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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF SOUTH DAKOTA**

SOUTH DAKOTA PUBLIC
UTILITIES COMMISSION

IN THE MATTER OF THE ESTABLISHMENT OF)	
SWITCHED ACCESS REVENUE REQUIREMENT FOR)	Docket No. TC05-097
SANTEL COMMUNICATIONS COOPERATIVE, INC.)	

DIRECT PRE-FILED TESTIMONY OF
MICHELLE CHRISTENSEN

1 INTRODUCTION

2 **Q: What is your name and address?**

3 A: My name is Michelle Christensen. My business address is 1801 N. Main Street,
4 Mitchell, South Dakota 57301.

5

6 **Q: By whom are you employed and in what capacity?**

7 A: I am a Telco Revenue Consultant with Vantage Point Solutions, Inc. (VPS). VPS is
8 a telecommunications and consulting firm in Mitchell, South Dakota. The client
9 base of VPS is made up of mostly Rural Local Exchange Carriers (RLECs). I focus
10 on assisting the RLECs with cost studies and other regulatory issues. The staff of
11 VPS provides engineering, financial, and regulatory services to many of the South
12 Dakota RLECs, as well as RLECs in many other states.

13

14 **Q: What is your educational and business background?**

15 A: I received a Bachelors degree in Business Economics from South Dakota State
16 University (1998) in Brookings, SD. I have been employed in the
17 telecommunications industry since 1998. I started working with End-User Billing
18 and Telco Toll revenue and in 2003 began working in the regulatory consulting
19 area. During this time, I have completed interstate and intrastate switched access
20 cost studies that have been filed with NECA and the South Dakota Public Utilities
21 Commission (SDPUC). I have also conducted Average Schedule versus Cost Study
22 comparisons, and other telco revenue consulting activities with a focus on RLECs.

1 **Q: On whose behalf are you testifying in this proceeding?**

2 A: My direct pre-filed testimony is submitted on behalf of Santel Communications
3 Cooperative, Inc (Santel) headquartered in Woonsocket, South Dakota. Santel is a
4 local exchange cooperative serving ten exchanges in central South Dakota; Alpena,
5 Artesian, Ethan, Forestburg, Letcher, Mount Vernon, Parkston, Tripp, Wolsey, and
6 Woonsocket. Santel serves 4,832 lines within 1,887.25 square miles, an average of
7 2.56 subscribers per square mile ¹.

8
9 **Q: What is the purpose of your testimony?**

10 A: I will provide testimony on how Santel's 2005 intrastate switched access cost study²
11 was performed and how it complies with the SDPUC Administrative Rules relating
12 to switched access services within the state of South Dakota.

13
14 **Q: What is the goal of the cost study?**

15 A: The goal of the cost study is to determine the intrastate switched access charge that
16 is required to properly recover the portion of the telephone company's intrastate
17 switched access investment and expenses. The process used to determine the
18 intrastate switched access charge is defined by rules established by the SDPUC and
19 includes separations to allocate investment and expenses between local, state, and
20 interstate jurisdictions, as well as regulated and non-regulated operations. The

¹ "A Report on Telecommunication Company Operations for the Year 2003", Harlan Best, South Dakota Public Utilities Commission Analyst, July 2004.

² Within this document, references to Santel's 2005 cost study are referring to Santel's state cost study filed in 2005 under Docket No. TC05-098, which is based on the test year of 2004 with known and measurable adjustments for 2005.

1 SDPUC rules are applied specifically to Santel's unique circumstances and
2 network configuration. This testimony deals with the 2005 Santel cost study and
3 the Santel network as it existed during the 2004 test year with known and
4 measurable adjustments for 2005.

5

6 **Q: Are you familiar with Santel's network?**

7 A: Yes. Santel owns a host switch which is located in the Woonsocket exchange as
8 well as remote switches in each of the other nine exchanges.

9

10 **Q: Are you familiar with the current SDPUC rules for cost settlements?**

11 A: Yes, I am familiar with the access rules associated with South Dakota intrastate cost
12 settlements. In South Dakota, the applicable access rules are contained within
13 SDPUC Administrative Rules, ARSD 20:10:27 through 20:10:29. These chapters
14 establish rules for the determination of switched access charges for intrastate
15 switched access services provided by each carrier's carrier operating in this state.

16

17 **Q: How is the intrastate switched access charge determined?**

18 A: The intrastate switched access return on net investments and expenses, as defined
19 by the SDPUC rules, are often referred to as the intrastate revenue requirement.
20 The intrastate switched access charge can be found by dividing the company's
21 intrastate revenue requirement by the total intrastate switched access minutes.

22

1 **Q: Did you determine Santel's intrastate switched access revenue requirement in**
2 **the 2005 switched access cost study?**

3 A: Yes. All of Santel's property costs, revenues, expenses, taxes, and reserves were
4 allocated between intrastate toll and all other.³ The intrastate revenue requirement
5 is comprised of the return on net intrastate switched access investments plus
6 expenses.

7

8 **Q: Were Santel's investments and expenses allocated according to the SDPUC**
9 **rules in determining the intrastate revenue requirement?**

10 A: Yes. To do this, we first assigned the cost of the plant to categories. The basis for
11 making this assignment is the identification of the plant assignable to each category
12 and the determination of the cost of the plant so identified. The second step is the
13 apportionment of the cost of the plant in each category among the operations by
14 direct assignment where possible. All remaining costs were assigned by the
15 application of allocation factors. For example, in the assignment of property costs
16 to categories and in the apportionment of such costs among the operations, each
17 amount assigned and apportioned was identified as to the account classification in
18 which the property is included. The separated results were identified by property
19 accounts and apportionment bases were provided for those expenses which were
20 separated on the basis of the apportionment of property costs. Similarly, amounts

³ SDPUC ARSD 20:10:28:02, Allocation procedures – General.

1 of revenues and expenses assigned to each of the operations were identified as to
2 account classification.⁴

3

4 **Q: Did Santel separate its plant investment into categories in the cost study?**

5 A: Yes. Santel apportions its costs among categories by actual use or direct
6 assignment⁵. Santel records its Central Office Equipment (COE) in Accounts 2210-
7 2230s. The total investment in these accounts is classified into the following
8 categories according to SDPUC ARSD 20:10:28:20 through 20:10:28:44.

9 Category 1 – Operator Systems Equipment

10 Category 2 – Tandem Switching Equipment

11 Category 3 – Local Switching Equipment

12 Category 4 – Circuit Equipment

13

14 Santel records its Cable and Wire Facilities (CWF) in Accounts 2410-2420s. The
15 total investment in these accounts is classified into the following categories
16 according to ARSD 20:10:28:49 through 20:10:28:64.

17 Category 1 – Exchange Line Excluding Wideband

18 Category 2 – Wideband and Exchange Trunk

19 Category 3 – Interexchange

20 Category 4 – Host/Remote

21

⁴ SDPUC ARSD 20:10:28:02 Allocation procedures – General. See note in this section.

⁵ SDPUC ARSD 20:10:28:04 Separations procedures – General.

1 **Q: Is property rented to another party excluded from Santel's**
2 **telecommunications operations in the cost study?**

3 A: Yes. When the COE and CWF categories are reviewed, any known investment
4 identified for solely non-regulated purposes is removed from the cost study. In
5 addition, any joint use investment is removed from the cost study⁶ based on its
6 percentage of circuits (for COE) and circuit miles (for CWF) of the total.

7

8 **Q: Were the remaining investments in the COE and CWF categories recovered as**
9 **part of the switched access charge?**

10 A: No. EAS and private line were not recoverable through the intrastate cost study
11 process. Only the intrastate switched access portions of the remaining investments
12 in the COE and CWF are recoverable.

13

14 **Q: How were the intrastate portions of the remaining COE investments**
15 **determined?**

16 A: The intrastate portion of these investments is determined according to ARSD
17 20:10:28:06, 20:10:28:33, 20:10:28:35, 20:10:28:40, 20:10:28:42, and 20:10:28:44,
18 whereby allocation factors are applied to the category investments.
19 COE Cat. 1 – Operator Systems Equipment is not applicable to Santel since Santel
20 does not own any operator systems equipment.

⁶ ARSD 20:10:28:07

1 COE Cat. 2 – Tandem Switching Equipment is not applicable to Santel since Santel
2 does not own any tandem switching equipment.

3 COE Cat. 3 – Local Switching Equipment was allocated based on the percentage of
4 intrastate switched access minutes of use, as compared to the total minutes of use,
5 for this equipment. The intrastate Weighted Dial Equipment Minute (WDEM) was
6 adjusted to ensure that the total of intrastate plus interstate WDEM is less than or
7 equal to 85%⁷.

8 COE Cat. 4 – Circuit Equipment has several subcategories, which are described as
9 follows:

10 Cat. 4.12 – Exchange trunk circuit equipment, wideband and non-wideband (EAS)
11 is not recoverable through the cost study, as previously explained.⁸ Santel has EAS
12 between Wolsey and Huron and between Artesian and Howard; therefore, the
13 circuit equipment associated with this did not get assigned to the intrastate switched
14 access revenue requirement.

15 Cat. 4.13 – Exchange line circuit equipment excluding wideband is allocated based
16 on the 25% intrastate factor.⁹

17 Cat. 4.23 – All other interexchange circuit equipment (only the Joint Message
18 portion of this category, not private line, is included) is allocated based on the
19 relative number of conversation minutes (CM) applicable to such facilities¹⁰.

⁷ ARSD 20:10:28:35

⁸ ARSD 20:10:28:40

⁹ ARSD 20:10:28:40

¹⁰ ARSD 20:10:28:42

1 Cat. 4.3 – Host/Remote message circuit equipment is allocated based on the relative
2 number of intrastate minutes of use applicable to such facilities¹¹ (Host/Remote
3 Factor).

4
5 **Q: How were the intrastate portions of the remaining CWF investments**
6 **determined?**

7 **A:** The intrastate portion of these investments was determined according to ARSD
8 20:10:28:06 and 20:10:28:61-64, whereby allocation factors were applied to the
9 category investments.

10 CWF Category 1 – Exchange Line Excluding Wideband –

11 Cat. 1.1 Intrastate Private Line and state WATS lines are directly assigned to the
12 intrastate private line jurisdiction, which is not recoverable through the intrastate
13 switched access revenue requirement.

14 Cat. 1.3 Subscriber or Common Lines that are jointly used for local exchange
15 service and exchange access for intrastate and interstate interexchange services are
16 allocated based on the 25% intrastate factor¹².

17 CWF Category 2 – Wideband and Exchange Trunk (EAS) is allocated based on
18 relative intrastate minutes of use. EAS is not recoverable through the cost study, as
19 previously explained. Santel has EAS between Wolsey and Huron and between
20 Artesian and Howard; therefore, the cable and wire facilities associated with this
21 did not get assigned to the intrastate switched access revenue requirement¹³.

¹¹ ARSD 20:10:28:44

¹² ARSD 20:10:28:61

1 CWF Category 3 – Interexchange (only the Joint Message portion of this
2 category, not private line, is included) is allocated based on conversation
3 minute miles as applied to toll message circuits or other classes of
4 circuits¹⁴.

5 CWF Category 4 – Host/Remote cable and wire facilities is allocated based on the
6 relative number of intrastate minutes of use miles applicable to such facilities¹⁵
7 (Host/Remote Factor).

8

9 **Q: What are the basic network elements that are to be recovered through the**
10 **intrastate cost study?**

11 A: The basic network elements investments and expenses that are to be
12 recovered through the intrastate cost study are transport, switching, and carrier
13 common line. In addition to the return on net investment,
14 operating expenses and taxes are also recoverable through the intrastate cost study.

15

16 **Q: Which of the above category investments are included in Santel's intrastate**
17 **Transport revenue requirement for the 2005 cost study?**

18 A: CWF Categories 3 and 4 and COE Categories 4.23 and 4.3 investments. These
19 investments are then netted against the associated accumulated depreciation.

20

¹³ ARSD 20:10:28:62

¹⁴ ARSD 20:10:28:63

¹⁵ ARSD 20:10:28:64

1 **Q: Which of the above category investments are included in Santel's intrastate**
2 **Carrier Common Line revenue requirement for the 2005 cost study?**

3 A: CWF Category 1 Subscriber Loop Plant and COE Category 4.13 Subscriber Circuit
4 investments. These investments are then netted against the associated accumulated
5 depreciation.

6
7 **Q: Which of the above category investments are included in Santel's intrastate**
8 **Local Switching revenue requirement for the 2005 cost study?**

9 A: COE Category 3 investment. These investments are then netted against the
10 associated accumulated depreciation.

11

12 **Q: Were there any other investments included in the revenue requirement for the**
13 **2005 cost study?**

14 A: Yes, general support assets were also included in the revenue requirement for the
15 2005 cost study. The general support assets are contained in account 2110 and
16 include such items as land, buildings, vehicles, work equipment, office equipment,
17 and general purpose computers¹⁶. The apportionment of the general support assets
18 is based on the separation and allocation of the combined cost of central office
19 equipment, and cable and wire facilities. For example, the amount of general
20 support assets allocated to transport would depend on the percentage of central

¹⁶ ARSD 20:10:28:13

1 office equipment and cable and wire facilities assigned to intrastate transport to
2 total intrastate central office equipment and cable and wire facilities¹⁷.

3

4 **Q: Was the intrastate net investment determined from the previous steps used to**
5 **determine the revenue requirement for each element?**

6 A: Yes. In addition, the following items were included in the calculation of the net
7 investment: Total Plant Under Construction , Intangible Assets, Materials and
8 Supplies, Accumulated Deferred Operating Taxes, and Cash Working Capital.

9 Once the net investment was determined, that amount is multiplied by a 10% rate of
10 return¹⁸. AFUDC is deducted from the return to determine the net return on the rate
11 base.

12

13 **Q: Did Santel include expenses related to the plant investment in the revenue**
14 **requirement established in the 2005 Intrastate Cost Study?**

15 A: Yes. Santel included expenses related to the plant investment in the revenue
16 requirement established in the 2005 Intrastate Cost Study. Santel follows the rules
17 contained in ARSD 20:10:28:92 through ARSD 20:10:28:96 as the basis of
18 allocation of these expenses. The expenses are contained in accounts 6110, 6120,
19 6210, 6230, 6410, and 6530. The expenses are allocated to the intrastate
20 jurisdiction and rate elements in the same manner as the related plant investment.

21 The depreciation expense related to the plant investments is allocated based on the

¹⁷ ARSD 20:10:28:15

¹⁸ ARSD 20:10:27:06 and SDPUC Docket TC93-086

1 related plant investment. In addition, Santel's CWF lease expenses are directly
2 assigned to the appropriate jurisdictions, based on the actual access minutes
3 traversing these leased facilities.

4

5 **Q: Did Santel include other operating expenses in the revenue requirement**
6 **established in the 2005 Intrastate Cost Study?**

7 A: Yes, Santel did include operating expenses in the revenue requirement established
8 in the 2005 Intrastate Cost Study. The Operating Expenses are recovered based on
9 the rules contained in ARSD 20:10:28:88 through 20:10:28:123. There are several
10 categories of Operating Expenses and each type of expense is allocated based on its
11 function or an allocation related to its use.

12

13 Expenses related to access charges, contained in account 6540, that are paid for
14 exchange access services, are directly assigned to toll and therefore not included in
15 the switched access revenue requirement.

16

17 Customer Operations expense is another category of expenses which are contained
18 in the marketing account 6610 and services account 6620. Santel has allocated
19 marketing expenses based on an analysis of the current billing to determine the
20 amount of state and interstate services billed for a period. The billing analysis
21 excludes billing on behalf of others and interconnection settlements¹⁹. Santel

¹⁹ ARSD 20:10:28:103

1 completes a work time study to determine job functions and the amount of time
2 worked on the various functions. This study is used for many of the expense
3 allocations including expenses in the services account 6620. The services included
4 in this account would include telephone operator services, publishing, directory
5 listings, local business office expense, and customer services. The publishing
6 directory listing expense is allocated based on ARSD 20:10:28:106 which indicates
7 how to allocate each type of directory expense such as classified directory
8 expenses, the expenses associated with the soliciting of advertising, alphabetical
9 and street directories, and foreign directories. In the rules for account 6620, there
10 are several subcategories for the local business office and customer service
11 expenses as defined in ARSD 20:10:28:107 through ARSD 20:10:28:121. Many of
12 these expenses are allocated to the appropriate category based on factors such as
13 number of customer contacts, intrastate billed revenues, and number of messages
14 processed. Some expenses, such as end user common line charge billing expense,
15 are assigned directly to the interstate operations since no end user common line
16 charge is assessed for intrastate toll access²⁰.

17
18 Other expenses are related to the corporate operations of Santel. They include
19 executive and planning, and general and administrative; they are included in
20 accounts 6710 and 6720, respectively. The allocation of these expenses is based on
21 the separation of the Big Three Expenses; Plant-Specific Expenses, Plant-

²⁰ ARSD 20:10:28:119

1 Nonspecific Expenses, and Customer Operations Expenses. The rules relating to
2 the Corporate Operations Expenses are contained in ARSD 20:10:28:123.

3

4 **Q: Did Santel include operating taxes in the revenue requirement established in**
5 **the 2005 Intrastate Cost Study?**

6 A: Yes, Santel includes operating taxes in the revenue requirement established in the
7 2005 Intrastate Cost Study. The rules that are the basis for Santel including taxes
8 are contained in ARSD 20:10:28:124 through ARSD 20:10:28:125. Since Santel is
9 a cooperative, they do not have state and federal income taxes. They can however,
10 recover the gross receipts tax. Santel enters the appropriate tax percentage into the
11 SDPUC Intrastate Cost Model and the cost model determines the appropriate taxes
12 to be included in the revenue requirement based on the allocations already
13 completed within the cost model. Any other taxes that may be assignable are, but
14 the remaining taxes are assigned based on the separation of the cost of the
15 telecommunications plant in service.

16

17 **Q: As new technologies emerge, how are these rules applied?**

18 A: Since the rules have remained essentially unchanged for approximately ten years,
19 we apply the principles and intent of the rules to the new technologies and/or
20 services.

21

1 **Q: Which of the above amounts actually determine Santel's revenue**
2 **requirement?**

3 A: As explained in sections above, the return on net investment for each of the network
4 elements (Transport, Carrier Common Line, Local Switching) are a portion of the
5 revenue requirement. In addition, the portion of operating expenses and taxes that
6 was determined to be intrastate and allocated to the three network elements is also
7 included in the revenue requirement.