

1 **BEFORE THE PUBLIC UTILITIES COMMISSION OF COLORADO**

2 DOCKET NO. 07S-521E

3 IN THE MATTER OF ADVICE NO. 1495 - PUBLIC SERVICE COMPANY OF
4 COLORADO REVISION TO THE INTERRUPTIBLE SERVICE OPTION CREDIT
5 (ISOC) TARIFF - ELECTRIC.

6 ANSWER TESTIMONY OF LESLIE GLUSTROM
7 MARCH 24, 2008

10
11 **Q: PLEASE STATE YOUR NAME AND CONTACT INFORMATION**

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13 A: My name is Leslie Glustrom. I am a citizen intervener in this Docket. My address is
14 4492 Burr Place, Boulder, CO 80303. My phone number is 303-245-8637 and my e-mail
15 is lglustrom@gmail.com .

16 **Q: PLEASE SUMMARIZE YOUR TESTIMONY.**

17 A: The primary purpose of my testimony is to introduce two documents into the record
18 and to request that the Commission take administrative notice of Public Service Company
19 of Colorado ("PSCo" or "Xcel")'s recent Electric Commodity Adjustment ("ECA") filing
20 in Docket 08L-094E. The attached documents as well as the recent ECA filing provide
21 important information on the avoided cost of peaking resources that should be considered
22 in the revision of the Interruptible Service Option Credit ("ISOC") tariff. In particular, it
23 appears that the avoided cost calculated by Mr. Taylor may be low and there may be a
24 need to consider the recent large increases in the Electric Commodity Adjustment in the
25 determination of the appropriate ISOC tariff. Finally, it does not appear that Xcel has
26 proposed a very aggressive ISOC program and until they do, it is not clear that customers
27 will actually benefit from the program because the reliability benefits of the ISOC

1 program come in “quantum steps” not in a linear fashion. That is, if there aren’t enough
2 ISOC participants to avoid building peaking turbines, then customers have to both pay for
3 the ISOC program and the new peaking turbine, as has been recently experienced in the
4 07A-469E Fort St. Vrain docket. This “quantum” nature of the potential reliability
5 benefits of the ISOC program does not appear to have been adequately considered. Until
6 ratepayers begin to see real benefits from the ISOC program, then Xcel should not begin
7 to earn an incentive. Finally, I recommend that unless Xcel greatly picks up the pace of
8 its ISOC program, that the program be terminated and the task of demand management
9 be turned over in its entirety to third party aggregators.

10 **Q: PLEASE DESCRIBE THE ORIGIN AND SIGNIFICANCE OF**
11 **ATTACHMENT 1 TO YOUR ANSWER TESTIMONY.**

12 Attachment 1 was entered by Xcel as Exhibit 44 in Docket 07A-469E, the Fort St. Vrain
13 gas turbine docket. It is Xcel Witness Greg Ford’s calculation of the cost of a gas turbine
14 in 2009 and shows a cost of \$781.20/kW cost in 2009 dollars compared to Mr. Taylor’s
15 theoretical determination of \$581.25/kw in 2007 dollars. It is my hope that the
16 Commission and the Commission staff will consider these differences in cost and also the
17 likelihood that the cost of peaking turbines will increase in coming years, which will lead
18 to increases in the avoided cost which should increase the ISOC tariff.

19 **Q: DID YOU PREPARE A MORE DETAILED ANALYSIS OF MR. FORD’S**
20 **ANALYSIS OF GAS TURBINE COSTS?**

21 A: No, I’m afraid I did not. There are many dockets presently underway and I did not
22 have the time to prepare a more detailed analysis, but I wanted to make sure that Mr.
23 Ford’s analysis was in this 07S-521E Docket.

1 **Q: DO YOU HAVE OTHER CONCERNS REGARDING THE COST OF**
2 **PEAKING TURBINES?**

3 A: Yes, it appears that Mr. Taylor's analysis was a generic analysis without adequate
4 consideration of real world constraints on gas turbines. In the recent Fort St. Vrain
5 Docket, the Commission was asked to approve gas turbines that will have a leveled cost
6 of electricity that is likely to be above 30 cents/kwh (See pages 114, 124 and 125 in the
7 transcript of February 12, 2008 in the 07A-469E Fort St. Vrain docket.) One of the
8 constraints on the Fort St. Vrain turbines is an air permit limitation that will keep the
9 turbines from operating for more than 8.4% of the time (See the Direct Testimony of
10 Xcel Witness Gary Magno in the 07A0-469E Docket). This is an example of a real world
11 constraint that Mr. Taylor does not seem to have considered when determining the
12 avoided cost of building peaking turbines. When real world constraints are considered as
13 they had to be in the recent 07A-469E Fort St. Vrain Docket, it appears that the avoided
14 costs are likely to be substantially higher than calculated by Mr. Taylor.

15 **Q: PLEASE DESCRIBE THE ORIGIN AND SIGNIFICANCE OF**
16 **ATTACHMENT 2 TO YOUR ANSWER TESTIMONY.**

17 A: Attachment 2 to my testimony is a press release issued by Xcel recently (March 17,
18 2008) as part of its submission of its Electric Commodity Adjustment ("ECA") filing in
19 what is now Docket 08L-094E. The press release summarizes the significant increase in
20 the ECA that Xcel is presenting to the Commission in Docket 08L-094E, including an
21 increase of 15% in electricity bills as a result of higher fuel and purchased energy costs.
22 In particular, the press release notes that local and wholesale natural gas prices have
23 "nearly quadrupled in the last six months with the addition of pipeline capacity out of the

1 region....” Referring to Exhibit 8 in the 08L-094E ECA filing, it can be seen that the
2 ECA as proposed by Xcel will go from \$0.02506/kWh to \$0.03849/kWh. This is more
3 than a 1.3cents/kWh increase which is about a 53% increase in the ECA. This dramatic
4 increase should be considered when revising the ISOC tariff and determining the
5 potential benefits to non-ISOC customers of avoiding the charges associated with rapidly
6 escalating fossil fuel costs. It appears that what Mr. Brockett describes as “the tail of the
7 dog” (i.e. the energy benefits) may be increasing in importance. For this reason, I hereby
8 request that the Commission take administrative notice of the recently filed increase in
9 the ECA in Docket 08L-094E.

10 **Q: WHAT IS YOUR GOAL IN SUBMITTING THESE TWO ATTACHMENTS?**

11 A: My goal in submitting these documents is to ensure that the Commission and the staff
12 develop a fair price for the ISOC tariff in hopes that Xcel can begin to offer a much more
13 aggressive program—along with aggressive demand response programs run by third
14 party aggregators so as to manage the very steep peak demand that exists for a very small
15 fraction of the year.

16 **Q: ARE YOU CONCERNED THAT XCEL’S ISOC PROGRAM IS NOT**
17 **AGGRESSIVE ENOUGH?**

18 A: Yes, I am. Mr. Brockett has testified that when moving to a 300 kW minimum
19 threshold (p. 9, lines 18-22) that the eligible load will increase from about 2200 MW to
20 about 2700 MW and there will be about 2,600 potential customers. Yet, Mr. Brockett has
21 testified that Xcel’s goal for ISOC is only about 243 MW by 2020 (Brockett Direct
22 Testimony, p. 16, lines 22-23). Currently, the ISOC program is about 120 MW (Brockett
23 Direct Testimony p.6, lines 17-19), so Xcel is only proposing about a 123 MW increase

1 over the next 11 years—or less than 15 MW per year. As Mr. Brockett noted on page 6 of
2 his Direct Testimony (lines 22-23), the present 120 MW program is less than 2% of
3 Xcel’s load. Expanding the program to a mere 243 MW by 2020 will not be a very
4 significant increase given the expected load growth. Importantly, until the ISOC program
5 becomes more aggressive, it may not have any real benefits for consumers due to what
6 I’m referring to as the “quantum” nature of reliability benefits.

7 **Q: WHAT DO YOU MEAN BY YOUR CONCERN ABOUT THE “QUANTUM”**
8 **NATURE OF RELIABILITY BENEFITS UNDER THE ISOC PROGRAM?**

9 A: As we recently learned in the 07A-469E Fort St. Vrain docket, if the ISOC program
10 isn’t big enough to displace a combustion turbine, then it appears that customers will be
11 both paying for the ISOC program and for new combustion turbines. With Xcel’s demand
12 expected to grow about 160 MW/year between 2012 and 2015 (See p. 1-17 in Xcel’s
13 Resource Plan in Docket 07A-447E), then unless there are significant increases in the
14 ISOC program, the 10-15 MW/year ISOC growth projected in this 07S-521E Docket
15 won’t displace any significant number of gas turbines and non-ISOC customers won’t
16 have seen any significant benefits—only costs. It appears that non-ISOC customers only
17 obtain reliability benefits when there are enough ISOC participants to avoid building
18 either 77 MW (quick start) or 130 MW (GE Frame) turbines. If there is less than this
19 minimum (i.e. “quantum”) number of participants, then Xcel is likely to argue that for
20 reliability it still needs to build gas turbines—as they did in the recent 07A-469E Fort St.
21 Vrain case. When this happens, then the ISOC program hasn’t achieved its primary stated
22 purpose.

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2 **Q: ARE YOU OPPOSED TO THE ISOC PROGRAM?**

3 A: No, I believe demand management is key to managing Xcel (or almost any utility)'s
4 system. In the case of Xcel, a quick look at a typical load management curve (e.g. Exhibit
5 37 in the Fort St. Vrain 07A-469E Docket), will quickly show that there are typically
6 over 1500 MW of load on Xcel's system that is only experienced less than 10% of the
7 time, and it is often the case that over 1000 MW of the load is only experienced 5% of the
8 time. Building capacity for these few hours of the year is very expensive and the natural
9 gas used to run these peaking turbines is likely to be very expensive from here on out.
10 While gas prices are notoriously volatile, natural gas is likely to become increasingly
11 expensive due to declining supplies and new pipelines leading out of the Rocky Mountain
12 region for other areas of the country. While Concentrating Solar Power ("CSP") holds
13 great potential for meeting peak summer demand at a levelized cost that is lower than
14 peaking gas turbines, it is likely to take Xcel a few more years before they fully
15 understand this and are able to get some CSP plants built. In the meantime, it is very
16 important to develop strong programs for managing this peak demand. While Xcel's
17 ISOC program is one way to do this, unless Xcel gets very serious about being much
18 more aggressive in the implementation and management of its ISOC program, I would
19 recommend that the ISOC program be discontinued in favor of contracting with third
20 party demand response aggregators (e.g. EnerNOC, Consumer Powerline and others) to
21 manage the program. These demand response companies bring in 21st century
22 management and marketing tools and can typically aggregate and manage significant
23 amounts of demand. As long as Xcel continues at the very slow pace it has set in this

1 Docket, it is not likely to save ratepayers any significant money and the task should be
2 handed over to a third-party aggregator using modern tools to maximize progress in
3 demand management on Xcel's system.

4 **Q: XCEL HAS PROPOSED RECEIVING A BENEFIT OF 12.5% OF THE ISOC**
5 **CREDIT EXPENDITURES. WHAT DO YOU THINK OF THAT?**

6 A: At this point, it isn't clear that non-ISOC customers have received any benefit from
7 the ISOC program and at a rate of 10-15 MW a year increase, it isn't clear that non-ISOC
8 customers will ever receive any significant real (as opposed to theoretical) benefits. If
9 Xcel wants to receive a benefit under the ISOC program, it seems they should
10 demonstrate that the program is truly helping to avoid building new peaking turbines.
11 This does not appear to have been the case and until such benefits are clearly
12 demonstrated, I don't believe it is fair or appropriate for Xcel to receive a benefit for the
13 ISOC program or that they should even continue to manage it.

14 **Q: IS THIS THE END OF YOUR TESTIMONY?**

15 A: Yes. Thank you.

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CERTIFICATE OF SERVICE

I hereby certify that on this 24th day of March 2008, the original and seven copies of this
ANSWER TESTIMONY OF LESLIE GLUSTROM were served on the

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