

**United States of America
before the
Federal Energy Regulatory Commission**

Powerex Corporation) Docket No. EL03-166-000
(f/k/a/British Columbia Power Exchange Corp.)

Powerex Corporation) Docket No. EL03-199-000
(f/k/a/British Columbia Power Exchange Corp.)

**Affidavit of
Patrick R. Crowley
Regarding FERC Trial Staff Investigation
into Allegations of Powerex Gaming Practices & Partnerships**

Patrick R. Crowley, being duly sworn on oath, does depose and say:

1 My name is Patrick R. Crowley. My business address is 888 First Street, N.E.,
2 Washington, D.C., 20426. I am employed by the Federal Energy Regulatory Commission
3 (FERC or Commission) as an Economist in the Office of Administrative Litigation.

4

5 **Qualification**

6 My educational background and professional qualifications are as follows: I
7 graduated from DePaul University in Chicago, Illinois, in 1976 with a Bachelor of Arts
8 degree in Economics. In 1978, I received a Master of Arts degree in Economics from
9 DePaul University. I began work at the Commission in 1979 as an Industry Economist in
10 the Pipeline Rates Division of the Office of Pipeline Rates. As an expert witness with the
11 Staff litigation team from 1979 to 1992, I prepared pipeline depreciation studies, long-
12 term forecasts of natural gas reserves and production, mortality studies of plant
13 investment and retirements, cost behavior studies for pipeline facilities, and Mcf/mile

1 studies. From 1993 through 1994, I acted as team leader in the restructuring of the
2 Tennessee Gas Pipeline Company. From 1994 through 1998, I worked on the advisory
3 side of the Commission where I prepared reports for Commission orders regarding
4 proposals for revised tariff terms, new services, rate designs, and tariff rates, and a wide
5 variety of utility reports and cost studies. In 1998, I returned to the litigation side of the
6 Commission where I now work on electric utility, natural gas pipeline, and oil pipeline
7 rate cases and complaint cases.

8 I have previously filed testimony or affidavits before the Commission in the
9 following rate cases:

- 10 Black Marlin Pipeline Company, Docket No. RP81-67-000;
- 11 Tarpon Transmission Company, Docket No. RP84-82-000;
- 12 National Fuel Gas Supply Corporation, Docket No. RP86-136-000;
- 13 Pacific Gas Transmission Company, Docket No. RP87-62-000;
- 14 Sea Robin Pipeline Company, Docket No. RP88-181-000;
- 15 Natural Gas Pipeline Company of America, Docket No. RP88-209-000;
- 16 Paiute Pipeline Company, Docket No. RP88-227-000;
- 17 Southwest Gas Storage Company, Docket No. RP89-60-000;
- 18 Natural Gas Pipeline Co. of America, Docket No. 93-36-000;
- 19 San Diego Gas & Electric Co. v Public Service of NM, Docket No. EL97-54-002;
- 20 Montana Power Company, Docket No. ER98-2382-000;
- 21 Big West Oil Co. & Chevron Products Co. v Anschutz Ranch East Pipeline, Inc.
22 & Express Pipeline Partnership, Docket Nos. OR02-1-000 & OR02-3-000;
- 23 Big West Oil Co. & Chevron Products Co. v Frontier Pipeline Co.
24 & Express Pipeline Partnership, Docket Nos. OR02-2-000 & OR02-4-000;
- 25 Boston Edison Company, Docket No. ER01-890-000;
- 26 Avista Corporation, Avista Energy, Inc., Portland General Electric Company,

1 & Enron Power Marketing, Inc., Docket No. EL02-115-000;
2 Ameren Services Company, Docket No. ER02-929-000.

3

4 **Purpose of this Affidavit**

5 The purpose of this affidavit is to present the FERC Trial Staff analysis of the
6 evidence regarding allegations of inappropriate market behavior on the part of Powerex
7 Corp. (Powerex) during the period January 1, 2000 through June 20, 2001.

8

9 **Background**

10 On June 25, 2003, the Commission issued its “Order to Show Cause Concerning
11 Gaming and/or Anomalous Market Behavior” (Gaming Order) in Docket No. EL03-137-
12 000, et al., including the instant Docket No. EL03-166-000 directed at Powerex. The
13 Commission’s order found that numerous entities appeared to have engaged in electric
14 energy trading practices that constituted violations of the California Independent System
15 Operator (CAISO) and California Power Exchange (CalPX) market behavior rules as
16 outlined in the respective tariffs. The Commission directed these parties to show cause
17 why their behavior during the period January 1, 2000 through June 20, 2001 did not
18 constitute a violation of the tariffs.

19 Powerex was included in the Gaming Order appendices for potential gaming under
20 the following strategies: False Import, Cutting Non-Firm, Circular Scheduling,
21 Scheduling Counterflows on Out-of-Service Lines, Load Shift, and Paper Trading.
22 Powerex filed testimony in the Gaming Order on September 2nd, 2003. Powerex met with
23 the FERC Trial Staff on October 1st and 22nd, 2003 to present its evidence regarding the
24 allegations of inappropriate market behavior. Powerex provided follow-up information
25 via email on October 10, 2003 and via several subsequent telephone conversations.

26 Also on June 25, 2003, the Commission issued its “Order to Show Cause

1 Concerning Gaming and/or Anomalous Market Behavior Through the Use of
2 Partnerships, Alliances, or Other Arrangements and Directing Submission of
3 Information” (Partnership Order). The Partnership Order alleged that a number of
4 entities, including Powerex, appear to have participated in Gaming Practices through
5 partnerships, alliances, or other arrangements in violation of the CAISO and CalPX
6 tariffs. The Commission directed these parties to show cause why their behavior during
7 the period January 1, 2000 through June 20, 2001 did not constitute a violation of the
8 tariffs.

9 Powerex was included in the Partnership Order on the basis of allegations that
10 Powerex may have entered into an alliance with Enron for the purpose of facilitating joint
11 gaming practices, and that Powerex may have jointly engaged in gaming practices
12 through a parking arrangement with Public Service Company of New Mexico (PSNM).
13 Powerex responded to the Partnership Order on September 2nd, 2003 and filed testimony
14 before Judge Benkin on October 3, 2003. Powerex discusses the evidence at the October
15 1st and 22nd meetings with FERC Trial Staff, and in follow-up email on October 10, 2003.

16 The following discussion summarizes the FERC Trial Staff analysis of the CAISO
17 data, the Fox-Penner data (described below), and the Powerex evidence.

18

19 **Data Base Foundations**

20 The Commission’s Gaming and Partnership Orders were based primarily on two
21 sources of information: 1) an advisory staff March 26, 2003 report entitled “Final Report
22 on Price Manipulation in Western Markets, Fact Finding Investigation of Potential
23 Manipulation of Electric and Natural Gas Prices” (Staff Final Report), and 2) a March 3,
24 2003 analysis by Dr. Peter Fox-Penner included in the California Parties’ filed response
25 to the Commission’s “100 Days Evidence” proceeding in Docket No. EL00-95-000 (Fox-
26 Penner).

1 The Staff Final Report outlined numerous gaming strategies first brought to light
2 in an Enron memo describing Enron’s bidding and scheduling strategies in the electric
3 energy markets. The Staff Final Report listed 37 entities that may have engaged in
4 Enron-like market manipulating strategies and recommended the Commission issue the
5 show cause orders. The Staff Final Report, in turn, was based primarily on an October 4,
6 2002 CAISO report “Analysis of Trading and Scheduling Strategies Described in Enron
7 Memos” (CAISO October 4th Report) [publicly issued on January 7, 2003] that explained
8 the various Enron strategies and identified parties that may have engaged in such
9 strategies.

10 Dr. Fox-Penner’s March 3, 2003 analysis was based upon data made available to
11 the California Parties during the 100 Days Evidence proceeding from the CAISO
12 Response to the California Parties data requests, including in particular CAL-ISO-4 and
13 CAL-ISO-17. The supporting workpapers, containing sensitive information, were
14 supplied to each party in the EL00-95-000 docket. The Fox-Penner analysis used various
15 screens to cull specific data from the data base to isolate and highlight potential gaming
16 practices by the various parties.

17 On January 17, 2003 the CAISO issued an “Addendum to October 4, 2002 Report
18 on Analysis of Trading and Scheduling Strategies Described in Enron Memos: Revised
19 Results for Analysis of Potential Circular Schedules (“Death Star” Scheduling Strategy)”
20 (January 17th Addendum), noting that the intent of the report was to identify specific
21 schedules and transactions that could provide a starting point for further investigation –
22 not a final conclusion or finding of specific gaming activity. The January 17th Addendum
23 also noted that the analysis was intentionally designed to cast a broad net and identify all
24 market activity that could be indicative of gaming behavior. The CAISO October 4th
25 Report did not describe the data bases used to derive the list of potential gaming
26 transactions while the January 17th Addendum referred to “computer programs used to

1 identify market activity.” These programs sorted market activities by Scheduling
2 Coordinator as they related to the various gaming strategies, eg., simultaneous imports
3 and exports that may signal circular schedules, schedules for transmission on out-of-
4 service lines, and schedules of non-firm energy over congested lines that were
5 subsequently cut, which might indicate intent to earn congestion revenues for schedules
6 that were never intended to be realized.

7 In response to the Staff Final Report the CAISO prepared a new report on June 18,
8 2003 entitled “Supplemental Analysis of Trading and Scheduling Strategies Described in
9 Enron Memos” (CAISO June 18 Report). The CAISO June 18 Report narrowed the time
10 frame of analysis to be consistent with the Commission’s period of investigation (January
11 1, 2000 through June 20, 2001) and incorporated revised transaction data by market
12 participants who provided additional information, explanations, or corrections in response
13 to the previous analyses. I assume that the transaction specific data was obtained through
14 the 100 Days Proceeding data requests. The CAISO June 18 Report included summary
15 tables for each gaming strategy showing all the parties that the CAISO data base indicated
16 might have engaged in inappropriate market behavior for the period January 1, 2000
17 through June 20, 2001. The CAISO June 18 Report also provided subtotal tables for the
18 *pre-refund* period January 1, 2000 through October 1, 2000 and the *refund* period October
19 2, 2000 through June 20, 2001 – the period covered by the California Refund
20 Proceedings.

21 The Gaming Order required the CAISO to provide all identified parties with the
22 specific transaction data for each gaming practice, along with an explanation of the
23 screens used by the computer programs to identify transactions. On July 15, 2003, the
24 CAISO issued “California Independent System Operator Corporation Technical
25 Supplement to Source Data Provided Pursuant to the June 25, 2003 FERC Orders to
26 Show Cause Concerning Gaming and/or Anomalous Market Behavior, Docket Nos.

1 EL03-137-000, et al., and EL03-180-000, et al.” (CAISO July 15th Report). The
2 underlying data was provided to the parties in the form of CDs containing all the
3 transactions in question and posted on the CAISO web site
4 (<http://www.caiso.com/pubinfo/currentissues.html>).

5 On September 2, 2003, Powerex submitted a detailed response to the Gaming
6 Order outlining its understanding of the requirements of the Gaming Order, explanations
7 of the underlying CAISO identified transactions, examinations of the screens used in
8 culling the CAISO data base, and, where appropriate, pointing out that the transactions
9 meet the Commission exemptions to described activities (Powerex September 2nd
10 Response).

11

12 **False Import**

13 Definition

14 The Gaming Order defines False Import as a practice of parking day-ahead or day-
15 of California energy with a company outside of California, buying it back for a small fee,
16 and then selling it to the CAISO as “imported” out-of-market power above the price cap.
17 This practice allowed the participant to evade the CAISO price caps on in-state
18 generation when the CAISO was forced to bid for additional “out-of-market” energy due
19 to insufficient supplies being bid into the CalPX market. The assumption is that the
20 power never left the CAISO control area and therefore was not a true import and the price
21 should not have exceeded the CAISO price caps. The Commission limited the
22 examination of False Import to the period May 1, 2000 to October 1, 2000.

23

24 Allegation Source

25 The CAISO October 4th Report contained a general discussion of the False Import
26 or Ricochet gaming strategy but did not provide any list of potential participants in that

1 strategy.

2 Fox-Penner defined False Import more broadly than the Gaming Order, including
3 all export/import pairs regardless of whether there was a third party “laundering” the
4 transaction. Fox-Penner questioned Powerex’s explanation of its seasonal power/water
5 management strategy and noted that Powerex bought and exported extensively from the
6 CalPX, and imported and sold extensively to the CAISO. Fox-Penner’s Table D-1 “Total
7 Single Entity Exports and Imports that are Potential Ricochet Trades” lists Powerex with
8 806,525 MWh over 4,024 hours during the broader period May 1, 2000 through June 19,
9 2001. This figure includes total real time and out-of-market imports matched with day-
10 ahead and hour-ahead exports. In Table D-2 “Single Entity Exports and Imports that are
11 Potential Ricochet Trades,” Fox-Penner shows Powerex with 158,662 MWh over 901
12 hours for the period May 1, 2000 through October 1, 2000. Neither table limits the
13 screening to import sales to the CAISO at prices above the caps.

14 Fox-Penner also suggests that Powerex may have been exporting power out of
15 California in violation of its export license, which bars it from exporting power in ways
16 that could impair system reliability. Fox-Penner Table D-3 “Powerex Net Exports from
17 California ISO to the Northwest (MW) During CAISO Declared Emergencies, January 1,
18 2000 – June 19, 2001” lists every hour in which Powerex had net hour-ahead exports
19 during CAISO emergency periods. However, Fox-Penner does not specifically accuse
20 Powerex of violating its license.

21 The CAISO June 18 Report Table 10 “Potential Real Time Energy Imports
22 Exported in Day-Ahead/Hour-Ahead Schedules (MW)” lists Powerex [shown as BCHA:
23 British Columbia Power Exchange Corporation] as having 40,748 MW of potential
24 ricochet or False Import transactions for the period January 1, 2000 through October 1,
25 2000. The CAISO June 18 Report used a screen that captured all overlapping exports and
26 imports that occurred at the same time by the same scheduling coordinator, in excess of

1 1,000 MW.

2 The CAISO July 16 Report, Tables 1 and 2, widened the screen to 1) capture
3 overlapping exports and imports between the CAISO control area and all neighboring
4 control areas rather than just neighboring regional areas [to capture, for example, a
5 southwest export and northwest import, rather than just southwest export and import
6 pairs] and 2) capture imports made through other scheduling coordinators such as the
7 CalPX. Tables 1 and 2 of the CAISO July 16 Report list Powerex as having had 140,543
8 MW of potential ricochet or False Import transactions for the period January 1, 2000
9 through October 1, 2000. Tables 1 and 2 include all export/import pairs regardless of
10 whether the sale to the CAISO was above or below the price caps. However, Table 3,
11 entitled “Potential OOM Energy Imports and Prices Over ISO “Hard Caps” Exported in
12 Day-Ahead/Hour-Ahead Schedules (MW),” shows that Powerex had no potential False
13 Import transactions over the January 1, 2000 through October 1, 2000 period that
14 exceeded the CAISO price caps.

15

16 Powerex Evidence

17 The Powerex September 2nd Response described the nature of the seasonal power
18 flows, physical constraints during the period, and market conditions, which indicate that
19 even in the absence of the price cap criteria, all of Powerex’s transactions would be
20 covered by the Commission’s exemptions to what could otherwise appear to be False
21 Import transactions. Powerex noted that the CAISO and Fox-Penner False Import
22 screens capture all pairs of simultaneous exports and imports where the import is sold to
23 the CAISO at above-market prices (but not above the price cap), regardless of the
24 underlying transaction particulars.

25

26 Staff Conclusion

1 In examining whether a given transaction constitutes an inappropriate market
2 behavior, two threshold questions must be addressed: 1) does the transaction fit the
3 Commission's definition of the gaming behavior and 2) if it does, are there extenuating
4 circumstances that exonerate the behavior. Subsequent to the CAISO October 4th Report,
5 the Fox-Penner testimony, and the CAISO June 18 Report, the Commission's June 25,
6 2003 Gaming Order refined the analysis of export/import transactions to account for
7 circumstances in which the activities caught by the screening process do not represent
8 violations of tariff rules. In regard to the prohibited False Import practices, the Gaming
9 Order allowed for four exonerating circumstances: 1) the imported power was actually
10 sourced outside of California, and therefore was not a fictitious import, 2) the transaction
11 was intended to work around a constraint point and thereby assist in matching California
12 supplies with California load, 3) the export and import transactions were independent and
13 unrelated energy deals, and 4) the participant was importing power on behalf of the
14 CAISO or the California Department of Water Resources to provide other sellers with
15 credit risk protection.

16 Powerex provided compelling evidence that its transactions would fit one or more
17 of the Commission's criteria for exemption from gaming practice accusations. Moreover,
18 application of the Commission's definition of False Import settles this matter with respect
19 to Powerex. The Gaming Order defines False Import as having two distinct properties: 1)
20 the power must be sold to a third party and then repurchased, and 2) the power must be
21 sold to CAISO at prices above the price caps. The CAISO July 16 Report Table 3 and
22 Powerex's corroborating evidence shows that Powerex had no transactions during the
23 relevant period that exceeded the price caps.

24 Fox-Penner's implications of export license violations are not backed by any data
25 showing that system reliability was impaired by the Powerex transactions. In fact, Fox-
26 Penner notes that the exported power could easily be flipped back into CAISO imports as

1 ricochet transactions, which would assist system reliability even if the price was above the
2 market.

3

4 **Cutting Non-Firm**

5 Definition

6 The Gaming Order defines Cutting Non-Firm as the practice of scheduling non-
7 firm energy so as to provide a counterflow on a congested line and receive congestion
8 relief payments for a schedule the participant never intended, or was not able, to deliver.
9 The participants scheduled the power, received the congestion payments, and then cut the
10 non-firm schedule after the hour-ahead market closed. In this practice no energy flowed,
11 no congestion was relieved, but congestion payments were paid.

12

13 Allegation Source

14 The CAISO October 4th Report discussed the practice of “Scheduling Energy to
15 Collect Congestion Charges,” also known as “Cutting Non-Firm.” Initially this practice
16 involved scheduling non-firm energy in day-ahead and hour-ahead markets to collect
17 congestion payments and then cutting the schedules in real time. This practice was
18 proscribed by the CAISO in a July 21, 2000 market notice and has not occurred since
19 then. However, the CAISO October 4th Report noted that a similar strategy of scheduling
20 wheel-through energy or firm energy to collect congestion revenue and then cutting the
21 schedule continued to exist. However, the Report also notes that there are legitimate
22 reasons for cutting schedules and some may be beyond the control of the participant.

23 The CAISO October 4th Report Table 11 “Counterflows Revenues from Cutting
24 Schedule in Real Time, January 2000 through June 2002” lists Powerex [shown as
25 BCHA: British Columbia Power Exchange Corporation] as having earned \$45,567 in
26 congestion revenue on schedules subsequently cut by the CAISO; \$9,893 in congestion

1 revenue on schedules subsequently cut by the scheduling coordinator; and \$129,313 in
2 congestion revenue on schedules subsequently cut for unknown reasons. The total
3 congestion revenues earned by Powerex on schedules that were subsequently cut by a
4 party other than the CAISO was \$139,206.

5 Fox-Penner stated that an Enron employee implicated Powerex in 41 incidents of
6 using cut schedule strategies during the period May 1, 2000 through June 19, 2001. Fox-
7 Penner lumps together the four forms of Cut Schedule strategies [1) Cutting Non-Firm, 2)
8 Scheduling on Out-Of Service Lines, 3) Failing to provide completed paperwork to the
9 CAISO prior to real time flow causing the schedule to be cut by the CAISO, and 4)
10 submitting offsetting counterflow and supplemental energy bids]. Consequently, the Fox-
11 Penner analysis lumps together the transactions for Scheduling on Out-of-Service Lines
12 with the Cutting Non-Firm scheduling under Table F-1 “Total Schedules Cut After
13 Receiving Counterflow Payments.” The total for all Cut Schedules lists Powerex as
14 having 2,933 MWh over 41 hours for the period May 1, 2000 through June 19, 2001.

15 The CAISO June 18th Report revised the October cut-schedule data base for
16 Powerex to a total for counterflow revenues from cut schedules to \$46,273. The CAISO
17 July 15 Report shows no change in the figures. The CAISO July 15 Report includes
18 workpapers labeled “CutCounterflows_FERCworksheet.wls” that list the 13 transactions
19 in question for Powerex covering a period from January 1, 2000 through May 15, 2001.

20

21 Powerex Evidence

22 The Powerex September 2nd Response examined the 13 transactions included in
23 the CAISO July 15 Report in regard to the Commission’s definitions and the underlying
24 circumstances for each transaction, as shown in Powerex Exhibit No. 5, Attachment A.
25 Powerex pointed out that none of the transactions is listed as “non-firm” and that all the
26 transactions are either firm or wheel through transactions and therefore do not fit the

1 definition in the Commission's Gaming Order.

2 Powerex also examined the specific transactions in question and provided the
3 backup information to Trial Staff. Of the 13 transactions, six were not cut and the power
4 did in fact flow as scheduled. Six of the 13 transactions were cut for reasons beyond
5 Powerex's control such as Y2K precautions, line outages, or generator ramping issues.
6 There was only one hour for which no explanation was determined and that hour was a
7 wheel transaction, not a non-firm transaction.

8

9 Staff Conclusion

10 As in the case of the False Import strategy, in the end the simple definition of
11 Cutting Non-Firm settles this matter with respect to Powerex. The Gaming Order defines
12 Cutting Non-Firm as the scheduling of non-firm power by a market participant that did
13 not intend to deliver the power. The CAISO July 16 Report shows that Powerex had no
14 congestion revenues from non-firm schedules that were subsequently cut during the
15 relevant period. Not only do Powerex transactions not fit the Commission's definition,
16 but of the 13 transactions, Powerex provided evidence showing that they either were not
17 cut or were cut for reasons beyond Powerex's control. Thus, the allegations of Cutting
18 Non-Firm are not applicable to Powerex's transactions.

19

20 **Circular Scheduling**

21 Definition

22 The Gaming Order defines Circular Scheduling as the practice of scheduling a
23 series of transactions that garnered congestion relief payments when, in fact, no energy
24 flowed and no congestion was relieved. The essence of this practice was to schedule a
25 counterflow on a congested line within the CAISO control area so as to receive
26 congestion relief payments but at the same time schedule equal and opposite transactions

1 outside the CAISO control area that brought the energy back to the point of origin so that,
2 in fact, the power never flowed.

3

4 Allegation Source

5 The CAISO October 4th Report screened the CAISO transaction data base for pairs
6 of export/import transactions of equal quantities by the same scheduling coordinator that
7 generated congestion revenues from counterflows on inter-ties or internal paths. Table 2
8 “Total Congestion Revenues from Counterflows Created by Import/Export Schedules
9 (Matched by MW Amount) by SC” lists Powerex [shown as BCHA: British Columbia
10 Power Exchange Corporation] as having earned \$44,779 from congestion revenues on
11 potential circular schedules in 2000.

12 The Fox-Penner analysis states that an Enron employee implicated Powerex as
13 engaging in “Death Star” transactions. Table E-1 “Total Matching Export-Import
14 Transactions that Are Potential Death Star Trades” lists Powerex as having 689 MWh
15 over 26 hours during the period May 1, 2000 through June 19, 2001, in which Powerex
16 may have earned congestion revenues through circular scheduling.

17 The CAISO June 18th Report Table 4 “Total Congestion Revenues from
18 Counterflows Created by Import/Export Schedules (Matched by MW Amount)” revised
19 the number of Powerex transactions that could potentially be Circular Schedules such that
20 the congestion revenues earned during the January 1, 2000 through June 20, 2001 period
21 amounted to \$31,456. The CAISO July 15th Report shows no change from the CAISO
22 June 18th Report in regard to Circular Schedules. The CAISO July 15 Report workpapers
23 include a spreadsheet labeled “Death_Star_Data.xls” that lists the 26 transactions in
24 question.

25

26 Powerex Evidence

1 The Powerex September 2nd Response examined the 26 transactions included in
2 the CAISO July 15 Report for the period January 1, 2000 through June 20, 2001 in regard
3 to the Commission’s definitions and the underlying circumstances for each transaction, as
4 shown in the PowerPoint slides in Powerex Exhibit No. 5, Attachment A. Powerex
5 provided the source control area and sink control area for each transaction to show that
6 the schedules it submitted to the CAISO had distinct sources and sinks. Powerex
7 demonstrated that it did not schedule transactions back to the original sources through
8 non-CAISO controlled facilities. This determination was made by Powerex examining all
9 Powerex transactions sourcing out of each sink associated with a transaction that the
10 CAISO data indicated could be a circular schedule. Any “sink/source” transaction was
11 then traced to ascertain whether it led back to the original source for the CAISO identified
12 transaction. Similarly, Powerex examined Powerex transactions sinking into each source
13 associated with a transaction the CAISO data indicated could be a circular schedule. Any
14 “source/sink” transaction was then traced to ascertain whether it led back to the original
15 sink for the CAISO identified transaction.

16

17 Staff Conclusion

18 The CAISO July 15th Report includes 26 pairs of transactions from January 1,
19 2000 through June 20, 2001 that were potential circular schedules. Of these 26 pairs, two
20 pairs had mismatched markets for the import and export. Circular Schedules require that
21 the export and import transaction take place in the same market, day-ahead or hour-ahead
22 in order to earn the congestion revenues for non-flowing schedules. One transaction was
23 scheduled on the DC line and thus must have flowed. Powerex’s examination of the
24 remaining 23 potential transactions sourcing and sinking in correlation with the CAISO
25 identified transactions indicated that there was no “closing the loop” to create circular
26 schedules. Powerex has confirmed that the power flows were not connected with a non-

1 CAISO control area transaction to close the loop. Trial Staff verified Powerex's
2 assertions through random testing of potential downstream daisy chains at the sink-end of
3 the CAISO's identified transactions. Thus, these transactions cannot be demonstrated to
4 constitute circular schedules.

5

6 **Scheduling Counterflows on Out-of-Service Lines**

7 Definition

8 The Gaming Order defines Counterflows on Out-of-Service lines as a practice of
9 submitting a schedule and a counter-schedule across an intertie at the CAISO border that
10 was known to be out of service. Scheduling transmission across a line derated to zero
11 created artificial congestion in the day-ahead or hour-ahead market; the correlated
12 counter-schedule would garner congestion relief payments in the same day-ahead or hour-
13 ahead markets. In real time, the CAISO would cut the initial schedule and the participant
14 would not have to supply the energy which initiated the congestion relief payment.
15 Because the congestion payment was in the day-ahead or hour-ahead market and the cut
16 schedule in the real time market, the congestion payment could be realized while the
17 offending transaction got cut.

18

19 Allegation Source

20 The CAISO October 4th Report Table 9 "Counterflow Revenues on Out-Of-
21 Service Tie Points, April 1998 – June 2002" lists Powerex as earning \$738,644 in
22 congestion revenues for counterflows on out-of-service lines in the year 2000.

23 Fox-Penner lumps together the four forms of Cut Schedule strategies (1) Cutting
24 Non-Firm, 2) Scheduling on Out-Of Service Lines, 3) Failing to provide completed
25 paperwork to the CAISO prior to real time flow causing the schedule to be cut by the
26 CAISO, and 4) submitting offsetting counterflow and supplemental energy bids).

1 Consequently, the Fox-Penner analysis lumps together the transactions for Scheduling on
2 Out-of-Service Lines with the Cutting Non-Firm scheduling under Table F-1 “Total
3 Schedules Cut After Receiving Counterflow Payments.” The totals for all Cut Schedules
4 lists Powerex as having 2,933 MWh over 41 hours.

5 The CAISO June 18th Report Table 9 “Counterflow Revenues on Out-Of-Service
6 Tie Points, January 1, 2000 – June 19, 2001” lists Powerex as earning \$789,491 in
7 congestion revenues for counterflows on out-of-service lines during the pre-refund period
8 January 1, 2000 through October 1, 2000. The CAISO July 15th Report shows no change
9 from the June 15th report in regard to Scheduling on Out-Of-Service Lines. The CAISO
10 July 15th Report includes workpapers labeled “WheelOut_FERCWorksheet.xls” that lists
11 20 transactions in which Powerex may have earned congestion revenues on cut schedules
12 over out-of-service lines.

13

14 Powerex Evidence

15 The Powerex September 2nd Response, the October 1, 2003 presentation, and
16 October 10, 2003 follow-up material, as shown in Powerex Exhibit No. 5, Attachements
17 A and B, examined the 20 transaction included in the CAISO July 15 Report in regard to
18 the Commission’s definitions and the underlying circumstances for each transaction.
19 Powerex notes that all twenty of the transactions in question are adjustment bids, not
20 initial schedules, and therefore are not within the Commission’s definition of Scheduling
21 Counterflows on Out-of-Service Lines.

22

23 Staff Conclusion

24 The Scheduling Counterflows on Out-of-Service Lines strategy called for the
25 participant to schedule an *initial schedule* across an out of service line, creating a false
26 congestion scenario which it then relieves with a counterflow schedule, thus receiving

1 congestion relief payments. It is not clear how the congestion charge associated with the
2 initial schedule would not cancel out the congestion relief payment for pairs of
3 transactions by the same participant. Nevertheless, the Powerex transactions identified by
4 the CAISO are not initial schedules but *adjustment schedules*. The CAISO data base
5 shows that for the transactions in question, Powerex submitted zero bids for those hours
6 in the day-ahead and hour-ahead markets – the hour-ahead final schedule reflects that the
7 CAISO selected Powerex’s adjustment bid to assist with congestion problems.
8 Adjustment schedules are offers by participants to assist the CAISO in dealing with
9 congestion problems by taking up the excess energy that cannot flow as intended and
10 finding alternative sinks or providing extra energy to fill in where the initial schedule
11 cannot flow as intended. The adjustment bid, which the CAISO uses to create a schedule,
12 does not cause the congestion but rather relieves congestion caused by the initial
13 schedule. As in other instances here, the simple definition of the strategy clears Powerex
14 of engaging in this strategy. Powerex did not submit initial schedules for lines that were
15 out of service and therefore these transactions do not represent a gaming practice.

16

17 **Load Shift**

18 Definition

19 The Gaming Order defines Load Shift as the practice of under-scheduling load in
20 one zone and over-scheduling load in another so as to create congestion in the direction of
21 the over-scheduled zone and subsequently garner congestion relief payments by
22 correcting the schedules to reflect the actual load and thereby relieving the false
23 congestion. This strategy required that the participant own Firm Transmission Rights
24 (FTRs) in the direction of the overscheduled zone so that it could not be assessed
25 congestion payments by the CAISO (which would offset the congestion relief payment).

26

1 Allegation Source

2 The October 4th Report discusses the Load Shift strategy in relation to Enron but
3 does not provide any discussion of other parties that may have engaged in Load Shift.
4 Fox-Penner also discusses the Load Shift strategy but does not provide specific
5 transaction allegations.

6 The CAISO June 18th Report and CAISO July 15th Report do not list Powerex as
7 having engaged in any Load Shift transactions.

8
9 Powerex Evidence

10 The Powerex September 2nd Response noted that neither the CAISO June 18th
11 report nor the CAISO July 15th Report include Powerex in the list of those that may have
12 engaged in Load Shift. Powerex also noted that Powerex does not own FTRs across Path
13 15 or path 26 in California and thus cannot profit from the Load Shift strategy.

14
15 Staff Conclusion

16 In light of the fact that no party named Powerex for any specific load shift
17 transactions and that Powerex could not gain from the strategy since it did not own FTRs,
18 Powerex cannot be found to have engaged in this strategy.

19
20 **Paper Trading**

21 Definition

22 The Gaming Order defines three forms of ancillary service practices: Paper
23 Trading, Double Selling, and Arbitraging. Paper Trading is the practice of selling
24 ancillary services in the day-ahead market without the resources necessary to actually
25 provide the service. The participant must buy-back the ancillary service in the hour-ahead
26 market or risk non-performance if the CAISO calls on the participant to provide the

1 service. In buying back the resources, the participant also risks price fluctuations
2 unfavorable to their original sale. Double Selling is the practice of selling ancillary
3 services in the day-ahead market and later selling those same resources into other
4 markets. Again, the participant must buy-back the ancillary service in the hour-ahead
5 market or risk non-performance if the CAISO calls on the participant to provide the
6 service.

7 Arbitrage is the practice of buying back equivalent ancillary services in the hour-
8 ahead market if the prices were favorable, and in so doing cancel out the initial
9 obligation. In general, participants in arbitrage would submit one-cent purchase bids in
10 the hour-ahead market; if another party submitted a one-cent sale bid, the first participant
11 could buy back equivalent resource at the one-cent price and thus reap the arbitrage
12 between the original price and the one-cent price. The CAISO's ancillary service position
13 was not harmed because it still had the same level of ancillary services as it had before the
14 hour-ahead market arbitrage. As long as the participant had the resources initially and did
15 not double commit the resources, arbitrage is not considered a violation of the tariff.

16

17 Allegation Source

18 The suspicion that parties may have engaged in Paper Trading arose out of two
19 sources of information that suggested participants may not have had the resources
20 available at the time the ancillary services were sold to the CAISO. One is the July 3,
21 2002 CAISO Market Notice "Ancillary Services Payments Rescinded Due to Generator
22 Unavailability" that identified 32 entities that had ancillary service payments rescinded
23 over the period June 14, 1999 through April 30, 2002 due to non-performance when the
24 service was called upon. The second is the practice of buying back ancillary services, as
25 documented by the CAISO in its various reports.

26 The CAISO October 4th Report Table 6 "Gains and Losses from Sellback of

1 Ancillary Services by SC (through May 2002)” lists Powerex as having gained a net
2 \$1,006,027 from engaging in the buying back of ancillary services through the CAISO
3 from 1999 through May 2002. Table 7 clarifies that all of these gains occurred in 2000.

4 Fox-Penner states that Powerex bought back ancillary services on 96 occasions
5 between May and October 2000. Fox-Penner’s Table G-2 “Ancillary Services Buyback
6 Summary (Importers – Peak Hours)” attributes 118 hours to Powerex for the January 1,
7 2000 and June 20, 2001 period.

8 The CAISO June 18th Report Table 7 “Sellback of Ancillary Services” revised the
9 estimate of Powerex gains from ancillary service buybacks to \$162,795. The CAISO July
10 15th Report did not revise the figures for Powerex. The CAISO July 15th Report includes
11 workpapers labeled “AS Buy-back Data and Tables.xls” that lists 142 hours of
12 transactions in which Powerex bought back ancillary services from the CAISO.

13

14 Powerex Evidence

15 Powerex’s September 2nd Response counted 158 instances in which the CAISO
16 identified potential Paper Trading activities by Powerex. Of the 158 instances, Powerex
17 states and the CAISO confirmed as shown in Exhibit No. 5, Attachment D, that the
18 CAISO initiated a forced buy back on 95 occasions and that the Powerex initiated only 63
19 such buy backs. Furthermore, Powerex asserts that it lost approximately \$120,000 on the
20 buy backs. Powerex provided detailed information explaining and justifying each of
21 these remaining buy backs, and demonstrating that they did not constitute Paper Trading.

22

23 Staff Conclusion

24 Ancillary service games include 1) selling services that the participant does not
25 have available if called upon, known as Paper Trading or “Get Shorty,” and 2) selling the
26 same resource twice, thus making it unavailable if called upon, known as Double Selling.

1 (Powerex was not named as an entity that may have engaged in Double Selling.) An
2 entity engaging in Paper Trading could take the risk that the service would not be called
3 upon, or buy back the service in the hour-ahead markets. Services called upon by the
4 CAISO but not delivered were subject to having the ancillary service payments rescinded,
5 as reflected in the CAISO July 3rd Market Notice. Non-performance could be occasioned
6 for many reasons in addition to simply not having the necessary resources. In the wake of
7 the Enron memos, which revealed the intent to deceive the market by selling services
8 Enron did not have, the Commission Trial Staff sought to determine whether parties listed
9 in either the CAISO July 3rd Market Notice or the CAISO June 18th and July 15th Reports
10 did in fact have the resources available to back up their ancillary service sales.

11 Powerex provided Trial Staff with a capacity report for every hour of every day
12 between May 1, 2000 and December 20, 2000, at which time Powerex ceased selling
13 ancillary services to the CAISO. The capacity report shows: 1) energy reserves available
14 to Powerex through BC Hydro, 2) BC Hydro's system reserve requirements, 3) ancillary
15 service sales to CAISO, 4) CAISO out-of-market sales, 5) BC Hydro's headroom, and 6)
16 undispached ancillary services. The capacity report indicates that Powerex had 4 hours
17 between May and December 2000 in which it had a "physical resource deficit."
18 However, as explained by Powerex, through released replacement reserves and
19 curtailment programs, Powerex was able to maintain a positive balance of reserves at all
20 times. This data and other evidence presented by Powerex confirm that Powerex did not
21 engage in Paper Trading and was capable at all times of providing the ancillary services it
22 sold to the CAISO.

23

24 **Enron Partnership Allegation**

25 The Partnership Order, Docket EL03-180-000, et al, stated that Enron created a
26 marketing program based on the use of other entities assets and, in so doing, acquired

1 sensitive market information, decision making authority, and market share. Enron did
2 these things without seeking Commission approval for its *de facto* expanded market based
3 rate authority. These activities suggest that Enron acted in partnership with the other
4 entities to systematically game the California markets. Among the documents received
5 from Enron was a list of 12 entities that had service arrangements of some sort with
6 Enron. Powerex was on that list and consequently named in the Commission's
7 Partnership Order and required to show cause why it was not in violation of the tariff.

8 Powerex provided Trial Staff with extensive documentation regarding all Enron
9 references to Powerex. These documents demonstrate the Enron references were wholly
10 inaccurate, normal arms-lengths transactions, or entreaties by Enron that were not
11 accepted. The Trial Staff found no corroboration that Powerex had any partnership,
12 alliance, or other arrangements with Enron beyond normal arms-length transactions. I
13 found no corroborating evidence that Powerex formed any arrangements with Enron to
14 game the CAISO markets in any way.

15 Powerex furnished credible and complete explanations of the documents identified
16 in the Final Report and the Fox-Penner testimony, and demonstrated that none of these
17 documents provided any foundation to support an allegation that Powerex engaged in
18 joint activity with Enron to effect or facilitate a gaming practice or to engage in any other
19 improper concerted activity. I have found no evidence to contradict Powerex's evidence,
20 nor have I seen any evidence indicating the existence of any partnership, alliance or other
21 arrangement between Enron and Powerex during 2000-2001. Thus, there is no basis to
22 maintain these allegations against Powerex.

23

24 **PSNM Partnership Allegation**

25 The Partnership Order also alleged that evidence identified in the Final Report and
26 in the Fox-Penner testimony indicates "various entities appear to have had agreements

1 with other market participants that had the same attributes as the Enron Partnership,
2 alliance or other Arrangements.” The Partnership Order also noted that Public Service of
3 New Mexico (PSNM) had business arrangements with a number of entities, including
4 Powerex. The source of this allegation appears to be the Fox-Penner testimony, which
5 refers to the fact that PSNM had business arrangements “with many entities (Exhibit No.
6 CA-187).” (Fox-Penner, page 46.) Exhibit No. CA-187 was submitted by PSNM as part
7 of the 100 Days Proceeding and is a spreadsheet showing all PSNM parking transactions
8 from January 1, 2000 through June 1, 2001. Powerex appears in the list with transactions
9 spanning January 2, 2001 through May 29, 2001.

10 Powerex provided the Trial Staff with extensive documentation of correspondence,
11 memoranda, e-mails, trade tickets, billing statements and other evidence relating to any
12 arrangements with PSNM. Powerex furnished detailed testimony and information
13 regarding all of its transactions with PSNM during 2000 and 2001, including analyses of
14 all of Powerex’s parking transactions with PSNM. This evidence did not identify any
15 parking or other transaction with PSNM during the review period that meets the
16 Commission defined criteria for a False Import transaction or any other gaming practice.
17 Powerex provided supplemental information to the Staff at meetings on October 1 and
18 October 22, 2003, and in its October 10, 2003 memorandum, Exhibit No. 5 Attachment B
19 to the Settlement, Powerex also supplemented its September 2, 2003 response to the
20 Partnership Order to provide additional Powerex/PSNM transaction and revenue
21 information.

22 I have independently reviewed the Staff Final Report, the Fox-Penner data, and
23 Exhibit No. CA-187, which identifies certain dates and hours when Powerex bought and
24 sold energy with PSNM. Fox-Penner asserted that such an arrangement could be used to
25 facilitate False Import transactions, but neither the Final Report nor the Fox-Penner data
26 offer any evidence that Powerex used a parking arrangement with PSNM to engage in

1 False Imports, or other gaming practices as defined by the Commission. After analyzing
2 the data and documents supplied by Powerex and the testimony and information provided
3 by Powerex representatives, I concluded that Powerex's transactions with PSNM during
4 the Review Period did not meet the Commission's criteria for a False Import transaction
5 or other gaming practice and that there is no evidence indicating that Powerex had an
6 alliance, partnership or other arrangement with PSNM. There is thus no basis to maintain
7 these allegations against Powerex.

8 I have seen no evidence that Powerex had a partnership, alliance or other
9 relationship with Enron or PSNM that was used to jointly engage in gaming practices or
10 any other improper concerted activity. I found no basis for requiring Powerex to disgorge
11 any profits from its transactions with Enron or PSNM, or for imposing any other
12 monetary or non-monetary remedy on Powerex.

13 **Remedies**

14 My analysis of the transactions included in the CAISO June and July Report data
15 bases, the allegations in the Fox-Penner testimony, and the background information
16 underlying these transactions provided by Powerex confirms Powerex's assertion that it
17 did not engage in the gaming activities as defined by the Commission in the Gaming and
18 Partnership Orders. Examination of the data reveals that in many instances the CAISO
19 data screens identified transactions were not indicative of potential gaming behavior. In
20 virtually all remaining instances¹ the Powerex transactions in question did not meet the
21 Commission's definition of these gaming practices and therefore the identified
22 transactions were not indicative of potential gaming behavior. Furthermore, Powerex's
23 explanation of the underlying circumstances in a substantial number of these transactions
24 led me to conclude that Powerex was genuinely attempting to assist the CAISO in its

1 One firm cut schedule was not explainable.

1 congestion management. Consequently, I find no basis on which to recommend and
2 therefore do not recommend disgorgement of revenues by Powerex for the transactions in
3 question or the payment of any monetary damages or the imposition of any non-monetary
4 remedies by Powerex.

5 **Powerex Reliability**

6 Evidence provided by Powerex shows that, despite the drought conditions that
7 prevailed in British Columbia and the Pacific Northwest in 2000-2001, Powerex was able
8 to draw on the capacity and capability of BC Hydro's predominately hydroelectric system
9 to be a major supplier of energy, particularly real-time imbalance energy and ancillary
10 services to California. Powerex documentation demonstrated that in 1999 Powerex
11 provided approximately 4,662,000 MWh of day ahead, hour ahead, and real-time energy
12 and ancillary services to the CalPX and CAISO. In 2000, these deliveries to the CalPX
13 and CAISO increased dramatically to about 6,185,000 MWh, of which about 39% was
14 imbalance energy in the real time market , demonstrating CAISO's reliance on Powerex
15 to support the California energy markets. Of the real-time imbalance sales, Powerex's
16 real time OOM sales amounted to about 116,000 MWh - a small 1.9% of Powerex's total
17 sales in 2000 to the CAISO and CalPX markets, demonstrating that Powerex was making
18 sales generally within the market clearing prices for the CalPX and CAISO markets.

19 Additionally, Powerex presented evidence showing that it had 12,808 ancillary
20 services transactions with the CAISO in 2000 in the review period, involving total sales
21 of 1.45 million MW of ancillary services. Staff has calculated that when Powerex was
22 called upon to deliver energy from these ancillary services (a total of 4,872 transactions in
23 the review period), it was able to deliver on 99.4% of such calls. This evidence
24 demonstrates Powerex's reliability as a supplier and its contribution toward keeping the
25 lights on in California during the crisis.

26 My analysis of the transactions data bases incorporated in the CAISO June and

1 July Reports, the ancillary service capacity report data provided by Powerex, the
2 explanations of the underlying circumstances related to the transactions identified by the
3 CAISO, and the testimony provided by Powerex representatives leads me to conclude that
4 Powerex was a valuable and reliable supplier of energy and ancillary services to the
5 California markets during the period January 1, 2000 through June 20, 2001.
6
7 This concludes my affidavit.

United States of America
before the
Federal Energy Regulatory Commission

Powerex Corporation)
(f/k/a/British Columbia Power Exchange Corp.)
Powerex Corporation)
(f/k/a/British Columbia Power Exchange Corp.)

Docket No. EL03-166-000

Docket No. EL03-199-000

AFFIDAVIT OF Patrick R. Crowley

I, Patrick R. Crowley, do hereby declare that under penalty of perjury that I am the author of the foregoing affidavit, that the facts set forth herein are true and correct to the best of my knowledge.

October 30,

2003