LANE POWELL
ATTORNEYS & COUNSELORS

RICHARD H. WILLIAMS
503.778.2160
williamsr@lanepowell.com

November 6, 2007

VIA ELECTRONIC *<PUC.FilingCenter@state.or.us>*
AND REGULAR MAIL

Attention: Filing Center
Public Utility Commission of Oregon
550 Capitol Street NE #215
PO Box 2148
Salem, OR 97308-2148

Re: *Wah Chang, Petitioner v. PacifiCorp, Respondent*
Docket UM 1002

Dear Sir or Madam:

Enclosed for filing are the originals of (a) Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203, (b) Affidavit of Robert McCullough in Support of Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203, (c) Affidavit of Richard H. Williams in Support of Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203 and (d) Certificate of Service.

Very truly yours,

Richard H. Williams

Enclosures

cc (w/enc): The Honorable Patrick Power *(by electronic and regular mail)*
Mr. James M. Van Nostrand *(by electronic mail and hand delivery)*
Ms. Natalie Hocken *(by electronic and regular mail)*
Mr. Paul Graham *(by electronic and regular mail)*
Mr. Christopher Garrett *(by electronic and regular mail)*

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BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1002

WAH CHANG, Petitioner, v. PACIFICORP, Respondent.	)	WAH CHANG'S RENEWED, SUPPLEMENTAL AND ALTERNATIVE MOTIONS TO COMPEL COMPLIANCE WITH DR 203

Wah Chang renews its motion for a ruling requiring PacifiCorp to fully comply with Wah Chang's Data Request No. 203 ("DR 203"). *See* Wah Chang's Motion to Compel Full Response to Data Request No. 203, filed August 21, 2007 ("Motion to Compel"). Wah Chang supplementally moves for a ruling requiring PacifiCorp to pay Wah Chang's costs of obtaining the DR 203 data, including experts' and attorneys' fees incurred in reviewing and attempting to repair PacifiCorp's incomplete and damaged DR 203 data and in preparing the Motion to Compel and this motion.

In the event the foregoing motions are denied, Wah Chang alternatively moves for a ruling (i) appointing a Commission staff analyst to facilitate production by PacifiCorp of a complete, undamaged data set and to report to the Administrative Law Judge about PacifiCorp's DR 203 responses and (ii) if the report confirms that the data provided by PacifiCorp have been incomplete and damaged, awarding Wah Chang its costs of obtaining the DR 203 data, including experts' fees and attorneys' fees, incurred in reviewing and attempting to repair PacifiCorp's DR 203 responses and in preparing the motion to compel and this motion.

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DISCUSSION

I. PacifiCorp's Responses to DR 203 have been incomplete and otherwise inadequate.

Wah Chang served DR 203 on May 30, 2007, requesting a "complete and comprehensive set of data documenting PacifiCorp's electricity trading activities for the years 2000 and 2001," including specified information about each transaction. *See* Motion to Compel at 1. Wah Chang later limited its request to the period April 2000 through June 2001. Wah Chang filed its Motion to Compel on August 21, requesting a ruling compelling PacifiCorp to fully comply with the request. The Motion to Compel explained that PacifiCorp three times had delivered a data disk said to comply with DR 203, but each disk omitted some of the requested information.

In response to the Motion to Compel, PacifiCorp asserted that it would provide the information and that the motion should be denied as moot. PacifiCorp's Response to Motion to Compel Response to Data Request 203 at 5 ("Response"). Wah Chang did not agree that the motion was moot, but agreed that a ruling should be deferred. See e-mails from Richard H. Williams to Administrative Law Judge Power, dated September 7 and September 12, 2007, attached hereto as Attachment 1.

After PacifiCorp filed its Response, it delivered disks on three more occasions, and on each occasion the data on the disk were incomplete or damaged or both. On September 7, PacifiCorp delivered a disk that omitted all transactions for some days, omitted some transactions for some days and omitted a data field for all transactions. *See* Affidavit of Richard H. Williams in Support of Wah Chang's Renewed, Supplemental and Alternative Motions Regarding DR 203 ("Wms Aff"), Exhs A and B. Wah Chang suggested that PacifiCorp produce the data in CSV format to avoid errors caused by what appeared to be PacifiCorp's "hand copying" of the data from its CSV format to the format in which it was provided to Wah Chang. Wah Chang also suggested a meeting to discuss technical issues between its expert,

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Robert McCullough, and a PacifiCorp person with first hand knowledge of its computerized data production procedures. Wms Aff, Exh B. PacifiCorp did not respond to the invitation to meet.

On September 18, PacifiCorp produced a disk with the data in CSV format. Wms Aff, Exh C. However, the data was damaged: information appeared in columns or fields where it did not belong. Wms Aff, Exh D. In addition, a number of transactions reported in earlier responses did not appear. *Id.*

On October 9, PacifiCorp produced another disk in CSV format. The data again were damaged, and a number of transactions identified in earlier data productions were missing. Affidavit of Robert McCullough in Support of Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203 ("McCullough Aff"), ¶¶ 14, 15 and 20. Mr. McCullough attempted to repair the data, a time-consuming process akin to assembling a jigsaw puzzle without having all the pieces. McCullough Aff, ¶¶ 18 and 19.

In addition, at least one transaction reported to Dow Jones was missing, and others did not match the information PacifiCorp sent to Dow Jones. *Id.* at ¶ 21. Further, the data did not include transactions between PacifiCorp and Enron recorded in Enron's database, *id.* at ¶ 22, and it did not match information provided by PacifiCorp to FERC. *Id.* at ¶ 23.

II. The Administrative Law Judge should grant the Motion to Compel and should award Wah Chang its expenses.

Wah Chang believes it ought to be a simple matter for PacifiCorp to comply with DR 203. PacifiCorp should be able to quickly and easily generate the requested information by entering a command to its computerized data base. *See* McCullough Aff at ¶¶ 8-11. PacifiCorp has not explained its multiple failures to provide a complete and undamaged data set, except to hypothesize that the corruption of the September 18 data was attributable to a downloading error by Mr. McCullough's staff. Wms Aff, Exh E. Mr. McCullough disproved that hypothesis by following PacifiCorp's suggested corrective without curing the problem. McCullough Aff at

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¶ 17. By its silence, PacifiCorp declined Wah Chang's invitation to meet to discuss possible technical problems in PacifiCorp's data production. *See* Wms Aff, Exhs B and E at 1.

Under these circumstances, it is possible to infer that PacifiCorp's failures are careless or willful. In any event, a ruling requiring a full response is necessary, and an award of Wah Chang's expenses is warranted. *See* ORCP 47A(4)(court may award reasonable expenses incurred in obtaining order compelling compliance with discovery request); OAR 860-011-0000(3)(Oregon Rules of Civil Procedure govern Commission hearings, except as modified).

III. If the Motion to Compel is denied, Wah Chang's alternative motion should be granted.

If the Administrative Law Judge denies the Motion to Compel, Wah Chang requests the appointment of a Commission staff member to facilitate production of a full data set and to report on PacifiCorp's failures to provide the data. An appropriate choice is an analyst experienced in handling computerized cost of energy data. The analyst might meet with PacifiCorp at its offices and observe and receive an explanation of the data production. The analyst might also meet with Mr. McCullough to observe the data previously provided by PacifiCorp.

The Administrative Law Judge has authority to make such an appointment. OAR 860-012-0035(1)(e) and (g) (Administrative Law Judge has authority to "[l]imit, supervise and control discovery" and to decide procedural matters). The appointment of an analyst is within this authority. Further, it is analogous to a court's appointment of a referee "to report only upon particular issues, or to do or perform particular acts, or to receive and report evidence only." ORCP 65C(1); *see* OAR 860-011-0000(3).

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/ / /

III. CONCLUSION

The Administrative Law Judge should grant Wah Chang's Motion to Compel and should award Wah Chang's expenses or, alternatively, should appoint a Commission staff member to supervise PacifiCorp's production and to report to the Administrative Law Judge.

DATED this 6th day of November, 2007.

LANE POWELL PC

By Richard H. Williams

Richard H. Williams, OSB No. 72284
Milo Petranovich, OSB No. 81337

Attorneys for Petitioner Wah Chang

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BEFORE THE PUBLIC UTILITY COMMISSION

OF THE STATE OF OREGON

UM 1002

WAH CHANG, Petitioner, v. PACIFICORP, Respondent.	AFFIDAVIT OF RICHARD H. WILLIAMS IN SUPPORT OF WAH CHANG'S RENEWED, SUPPLEMENTAL AND ALTERNATIVE MOTIONS TO COMPEL COMPLIANCE WITH DR 203

STATE OF OREGON)
) *ss.*
County of Multnomah)

I, Richard H. Williams, being first duly sworn, depose and say:

1. I am an attorney representing Wah Chang in this proceeding.

2. I make this affidavit in support of Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with Data Request 203. This affidavit is based on my personal knowledge.

3. Attached to this affidavit as Exhibit A is a true and complete copy a letter dated September 7, 2007, from Christopher Garrett to me.

4. Attached to this affidavit as Exhibit B is a true and complete copy of a letter dated September 13, 2007, from me to Christopher Garrett.

5. Attached to this affidavit as Exhibit C is a true and complete copy of a letter dated September 18, 2007, from Christopher Garrett to me.

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6. Attached to this affidavit as Exhibit D is a true and complete copy of a letter dated September 27, 2007, from me to Christopher Garrett.

7. Attached to this affidavit as Exhibit E is a true and complete copy of an e-mail dated October 3, 2007, from Christopher Garrett to me and two e-mails dated October 4, 2007, from me to Christopher Garrett.

8. Attached to this affidavit as Exhibit F is a true and complete copy of a letter dated October 9, 2007, from Christopher Garrett to me.

DATED: November 6, 2007.

Richard H. Williams

RICHARD H. WILLIAMS

SIGNED AND SWORN to before me this 6th day of November, 2007.

OFFICIAL SEAL
KATHLEEN RYLAND
NOTARY PUBLIC-OREGON
COMMISSION NO. 393410
MY COMMISSION EXPIRES JULY 20, 2009

Kathleen Ryland

NOTARY PUBLIC FOR OREGON
My Commission Expires: 7-20-2007

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Christopher L. Garrett
PHONE: 503.727.2078
FAX: 503.346.2078
EMAIL: CGarrett@perkinscoie.com

September 7, 2007

BY HAND DELIVERY AND EMAIL

Mr. Richard H. Williams
Lane Powell PC
601 SW Second Ave., Suite 2100
Portland, OR 97204-3158

Re: ***Wah Chang v. PacifiCorp*;**
PUC Docket No. UM 1002

Dear Rich:

This letter responds to your letter dated August 17, 2007 regarding Wah Chang's Data Request No. 203 and Wah Chang's Motion to Compel Full Response to Data Request No. 203 ("Motion to Compel").

Data Request No. 203, served on May 30, 2007, requests information regarding all of "PacifiCorp's electricity trading activities for the years 2000 and 2001." Wah Chang thereafter volunteered to narrow this request to the time period April 2000 through June 2001, exclusive of the period from July through November 2000. PacifiCorp responded to that request on June 22, 2007. In a telephone conversation with Jamie Van Nostrand on August 17, followed by your letter of the same day, you informed us that the data appeared to be incomplete for certain months during the requested time period. That very same day, PacifiCorp began to provide replacement data for the referenced months.

In light of the foregoing, PacifiCorp was surprised when Wah Chang on August 21 filed its Motion to Compel, which abandoned the compromise reached by the parties and instead demanded that PacifiCorp produce all of the information for the period April 2000 through June 2001. Although it was not appropriate for Wah Chang to inform PacifiCorp of its change of mind through a motion to compel, PacifiCorp, as indicated in its response to the motion, is willing to produce the data requested in Wah Chang's motion, which includes all electricity transactions for the period April 1, 2000 through June 30, 2001. *See* Wah Chang Motion to Compel at pages 3-5.

Enclosed is a CD with the requested transactional information for the period April 2000 through June 2001. Please review this CD at your earliest opportunity and advise me if you believe it does not include any portion of the information that Wah Chang has requested in its Motion to Compel.

Very truly yours,

Christopher L. Garrett

Enclosures

c: Natalie Hocken

LANE POWELL
ATTORNEYS & COUNSELORS

RICHARD H. WILLIAMS
503.778.2160
williamsr@lanepowell.com

September 13, 2007

VIA ELECTRONIC/REGULAR MAIL

Mr. Christopher L. Garrett
Perkins Coie LLP
1120 NW Couch Street, 10th Floor
Portland, OR 97209-4128

Re: *Wah Chang v. PacifiCorp*
Docket UM 1002

Dear Chris:

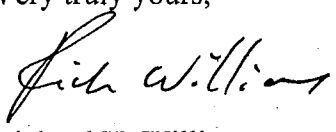
This will follow up our conversation yesterday about the disk delivered on Friday, September 7, in supplemental response to Wah Chang's data request number 203.

The data set on the disk appears not to be complete in the following respects: (a) Transactions for the days May 11-May 20 are missing. My understanding is that transactions for the days May 1-May 10 appear twice, and none appear for the days May 11-20. (b) For each month April 2000-June 2001, transactions are missing—that is, the data set does not include transactions identified in earlier responses to Wah Chang data requests. For each month other than May 2000 and June 2001, the number of missing transactions appears to be less than 10. For June 2001, the number is 12, and for May 2000, the number is 541. The high May 2000 number presumably is attributable in whole or in substantial part to the missing 10 days. (c) The "deal done date" field is missing. We understand the "deal done date" to be either the date the transaction is made or the date the transaction is entered into the RM&T program, and would appreciate clarification of this point. (d) The comment field is null for an exceedingly high percentage of trades, which may suggest that not all comments were provided.

We suggest a meeting or conference call that would include a PacifiCorp analyst or other person who has responsibility for or first-hand knowledge about the mechanics of providing the data. Robert McCullough advises that the responses apparently have been produced by "hand-copying" the RM&T data from its CSV (comma delineated format) to the format in which the data is provided to us, a laborious and possibly unnecessary step that may account for data gaps. A similar meeting or conference call was helpful two or more years ago to resolve technical difficulties in playing the audio tapes.

Mr. McCullough is out of town until next week. If a meeting is agreeable, please let me know your availability

Very truly yours,



Richard H. Williams

RHW:ps

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September 18, 2007

BY HAND DELIVERY AND EMAIL

Mr. Richard H. Williams
Lane Powell PC
601 SW Second Ave, Suite 2100
Portland OR 97204-3158

Re: ***Wah Chang v. PacifiCorp*;**
PUC Docket No. UM 1002

Dear Rich:

This letter responds to your letter dated September 13, 2007 regarding the data that PacifiCorp provided on September 7, 2007 in response to Data Request No. 203.

You are correct that PacifiCorp manually copied the data in the September 7 production. This method was chosen because of the volume of data at issue. In response to the suggestions made in your September 13 letter and in our telephone conversation of that day, PacifiCorp has reproduced the entire data file in comma-delineated format. That reproduction is contained on the enclosed DVD, which replaces PacifiCorp's September 7 production.

Please note that while we intend and believe that this DVD contains all of the data that you requested, the file is too large for us to open in order to verify its contents. Accordingly, upon review, if you believe that the DVD is missing any of the data that you requested, please let me know as soon as possible.

I believe that this replacement production will resolve the issues set forth in your letter, specifically with regard to the data for May 11-20, 2000 and the "done date" field, both of which were inadvertently omitted from the September 7 production. (The "done date" field reflects the date that transactions were consummated. Typically, forward transactions are entered into PacifiCorp's RMT system on the same day they are consummated. Real-time transactions are entered into the RMT system on the first business day after the end of the

day on which the transactions were consummated, but the "done date" for those transactions is changed to reflect the date of consummation.)

As to your inquiry regarding the "comments" field, I have no reason to believe that the September 7 production was incomplete; nonetheless, the enclosed DVD should contain complete "comments" data. Finally, with respect to the various transactions that you believe were missing for each month in the subject time period, we are still waiting for further details from you in order to determine whether any discrepancies exist. If, upon review of the enclosed replacement production, you continue to believe that any transactions are missing, please let me know.

Very truly yours,

Christopher L. Garrett

CLG:ljo

Enclosures

cc: Natalie Hocken
James Van Nostrand

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ATTORNEYS & COUNSELORS

RICHARD H. WILLIAMS
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September 27, 2007

VIA ELECTRONIC/REGULAR MAIL

Mr. Christopher L. Garrett
Perkins Coie LLP
1120 NW Couch Street, 10th Floor
Portland, OR 97209-4128

Re: *Wah Chang v. PacifiCorp, OPUC Docket UM 1002*

Dear Chris:

Robert McCullough has reviewed the CSV data you provided on disk on September 18 and reports the following problems:

- In some instances, information appears in columns where it does not belong. For example, the column captioned "TimeZone" includes as entries "CAISO," "Firm," "NULL," and other category mistakes. Mr. McCullough believes this occurred because the analyst who prepared the disk did not put quotation marks around single category information that itself included a comma, with the result that the program mistook the information separated by the comma as belonging to separate categories. Since the data is not titled, it is not possible to determine what some of the data elements are intended to be.

- There may be other problems with the data presentation, but Mr. McCullough cannot be certain because of the problem described above. One such problem may be that all transactions were reported in Pacific time, but the hour of transactions not occurring in the Pacific time zone was not adjusted to Pacific time. For example, suppose a transaction occurred at 10 a.m. Rocky Mountain time. The data set may report the transaction as having occurred at 10 a.m. Pacific time, instead of 9 a.m. Pacific time. Reporting all transactions in Pacific time makes sense, so long as the hour of non-Pacific time transactions is adjusted accordingly. Another such problem is that it is not entirely clear what variable is intended to be reported in some columns.

- Some transactions are missing from the data – that is, they were reported in response to earlier data requests but are not included in the CSV data set. A listing of those transactions by date, RMT number and earlier discovery response is enclosed.

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LAW OFFICES
ANCHORAGE, AK . OLYMPIA, WA
PORTLAND, OR . SEATTLE, WA
LONDON, ENGLAND

Please call me to discuss at your earliest opportunity.

Very truly yours,

Richard H. Williams

Enclosure
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Enclosure to letter dated September 2? J07
to Chris Garrett

Transaction numbers missing from September 18, 2007 data production

Month	RMT #	2001	2005	767	June 22	June 29	September 7	September 17
01-Apr-00	65974	65974	65974		65974			
01-Apr-00	65987	65987	65987		65987			
01-Apr-00	86158		86158		86158			
01-May-00	67819	67819	67819		67819			
01-May-00	67835	67835	67835		67835			
01-May-00	69566		69566		69566			
01-May-00	86158		86158		86158			
01-Jun-00	69866	69866	69866		69866			
01-Jun-00	86158		86158		86158			
01-Jul-00	86158		86158		86158			
01-Aug-00	74122	74122	74122					
01-Aug-00	86158		86158		86158			
01-Sep-00	76607		76607					
01-Sep-00	86158		86158		86158			
01-Oct-00	78243	78243	78243					
01-Oct-00	78250	78250	78250					
01-Oct-00	78270	78270	78270					
01-Oct-00	86158		86158		86158			
01-Nov-00	81263		81263					
01-Nov-00	86158		86158		86158			
01-Dec-00	82518	82518	82518		82518			
01-Dec-00	82519	82519	82519		82519			
01-Dec-00	86158		86158		86158			
01-Jan-01	83975		83975		83975			
01-Jan-01	86158		86158		86158			
01-Jan-01	98882		98882					
01-Feb-01	83975		83975		83975			
01-Feb-01	86158		86158		86158			
01-Feb-01	86672	86672	86672		86672			
01-Mar-01	83975		83975		83975			
01-Mar-01	86158		86158		86158			
01-Apr-01	83975		83975		83975			
01-Apr-01	86158		86158		86158			
01-May-01	83975		83975		83975			
01-May-01	86158		86158		86158			
01-May-01	90750		90750		90750			
01-Jun-01	83975		83975		83975			
01-Jun-01	86158		86158		86158			
01-Jun-01	92848		92848		92848			
01-Jun-01	92877		92877		92877			
01-Jun-01	94538		94538		94538			
01-Jun-01	94539		94539					
01-Jun-01	94540		94540					

Williams, Rich

From: Williams, Rich
Sent: Thursday, October 04, 2007 4:29 PM
To: Garrett, Christopher L. (Perkins Coie)
Cc: Van Nostrand, James M. (Perkins Coie)
Subject: FW: PacifiCorp data

Chris,

My e-mail below has an error. I intended to say that we believe the problem is the absence of *quotation marks* around the variable information that includes commas.

Richard H. Williams
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601 SW Second Avenue, Suite 2100
Portland, OR 97204
(503) 778-2160 (direct)
(503) 778-2200 (fax)
williamsr@lanepowell.com

From: Williams, Rich
Sent: Thursday, October 04, 2007 4:11 PM
To: 'Garrett, Christopher L. (Perkins Coie)'
Cc: Van Nostrand, James M. (Perkins Coie)
Subject: RE: PacifiCorp data

Chris,

Robert McCullough has followed PacifiCorp's suggestion to reload the disk without "touching" it while it was loading. That procedure did not cure the problem. He continues to believe the problem is that PacifiCorp failed to put commas around variable information that contains commas. I continue to believe that a meeting or conference call including Robert and a PacifiCorp person with first-hand knowledge would be useful.

Regards,

Rich

Richard H. Williams
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(503) 778-2200 (fax)
williamsr@lanepowell.com

From: Garrett, Christopher L. (Perkins Coie) [mailto:CGarrett@perkinscoie.com]
Sent: Wednesday, October 03, 2007 10:17 AM
To: Williams, Rich
Cc: Van Nostrand, James M. (Perkins Coie)
Subject: PacifiCorp data

Rich,

I am writing with regard to your letter of last week concerning problems with the data that PacifiCorp provided. I am told that a very likely cause of the first problem identified in your letter is that the person loading the .csv file may have "touched" it before it was done loading completely. Apparently, if a person so much as scrolls down the page while the file is loading, it interferes with the loading process (called "painting the data") and can cause the type of problem described in item one of your letter. Thus, as a first step toward resolving this, we ask that you try reloading the file and be certain that the file is left alone during the loading process.

PacifiCorp is still investigating the issue of the "missing" transactions identified in the attachment to your letter.

Regards,
Chris

Christopher L. Garrett

Perkins Coie LLP

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October 9, 2007

BY HAND DELIVERY

Mr. Richard H. Williams
Lane Powell PC
601 SW Second Ave, Suite 2100
Portland OR 97204-3158

Re: ***Wah Chang v. PacifiCorp*;**
PUC Docket No. UM 1002

Dear Rich:

I write in further response to your letter dated September 27, 2007 and our subsequent exchange of emails regarding the data that PacifiCorp has provided in response to Wah Chang's Data Request No. 203. I understand that Wah Chang has encountered complications in loading the data file provided by PacifiCorp on September 18, and that certain transactions appear to be missing from that file. Enclosed is a DVD containing a new copy of the requested data. Please attempt to load this file, which should contain those transactions that you identified as missing in your September 27 letter. I hope that this resolves the issue. Please let me know if you continue to have difficulties.

Very truly yours,

Christopher L. Garrett

CLG:ljo
Enclosure

cc: Natalie Hocken
James Van Nostrand

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1002

WAH CHANG, Petitioner, v. PACIFICORP, Respondent.	AFFIDAVIT OF ROBERT McCULLOUGH IN SUPPORT OF WAH CHANG'S RENEWED, SUPPLEMENTAL AND ALTERNATIVE MOTIONS TO COMPEL COMPLIANCE WITH DR 203

State of Oregon)
) ss.
County of Multnomah)

I, Robert McCullough, being first duly sworn, depose and say:

1. I make this Affidavit in support of Wah Chang's Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with Data Request 203.

2. I am an expert witness on behalf of Wah Chang in this proceeding. My curriculum vitae has been filed by Wah Chang as Exhibit WC/801.

3. On May 30, 2007, Wah Chang requested "a complete and comprehensive set of data documenting PacifiCorp's electricity trading activities for the years 2000 and 2001." Since that time, PacifiCorp has made six different responses to this request. The responses have included varying types of data, numbers of transactions, dates, and formats. Each response has been incomplete or incorrect.

4. The data requested is from a database called Risk Management and Trade (RMT). This is a standard computer database where the trades conducted by PacifiCorp are stored as a

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series of records and fields. A record may contain a number of different fields. More recent PacifiCorp responses have included twenty-six fields comprising information concerning the RMT number, the counterparty, the date entered into RMT, the date delivered, the hour delivered, the time zone, and other relevant information.

5. Of the twenty-six fields provided recently by PacifiCorp, fields 17 through 26 are damaged. Since PacifiCorp has also not identified the information contained in these fields, it is only possible to surmise the correct data that should have been provided.

6. More importantly, data is missing that had been provided by PacifiCorp to FERC and Dow Jones in the past. Some of the missing data had been provided to Wah Chang in previous discovery responses as well, but is now missing in the current data responses.

7. I have participated in the creation of transaction databases for Portland General Electric, Seattle City Light and Tacoma Power. In addition, over the past thirty years I have reviewed similar transaction data on many occasions, including data of Edmonton Power, Puget Sound Energy, PacifiCorp, Washington Water Power, Snohomish PUD, Washington Water Power, BPA, SCE, CAISO, Pacific Gas and Electric, Sierra Power, El Paso Electric, and Enron. I have also worked with transaction-level data for utilities in Illinois, Texas, and Maryland.

8. As a general rule, the quality of transaction-level databases is very high for two reasons: first, any error is likely to be extremely costly – the average transaction in the PacifiCorp data delivered on October 9, 2007 is over $240,000; second, utilities and traders often tie their transactions data directly into their scheduling – a major error could imperil the stability of their system.

9. The basic format of the databases used to store and retrieve transaction data is similar from utility to utility. The data is maintained on a server using database software designed by Microsoft or Oracle. The software is SQL based – a language that allows for simple queries to the database for specific data. The basic query to provide transaction data from a database for a specific period is:

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*SELECT * FROM [Transactions] WHERE (Delivery Date Between #4/1/2000# And #6/30/2001#);*

Translated, this means: "Select all the fields from the transactions database where the delivery date is between 4/1/2000 and 6/30/2001."

10. Although the specific implementation is different for each database, each must contain the ability to retrieve data in an expeditious fashion. Not only is the ability to retrieve data critical for trader information, risk management, and management reports, but trading data in the U.S. must be provided to the Federal Energy Regulatory Commission (FERC) on a quarterly basis where it is posted publicly at http://www.ferc.gov/docs-filing/eqr/data.asp.

11. On my workstation, the query to retrieve the October 9 data takes a little over forty seconds. Saving it to disk takes approximately three minutes.

12. In June 2007, PacifiCorp attempted to provide the data in a series of Excel files using an older version of Excel. Given the limitations of this format, PacifiCorp personnel apparently would conduct the data retrieval using standard techniques and then manually copy the data into the spreadsheet. This cumbersome process caused many errors including duplications of data for incorrect dates, missing dates, and missing fields.

13. On September 18 and October 9, 2007, PacifiCorp adopted a more common approach and delivered data in a format called Comma Separated Values (CSV). This is a well understood standard in the industry. In my experience, all database programs have the ability to output data in this format. This format is rigorously defined. The specification for CSV is contained in RFC 4180: Common Format and MIME Type for Comma-Separated Values (CSV) Files.

14. For reasons as yet unexplained, PacifiCorp's CSV format deviates from the CSV specification. In the data provided on September 18 and October 9, PacifiCorp provided approximately 2.5 million hourly schedules. Of these, approximately 40% (or 986,832 hourly schedules) contain erroneous data. This is true of the October 9 data as well as the September 18

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data. A simple test for the erroneous data is to review the field containing the time zone where the transaction occurred and check whether the data makes sense. For example, time zone data should not contain "Tullet Liberty Inc.", "CAISO", "Firm", "Nonfirm", "Null", or "SystemFirm", for example. Unfortunately, it does on almost one million occasions.

15. We informed PacifiCorp that the September 18 data was damaged, but did not receive an explanation, and the October 9 data was also damaged. In reviewing the data, we notice that PacifiCorp has neglected to follow specification 2.6 of RFC 4180:

> *6. Fields containing line breaks (CRLF), double quotes, and commas should be enclosed in double-quotes.*

16. When the double quotes are omitted, the embedded comma signals to the computer that a new field has begun. Any fields following the error will be one off, leading to incorrect data being inserted into the following fields.

17. PacifiCorp suggested that the data might have been damaged by "touching" it while loading it from the disk, for example by scrolling down the page. We followed PacifiCorp's suggestion to reload the data, taking care not to "touch" it, but found that it does not change the data response.

18. Working with a damaged database is both time-consuming and costly. To access the data, we have undertaken the following steps:

a. The data is loaded in its damaged form and reviewed.

b. The initial review indicates that PacifiCorp has not placed double quotes surrounding fields which contain commas. For example, specification 2.6 of RFC 4180 would require that the field containing "Enron Power Marketing, Inc." be preceded by a double quote and followed by a double quote. This problem is not restricted to counterparty names, since other fields also apparently contain unquoted commas, such as the comments field.

c. The damaged dataset is then repaired using two different techniques:

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i. The first approach is to review the damaged records in Excel and correct them by hand.

ii. The second approach is to insert the missing double quotes using PERL, a text- handling language appropriate for this task.

d. Finally, the two different repair results are compared and best judgment is used to determine which records are correct.

19. Obviously, this is akin to reassembling a jigsaw puzzle whose image and some of the pieces are missing. The final result is largely correct in that it can be compared with previous responses – which also had missing pieces – but cannot be considered better than an honest guess as to the complete contents of the database.

20. As part of the extensive efforts to repair the September and October data responses, we discovered a more important problem. In a number of cases, transactions previously identified by PacifiCorp in 2000, 2001, 2002, 2005, and 2007 are now missing from the most recent attempts to provide the database. Missing transactions from the September 18 discovery response were identified to PacifiCorp, but the October 9 data response only repaired four of these missing transactions. Missing from these current responses that were referenced in previous responses are RMTs 65974, 65987, 86158, 67819, 67835, 69566, 69866, 74122, 76607, 78243, 78250, 78270, 82518, 82519, 83975, 98882, 86672, 90750, 92848, and 92877. Since these are transactions, each missing RMT may correspond to many different missing hourly schedules.

21. In at least one case, PacifiCorp reported a transaction to Dow Jones that is not in the October 9 dataset. Moreover, there are many cases in which the data provided to Dow Jones differs from that provided to Wah Chang, even when the RMT numbers for the transactions match.

22. In addition, there are numerous transactions between Enron and PacifiCorp that are recorded in Enron's transaction database, Enpower, but that do not exist in PacifiCorp's

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current dataset. For example, Enron's transaction data shows that on May 28, 2000 from 7-10 p.m., Enron bought 20 MWhs from PacifiCorp at COB. This transaction is identified as Deal Number 346038 in Enpower. This corresponds to transaction 69566 in PacifiCorp's 2005 discovery and its June 22, 2007 response. This transaction has not been included in PacifiCorp's September 18 and October 9 responses.

23. The short-term transaction data set PacifiCorp provided to FERC in 2002 also does not match the October 9 data. For example, PacifiCorp's daily sales to Enron at COB on March 17, 2001 are 1,272 MWh in the FERC dataset, but only 1,036 MWh in the October 9 dataset. Thus, PacifiCorp's current data set is not consistent with other counterparties' records, or with the records it provided to FERC.

24. From the standpoint of computer technology, no plausible explanation exists for transactions being present in response to one query and not in responses to identical following queries. The database will report all transactions that meet the criteria unless human intervention occurs – either transactions being removed from the database or transactions being removed from the data response. Moreover, it is worthy of substantial concern that the records of PacifiCorp's transactions with Enron do not match Enron's records, nor do PacifiCorp's data responses match its submissions to Dow Jones.

25. This completes my affidavit.

Dated: November 1, 2007

Robert McCullough

SIGNED AND SWORN to before me this 1 day of November, 2007.

OFFICIAL SEAL
HELEN T LYMAN
NOTARY PUBLIC - OREGON
COMMISSION NO. 409458
MY COMMISSION EXPIRES NOVEMBER 5, 2010

Notary Public for Oregon
My Commission Expires: 11-05-2010

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BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

UM 1002

Wah Chang, Petitioner,	)	CERTIFICATE OF SERVICE
v.	)	
PacifiCorp, Respondent.	)	

I certify that on November 6, 2007, I served (a) Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203, (b) Affidavit of Robert McCullough Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203 and (c) Affidavit of Richard Williams Wah Chang's Renewed, Supplemental and Alternative Motions to Compel Compliance with DR 203 upon all parties of record in this proceeding, by electronic mail pursuant to OAR 860-013-0070 and by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, to the following parties or attorneys of parties:

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