of the public forums and also discussing how it plans to incorporate the
reasonable and effective renewable energy proposals resulting from the public forums.

7 "IT IS FURTHER ORDERED that Sulphur Springs Valley Electric Cooperative, Inc.
8 as a matter compliance, shall docket by December 31, 2009, a feasibility study
9 prepared by an independent third party that includes alternatives (including use of
10 distributed renewable energy) that could mitigate the need for construction of Sulphur
11 Springs Valley Electric Cooperative, Inc.'s proposed 69 kV project. The feasibility study
12 shall be available for discussion in public forums conducted by the Sulphur Springs
Valley Electric Cooperative, Inc. in the impacted communities. A report and minutes
from these public forums shall be docketed by Sulphur Springs Valley Electric
Cooperative, Inc. no later than July 30, 2010.

13 "IT IS FURTHER ORDERED that Sulphur Springs Valley Electric Cooperative, Inc.
14 shall not commence construction of the referenced 69 kV line until the public has had
15 an opportunity to review and comment on the report and until further Order of the
Commission." [Decision No. 71274, p. 48, 5-26]

16 A review of these paragraphs would show that the word substation is not mentioned
17 as a part of any of these orders. In particular the last "order" states "shall not commence
18 construction of the referenced 69 kV line."

19 **3.5 Comments Concerning the Testimony of Mr. Patrick Scharff, TRC,**

20 Mr. Patrick Scharff, one of TRC participants, who acted as a liaison between the Cooperative and
21 NCI during the study process, testified how this was implemented for the Feasibility Study. As Mr.
22 Scharff, a professional engineer, was primary a liaison person between the Cooperative and
23 Navigant, the Study contractor, no comments are included in this Response.

24 **3.6 Comments Concerning the Testimony of Ms Deborah White, SSVEC.**

25 Ms. Deborah White, the Cooperative's Real Property Manager, testified customer communications
26 during the SRP, the December 2009 outages, and to refute criticism against the Cooperative's
27 presentation of outage information.

28
29 **3.6.1 Responses to Reliability Comments.**

30 This paragraph discusses various reliability comments by Ms. White that includes her
questions and/or responses to the following issues

- 1 • Other SSVEC feeders have higher outages than the V-7 feeder.
- 2 • Causes of Outages in the service area.
- 3 • Outages by Number of Customers Affected, Over 90% of the outages impact 3 or fewer
- 4 customers
- 5 • Reliability “standards”
- 6 • The 3 versus 270 hours question in terms of “customer hours per customer”.

7 **a. Other SSVEC feeders have higher outages than the V-7 feeder.**

8 Her attorney questioned about Figure 2 on page 22 of the Magruder Testimony with

9 “[H]e further states that at least three other feeder lines with higher hours of outage
10 and two other feeder lines with higher number of customer hours of outage as a
11 comparison with other Sulphur feeders with the V-7. Do you agree with that
statement?” [Tr. 599, 2-6]

12 to which she responds

13 “I want to first clarify that this table was not prepared by SSVEC. And Mr. Magruder
14 states that the table used data from SSVEC 2008, 2009. Yet it was initially presented
15 to SSVEC as 2008 minus November data.” [Tr. 559, 8-12]

16 **Response:**

17 My testimony never said this was prepared by SSVEC, in fact, the figure is clearly
18 annotated by the names of who conducted the analysis. This data was obtained from the
19 Corporation Commission. When the table was prepared, it was thought only 11 months of data
20 were present with November missing. Upon additional review, it was found that 12 months of
21 data were present, however, November of 2008 was missing but January 2008 and 2009 were
22 included. The words reflected this; however, the figure was not changed since original
23 presentation. It is interesting that Ms. White did not discuss the fact that other feeders had higher
outages than the V-7.

24 **b. Causes of Outages in the Service Area.**

25 Her attorney questioned about Figure 4 on page 24 of the Magruder Testimony with

26 “Figure 4 discusses causes of outages, in particular natural, you know, weather, bird, animals,
27 which are dominant on the V-7 feeder. And what is your response?

28 “A. Outages from weather related occurrence are common on most rural feeders...” [Tr. 559,
19-25]

29 Her response agreed with the figure.

30 **Response.**

1 The Magruder Testimony continued on and stated

2 "The 350 miles of existing utility poles represented by Figure 4 will remain in the V-7
3 area. The additional 23 miles of the proposed 69 kV line will not make any changes to
4 the results in Figures 3 and 4 above. In fact, any additional outages on the 69 kV line
5 will need to be included whenever that line fails, to increase the potential total number
6 of outages per customer per year or SAIDI. The substation, which is independent of
7 the 69 kV line, improves outage reliability." [Magruder Testimony, p. 24]

8 Ms White comments were that the 69kV line will "serve the substation, but that will split
9 the load, which will reduce the number of outages created by performance issues." [Tr 560, 21-
10 23] She missed the whole point is the above discussion, that the 69 kV line (just the line) adds
11 another 23 miles of line that can fail. No lines are being removed.

12 **c. Over 90% of the outages impact 3 or fewer customers.**

13 Ms. White was asked to see if this statement was right. She responded with a comment
14 that did not make sense or was understandable. [Tr. 561, 7-19]

15 **Response:**

16 My Testimony was much clearer when discussing Figure 6, on page 26 which had no
17 response from Ms White.

18 "About 850 of the approximately 1100 outages in the past ten years impacted only
19 ONE customer, almost 78%. According to NCI, **over 90% of the outages impacted
20 less than 3 customers.** This shows that transformers to service lines, with 1 to 3
21 customers per service line, appear to be where the vast number of outages occurs.
22 The 69 kV line will not resolve the transformer fuse reliability issues that average of 75
23 outages per year." [Magruder Testimony, p. 26, 17-22, emphasis in original]

24 **d. Reliability Standards.**

25 Ms White states

26 "The reliability indices defined in the guideline of the IEEE are typically intended for
27 benchmarking purposes only and not a set standard of performance." Tr. 562, 2-5]

28 and later she states

29 "The indices are essentially useless for comparing utility performance unless
30 discrepancies are identified and understood." [Tr. 562, 11-13]

Response:

The short title of the IEEE document we are discussing is IEEE Std 1366:2003. This document is an IEEE "Standard". There are many IEEE, ANSI, RUS, and other standards. My

1 Testimony refers to the document as a "standard" and the values from using this document as
2 "indices." Many but not all standards publications are guidelines and not specifications.

3 I agree. In IEEE Std 1366, there is a set of results obtained from a large number of US
4 electric utility companies. Based that data, quartiles have been determined. The Corporation
5 Commission also uses the data in Table 2 of my Testimony (p. 20) and during its rate case
6 reviews have produced tables in the format of Table 3 for various feeder lines, in particular, the
7 worst three for the company. The Commission Staff understands that there are significant annual
8 variations, thus look for a minimum of five years of data. For the V-7 feeder, ten years of data are
9 available, as shown in Table 3 of my Testimony.

10 Note, in my opinion, Table 3 is not "useless" as one can see annual variations for the three
11 indices shown. Also, if improvements trends are present. Using quartiles, fairly broad groupings,
12 you can see if you are above or below national averages (which aren't perfect, but does SSVEC
13 have any better way to do this?).

14
15 **e. The 3 versus 270 hour question in terms of "customer hours per customer".**

16 Ms. White goes trough pages of testimony trying to explain "customer hours per customer"
17 process that seems to be unique to SSVEC. Her discussion about the "Navigant" process is in
18 terms of "outage hours per customer per year."

19 **Response:**

20 The "Navigant" process is identical to the IEEE Std 1366 System Average Interruption
21 Duration Index (SAIDI). I'm reasonably good whends determining performance measures (having
22 written professional papers on this subject, see my resume) but I see absolutely no value in what
23 she has been calculating, especially since she does NOT account for "the number of customers
24 impacted." [Tr. 566, 4-5]

25 **3.6.2 Responses to Demand/Load Comments.**

26 This paragraph contains responses involving demand, loads and peak comments that
27 include

- 28 • Pre-meter Construction Service
- 29 •

30 **a. Pre-meter Construction Service.**

1 Ms. White states in response to my Testimony that there is only one “new construction”
2 site with a temporary electrical connection in the V-7 service area with
3 “they had to pay a minimum until the meter was actually connected.” [Tr. 555, 22-23]

4 **Response:**

5 Ms. White missed the point. Obviously, there is very little “new” construction ongoing in
6 this feeder service area, “until the meter is actually connected.”

7 **3.6.3 Responses to Cost Comments.**

8 Ms White made no comments concerning cost.

9
10 **3.6.4 Responses to Future Comments.**

11 This paragraph contains comments from Ms White that involve future requirements for
12 this service area that include

- 13 • Pre-meter Construction Service
- 14 • Number of Homes
- 15 • Santa Cruz County and Cross-Roads Comprehensive Plans

16 **a. Pre-meter Construction Service.**

17 Ms. White was asked by the company attorney to describe this service that was
18 discussed in the Magruder Testimony on page 34. Ms White states

19 “they had to pay a minimum until the meter was actually connected.” [Tr. 555, 22-23]

20 **Response:**

21 Ms. White comments concur with my testimony, that this is a “pre-meter construction”
22 service before “the meter was actually connected.” The point in my Testimony was that there was
23 ONE person using this rate category, thus, there was ONE construction-oriented meter. This, to
24 me, means there was only one construction site of all of the meters listed in that table. Obviously,
25 there is very little “new” construction going on in this feeder service area.

26
27 **b. Number of Homes.**

28 Ms. White was asked by the company attorney to describe the comments from Magruder
29 Testimony on page 37 about the hundreds of homes being planned for the Patagonia area but he
30 also says that “only about a dozen of so homes are being constructed this year in the V-7 service
area.” [Tr. 556, 5-6] Ms White replies with

1 "this is a misrepresentation and SSVEC has never stated that this is the number of
2 new services that we have. It is a commitment... to a developer." [Tr. 556, 15-17]

3 **Response:**

4 Understood, however, large numbers of new home developments have been used as
5 justification for a moratorium. It is noted that actual homes being constructed was not rebutted
6 by Ms. White.

7 **c. Santa Cruz County and Cross Roads Comprehensive Plans.**

8 Ms. White was asked by the company attorney if she agreed with the Magruder Testimony
9 references to the Santa Cruz County Comprehensive Plan references to restrictions to the Santa
10 Cruz Active Management Area and implementation of the Sonoita Crossroads Comprehensive
11 Plans. Ms White states

12 "Mr. Magruder did not provide any documentation of that particular statement." [Tr. 558, 11-12]

13 **Response:**

14 The 2005 SCC Comprehensive Plan is available from the county's homepage. On pages 61-
15 62, the future population restrictions are given for assured water supply (without your property
16 will be designated as a "dry lot: with no access to water). Embedded in the county's plan are
17 relevant references to the Sonoita Crossroads plan that was used as a model when drafting the
18 county plan. The two plans were integrated with these references.

19 **3.6.5 Responses to Urgency Comments.**

20 Ms White made no comments concerning urgency.
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Section 4

Response to Commission Staff Witness

4.1 Comments Concerning the Testimony of Mr. Elijah Abinah, Commission Staff.

Mr. Elijah Abinah, the Commission's Assistant Director of the Utilities Division, duties includes making recommendations to the Director of this division for all filings. He testified that he believed the company complied with Decision No. 71274 with respect to completion of the requirements for the feasibility study and public forums. [Tr. 803, 19-24] When asked if he had seen the Public Forum "report" filed by the company, he said, "I have not seen the report." [Tr. 804, 3-4] The ALJ then continued with "There has been some suggestion that the Commission wanted more." And this witness responded "To the best of my knowledge I believe the company complied with the Commission's requirement." [Tr. 804, 9-12]

Response:

It appears, as indicated in my oral testimony, that "filing the checklist" is defined as compliance. In this case, even without seeing the report, it had been determined to be compliant. This means that "filing" equates to compliance; however, it is not the content or what is inside the report in respect to "compliance."

I have a problem with this approach, not only in this issue but in general with the Commission's statements that "compliance" means "filing" without any review by the Commission as to its content. As implied by the question above, is there more than submission of a report? In my opinion, the report is just the vehicle to report the results so that the Commission can then review and determine if meaningful Public Forums were held, that the public participated and understood the issues being presented, and that all sides of issues were discussed.

As shown in this report, there was one PowerPoint slide that discussed the 20 different Alternatives and that one slide is illegible in printed form and must not have been readable during the "presentation". Each of these 20 alternatives needed to be discussed, but the next slide had reduced this to five remaining alternatives. These were briefly discussed and only the 69 kV line remained in the next few minutes. In my opinion, all 90 minutes should have been devoted to these two slides, with nearly all the figures and tables from the excellent Feasibility Study shown

1 and discussed during these Forums. There was no “give and take” only a “take it or leave” attitude
2 at the Cooperative’s presentations,

3
4 **4.1.1 Responses to Reliability Comments.**

5 Mr. Abinah recommended that line crews be located nearer to the service area as
6 recommended by the Feasibility Study.

7 **Response.**

8 Concur.

9 **4.1.2 Responses to Demand/Load Comments.**

10 Mr. Abinah did not comment on this issue.

11
12 **4.1.3 Responses to Cost Comments.**

13 Mr. Abinah did not comment on this issue.

14 **4.1.4 Responses to Future Comments.**

15 Mr. Abinah recommended that the Cooperative educate and encourage its customers on
16 measures such as energy efficiency and use of renewable energy. [Tr. 805, 12 to 806, 8]

17 **Response:**

18 The Third Santa Cruz County Energy EXPO was held the next day at Patagonia High School,
19 where two sets of presentations by local energy efficiency including renewable energy
20 demonstrations and displays. I provided programs and maps to all parties at the hearing. Exit
21 polls all were favorable concerning this EXPO with 187 actual responses received. Another in the
22 series of successful Santa Cruz County EXPO!

23 A table was provided for the Cooperative to discuss the Feasibility Study, as a part of
24 continuing dialog from the Public Forum. The Cooperative had been informed they would have
25 such a table available to continue education with the public concerning energy efficiency,
26 renewable energy and demand side management programs. No one from the Cooperative showed
27 up and this table was the only participant that did not show up for this EXPO. It seems to me that
28 the public is ahead of the Cooperative on these three issues. Maybe a better recommendation
29 might have been for the public to educate the Cooperative as to what its members want in the
30 areas of Energy Efficiency, renewable energy and demand side management.

1 Most are unaware that the Commission has approved set rules to require public utilities to
2 achieve annual savings of at least 22%, measured in kW-hours, through demand side
3 management (DSM) programs including Energy Efficiency, load management and demand
4 response programs that were approved last December. These rules are described at the “less
5 expensive than building new power plants.” I concur that education of these rules is essential,
6 especially in the V-7 feeder area.

7 The population of the Town of Patagonia is under 1,000 people (estimated at 954), and if
8 all 187 were from Patagonia, then at least 18.7% participated in this EXPO, which I would say is
9 an excellent indication of the interest in these areas in the local community.

10 Funding for this EXPO was from a “stimulus grant” for Renewable Energy education, local
11 vendors at the EXPO including SSVEC. The Second Santa Cruz County Renewable Energy EXPO
12 was held in 2009 at the Sonoita Fairgrounds, with an estimated 300 to 350 attending. The first
13 SCC Solar EXPO was in Tubac with over 150 attending, and I was the coordinator with eight
14 vendors and UNS Electric participating with presentations on what is a solar systems,
15 preparations for solar, demand side management and the UNS Electric rebate programs. These
16 Solar and Renewable Energy EXPOs are becoming annual events, with future ones expected in Rico
17 Rico, the City of Nogales and Elgin/Sonoita in the next year. The public wants to know about
18 these programs.

19 **4.1.5 Responses to Urgency Comments.**

20 Mr. Abinah did change the recommendations from the rate case. [Tr. 806, 2-8]
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1 **Section 5**

2 **Magruder Oral Testimony and Responses to Cross-Examinations**

3
4 **5.1 Introduction and Magruder Oral Testimony**

5 Prior to starting my oral testimony, I had planned to respond to various witnesses
6 comments that concerned my testimony and to comments made during the Public Comments.
7 While going through these, I as asked to present my oral testimony, and changed to what I had
8 planned but was unable to find my "script" or notes I was outlining my comments. I spoke from
9 memory. Then cross-examination began, with no questions from the intervenors. The company's
10 attorney had many leading questions that were obviously designed to have me say something
11 that supported his case.

12 I had on exhibit that, when leaving my script on my computer, I forgot to present in
13 response to Public Comments. It was just a page from the *Santa Cruz County Road Atlas*. I brought
14 this "atlas" that shows all the roads including interstate, state, county and private with platted
15 lots and address numbers. When I purchased my property in 1998, copies of pages in that
16 document were used by every real estate agent we met, with a similar such atlas for Pima County.
17 The reason this document is important is that it "is" an official county document. About ten years
18 ago, the legislature passed a law that required counties (and other political entities) to show
19 transmission lines and planed transmission line corridors on county maps. As I participated
20 during the development and writing of the *2004 Santa Cruz County Comprehensive Plan* between
21 2002 to 2004, I brought this to the attention of those involved, that transmission lines and plans
22 should be shown in the Comprehensive Plan and other county documents. On page 31A that
23 covers the area of 69 kV line, there are NO such transmission lines shown, thus the Public
24 Comments that people should have known there were such lines being planned since 1982 would
25 not have been informed by the *Comprehensive Plan* or the *Street Atlas*. There is a rough drawing
26 of the TEP 138 kV lines to Fort Huachuca that cross through the eastern end of the affected area.

27 **5.2 Magruder Responses to SSVEC's Cross Examination.**

28 Prior to starting my oral testimony, I had planned to respond to various witnesses'
29 comments that concerned my testimony and to comments made during the Public Comments.
30 While going through these, I as asked to present my oral testimony, and changed to what I had
planned but was unable to find my "script" or notes I was outlining my comments. I spoke from

1 memory. Cross-examination began, with no questions from the intervenors. The company's
2 attorney had many leading questions that were obviously designed to have me say something
3 that supported his case.

4 The first cross-examination questions pertained to the Public Forums and are in Section 7,
5 paragraphs 7.3 and 7.4 below.

6 My responses are clarified areas:

7
8 **5.2.1 Responses to Reliability Cross-Examinations.**

9 In my response during cross-examination, concerning Mr. Orozco's responsibilities with
10 respect to

11 **a. A Correction to a Response.**

12 I have a correction to a statement in during cross-examination in response to the question:

13 "if Mr. Orozco was to adopt your recommendations as set forth in your testimony, and
14 you were wrong, hypothetically, ... lets' just say you were wrong and there is damage
15 to Sulphur's system as a result, or its customers, or damage to its, I am sorry, damage
16 to its customers, would you agree with me that Mr. Orozco and perhaps Sulphur as a
17 regulated utility would bear that responsibility?" [Tr. 5-12]

18 and my response was:

19 "I have been through problems with people in my county when they have had electrical
20 failure and brownouts and they tried to get their equipment replaced. And the Arizona
21 Revised Statutes exonerates the companies and the companies are not required to
22 replace a refrigerator [when it has] burned out. I was really surprised when I learned
23 that. But that apparently is the law in this state.

24 "So if a refrigerator burns out or a TV goes off the line because of a transformer failure
25 at the end of the utility pole, that person has – the utility has no liability." [Tr. 13-20,
26 emphasis added]

27 Upon checking, the Arizona Administrative Code (A.A.C.) should have been cited instead of
28 the Arizona Revised Statues, which reads in R14-2-208, Provision of Service:

29 "C. Continuity of service.

30 "Each utility shall make reasonable efforts to supply a satisfactory and continuous level
of service. However, no utility shall be responsible for any damage or claim of
damage attributable to any interruption or discontinuation of service resulting
from:

"1. Any cause against which the utility could not have reasonably foreseen or made
provision for, that is, force majeure.

"2. Intentional service interruptions to make repairs or perform routine maintenance.

"3. Curtailment. [A.A.C., R14-2-208]

This paragraph from the A.A.C. has been used to deny claims for damage when a service
line transformer surged for several days blew out with damages to computer, telephone modem,

1 printer, copier, and a refrigerator. Another claim was for replacement of underground cable from
2 the service box to the customer meters. The utility company has originally installed this cable.
3 After many debates, the cable complaint was finally resolved. It took several six months.

4 **5.2.2 Responses to Demand/Load including Peak Comments.**

5 No comments.

6
7 **5.2.3 Responses to Cost Comments.**

8 No comments.

9
10 **5.2.4 Responses to Future Comments.**

11 No comments.

12 **5.2.5 Responses to Urgency Comments.**

13 These responses are with respect to cross-examination questions that pertain to the
14 “urgency” or the issue that immediate construction of the 69 kV line that include:

- 15 • Construction of the substation
16 • Use of the word “immediate”

17 **a. Construction of the Substation**

18 In paragraph 3.5.b above there is a discussion concerning early construction of the Sonoita
19 substation. I am asked about the third ordering paragraph (in 3.5.b) from Decision No. 71274, on
20 page 48, he questions with

21 “...and it says what that the feasibility study prepared by an independent third party
22 that includes alternatives including use of distributed renewable energy that could
23 mitigate the need for construction of the Sulphur Springs Valley Electric
24 Cooperative’s proposed 69 kV project.

24 “...would you agree with me then ... my only question, final point is on this, as I read
earlier, that the term project defines, included the substation.”

25 And then goes on to get me to say “I agree and ... I didn’t mean to mislead... I just missed
26 the definition.” [Tr. 787, 9 to 788, 25]

27 In fact, since the words in the above ordering paragraph discuss the 69 kV line as a
28 “project” without reference to either the Project or the Sonoita Reliability Project, then it is very
29 clear that only the 69 kV line is intended to be included in this ordering paragraph.

30 **Response.**

1 Upon review of the Order, the part discussed above from page 48 on line 20 has the words
2 "proposed 69kV project." Again, the term substation is not found on page 48. However, earlier
3 on page 36, there is a clear definition of the Sonoita Reliability Project as follows:

4 "After years of study and analysis, the Cooperative states that it identified that the best
5 solution to the problem is a new substation in Sonoita, with four shorter feeders and
6 upgrading the transmission to 69 kV (the "Project")." [Decision No. 71274, 36, 10-12]

7 This is the definition for the Sonoita Reliability Project with the word "Project" both
8 capitalized and in parenthesis, a technique used in these kinds of proceedings to define an
9 acronym, or an abbreviation.

10 Therefore, **I retract that oral statement.** This is another example of being misled.

11 **b. Use of the word "immediate".'**

12 Mr. Carroll asked me if I testified that the word "immediate" was used only once in the
13 Feasibility Study and indicated it was used four or five times. I agreed with an "okay" response.
14 He then asks me

15 "[D]id you testify also that you felt that there was no immediate need for Sulphur to
16 commence construction of the 69 kV line, is that correct?

17 "A. Yes.

18 "Q. Okay

19 "A. Which is the purpose of today's proceeding.

20 "Q. Correct.

21 "A. Okay.

22 "Q. An again, I am looking at the study. I am looking at two places... on page 64, one,
23 where it says action needs to be taken immediately, in italics, by Sulphur to avoid
24 equipment overloads; accordingly, the impact of new service applications on the Ft
25 Huachuca substation loading should be carefully evaluated.

26 "I am also looking on page 3 of the study, which is part of the executive summary.
27 Again Navigant's conclusion was that – indicates that Sulphur should take immediate
28 action to address current performance issues and capacity limits, including carefully
29 addressing the impact of customer requests for newer or expanded service in the V-7
30 performance service.

"And I am getting to my question. Okay. So having you read you those two parts of
the study, is it still your... testimony that no immediate action is needed?

"A. No, that's not my testimony. My testimony is immediate action is needed. I am not
disagreeing that immediate action is needed.

"Q. I think action was – could have started. I hope – that's why I tried to stay [say] on
the substation months ago.

"

Response.

Concur with my comments above.

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Section 6

Response to Comments by the Cooperative's Attorney

6.1 Introduction

This section provides a rebuttal of various statements made by the Cooperative's attorney, which was not cross-examined, that are in the record without comment.

6.2 Opening Statement Comments and Responses.

No comments.

6.3 Statement Before Presenting the Cooperative's Witnesses and Responses.

This attorney summarized his view of the Public Comments and discussed the following:

6.3.1 A New Mine Needing Power.

a. "[T]his mine is not in Sulphur Springs' service territory" [Tr. 113, 16-16]

Response.

This is true, however, there will be no other power source readily available. The partial upgrade from 115 kV to 138 kV transmission line from TEP's Vail substation to UNS Electric's Valencia substation will not be completed until at least 2012. It would need to be then upgraded to a double-circuit 138 kV transmission line. In addition to the second circuit, at least 25 miles of additional transmission structures will be required that were constructed only to handle a single circuit. The upgraded single circuit 138 kV line capacity is about 120 MW (the new Rosemont Copper mine in Pima County has a continuous operational demand requirement for 143 MW according to its *Mine Plan of Operations*).

The future V-7 feeder area demand is less than 10 MW by 2029 is at least an order of magnitude smaller than the demands by a mine, and making the Cooperative membership pay for infrastructure for such a mine would be unconceivable and, in my opinion, immoral based on the Cooperative's arguments to date.

UNS Electric could not serve such a mine without expending more than SSVEC. To serve power in another service territory requires a "cross-boundary agreement" between UNS Electric for the Cooperative to meet the very high demand needs for up to three mines. This agreement requires Commission approval. The existing Valencia substation is nearly at its peak capacity and in another docket, E-01032A-09-0401, I requested in 2005, that the Commission-approved in

1 Line Siting Case No. 111, "Gateway" substation, be constructed as soon as possible. The existing
2 Valencia substation is in the 100-year floodplain and a 100-year flood would cripple Nogales,
3 thus a second substation is essential for backup purposes. In 2001, the City of Nogales approved
4 the permits for this second substation to be constructed to serve Nogales in the NW corner of the
5 City. To the best of my knowledge, including discussions within the past month, no action is being
6 taken on construction of this substation. It will need a CEC modification to upgrade from 115 to
7 138 kV between Valencia and Gateway before the other 138 kV line becomes operational in 2012
8 or later.

9 b. "[A] claim was made that perhaps Sulphur...[could using] the new 69 kV line to
10 install a 138 kV line." [Tr. 113, 23-25]

11 **Response:**

12 The sum of $69 + 69 = 138$, thus a double-circuit 69 kV line could equal 138 kV but will less
13 power carrying capabilities. Still the large demands by mines, for example, the largest single
14 consumers for TEP, will need at least whatever the Cooperative can provide and probably even
15 more power, such as the potential upgrading by TEP of its existing 46 kV line that passes through
16 the affected area.

17 A logical solution to provide power for these Patagonia mines would be to upgrade to 115 kV
18 or 138 kV along the proposed 69 kV alignment and continue to Patagonia and then to the mine.
19 The Mountain Empire communities have continuously fought and succeeded to keep
20 transmission lines away from the designated Scenic Highway SR-83 from Nogales to Sonoita and
21 SR-82 from Sonoita northward. Some Public Comments indicated this concern.

22
23 **6.3.2 Reliability Concerning Medical and Life-Support Issues.**

24 "[W]hat we have is unreliable. Two years ago my husband had a massive heart attack..."
25 [Tr. 114, 13-17]

26 **Response:**

27 As we know, no electrical distribution system is without fault, all have outages. In particular,
28 over 95% of the outages occur in the distribution system when compared to generation and
29 transmission systems. Since an outage is always a possibility, one must be prepared to ensure the
30 safety of everyone on medical equipment needed for life support. The Feasibility Study also
showed that over 90% of the outages were for three or fewer customers. Thus, having "smart"

1 distribution system will be essential to ensure the Cooperative knows when there is a fault,
2 especially when residential customers are asleep.

3 In another docket, I have personally worked very hard to resolve this problem, in particular
4 to ensure than ALL persons who need electricity for medical reasons are taken care of during any
5 and all electrical outages. I have not been successful so far; however, the comments in this letter
6 as quoted by the Cooperative's attorney are for me, a high personal priority.

7 Further, the Magruder Testimony, Section 3, shows that the reliability of this feeder is to be
8 expected for this kind of large rural area.

9 **6.3.3 Least Cost Viable Option.**

10 **"It [the 69 kV line] is the least cost viable option." [TR. 115, 15]**

11 **Response.**

12 The criteria for selection of alternatives are questioned, as was also noted by NCI during
13 negotiations, and the study's conclusions changed from including renewable options to only the
14 69 kV line. Further, of the five viable options, the two with the 69 kV had the highest cost, while
15 renewable energy, distributed generation and demand side management had lower costs by a
16 factors between three and five.

17 **6.3.4 Visual Impact.**

18 **"It [the 69 kV line] will impact the fewest number of residents. It has the least number
19 of visual constraints." [TR. 115, 15]**

20 **Response.**

21 The Feasibility Study visual impact summary and conclusions does not agree, as follows:

22 "As outlined in the evaluation above, varying types and levels of visual constraints are
23 associated with the alternatives being considered. Overall, due to their proximity to
24 public roadways, three options- T2, T3 and D3 could result in noticeable visual change
25 that would be seen by the greatest number of viewers in the project area. **Several
26 options including D1 and the demand-side options would result in virtually no
27 effect on existing visual resources or public views.** A second group of options
28 including D2, D4, R4 and R5 could involve a minor level of visual change. Depending
29 on site locations, the solar renewable options R1 and R2 could result in a minor to
30 substantial level of visual effect. Finally, **the 69 kV Transmission Supply options (T1-A through T1-D) would represent the most substantial degree of visible change because each of these options would introduce more than 20 miles of new transmission line and a new substation facility into the landscape setting.** [FS, p. 76, emphasis added]

1 It is a serious misstatement to claim that the T1 (proposed 69 kV line) route has the least
2 visual constraints; in fact, the 69 kV line has the most visual impacts. The study states that of the
3 four T1 options, that

4 "In comparison with to the other variations shown in the table [13] below, the T1
5 -A route has the least visual constraints due to its relatively lower exposure to
6 residential and roadway views. In addition, most of this route variation follows
7 existing distribution lines which would tend to decrease the degree of
8 noticeable visual change." [FS p. 72]
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SECTION 7

RESPONSE TO PUBLIC COMMENTS AND PUBLIC FORUMS

7.1 Introduction

Two busloads of SSVEC customers were brought to the hearings in busses chartered by the Cooperative with free box lunches [Tr. 66, 12-17]. These Public Comments included several employees of the Cooperative for locations including Herford, Sierra Vista, including at least one who was being paid while making his comments. Their employees who followed then all stated that they were "going to take the day off" or "were here on my own time." Some bias may be expected from most of these comments.

Responses below to some are not included, such as one that states,

"I am opposed to the idea that anyone can speak at open meetings. I believe that cooperative members, whether they are employees or not, if they have a membership number with the co-op should be the only people to speak at open meetings. I believe this because they are the ones being affected the most." [Tr. 42, 4-10]

These words speak for themselves. Another said,

"This is simply an example of an obnoxious minority costing the silent majority." [Tr. 58, 2-3]

Again, these words speak for themselves.

There were some who commented that a "few landowners in Sonoita" [TR. 42, 15-16] were causing this issue; however, a petition with 194 signatures was previously submitted by those living "in the affected" area calling for use of other alternatives than the 69 kV line, with emphasis on renewable energy sources [Tr. 82, 23-24].

The Public Comments from the majority at the 24 March 2010 hearing [Tr. 88, 8-13] were a planned SSVEC counter to the other two Public Comment sessions in February 2009 when about 25 opposed the 69 kV line and by another 40 speakers in August 2009 [Tr. 82, 22], where a significant majority supported alternatives other than the 69 kV line. Translating to the Tucson population, these 40 speakers would be equivalent to 18,000 speakers and the petitions would represent 100,000 citizens. This is not an insignificant minority group [Tr. 82, 22 to 83, 5].

7.2 Responses to Some Specific Public Comments on 24 March 2010

Below, I have summarized by major topical area, comments made by the Public that include comments concerning improving reliability, meeting the demand/load needs, cost, and the future.

1 Responses to these are in the following paragraphs 6.2.1 to 6.2.5. There were other comments,
2 not related directly with the immediate construction of the 69 kV line in 6.2.6 below.

3 These are not all the Public Comments, but would be considered as a representative
4 sample with reference to the transcript as to their origin. Major topic areas group them.

5 **7.2.1 Responses Concerning Reliability.**

6 There were many comments concerning reliability, that included various expressions, such as
7 those summarized below:

8 **a. Outages:**

- 9
- 10 (1) Disagree with Study concerning outage numbers that only 2 or 3 are affected [Tr.
11 15-19; 35, 25 to 36, 3]
 - 12 (2) Life-support and medical equipment during an outage [Tr. 12, 23 to 13, 1; 30, 5-11;
13 30, 17-20; 31, 8; 48, 15-20; 87, 3-6]
 - 14 (3) The elderly are afraid [Tr. 75, 22-24]
 - 15 (4) Many electrical outages, sporadic outages [Tr. 8, 8; 27, 17; 55, 2-3]
 - 16 (5) I believe SSVEC when they say people in Patagonia and Sonoita have multiple,
severe outages caused by an antiquated power distribution system [50, 8-11]
 - 17 (6) Over the years my outages have become fewer and shorter, no complaints [82, 7-9]
 - 18 (7) I live in Sonoita. I don't have outages that often. It is a bleep. It doesn't bother me. I
19 reset my timers ... I certainly am not complaining about their service. [Tr. 62, 22-25]

20 **Response:**

21 First, the 3.0 hours of outage per customer per year is based on the past ten years. This is
22 from the Feasibility Study and reflected in the Witness Marshall Magruder Direct Testimony,
23 Downing Exhibit D-2, of 16 March 2010 (hereafter Magruder Testimony) in Figure 1 (p. 18).
24 These outages impact one customer almost 78% of the time and three or fewer customers over
25 90% of the time as shown in Figure 6 (p. 26) of the Magruder Testimony. The commenter for (1)
26 appears to be misinformed.

27 Second, I was asked a question in 2005 by then Commission Chairman Gleason "what
28 happens to those on life-support during an electric outage?" and have been trying to implement a
29 solution for the past several years to reduce the issues in (2) and (3). See Commission Docket No
30 E-04204A-08-0589 for further information that should assist to remove these fears and anxiety.

Third, the total number of outages in (4) and (5) is within the acceptable range for this
rural feeder area as supported by the Feasibility Study including the quote in Magruder
Testimony, paragraph 3.1.1 [p. 17]. The existing distribution system will be significantly
improved with the substation's feeders.

1 Fourth, the Feasibility Study supports the improved performance in this feeder area and
2 Magruder Testimony in Figure 1 [p. 18] based on system improvements and upgrades being
3 made by the Cooperative's planning and maintenance personnel as reported in (6) and (7).

4
5 **b. Quality of Service:**

- 6 (1) Basic service is being maintained [Tr. 37, 19-20]
7 (2) Brownouts [Tr. 8, 8; 55, 5]
8 (3) Frequent flickering and power surges cause resetting and harming equipment
[Tr. 30, 22; 32, 14-19; 35, 20-25; 55, 3-5; 75, 19-21]
9 (4) Surges [Tr. 35, 20-25]

10 **Response:**

11 Comment (1) indicated additional services were expected than being provided.

12 The brownout comments (2) implies that voltage is sagging below an acceptable level. The
13 study states that the long 350-mile feeder has "momentary outages that clear via line or
14 substation reclosers that can also disrupt customer loads, particularly sensitive electronic
15 devices." (p. 20) When the substation is operational, voltage controllers at the substation will
16 have less load on each feeder to maintain voltage which should reduce brownouts. The data in
17 the Feasibility Study shows there were more pole transformer fuse failures of outages and all
18 other equipment failures combined. (Fig. p. 14)

19 Comments (3) and (4) are the results of recloser switches that impact the entire 350 mile
20 line. When the four feeders are installed, all connected to a common bus, there should be a
21 reduction by to about 25% of the present momentary (flicker) losses. Obviously an improvement,
22 without a 69 kV line.

23 **c. Restoration of Service**

- 24 (1) Length of line [Tr. 16, 1-13; 37, 20-24]
25 (2) Long response times from Sierra Vista to Patagonia (Tr. 16, 18-20)
26 (3) Restoration of Power [Tr. 16, 14-25]
27 (4) You can't get trucks into the Babocamari when the washes are running during a storm
28 [Tr. 64, 25 to 65, 15]

29 **Response:**

30 Comment (1) implies by this being a long line, restoration will take longer, obviously true;
however, when "cut" into four feeder lines, then each 'feeder' becomes a line, which is about 25%
shorter.

1 Comments (2) (and (3) are included in the Study's recommendations about pre-
2 positioning line crews during times when the probability of outages is higher (mornings, storms,
3 lightning, etc.) and the company has responded favorably to this recommendation.

4 Comment (4) implies that restoration on the 69 kV line will take much longer than on the
5 existing line from Mustang Corner to Sonoita, that is parallel to a main road.

6 **d. Present Reliability.**

- 7 (1) Reliability is not terrible. [71, 2]
8 (2) SSVEC said the [69 kV] line would improve reliability 15 to 30%. [Tr. 63, 6-9]
9 (3) Is this 15-30% worth the millions? [Tr. 63, 6-11]

9 **Response:**

10 At least one comment (1) understood that reliability wasn't perfect but it could have been
11 worst. Comments (2) and (3) question the overall cost of the substation.

12 **e. Need electricity for many reasons including heat, cooking, pumps, etc.**
13 **[Tr. 31, 2-5]**

14 **Response:**

15 Concur.

16 **7.2.2 Responses Concerning the Capacity, Load Demands and Peak Requirements.**

17 There were comments concerning impacts of load demands and impacts of peak on new home
18 construction, that included various expressions, such as those summarized below:

19 **a. The Feasibility Study, p. 3, says the peak is expected to reach 8,000 kW by 2029,**
20 **twenty years from now. [Tr. 63, 15-18]**

21 **Response:**

22 This is less than 12.5% growth in 20 years, from a peak of 7,000 kW in 2009, or 0.63% per
23 year or at a fairly slow growth rate. Further, lack of water will prohibit a large population in this
24 area.

25 **b. Capacity comments.**

- 26 (1) Capacity can be made up with renewable energy sources and storage
27 recommended by the Feasibility Study. [71, 3-5]
28 (2) SSVEC says minor upgrades and adjustments cannot solve existing system
29 performance problems and capacity needs. Will \$14 million do it? [Tr. 64, 8-11]
30 (3) Build a larger [sewage] line with greater capacity and get it in service before you
 have to buy more shovels and still spend more for a larger line [50, 15-21]
 (4) Only a higher capacity subtransmission line and substation facility can ensure a
 reliable source and backup. [Tr. 38, 16-19]

1 (5) Preferred alternative based on feeder performance and firm capacity requirements
2 is construction of a new 69 kV line [Tr. 27, 2-5]

3 **Response:**

4 Comment (1) supports alternative approaches to meet the capacity issue.

5 Comments (2) to (4) support installing a line that greatly exceeds future demands while
6 smaller, renewable and distributed generation can meet capacity needs.

7 **c. I question the actual need for a 69 kV line; will it alleviate our problems?**
8 **[Tr. 63, 4-6]**

9 **Response:**

10 The 69 kV line, a 23-mile long wire, does not solve most of the problems in this feeder area.
11 The substation with its multiple feeders and protective equipment is where increased reliability,
12 voltage and frequency stability will be enhanced, and power quality base lined for all four
13 distribution line feeders from that substation.

14 **7.2.3 Responses Concerning the Cost.**

15 There were several comments concerning cost, that included various expressions, such as those
16 summarized below:

17 **a. Based on my trust in SSVEC's prudent leadership, I firmly believe the co-op would**
18 **not commit millions on its members' dollars on a project that was unnecessary.**
19 **[50, 22-25]**

20 **Response:**

21 A "belief" that has no actual basis to prove it is true.

22 **b. Cost of Alternatives:**

- 23 (1) Alternatives increase cost [Tr. 8, 11; 11, 16-21]
24 (2) The "tax" we pay for Green Energy is not a market force and I oppose [44,
25 15-19]
26 (3) We can't afford renewable alternatives [Tr. 13, 1-4; 14, 2-5]
27 (4) People can't afford solar. [Tr. 63, 22-24]
28 (5) No economically viable renewable energy options replace the 69 kV line.
29 [Tr. 26, 18-23]
30 (6) Demand Side Management and Time of Use, from the Feasibility Study,
are ways to give customers incentives to shift the loads away from peak
are more cost-effective than the 69 kV line. [67, 7-14]
(7) Compare the mix of various alternatives to achieve all the SSVEC goals
during the regularly scheduled hearings. [71, 10-17]

Response:

1 Comments (1) to (4) assume that most of the costs for renewables comes from ratepayers
2 and thus oppose "green energy" and renewable energy options. There appears to be an
3 educational gap in understanding that tax credits, depreciation, co-op rebates, increased resident
4 value without raising property taxes, and other incentives, including stimulus funding, can
5 greatly reduce the capital costs for these items. Further, the benefits for ratepayers appear to be
6 overlooked, such as greatly reduced utility bills, lower company capital costs for new generation
7 and transmission systems, and environmental benefits with cleaner air and water.

8 Comment (5) is a quote by the company that is not fully supported by the Feasibility Study.

9 Comment (6) expresses support for DSM and TOU alternatives from the Feasibility Study
10 to shift loads and also that the Feasibility Study stated these were more cost-effective when
11 compared to the 69 kV line.

12 Comment (7) request that a mix of alternatives to be seriously compared, as none are
13 perfect, and the benefits of one when included with another to overcome its deficiencies needs to
14 be presented at the July hearings.

15 **c. Cost of the 69 kV line.**

16 (1) The 69 kV line is more expensive than the others in the Study. [71, 5-6]

17 (2) Delays are increasing cost, will cost more later [Tr. 18, 7-8; 25, 16-17; 41, 13-17;
18 55, 9, 12]

18 **Response:**

19 Based on comment (1), if true, if the cost of delay (2) is less than the savings from selection
20 lower cost approaches, then the ratepayers will also save. None support a system that will have a
21 higher total life cycle cost.

22 **d. Costs due to outages and surges:**

23 (1) Pumps for wells, freezers, refrigerators, and surge protectors [75, 25 to 76, 22]

24 (2) Emergency generators cost are too high for those on fixed incomes [76, 23 to 77, 3]

24 **Response:**

25 There is no disagreement with comment (1) and no electricity customer (2) should ever
26 require an emergency generator, no matter fixed or not fixed income.

27
28 **e. What is SSVEC doing to conserve its co-owners funds, like the post office going to
29 5 days, to save its members money? [59, 20-25; 65, 22-24]**

29 **Response:**

30 The response to this comment is best left for the company.

1 **f. Why don't the Patagonia Mines pay their share of the new line?[Tr. 59, 2-6, 70, 1-6]**
2 **Response:**

3 This is a valid comment, but note that the company states that it has no knowledge of such
4 a demand for these mines. Speculating, maybe the "mine" wants the company to demonstrate its
5 commitment first, with the 69 kV to Sonoita and the mine will pay the rest. Mines are the largest
6 electricity consumers in Arizona. TEP, for example, receives about 10-12% of its income from
7 several mines who pay the absolute minimum for electricity (no one pays less), which means that
8 the other customers all pay more, to support these large loads. Residential customers, usually,
9 pay the highest rates, thus will pay even higher rates if SSVEC ends up supporting these mines.

10 **7.2.4 Responses Concerning the Future Requirements.**

11 There were many comments concerning meeting future requirements, that included various
12 expressions, such as those summarized below:

13 **a. Can't Build New Homes if there is a Moratorium (Tr. 10, 4-8; 55, 8-12)**

14 **Response:**

15 There is no Moratorium at present. This case, in particular, these hearings will either deny
16 or consider approval of such a moratorium. This was requested early last fall and was not
17 approved at that time. In my opinion, there is no significant building throughout the entire V-7
18 feeder area, thus the company has not grounds for taking such action.

19 **b. Growth.**

- 20
- 21 (1) Growth is inevitable [Tr. 14, 6-7; 23, 18-19]
 - 22 (2) We have about 3000 residents here now. I realize we are going to grow but I
23 don't think we will grow to be a city and need that voltage immediately? [Tr. 11-
24 14]
 - 25 (3) When economy turns around I see growth/development in the Sonoita/Elgin with
26 planned wineries and vineyards and a couple 36-acre subdivisions. [Tr. 81, 133]
 - 27 (4) I am told by SSVEC that the [SRP] upgrade will provide reliable power with allow
28 continual growth [Tr. 50, 11-14]
 - 29 (5) I know the Commission does not want to curb growth [Tr. 81, 10-12]

30 **Response:**

31 In my opinion, growth is not inevitable as indicated in comment (1), but generally the slow
32 growth a consideration in the Santa Cruz County Comprehensive Plan is planned for this area,
33 thus agreeing with comments (2). Comment (3) is a reasonable expectation; however, the
34 economy has a long way to go before this will happen, thus the few month delay should not be a
35 factor.

1 Comment (4) assumes that continual growth will occur, which ignores the natural
2 limitations in this area. Obviously, the Commission doesn't want to interfere with growth (5).

3 **c. Coal-fueled versus Renewable (green) Generated Electricity.**

- 4 (1) Do we want to keep burning fossil fuels, polluting our environment, for our future
5 generations? [Tr. 63, 1-5]
6 (2) SSVEC needs to have energy independence as a top priority [Tr. 89, 11-15]
7 (3) Arizona needs to become more progressive on alternative energy than being so
8 dependent on less green things [Tr. 59, 8-13]
9 (4) SSVEC has changed their minds repeatedly with their RES programs [Tr. 20-22]
10 (5) Can we wait for new technology, new technologies are coming [Tr. 63, 20-25]

11 **Response:**

12 Comments (1) to (5) all relate to the present practices by this company, which now
13 primarily use fossil fuels, but has started changing this by not being 100% reliant on AEPCO. The
14 comment (2) concern is that the company's priorities are not directed toward energy
15 independence nor progressive as shown by is in ability to manage the REST funding (comment 4)
16 for the dozens of residential customers in this area who have purchased solar electric systems
17 and may not see their rebates for many years.

18 Comment (3) wants Arizona to be more progressive than this company's permits by its
19 conservative approach to new ideas, to new technologies mentioned in Comment (5).

20 **d. Wildcat Mine Requirements.**

- 21 (1) Who will provide power in three years for Wildcat Mine [owned by Rosemont
22 Copper] as the Feasibility Study implies the UNS Electric does not have
23 adequate backup power for the Town of Patagonia. [68, 5 to 70, 4]
24 (2) Can SSVEC double-circuit this 69 kV (two times 69 = 138) all the way to
25 Patagonia to provide power for this mine in the future? [Tr. 1-22]

26 **Response:**

27 The answer to comment (1) is unknown, but it appears that SSVEC is working very hard to
28 position itself for that mine and the others in the Patagonia Mountains.

29 In response to comment (2), my experience with other companies, due to the challenge in
30 obtaining easements, always design their utility poles for upgrading as future double-circuits.

7.2.5 Responses Concerning the Urgency Requirements.

There were comments concerning immediate construction, that included various
expressions, such as those summarized below:

a. Feasibility Study does not indicate immediately construct the 69 kV line.

- 1 (1) I read the study confirms the lack of an immediate need for the line. [61, 8-9]
- 2 (2) Is there really an emergency need for a 69 kV line? [Tr. 63, 19-21]
- 3 (3) Let's take some more time to make the right decision; if we make a mistake it is
- 4 permanent. [65, 24 to 66, 1]
- 5 (4) I supported the Feasibility Study and the rest of the process to determine the best
- 6 option [Tr. 79, 4-8]
- 7 (5) Immediately allow SSVEC to construct the line [Tr. 11, 6-7]
- 8 (6) SSVEC should take immediate action to address current performance issues and
- 9 capacity limits [Tr. 27, 5-7]
- 10 (7) None of the Alternatives are Viable [Tr. 11, 8]

7 **Response:**

8 Comments (1) and (2) agree that there is no immediate or emergency need for this line.
9 Comments (3) and (4) want to study the issues more.
10 Comments (5) and (6) want to immediately construct the line.
11 Comment (7) says that no alternates are viable.

12
13 **7.2.6 Responses Concerning Other Issues.**

14 There were some Public Comments that did not directly pertain to the matters under discussion
15 for this hearing.

16 These are summarized below:

17 **a. Feasibility Study Cost:**

- 18 (1) Cost of the Feasibility Study [Tr.17, 15-21]
- 19 (2) Cost is outrageous, approaching \$1 million, a \$360,000 bill [Tr. 39, 20-23; 47, 24-25;
20 53, 7-10]
- 21 (3) Keep costs down, stop costing co-op members [Tr. 15, 17-18; 47, 4-5; 56, 1]
- 22 (4) Why did we pay for the study and not the taxpayers? [53, 9-11]

23 **Response:**

24 All these comments (1) to (4) are concerned about the cost of the Study (about \$161,000).

25 **b. Feasibility Study Results:**

- 26 (1) I read the study confirms the lack of an immediate need for the line. [61, 8-9]
- 27 (2) I believe the study confirms the best fix for this issue is to begin now with the new line
28 and infrastructure. [51, 21-24]
- 29 (3) Feasibility Study and opinion survey recommended the Sonoita Reliability Project (Tr.
30 30, 14-15]
- (4) Report on alternatives only "broad brushed" many issues stating something like
also solve this problem. [Tr. 38, 21-23]
- (5) Several alternatives proposed only exacerbate existing problems [Tr. 38, 20-21]
- (6) The literature SSVEC is broadcasting twists the findings of the Feasibility Study
to support their insistence that this line is the only possible option for this area.
[61, 10-13]

1 **Response:**

2 Comment (1) indicated there is no immediate need for this line.

3 Comments (2) and (3) indicated that the Study confirmed or recommended the 69 kV line.

4 Comment (4) said that the Study only "broad brushed" many issues.

5 Comment (5) does not like some of the alternatives.

6 Comment (6) charges SSVEC with twisting the story about this line.

7
8 **c. Jobs.**

(1) Is SSVEC afraid it will lose jobs if we put in solar? [Tr. 64, 15-16]

(2) This is not about jobs but what is best for community and our planet [Tr. 64, 18-19]

(3) Conflict of interest as some are in the solar business [Tr. 32, 21-25]

10 **Response:**

11 Comment (1) implies the only reason SSVEC supports this line is to keep jobs.

12 Comment (2) wants to do what is best for the planet.

13 Comment (3) is concerned that one intervenor is also in the solar business.

14
15 **d. Disagree with all the derogatory statements about SSVEC [Tr. 46, 14-22]**

16 **Response:**

17 No.

18
19 **e. Location of the line:**

(1) Do not support the T-2 Option (Tr. 36, 7)

(2) Support line going through the undeveloped Babocamari [Tr. 35, 6]

(3) T-2 Option devalues property in Whetstone [Tr. 35, 6-12]

(4) Location through the Babocamari seriously threatens potential film making activities in this area. [Tr. 60, 11-23]

(5) It is going through the Babocamari just to save money? [Tr. 23-24]

22
23 **Response:**

24 Comments (1) to (3) oppose a 69 kV along SR-82 and want the line to go through
25 Babocamari Ranch.

26 Comment (4) is concerned about loss of income from filmmakers.

27 Comment (5) says that SSVEC is concerned about the \$18,000 they paid for the ranch.

28
29 **f. People moved into area after rights of ways were established.**

(1) They should have paid better attention to the ROW before building [Tr. 43, 12-16]

(2) The newcomers should have been told about these lines before buying their property [74, 21 to 75,1]

1 (3) Members should not have to pay for mistakes of a few [Tr. 43, 17-18]

2 **Response:**

3 Comments (1) to (3) indicate that newcomers did not look at maps prior to purchasing.

4 **g. 69 kV line.**

5 (1) Prefer that these lines not be needed or installed [Tr. 9, 16-17]

6 (2) A line is out-of-date technology, lets go green, be more progressive. [Tr. 82, 10-13]

7 **Response:**

8 Comment (1) says the lines are not needed.

9 Comments (2) wants more green things from SSVEC.

10 **h. Alternatives.**

11 (1) Demand Side Management uses customer incentives to manage the load [67, 7-9]

12 (2) Time of Use rates shifts customers loads away from peak to save costs [67, 10-14]

13 (3) SSVEC has looked at the alternatives [Tr. 9, 19; 38, 9-12; 38, 8-12;

14 (4) SSVEC has the talent to develop less expensive alternatives to solve our short peaking hours in the winter through several means in the Study [66, 23 to 26, 3]

15 **Response:**

16 DSM and TOU are the subjects of Comments (1) and (2)

17 Comments (1) and (2) suggests that SSVEC using DSM to shift loads away from peak.

18 Comments (3) and (4) want SSVEC to look for alternatives.

19 **i. SSVEC abides by NEC, REA, and other industry standards [Tr. 21, 17 to 22, 14; 22, 23 to 23, 1; 38, 9-12]**

20 **Response:**

21 I hope so.

22 **j. Views [Tr. 9, 17-18; 10, 10, 9-10; 13, 23 to 14, 2; 13, 24-25; 34, 24 to 35, 5; 39, 11-17]**

23 **Response:**

24 There were many comments with respect to views.

25 **7.3 Comments Concerning the Public Forums.**

26 This paragraph discuss some issues related to the Public Forums.

27 **7.3.1 Public Forum at Willcox on 2 March 2010.**

28 I attended this forum. Based on the filing by the company, I expected that this would be a
29 presentation with little public inputs. Before beginning, everyone was invited to introduce him or
30

1 herself. I indicated myself as a former Energy Commission from Santa Cruz County and got
2 involved in this issue because of that fact. I indicated that I was prepared to discuss the “other
3 side’s views” and to ensure both sides of the concerns could be heard by the Chamber.

4 It was surprising that the first slide said “Public Forum” and did not use the word
5 “presentation” as used in the company’s plans. And even more amazing was that the first
6 presenter, Ms. Deborah White (SSVEC’s ROW manager), opened with a comment that this was a
7 Public Forum mandated by the Corporation Commission. This was not expected; however, the
8 manner of delivery and actions by the presenters, made the entire nearly 100 minutes event to be
9 just another presentation by the cooperative. Much of the time was devoted to how receptive the
10 Cooperative was to its members in the V-7 feeder area, how they listened to the public, and even
11 moved the location of the substation based on such inputs. In fact,, because the Bachmann
12 Substation was within the floodplain and poorly located away from the population locus,
13 spending many minutes on the substation events could have been revealed in a few minutes
14 because there are many other topics that would require time to present, A very fast unreadable
15 slide (also found in the Final Report in this docket) that listed each of the 20 Alternatives in the
16 Study Report was just shown with the comment something like, “oh this is what engineers have
17 to do every day is work with these kinds of options”. Even their titles were never presented. The
18 next slide was equally unreadable, but it listed the five options that got through the “screening
19 filter” constraints. Again, in seconds, to the next slide. Even these five options were discussed on
20 one or two following slides without really giving the PROS and CCONS to help the audience
21 understand the position of the study contractor and the company on various Alternatives. It
22 seemed only the 69 kV was of interest to the speaker,

23 **7.3.3 Public Forum at Patagonia High School on 9 March 2010.**

24 No comments received.

25 **7.3.4 Public Forum at Elgin Elementary School on 11 March 2010.**

26 The following comment was received.

27 “I attended the Sonoita presentation by SSVEC. I was disappointed that they [SSVEC]
28 approached the whole thing as if it was a done deal and that we had to accept the plans
29 as they stated...They complied with everything that the Corporation Commission said,
30 but I have this feeling that the feasibility study was paid for by Sulphur Electric and
therefore that the results were possibly slanted. After an hour and a half of which they
spent patting themselves on the back, we were allowed to comment. It wasn’t as if they
were really listening to us. And they weren’t going to have open minds.” [Tr. 6-17]