

April 7, 2006

VIA E-MAIL (PUC.FilingCenter@state.or.us)
ORIGINAL BY REGULAR MAIL

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

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

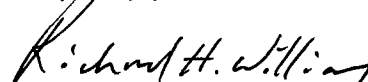
Dear Sir or Madam:

Enclosed for filing in the above-captioned proceeding are items 1 through 4. The e-mail filing does not include item 1, because it is filed under seal.

1. Wah Chang's Response to PacifiCorp's Motion to Strike Petitioner's Direct Testimony and Exhibits, filed under seal;
2. Wah Chang's Response to PacifiCorp's Motion to Strike Petitioner's Direct Testimony and Exhibits [Public Version; Redacted];
3. Affidavit of Robert McCullough in Support of Wah Chang's Response to PacifiCorp's Motion to Strike Direct Testimony and Exhibits;
4. Certificate of Service.

A courtesy copy of all four items are included for the Administrative Law Judge's copy file.

Very truly yours,



Richard H. Williams

Enclosures
cc: Service List
006854.0164/565651.1

Public Utility Commission of Oregon
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Page 2

bcc (by e-mail, w/encs, excluding item 1):

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Milo Petranovich

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

UM 1002

WAH CHANG,

Petitioner,

v.

PACIFICORP,

Respondent.

**WAH CHANG’S RESPONSE
TO PACIFICORP’S MOTION TO
STRIKE PETITIONER’S DIRECT
TESTIMONY AND EXHIBITS**

PUBLIC VERSION; REDACTED

Wah Chang responds as follows to PacifiCorp’s Motion to Strike Petitioner’s Direct Testimony and Exhibits (“Motion to Strike”).

I. Introduction.

PacifiCorp seeks to strike most of the testimony and exhibits Wah Chang filed as its direct case on December 15, 2005. In particular, PacifiCorp moves to strike (1) the Direct Testimony of Robert McCullough; (2) all or parts of 62 exhibits filed by Wah Chang on the ground that they are “irrelevant” because they are not cited in Mr. McCullough’s testimony; and (3) 61 exhibits on the grounds that they inadmissible because they are “hearsay” or lack authentication.

1 PacifiCorp's motion lacks merit.¹ The ultimate issue in this proceeding is whether Wah
2 Chang's market-indexed rate was just and reasonable during the 2000-2001 western energy
3 market crisis. *See* Petition, filed December 1, 2000, initiating this docket. Pursuant to the
4 Marion County Circuit Court's order entered July 23, 2002, the proceeding is currently before
5 the Commission for the purpose of receiving evidence regarding manipulation of western
6 wholesale electricity markets in 2000-2001 and regarding certain PacifiCorp complaints to
7 FERC asserting that its rates under contracts made during the crisis were unjust and
8 unreasonable. *See* Motion to Strike at 3. After receiving the evidence, the Commission may
9 vacate its earlier order denying Wah Chang's petition and may grant the relief Wah Chang
10 requests. *See former* ORS 756.600(2);² *see also* ORS 756.568 (authorizing the Commission to
11 rescind or amend previously issued orders after notice and opportunity to be heard).³

12 "[T]he Commission's normal rules and procedures will be used" in this proceeding,⁴
13 including the Commission's rule governing the admissibility of evidence. OAR 860-014-
14 0045(1). PacifiCorp's argument that the Oregon Evidence Code ("OEC") precludes the
15 admission of Wah Chang exhibits is entirely devoid of merit. Contrary to PacifiCorp's
16 contentions, the Commission does not "routinely" apply the OEC in its administrative

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18 ¹ Ordinarily, PacifiCorp's objections would be made and ruled upon at the time Wah Chang
19 offered its prefiled testimony and hearing exhibits into evidence. OAR 860-014-0045(2). However, with
20 respect to prefiled testimony and exhibits that Wah Chang intends to offer into evidence, as indicated in
21 this Response, Wah Chang agrees that decision on the motion in advance of the hearing is desirable and
22 appropriate, without prejudice to Wah Chang's right to re-offer exhibits, if any, as to which the
23 Commission grants the motion to strike.

24 ² ORS 756.600, providing for the Commission to receive additional evidence upon order by the
25 circuit court, was repealed by the 2005 Legislature, but continues to govern this proceeding. *See* Note
26 following ORS 756.610.

³ The Commission has noted that "[u]nder this statute, the Commission could reevaluate Order
No. 01-873 [denying Wah Chang's petition], in light of additional evidence, with no restrictions on the
scope or nature of such evidence." Order No. 04-305 (May 27, 2005) at 7, n.9.

⁴ *Id.* at 7 (internal quotation marks omitted).

1 proceedings (*see* Motion to Strike at 4). On the rare occasion when the Commission has drawn
2 from the OEC, it had done so in the limited context of the attorney-client privilege. *See* Order
3 No. 04-378 (OEC 503 (attorney-client privilege), OEC 511 (waiver of privilege)).

4 Instead, the applicable evidentiary standard is set forth in OAR 860-014-0045(1), under
5 which all relevant evidence “[i]s admissible if it is of a type commonly relied upon by reasonably
6 prudent persons in the conduct of their serious affairs.” That is the same standard set forth in the
7 Administrative Procedures Act, *see* ORS 183.450 (“evidence of a type commonly relied upon by
8 reasonably prudent persons in conduct of their serious affairs shall be admissible”), which the
9 Oregon courts have consistently interpreted to allow evidence of the type PacifiCorp seeks to
10 exclude here:

11 Under the APA, only evidence that is irrelevant, immaterial, or
12 unduly repetitious is excluded; all other evidence that a reasonably
13 prudent person would rely on is admissible. ORS 183.450(1);
Garcia v. Boise Cascade Corp., 309 Or. 292, 295, 787 P.2d 884
(1990).

14 *Cole v. Driver and Motor Vehicle Services Branch*, 336 Or. 565, 584 87 P.3d 1120 (2004). More
15 to the point, “[h]earsay evidence is admissible under [the APA] as any other evidence as long as
16 it meets the statutory test of reliability.” *Reguero v. Teacher Standards and Practices Com’n*,
17 312 Or. 402, 417, 822 P.2d 1171 (1991).

18 Twice previously, PacifiCorp filed pleadings with the Commission attempting to block
19 Wah Chang’s discovery and to cut short this court-ordered additional evidence proceeding.⁵ On
20 each occasion, the Commission rejected PacifiCorp’s attempt, stating that “future evidence could
21 reveal circumstances and conduct we would not want to ignore;”⁶ that “[w]e want to make a
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23 ⁵ PacifiCorp’s Motion for Summary Affirmance of Order No. 01-873, dated November 15, 2002;
24 PacifiCorp’s Opposition to Petitioner’s Motion to Reopen Docket and Permit Discovery, dated
25 February 13, 2004. On a third occasion, it asked the court to terminate these proceedings. *See* Motion to
Terminate or Limit ORS 756.600 Proceedings Currently Before the Public Utility Commission, filed
October 7, 2004.

26 ⁶ Order No. 03-153 (March 13, 2003), at 3.

1 decision based on all the relevant information that can be produced;”⁷ and that the manipulation
2 evidence contemplated by the court’s order was “wide ranging and limited only by a general
3 subject matter and time frame.”⁸

4 Evidence has indeed come to light—through governmental investigations and through
5 Wah Chang’s discovery—“reveal[ing] circumstances and conduct [the Commission] would not
6 want to ignore.” PacifiCorp’s current motion is yet another attempt to prevent the Commission
7 from hearing it.

8 **II. Robert McCullough’s Testimony Is Admissible.**

9 PacifiCorp claims Mr. McCullough’s testimony is not “appropriate expert opinion”
10 because it addresses “the alleged state of mind and credibility of PacifiCorp’s employees and
11 witnesses” (PacifiCorp’s Motion to Strike, p. 2), citing federal case law delimiting the scope of
12 expert testimony under civil rules of evidence. (PacifiCorp’s Motion to Strike, p. 8). We have
13 already demonstrated that the admissibility of Mr. McCullough’s testimony is controlled by the
14 PUC’s rules, not Oregon or Federal Rules of Evidence. PacifiCorp’s position to the contrary is
15 simply misinformed. But even if the civil rules of evidence were to supply the rule of decision
16 on PacifiCorp’s request to strike the direct testimony of Mr. McCullough, PacifiCorp is wrong.

17 Oregon Rule of Evidence 702, and the identical Federal Rule 702, provide that a
18 competent expert with specialized knowledge may testify if to do so “will assist the trier of fact
19 to understand the evidence or determine a fact in issue.” PacifiCorp asserts that under such a
20 standard an expert cannot testify on the credibility of witnesses, or on a person’s intent, and it
21 cites cases which hold to that effect. But there are also cases where an expert is allowed to
22 testify on the credibility of a witness, i.e., *U.S. v. Hiss*, 88 F. Supp. 559 (S.D.N.Y. 1950) (expert
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24 ⁷ *Id.*

25 ⁸ Order No. 04-305 (May 27, 2004), at 7.
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1 witness allowed to testify on credibility of Whittaker Chambers, in trial of Alger Hiss) and cases
2 where an expert is allowed to testify on a person's state of mind, i.e., *Haley v. Pan Am World*
3 *Airlines*, 746 F.2d 311 (5th Cir. 1984) (expert witness allowed to testify that most airplane
4 passengers would be in an absolute state of panic from the time their plane hit a tree). Again, the
5 question is not the subject of the expert testimony, but whether the testimony is helpful to the
6 trier of fact in that particular case. We establish below that the challenged testimony of
7 Mr. McCullough meets that standard.

8 Although PacifiCorp claims that Mr. McCullough's testimony "is heavily laced" with
9 unsupported speculation on improper subjects (PacifiCorp's Motion to Strike, p. 8), and although
10 PacifiCorp complains that Mr. McCullough's opines or speculates "throughout his testimony as
11 to the motives and states of mind of PacifiCorp's employees" (PacifiCorp's Motion to Strike,
12 p. 8), PacifiCorp enumerates only four instances, in 149 pages of Mr. McCullough's testimony,
13 of supposedly improper expert opinion. However, in each of those instances, Mr. McCullough's
14 testimony is entirely appropriate, and what PacifiCorp claims to be improper is simply a
15 summary of detailed facts Mr. McCullough brings to the PUC's attention.

16 **A. Challenged Testimony on Page 2 of McCullough's Testimony.**

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B. Challenged Testimony on Page 14 of McCullough's Testimony.

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C. Challenged Testimony on Page 14 of McCullough’s Testimony.

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(The transaction outlined in 2., above.) PacifiCorp claims such testimony is inadmissible expert testimony under the Federal Rules of Evidence, citing *Salas v. Carpenter*, 980 F.2d 299, 305 (5th Cir. 1992). In *Salas*, the court noted that the focus in deciding whether an expert’s opinion should be admitted is whether the testimony will assist the trier of fact to understand the evidence or to determine a fact in issue and the court concluded in that case that an expert’s simple “conclusory assertions” regarding the party’s state of mind were not admissible. However, the *Salas* court admitted the expert’s many statements about the details regarding effective methods of hostage negotiation and defects in the defendant’s negotiation tactics. Mr. McCullough’s testimony, on page 14, is not simply conclusory, and it is based on the details of transactions contained in PacifiCorp’s own business records and explained by Mr. McCullough. It is proper expert testimony, helpful to the trier of fact.

D. Challenged Testimony on Page 143 of McCullough’s Testimony.

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Salas v. Carpenter, 980 F.2d at 305, cited by PacifiCorp, makes it clear that striking all of Mr. McCullough’s testimony is not the proper remedy, if the PUC concludes it is bound by the Federal Rule of Evidence and that portions of Mr. McCullough’s testimony in the four enumerated instances is improperly conclusory. In *Salas v. Carpenter*, the Court of Appeals,

1 applying the Federal Rule of Evidence, struck only the “conclusory” allegations contained in the
2 challenged expert affidavit. It specifically held that the district court erred in striking the entire
3 affidavit (980 F.2d 299, 305-305).

4 **III. Wah Chang’s Exhibits Are Not “Irrelevant.”**

5 PacifiCorp has moved to strike 31 exhibits in their entirety on the grounds that they are
6 irrelevant because Mr. McCullough did not cite them in his testimony. Motion to Strike at 2,
7 ll. 9-11. On the same grounds, PacifiCorp has moved to strike all of 31 additional exhibits
8 except specific pages cited by Mr. McCullough. *Id.*

9 However, an exhibit is not “irrelevant” simply because Mr. McCullough did not cite it in
10 his testimony. As discussed, an exhibit is relevant if it pertains to manipulation of the western
11 electricity markets in 2000-2001 or to PacifiCorp’s “unjust and unreasonable” complaints to
12 FERC. As the Commission previously noted, permissible evidence of manipulation is “wide
13 ranging and limited only by general subject matter and time frame.” Order No. 04-305 at 7.

14 PacifiCorp asserts that it suffers prejudice in the preparation of its case in the absence of
15 an explanation of relevance, *see* Motion to Strike at 2-3, apparently because it cannot discern the
16 exhibits’ relevance. With respect to the great majority of exhibits, this claim may well be
17 doubted. It has been almost four years since the court ordered receipt of additional evidence, and
18 after much briefing and discovery, PacifiCorp knows the issues and the subject matter. Further,
19 a reading of Mr. McCullough’s testimony can leave little doubt about what Wah Chang claims
20 for the evidence, even if Mr. McCullough did not specifically refer to each exhibit. Finally,
21 PacifiCorp’s fear that Wah Chang will make surprise arguments in post-hearing briefing based
22 on exhibits not explained by testimony, Motion to Strike at 2, l. 15, is overblown. The
23 Commission is not likely to be impressed by a post-hearing argument supported neither by
24 testimony nor by a self-explanatory exhibit.

1 Notwithstanding the lack of merit in PacifiCorp’s prejudice claim, Wah Chang has
2 prepared explanations of relevance as follows:

- 3 • Attached to this memorandum as Exhibit 1 is Exhibit 1 to the Declaration of Susan K.
4 Roberts in Support of PacifiCorp’s Motion to Strike Petitioner’s Direct Testimony
5 and Exhibits, with Wah Chang’s explanation in bold print of the relevance of each
6 listed exhibit. Exhibit 1 to the Roberts Declaration lists the 31 Wah Chang exhibits
7 said not to be cited in Mr. McCullough’s testimony.
- 8 • Attached to this memorandum as Appendix 1 is Appendix 1 to PacifiCorp’s Motion
9 to Strike, with Wah Chang’s explanation in bold print of the relevance of each listed
10 exhibit. Appendix 1 to the Motion to Strike lists the additional 31 Wah Chang
11 exhibits said to be cited in Mr. McCullough’s testimony only in part.⁹

12 **IV. Wah Chang’s Exhibits Are Admissible.**

13 PacifiCorp asserts that 61 Wah Chang exhibits are inadmissible because they are
14 “hearsay” and that 11 are inadmissible because they lack authentication.

15 As discussed, the criterion for admissibility is whether a reasonably prudent person
16 would rely upon the exhibit, OAR 860-14-0045(1), not whether it is hearsay.

- 17 • Attached to this memorandum as Appendix 2 is Appendix 2 to the Motion to Strike,
18 with Wah Chang’s explanation in bold print of the source and reliability of each of
19 the listed exhibits. Appendix 2 to the Motion to Strike lists the 61 exhibits PacifiCorp
20 asserts are inadmissible hearsay.
- 21 • Attached to this memorandum as Appendix 3 is Appendix 3 to the Motion to Strike,
22 with Wah Chang’s explanation in bold print of the source and reliability of each of
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25 ⁹ As stated in the attachments, Wah Chang does not currently intend to offer some exhibits.
26 Wah Chang may later offer the exhibit if needed for rebuttal or to respond to PacifiCorp objections.

1 the listed exhibits. Appendix 3 to the Motion to Strike lists the 11 exhibits PacifiCorp
2 asserts are inadmissible because they lack authentication.

3 The Affidavit of Robert McCullough in Support of Wah Chang's Response to
4 PacifiCorp's Motion to Strike Direct Testimony and Exhibits attests to the source and reliability
5 of the exhibits.

6 As noted in Appendix 2 to this memorandum, most of the listed exhibits are documents
7 produced by Enron or other FERC-regulated wholesalers in the course of FERC proceedings,
8 congressional hearings or a California state legislative investigation, in each case pertaining to
9 the 2000-2001 western crisis. In March 2003, FERC ordered the public release of documents
10 that it had gathered in Docket No. PA02-2-000, its investigation of 2000-2001 western market
11 manipulation. The documents formed the basis for its staff's Final Report on Price Manipulation
12 in Western Markets, which in turn formed the basis for the show cause orders that FERC issued
13 requiring 60 market participants to show cause why they should not disgorge profits. *American*
14 *Electric Power Service Corporation, et al.*, 103 FERC P61,345 (June 25, 2003); *Enron Power*
15 *Marketing, Inc., et al.*, 103 FERC P61,346 (June 25, 2003). When FERC order the release of the
16 documents, it stated that they constituted the evidentiary record for the Final Report and
17 subsequent orders, and it made the documents available so that they could be used in the further
18 proceedings:

19 Soon, the Commission will finalize its report in PA02-2-000, and
20 also will issue several orders regarding those investigations.
21 Therefore, the release of the information now will enable the
22 public to understand better the evidentiary record on which the
23 Commission's decisions in those proceedings are grounded. Also,
any further proceedings in these matters addressing information in
the instant dockets will benefit from the release of the information,
which will assist in framing the issues and in expeditious
resolution of such cases.

24 *Fact Finding Investigation of Potential Manipulation of Electric and Natural Gas Prices*, 102
25 FERC ¶ 61,311 at 62,044 (March 21, 2003).

1 Further, when the Commission held these proceedings in abeyance in 2003, it
2 contemplated that documents of the type offered by Wah Chang might become available as the
3 result of the FERC and other investigations and would be received in these proceedings:

4 When should the hearing to consider any additional evidence be held?
5 Wah Chang asks us to wait until the FERC investigation is completed. That is a
6 reasonable request. We do not want to hold a hearing that includes only some of
7 the evidence that might be available. We want to make a decision based on all the
8 relevant information that can be produced. That evidence will not be available
until the appropriate officials complete their investigations. At that time, if
Wah Chang determines that it can present evidence that might cause us to change
the outcome of this case, it may file a motion to reopen the record to receive that
evidence. An evidentiary hearing will then be held.


9 Order No. 03-153 (March 13, 2003), at 3.

10 Thus, the Commission has stated its willingness to receive documents of the type
11 Wah Chang proposes to offer. While the exhibits must satisfy the Commission's criteria for
12 admissibility, documents and records relied upon by regulators and legislators plainly satisfy
13 those criteria, regardless of whether they are "hearsay."

14 **V. Conclusion**

15 The Commission should deny PacifiCorp's motion to strike.

16 LANE POWELL PC

17
18 By 
19 Richard H. Williams, OSB No. 72284
Milo Petranovich, OSB No. 81337

20 Attorneys for Petitioner Wah Chang
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EXHIBIT 1

WAH CHANG EXHIBITS SUBMITTED TO OPUC
NOT CITED IN TESTIMONY

With Wah Chang Explanation of Relevance in Bold

REDACTED

Exhibit	Description	Format	No. of pages submitted
WC/818	Docket No. EL03-159-000, Ex. No. MID-4 Wah Chang does not intend to offer this exhibit.	Paper	1
WC/819	City of Redding Conversations This exhibit consists of City of Redding trader conversation transcripts. The conversations beginning at the bottom of page 1 are between Bill of the City of Redding and Jeremy of Enron proposing a "loop" to be arranged "with PAC" at COB. <u>REDACTED</u>	Paper	2
WC/823	City of Redding Conversations This exhibit also consists of City of Redding trader conversation transcripts. The second conversation beginning on page 1 and continuing on page 2 is between Sal of the City of Redding and Chuck Brower of PacifiCorp (see page 96 of Mr. McCullough's testimony). Sal reminds Chuck that "we have a previous agreement where we'd [i.e., Redding would] buy energy from you [PacifiCorp] and then we, you guys would purchase it from Enron." Chuck acknowledges the agreement, "Uh huh. OK," and wants Enron to call him to tell him the source of the power: "****last time I did it, it was coming out of the PX so." In the following conversation (on page 2 of the exhibit), Sal calls Les of Enron "on that energy we do for the congestion" and tells Les to call "PacCorp" about the generator. These conversations are further evidence of PacifiCorp's knowing involvement with the City of Redding and Enron in congestion schemes.	Paper	2
WC/832	Enron Buy-Resales Wah Chang does not intend to offer this exhibit.	Paper	1

Exhibit	Description	Format	No. of pages submitted
WC/849	Exhibit 8A, 8B and 8C to Affidavit of Stanley K. Watters May 22, 2000 <p style="text-align: center;"><u>REDACTED</u></p>	Paper	49
WC/852	Enron May 6 Data Request Supplemental Dated November 15, 2002 Wah Chang does not intend to offer this exhibit.	Paper	12
WC/902	Excel Spreadsheet Containing Hyperlinks to Audio Files of Trader Conversations Submitted to FERC and Cross-References to Transcript of FERC Submitted Conversations (WC/901) – (on CD) <p style="text-align: center;"><u>REDACTED</u></p>	2 Disks	Disk 1 wav 102 files* Excel 16 pages Disk 2 wav 147 files* Excel 16 pages

Exhibit	Description	Format	No. of pages submitted
WC/904	<p>Excel Spreadsheet Prepared by McCullough Research of Selected Audio Files from Wah Chang's Listening Project and Corresponding Transcripts (on D)</p> <p style="text-align: center;"><u>REDACTED</u></p>	Disk with Transcript, Audio and Spreadsheet	<p>PDF 401 pages wmv 132 files* Excel 4 pages</p>
WC/905	<p>PC 075269 – Produced by PacifiCorp as Attachment 155 in response to Wah Chang Data Requests – (on CD)</p> <p style="text-align: center;"><u>REDACTED</u></p>	Disk	Excel 453

Exhibit	Description	Format	No. of pages submitted
WC/906	<p>PC 018963 – Produced by PacifiCorp as Attachment 99 in Response to Wah Chang Data Requests – (on CD)</p> <p style="text-align: center;"><u>REDACTED</u></p>	Disk	Excel zipped files 98,828 pages
WC/1000	<p>Deposition Testimony of Greg Maxfield, taken October 17, 2005</p> <p>Mr. Maxfield was a PacifiCorp trader and supervisor of PacifiCorp traders during 2000-2001. His deposition testimony is relevant (1) to show PacifiCorp’s trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.</p>	Paper	303
WC/1001	<p>Deposition Testimony of Valarie Sabo, taken October 24, 2005</p> <p style="text-align: center;"><u>REDACTED</u></p>	Paper	144
WC/1002	<p>Deposition Testimony of David Kvamme, taken October 24, 2005</p> <p>Mr. Kvamme was a PacifiCorp media relations person during 2000-2001. <u>REDACTED</u></p>	Paper	39
WC/1003	<p>Deposition Testimony of Jim Portouw, taken November 15, 2005</p> <p>Mr. Portouw was a PacifiCorp trader during 2000-2001. His deposition testimony is relevant (1) to show PacifiCorp’s trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.</p>	Paper	83

Exhibit	Description	Format	No. of pages submitted
WC/1004	<p>Deposition Testimony of John Apperson, taken November 15, 2005</p> <p>Mr. Apperson was a supervisor of PacifiCorp traders during 2000-2001. His deposition is relevant (1) to show PacifiCorp's trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.</p>	Paper	84
WC/1005	<p>Deposition Testimony of Paul Kroger, taken November 16, 2005</p> <p>Mr. Kroger was a PacifiCorp trader during 2000-2001. His deposition is relevant (1) to show the activities of PacifiCorp traders, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.</p>	Paper	32
WC/1010	<p>Deposition Testimony of Gary Eldridge, taken November 30, 2005</p> <p>Mr. Eldridge was a PacifiCorp trader during 2000-2001. His deposition testimony is relevant (1) to show the activities of PacifiCorp traders, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.</p>	Paper	122
WC/1103	<p>Letter from Roy Hemmingway to The Honorable Patrick Wood, dated April 17, 2003</p> <p>This letter is relevant because it shows that the Commission stated to FERC, in aid of PacifiCorp's "unjust and unreasonable" complaints, that "[t]he exorbitant prices that PacifiCorp paid were the direct result of the manipulated and dysfunctional California spot market." The letter thus shows that the market manipulations "direct[ly] result[ed]" in "exorbitant" market prices.</p>	Paper	1
WC/1104	<p>Letter from Hardy Myers to The Honorable Patrick Wood, dated July 12, 2004</p> <p>This letter is relevant because it shows that the Oregon Attorney General has determined that "Enron was not only involved in fraudulent and deceptive practices in the electricity markets, but that it created many of them" and that Oregon "ratepayers [] have been severely impacted by the fraudulent activities of Enron." The letter thus shows that fraud occurred in the electricity markets and that the fraud "severely impacted" ratepayers in Oregon.</p>	Paper	2
WC/1105	Order on Complaint	Paper	6

Exhibit	Description	Format	No. of pages submitted
	<p>Utah Associated Municipal Power Systems v. PacifiCorp, Docket No. EL 98-32-00</p> <p>83 FERC ¶ 61,337, issued June 29, 1998</p> <p>This exhibit is a 1998 FERC Order ordering PacifiCorp to cease certain practices. The relevance of the Order is explained by Mr. McCullough. See WC/800 at 65-66. WC/1105 is the same as WC/839.</p>		
WC/1106	<p>Request for Rehearing and Clarification of PacifiCorp</p> <p>PacifiCorp v. Reliant Energy Services, Inc. (Docket No. EL02-8000) Morgan Stanley Capital Group, Inc., (Docket No. EL 02-8100)</p> <p>Williams Energy Marketing & Trading Company, (Docket No. EL 02-82-00), and El Paso Merchant Energy, L.P. (Docket No. EL 02-83-00)</p> <p>July 29, 2002</p> <p>This exhibit is a PacifiCorp pleading in its FERC case seeking to reform purchase contracts on the grounds that the “wildly dysfunction” California market made the contract purchase price “unjust and unreasonable.” The pleading is a convenient summary of PacifiCorp’s factual admissions and legal positions.</p> <p>The exhibit is relevant because (1) it is within the scope of the court’s additional evidence order, which specifically included evidence of PacifiCorp’s complaints to FERC, and (2) it is an admission by PacifiCorp that the “dysfunctional” markets adversely affected market prices.</p>	Paper	18
WC/1107	<p>E-mail from JMF to Portland Shift re Project Red Congo Document number ECf000227557</p> <p>This exhibit is an e-mail from John Forney of Enron to other Enron traders. Its subject is “Project Red Congo,” and it explains the arrangements among Enron, the City of Redding and PacifiCorp to engage in the congestion scheme known by that name.</p> <p>The exhibit is relevant because it shows that PacifiCorp participated in Red Congos with the City of Redding and Enron. <u>REDACTED</u></p>	Paper	1
WC/1108	<p>Letter from Edward Silliere of Dow Jones to “Gentlemen” RE: Guidelines for Participants, California-Oregon Border (COB) Electricity Price Index, dated February 1, 1995</p>	Paper	5

Exhibit	Description	Format	No. of pages submitted
	<p>This exhibit is a letter agreement between PacifiCorp and Dow Jones. It is relevant to show (1) the types of transactions included in the Dow COB index and (2) that PacifiCorp submitted transaction data to Dow Jones for inclusion in the index.</p>		
WC/1110	<p>Response of PacifiCorp to the FERC's Data Request, dated May 21, 2002</p> <p>Affidavit of Stanley K. Watters on Behalf of PacifiCorp</p> <p><u>Explanation of Relevance for WC/1100, WC/1118 and WC/1119.</u></p> <p style="text-align: center;"><u>REDACTED</u></p>	Paper	21
WC/1118	<p>Supplemental Response of PacifiCorp to FERC's Data Request, dated May 21, 2002</p> <p>Supplemental Affidavit of Stanley K. Watters on Behalf of PacifiCorp</p> <p>See above Explanation of Relevance, at WC/1110.</p>	Paper	9
WC/1119	<p>Exhibit 2 to PacifiCorp's Response to FERC's Data Request, dated May 21, 2002</p> <p>See above Explanation of Relevance, at WC/1110.</p>	Paper	5

Exhibit	Description	Format	No. of pages submitted
WC/1121	<p>E-mail:</p> <ul style="list-style-type: none"> • July 6, 2000, from Terry Hudgens to Stan Watters et al. re Cal ISO • September 8, 2000, from Keith Johnson to Alan Richardson et al. re Energy Market Report—09/07/00 • March 20, 2001, from Keith Johnson to Alan Richardson et al. re Energy Market Report—03/19/01 • May 25, 2001, from Steven Wallace to Cory Anderson et al. re Downward Price Pressure • June 25, 2001, from John Apperson to Jim Portouw et al. re Effect of FERC Price Cap Order on Fundamentals • July 9, 2001, from Nathalie Wessling to Cory Anderson et al. re July 9 Bloomberg Power Lines Report • August 10, 2001 from Rob Goodman to Jean Wilson et al. re Scheduling Stateline <p style="text-align: center;"><u>REDACTED</u></p>	Paper	26
WC/1122	<p>Attachment 126(b) to PacifiCorp Data Response</p> <p style="text-align: center;"><u>REDACTED</u></p>	Paper	4
WC/1123	<p>List of PacifiCorp Traders and Organizational Chart</p> <p>The documents comprising this exhibit were produced by PacifiCorp. The documents are lists of PacifiCorp's traders and an organizational chart of its Commercial Trading unit. The exhibit is relevant to show the names of PacifiCorp's traders, their titles and their position in the organization.</p>	Paper	5
WC/1124	<p>Responses of PacifiCorp to 5/8/00 FERC Data Request</p> <p>This exhibit duplicates other exhibits, and Wah Chang filed it in error. Assuming the other exhibits are admitted, Wah Chang does not intend to offer it.</p>	Paper	19

Exhibit	Description	Format	No. of pages submitted
WC/1127	PacifiCorp Response to Oregon Department of Justice Civil Investigative Demand, February 19, 2003 <p style="text-align: center;"><u>REDACTED</u></p>	Paper	4
			Total pages submitted 100,718

* Files not included in total because type of files, if printed, would not print legibly.

APPENDIX 1

WAH CHANG EXHIBITS IMPROPERLY SUBMITTED IN THEIR ENTIRETY

With Wah Chang Explanation of Relevance in Bold

REDACTED

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
WC/8038	Enron Inc Sheets (on disk)	Disk	141	8 "inc sheets"	pp. 12:7, 21, 50:3-15, 51:1-10, 117:1-119:7, 138:14-25, 140:1-10, 146:1-8
	Wah Chang will offer only the cited Inc Sheets.				
WC/806	Tim Belden Presentation	Paper	45	1	pp. 17:5, 21:14
	This exhibit states general information about the U.S. and western power markets in 2000. Wah Chang believes the information is not controversial and may be useful to the Commission as background.				
WC/808	Death Star Templates (on disk)	Disk	600	8 templates	pp. 21, 22:14-20, 23, 52:6-25; 109:15-18
	<u>REDACTED</u>				
WC/813	City of Redding Conversations	Paper	34	1	p. 29
	Wah Chang will offer only the conversations cited in Mr. McCullough's testimony, but reserves the right to offer any other conversations in which PacifiCorp participated.				
WC/821	City of Redding Conversations	Paper	37	4	pp. 23:13, 96:4-10, 96:13-97:18, 115:1-5
	Wah Chang will offer only the conversations cited in Mr. McCullough's testimony, but reserves the right to offer any other conversations in which PacifiCorp participated.				
WC/822	Tim Belden Presentation	Paper	54	0	p. 25:5
	Wah Chang will not offer this exhibit unless PacifiCorp moves to strike the particular testimony by Mr. McCullough that cites the exhibit.				
WC/824	Tim Belden E-mails (on disk)	Disk	6,368	1	p. 25:11
	Wah Chang will not offer this exhibit unless PacifiCorp moves to strike the particular testimony by Mr. McCullough that cites the exhibit.				

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
WC/829	Steve C. Hall E-mail Attaching Draft Memorandum	Paper	27	1	pp. 30:4, 53:3-22
	This exhibit consists of drafts of the “Enron memos,” prepared by Stephen Hall of Stoel Rives, whose release by FERC publicly revealed the manipulation of the western energy markets in 2000-2001. It is relevant in its entirety.				
WC/836	Reliant Trader Conversations	Paper	36	1-2	p. 33-34
	This exhibit consists of transcripts of conversations between Reliant employees and, in a few instances, between a Reliant trader and a broker. As explained in Mr. McCullough’s testimony, Reliant engaged in physical withholding, as shown by the transcripts, and was indicted as a consequence. Mr. McCullough’s testimony quotes one of the conversations. Others are also relevant to show that Reliant manipulated the market by physically withholding power. At page 9 of the exhibit, the Reliant Operations Manager says to his plant manager: “Longer term that we may, you know, we may need to get some units off for a couple of days to try to create some movement hopefully in the PX...create movement in other markets that help us out long term.” See also the conversation beginning at page 24, in which the Reliant Operations Manager tells a plant operator they are going to shut down 6 plants that night: “It was intentional. * * * Proving a point, huh? * * * Well, yeah, sometimes you have to.” The exhibit is relevant in its entirety.				
WC/837	Testimony of Ann M. Hatcher on Behalf of Silicon Valley Power in FERC Dockets	Paper	34	1	p. 34:23-35:6
	The exhibit is relevant in its entirety to show the source, context and reliability of the page cited by Mr. McCullough.				
WC/839	Order on Complaint Utah Associated Municipal Power Systems	Paper	11	0	p. 66:5
	This exhibit is an Order on Complaint in which FERC ordered PacifiCorp to cease certain practices. Mr. McCullough’s testimony explains its relevance.				
WC/841	Letter from Harvey L. Reiter to Donald Gelinias, with attached Affidavit of Arlen Orchard	Paper	17	1	p. 70:1-17
	This exhibit is the Sacramento Municipal Utility District’s affidavit responding to FERC’s “Enron memo” data request. As Mr. McCullough states, it is relevant to show that SMUD, unlike PacifiCorp, recognized a proposed ricochet for what it was and cancelled the transaction because “Ricochet not allowed.” WC/841 at 9. The exhibit is relevant in its entirety to show the source, context and reliability of the page cited by Mr. McCullough.				

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
WC/848	<p>Agreement and Stipulation in FERC Docket re City of Redding, CA</p> <p>This exhibit is the City of Redding’s settlement of FERC’s show cause order and the City’s affidavit supporting the settlement. It is relevant to show that the City of Redding engaged in Red Congos with Enron and PacifiCorp (at page 20).</p>	Paper	30	1	p. 98:15-20
WC/863	<p>Statement of Terry Winter before Congress</p> <p>This exhibit is testimony by the Chief Executive Officer of the California Independent Operator to a subcommittee of the United States House of Representatives. It discusses the effect of gaming and market power on “electric consumers in California and throughout the western United States,” at 1, including a summary of the market impacts of the gaming schemes described in the Enron memos (37-54). It is relevant to show that gaming schemes occurred and that they had an adverse effect on consumers.</p>	Paper	54	One sentence (no page citation)	p. 129:23-130:2
WC/901	<p>Transcript of PacifiCorp Trader Conversations</p> <p style="text-align: center;"><u>REDACTED</u></p>	Paper	248	2	p. 100:16-101:16

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
WC/903	Transcripts of PacifiCorp Trader Conversations	Paper	446	35	pp. 3, 28, 29, 36, 43-44, 46-47, 55-61, 67-68, 77-78, 93-96, 136-138, 140
	<u>REDACTED</u>				
WC/907	Real-Time Blotters (PC 019435 through PC 027756) Produced by PacifiCorp as Attachment 92 in Response to Wah Chang Data Requests (on DVD)	DVD	8321	0	p. 48:9-15
	<u>REDACTED</u>				
WC/1006	Deposition Testimony of Marlin Green, taken Nov. 16, 2005	Paper	114	4	p. 73
	Mr. Green was a PacifiCorp trader during 2000-2001. His deposition testimony is relevant (1) to show PacifiCorp's trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.				
WC/1007	Deposition Testimony of Todd Carpenter, taken Nov. 21, 2005	Paper	215	7	pp. 14:22, 73
	Mr. Carpenter was a PacifiCorp trader during 2000-2001. His deposition testimony is relevant (1) to show PacifiCorp's trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.				
WC/1008	Deposition Testimony of John Rogers, taken Nov. 21, 2005	Paper	73	5	p. 73
	Mr. Rogers was a PacifiCorp trader during 2000-2001. His deposition testimony is relevant (1) to show PacifiCorp's trading activities, (2) to identify tapes of trader conversations and (3) to shed light on the credibility of PacifiCorp trader deposition testimony.				
WC/1009	Deposition Testimony of Stanley Watters, taken Nov. 29, 2005	Paper	164	12	pp. 3, 17, 24, 27, 47, 56-57, 71-72, 75, 79, 97-99, 113, 121, 135,

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
					141-145
	Mr. Watters was PacifiCorp's Vice President of Trading in 2000-2001. His deposition testimony is relevant (1) to identify and explain affidavits and exhibits that he filed with FERC on behalf of PacifiCorp in response to data requests concerning western market manipulation, (2) to explain PacifiCorp trading and (3) to show the nature and extent of the internal investigation PacifiCorp undertook of its 2000-2001 trading activities.				
WC/1100	Timothy M. Belden Plea Agreement, filed Oct. 17, 2002	Paper	8	0	p. 10:6
	This exhibit is Tim Belden's agreement to plead guilty to federal charges of conspiracy to commit wire fraud. Mr. Belden was the head of Enron's West Power Trading Division, located in Portland. In the plea agreement, Mr. Belden admits that he and other Enron employees "agreed to devise and implement a series of fraudulent schemes throughout these markets." The exhibit is relevant to show that the California PX and ISO markets were fraudulently manipulated.				
WC/1101	John M. Forney Plea Agreement, filed Aug. 5, 2004	Paper	12	0	p. 10:6
	This exhibit is John Forney's agreement to plead guilty to federal charges of conspiracy to commit wire fraud. Mr. Forney was the manager of the Real Time Trading Desk at Enron's West Power Trading Division, located in Portland. In the plea agreement, Mr. Forney admits that he "submitted, caused to be submitted, and/or supervised the submission by others, of false and fraudulent schedules, bids and other information in order to maximize Enron's trading profits." The exhibit is relevant to show that the California PX and ISO markets were fraudulently manipulated.				
WC/1102	Jeffrey S. Richter Plea Agreement, filed Feb. 4, 2003	Paper	9	0	p. 10:8
	This exhibit is Jeff Richter's agreement to plead guilty to federal charges of, among other things, conspiracy to commit wire fraud. Mr. Richter was the manager of the Short Term California trading desk at Enron's West Power Trading Division, located in Portland. In the plea agreement, Mr. Richter admits that he and others at Enron "agreed to devise and implement fraudulent schemes through these markets." The exhibit is relevant to show that the California PX and ISO markets were fraudulently manipulated.				
WC/1109	ISO Market Monitoring & Information Protocol	Paper	19	1	pp. 66;12-16, 130:6
	This exhibit is an ISO tariff. Mr. McCullough's testimony explains that PacifiCorp transactions violated certain provisions of the tariff.				
WC/1111	PacifiCorp's Response to Petitioner's 7th Data Request	Paper	13	1	p. 6:8
	This is relevant to show PacifiCorp's responses to data requests. In addition to the cited data request response, Wah Chang may desire to cite additional data request responses in its rebuttal				

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
case, at the hearing or in briefing.					
WC/1112	PacifiCorp's Response to Petitioner's 9th Data Request	Paper	57	1	p. 6:8
This exhibit is relevant to show PacifiCorp's responses to data requests. In addition to the cited data request response, Wah Chang may desire to cite additional data request responses in its rebuttal case, at the hearing or in briefing.					
WC/1113	PacifiCorp's Response to Petitioner's 10th Data Request	Paper	23	4	pp. 7:19, 8:12, 14:18
This exhibit is relevant to show PacifiCorp's responses to data requests. In addition to the cited data request responses, Wah Chang may desire to cite additional data request responses in its rebuttal case, at the hearing or in briefing.					
WC/1117	<i>Electric Utility Week</i> Articles	Paper	23	0	p. 45:25-46:1
<p>These articles from an industry periodical show that industry and government officials speculated publicly as early as June 2000 and thereafter that manipulation and gaming were occurring in western markets. It is reasonable to infer that PacifiCorp management was aware of the publicly-voiced concerns about manipulation.</p> <p style="text-align: center;"><u>REDACTED</u></p>					
WC/1125	Attachment 75 to PacifiCorp Data Response	Paper	8	0	p. 14:18
<u>REDACTED</u>					

Exhibit	Description	Format	No. of pages in exhibit	No. of pages cited	Location of citations in McCullough testimony
WC/1126	Attachment 76 to PacifiCorp Data Response	Paper	5	0	p. 14:21
<u>REDACTED</u>					
			Total pages submitted: 17,246	Total pages cited: approx. 102	

APPENDIX 2

A. Enron Hearsay Exhibits (31)

With Wah Chang Explanation of Source and Reliability in Bold

Exhibit	Description
WC/803	<p>Enron "Inc Sheets" (on disk)</p> <p>Exhibit 803 contains documents produced by Enron to McCullough Research in response to a data request by Snohomish PUD. McCullough Research later provided the documents to FERC in the course of FERC proceeding PA02-2-000. FERC subsequently issued an order making the documents available to the public. The documents also became a basis of the testimony of the FERC staff and the California Parties, a group of parties to FERC proceeding including the California Attorney General and the California Public Utility Commission.</p>
WC/804	<p>Enron Enpower record (20000522 Ricochet)</p> <p>Exhibit 804 is a McCullough Research excerpt from records in Enron's official accounting system known as "Enpower." Enron provided its Enpower records to FERC in PA02-2-000. FERC later issued an order making the Enpower database available to the public.</p>
WC/806	<p>Tim Belden (Enron) Presentation re: Western Power Markets</p> <p>Exhibit 806 is an email from Enron's Tim Belden, with its attachment. FERC issued data requests to Enron for documents, including Enron's emails, as part of its investigation in proceeding PA02-2-000, and Enron produced them to FERC. After review and analysis, FERC made the Enron documents, including emails, available to the public. McCullough Research obtained this document from FERC's website, located at http://www.ferc.gov/industries/electric/indus-act/wec/enron/info-release.asp.</p>
WC/808	<p>Death Star Templates (on disk)</p> <p>Exhibit 808 is a data compilation prepared by McCullough Research from the Inc Sheets discussed above under WC/803 and Enpower queries to CAPS reconciliations.</p>
WC/811	<p>Enron Record of Transaction</p> <p>Exhibit 811 is a McCullough Research excerpt from the Enpower records discussed above under WC/804.</p>

Exhibit	Description
WC/814	<p>Email from Tim Belden to Greg Piper, May 12, 2000</p> <p>Exhibit 814 is an email from Tim Belden of Enron to Greg Piper. See discussion under WC/806 above.</p>
WC/815	<p>Email from Tim Belden re “Out of Market,” May 23, 2000</p> <p>Exhibit 815 is an email from Tim Belden of Enron. See discussion under WC/806 above.</p>
WC/820	<p>Yoder-Hall Memo dated December 8, 2000</p> <p>Exhibit 820 is a memorandum from Christian Yoder and Stephen Hall, attorneys for Enron, to Richard Sanders, regarding manipulative trading practices in the Western energy markets. This memorandum is perhaps the most well known and widely distributed document in the Western energy crisis. It was submitted as part of a sworn affidavit in FERC proceeding PA02-2-000. Its authenticity and the accuracy of its contents has never been in dispute and it has been relied upon by virtually every party involved in energy crisis litigation. FERC ordered this memorandum to be made available to the public.</p>
WC/822	<p>Tim Belden Presentation August 5, 2000</p> <p>Exhibit 822 is a power point presentation attached to an Enron email. The email states that the presentation was made by Mary Hain to FERC. Mary Hain was an Enron attorney for Enron’s trading desk. A substantially similar presentation was made by Tim Belden, who had presented it to the Oregon Public Utility Commission in August 2000 at a meeting attended by Robert McCullough. Mr. McCullough also made a presentation to the Commission at the meeting.</p>
WC/824	<p>Tim Belden emails (on disk)</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/825	<p>Tim Belden email, dated November 5, 2001</p> <p>Exhibit 825 is an email from Tim Belden at Enron. See discussion under WC/806 above.</p>
WC/826	<p>Christian Yoder email</p> <p>Exhibit 826 is an email from Christian Yoder, one of Enron’s attorneys, which was previously produced by Enron to FERC. See discussion under WC/806 above.</p>

Exhibit	Description
WC/827	<p>Presentation by Tim Belden, dated March 25, 2001</p> <p>Exhibit 827 is a presentation made by Tim Belden at Enron, which was attached to emails produced by Enron in FERC proceedings. See discussion under WC/806 above.</p>
WC/828	<p>Bill Williams (Enron) email, dated April 17, 2001</p> <p>Exhibit 828 is an email from Bill Williams of Enron. See discussion under WC/806 above.</p>
WC/829	<p>Steve C. Hall email Attaching Draft Memorandum re: "Trading Strategies," November 14, 2000</p> <p>Exhibit 829 is an email from Steve C. Hall, one of Enron's attorneys, which attaches a rough draft of the Yoder Hall Memorandum that is Wah Chang exhibit 820. This document was among the documents obtained and made public by FERC as part of its PA02-2-000 investigation.</p>
WC/830	<p>Kim Ward (Enron) email dated May 4, 2001</p> <p>Exhibit 830 is an email from Kim Ward of Enron. See discussion under WC/806 above.</p>
WC/832	<p>Enron Buy-Resales</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/834	<p>Bill Williams (Enron email), dated August 30, 2001</p> <p>Exhibit 832 is an email from Bill Williams of Enron. See discussion under WC/806 above.</p>
WC/838	<p>Stanley Cocke (Enron) email dated July 13, 2001</p> <p>Exhibit 838 is an email from Stanley Cocke of Enron. See discussion under WC/806 above.</p>
WC/844	<p>PacifiCorp/Enron Buy Sells by Month</p> <p>Exhibit 844 is a document prepared by McCullough Research from a query to the Enpower database. See discussion under WC/804 above.</p>
WC/845	<p>Enron email to Portland Shift re Project Red Congo</p> <p>Exhibit 845 is an email from John Forney of Enron with handwritten notes. See discussion under WC/806 above.</p>

Exhibit	Description
WC/846	<p>Handwritten Notes</p> <p>Exhibit 846 is the handwritten notes of an Enron attorney made while he was reviewing Enron trader tapes. Enron produced the notes to McCullough Research in response to a data request by Snohomish PUD, which subsequently filed them with FERC in FERC proceedings against Enron.</p>
WC/852	<p>Enron May 6 Data Request Supplemental, Nov. 15, 2002</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/854	<p>Driscoll's Final Procedures & Forney's Perpetual Loop</p> <p>Exhibit 854 contains documents that were produced to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the "Committee"), as part of its investigation into manipulative practices in the Western energy markets. After its review and analysis of these documents, FERC ordered that these documents be made available to the public.</p>
WC/855	<p>Enpower records of Death Stars with PacifiCorp</p> <p>Exhibit 855 is a compilation report prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/857	<p>Accomplishments of Michael Driscoll for year end 2000</p> <p>Exhibit 857 contains documents Enron produced to FERC in response to data requests in PA02-2-000. After its review and analysis of the documents Enron produced, FERC ordered that they be made available to the public.</p>
WC/858	<p>July 1, 2000 Enpower record (Death Star Deal Comments)</p> <p>Exhibit 858 is an extract prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/859	<p>July 1, 2000 Enpower and Inc Sheet</p> <p>Exhibit 859 is a data compilation prepared by McCullough Research from a query of the Enpower database discussed above under WC/804 and from the Inc Sheets discussed above under WC/803.</p>
WC/860	<p>August 19, 2000 Death Star</p> <p>Exhibit 860 is an extract prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>

Exhibit	Description
WC/862	<p>Enron Ricochet Counterparties</p> <p>Exhibit 862 is an extract prepared by McCullough Research from a query of the Enpower records database. See discussion under WC/804 above.</p>
WC/1107	<p>Email from JMF to Portland Shift re Project Red Congo Document number Ecf000227557</p> <p>Exhibit 1107 is an e-mail from Enron's John Forney with handwritten notes. See discussion under WC/806 above.</p> <p>Exhibit 1107 is the same as Exhibit 845.</p>

B. Other Hearsay Exhibits (30)

Exhibit	Description
WC/807	<p>Enron Trading Hub Correlation Matrix</p> <p>Exhibit 807 is an attachment to an e-mail from Enron’s Tim Belden. See discussion under WC/806 above.</p>
WC/809	<p>Prepared Initial Tape Testimony of Barry E. Sullivan, Witness for the Staff of FERC</p> <p>Exhibit 809 is the written testimony of Barry E. Sullivan, a member of and witness for the FERC staff, providing testimony in the indicated dockets pertaining to FERC’s show cause orders and investigation into manipulation in the Western energy markets. FERC has made Mr. Sullivan’s testimony available to the public.</p>
WC/812	<p>Conv. Between Les at Enron and Harry at City of Redding</p> <p>Exhibit 812 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. The Committee provided that transcript to McCullough Research, which assisted the Committee with its investigation.</p>
WC/813	<p>City of Redding Conversations</p> <p>Exhibit 813 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/818	<p>Docket No. EL03-159-000, Ex. No. MID-4</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/819	<p>City of Redding Conversations</p> <p>Exhibit 819 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>

Exhibit	Description
WC/821	<p>City of Redding Conversations</p> <p>Exhibit 821 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/823	<p>City of Redding Conversations</p> <p>Exhibit 823 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/836	<p>Reliant Trade Conversations, dated June 19, 2000; June 20, 2000; June 21, 2000; and June 23, 2000</p> <p>Exhibit 836 is a transcript of conversations involving Reliant Energy operations managers and plant managers. The contents of those conversations were a component of a settlement reached between FERC and Reliant. McCullough Research obtained a copy from a January 2003 FERC Information Release following Reliant’s settlement with FERC.</p>
WC/837	<p>Testimony of Ann M. Hatcher on Behalf of Silicon Valley Power in FERC Dockets</p> <p>Exhibit 837 is the written testimony of Ann M. Hatcher, a division manager of Silicon Valley Power, filed with FERC in the indicated dockets. This testimony is also identified as Exhibit No. SNO-525 in EL03-137/180 and is available on FERC’s eLibrary website. The trader conversation quoted in Ms. Hatcher’s testimony and in Mr. McCullough’s testimony is also available at www.enrontapes.com.</p>
WC/839	<p>Order on Complaint</p> <p>Utah Associated Municipal Power Systems</p> <p>Docketed June 29, 1998</p> <p>Exhibit 837 is an order issued by FERC.</p>
WC/840	<p>David Pierce (NRG) email, dated November 12, 2000</p> <p>Exhibit 840 is an email submitted by NRG to FERC as part of FERC’s PA02-2-000 investigation. After its review and analysis of documents submitted by NRG, FERC made them available to the public.</p>

Exhibit	Description
WC/841	<p>Letter from Harvey L. Reiter to Donald Gelinas (with attached Affidavit of Arlen Orchard), May 22, 2002</p> <p>Exhibit 841 is the sworn affidavit of the Sacramento Municipal Utility District (“SMUD”), and accompanying letter, submitted to FERC as part of its PA02-2-000 investigation. After its review and analysis of documents submitted by SMUD, FERC made them available to the public.</p>
WC/842	<p>2005 Discovery Buy Resell by Counterparty</p> <p>Exhibit 842 is a compilation prepared by McCullough Research from materials provided by PacifiCorp in response to discovery requests in this proceeding.</p>
WC/847	<p>Index of Relevant Material and email from Paul Cummings</p> <p>Exhibit 847 is a City of Redding memorandum obtained through discovery by the California Parties and filed with FERC as part of the “100 days’ evidence” proceeding in EL00-95, FERC’s California refund docket. FERC has made this document available to the public.</p>
WC/848	<p>Agreement and Stipulation in FERC Docket re City of Redding, CA</p> <p>Exhibit 848 is the Agreement and Stipulation between FERC Staff and the City of Redding settling FERC’s show cause cases against the City. It is an official FERC record.</p>
WC/851	<p>Chart Describing November 6, 2000, Death Star</p> <p>Exhibit 851 is an excerpt from a data set the City of Modesto submitted in its affidavit to FERC in response to FERC’s June 25, 2003 Show Cause Order in proceeding EL03-193. FERC made the documents available to the public.</p>
WC/853	<p>PacifiCorp Over Scheduling</p> <p>Exhibit 853 is a data set prepared by McCullough Research by querying data from the California ISO. The California ISO provided that data pursuant to a request from the California Senate as a part of its investigation into manipulation in the Western energy markets. The California Senate provided that data to McCullough Research. PacifiCorp also provided California ISO settlement data through discovery in this matter.</p>
WC/863	<p>Statement of Terry Winter before Congress, July 22, 2002</p> <p>Exhibit 853 is the sworn testimony of Terry Winter, CEO of the California ISO, to a subcommittee of the U.S. House of Representatives.</p>

Exhibit	Description
WC/864	<p>Attachment I.K.1 to PGE Affidavit Filed in FERC Docket No. PA02-2-000</p> <p>Exhibit 864 is an attachment to the affidavit of Portland General Electric submitted to FERC in response to FERC's data request in PA02-2-000. FERC made this document available to the public.</p>
WC/866	<p>Transcript of Scheduler Telephone Conv., April 26, 2000</p> <p>Exhibit 866 is an attachment to the affidavit of Portland General Electric submitted to FERC in response to FERC's data request in PA02-2-000. FERC made this document available to the public.</p>
WC/867	<p>August 23, 2000 ISO Interchange Data from Hildebrandt.</p> <p>This data was provided to Senator Joseph Dunn of the California State Senate by Eric Hildebrandt of the market surveillance office of the California ISO. McCullough Research received the document from Senator Dunn's office on September 16, 2002. Senator Dunn had retained McCullough Research to assist with his investigation of the Western energy crisis.</p>
WC/868	<p>August 23, 2000 CAPS Supplemental Bids</p> <p>Exhibit 868 is an excerpt from the Enron accounting system known as CAPS, which the Snohomish PUD obtained from Enron and filed with FERC.</p>
WC/1100	<p>Timothy M. Belden Plea Agreement, filed October 17, 2002</p> <p>Exhibit 1100 is the criminal plea agreement by Timothy M. Belden of Enron. This court document is a public record available from the court in which Belden plead guilty.</p>
WC/1101	<p>John M. Forney Plea Agreement, filed August 5, 2004</p> <p>Exhibit 1101 is the criminal plea agreement by John M. Forney. This court document is a public record available from the court in which Forney pled guilty.</p>
WC/1102	<p>Jeffrey S. Richter Plea Agreement, filed February 4, 2003</p> <p>Exhibit 1102 is the criminal plea agreement by Jeffrey S. Richter. This court document is a public record available from the court in which Richter pled guilty.</p>
WC/1105	<p>Order on Complaint, <i>Utah Associated Municipal Power Systems v. PacifiCorp</i>, Docket No. EL 98-32-00, 83 FERC ¶ 61, 337, issued June 29, 1998</p> <p>Exhibit WC/1105 is an order issued by FERC.</p>

Exhibit	Description
WC/1108	<p>Letter from Edward Silliere of Dow Jones to “Gentlemen” RE: Guidelines for Participants, California-Oregon Border (COB) Electricity Price Index, dated February 1, 1995</p> <p>Exhibit WC/1108 is a letter agreement between PacifiCorp and Dow Jones concerning the Dow Jones electricity price indices.</p>
WC/1109	<p>ISO Market Monitoring & Information Protocol Issued by Roger Smith on October 13, 2000</p> <p>Exhibit 1109 is a FERC-filed tariff of the California ISO.</p>
WC/1117	<p><i>Electric Utility Week</i> Articles</p> <p>Exhibit 1117 is articles from a widely distributed energy industry publication. (They are offered to show that PacifiCorp management was on notice of industry speculation that market manipulation was occurring.)</p>

APPENDIX 3

UNAUTHENTICATED EXHIBITS SUBMITTED BY WAH CHANG (11)

With Wah Chang Explanation of Source and Reliability in Bold

Exhibit	Description
WC/807	Enron Trading Hub Correlation Matrix Exhibit 807 is an attachment to an e-mail from Enron's Tim Belden. See discussion under WC/806 above.
WC/808	Death Star Templates (on disk) Exhibit 808 is a data compilation prepared by McCullough Research from the Inc Sheets discussed above under WC/803 and Enpower queries to CAPS reconciliations.
WC/811	Enron Record Transaction Exhibit 811 is a McCullough Research excerpt from the Enpower records discussed above under WC/804.
WC/832	Enron Buy-Resales Wah Chang does not intend to offer this exhibit.
WC/842	2005 Discovery Buy Resell by Counterparty Exhibit 842 is a compilation prepared by McCullough Research from materials provided by PacifiCorp in response to discovery requests in this proceeding.
WC/844	PacificCorp/Enron Buy Sells by Month Exhibit 844 is a document prepared by McCullough Research from a query to the Enpower database. See discussion under WC/804 above.
WC/851	Chart Describing November 6, 2000 Death Star Exhibit 851 is an excerpt from a data set the City of Modesto submitted in its affidavit to FERC in response to FERC's June 25, 2003 Show Cause Order in proceeding EL03-193. FERC made the documents available to the public.

Exhibit	Description
WC/853	<p>PacifiCorp Overscheduling</p> <p>Exhibit 853 is a data set prepared by McCullough Research by querying data from the California ISO. The California ISO provided that data pursuant to a request from the California Senate as a part of its investigation into manipulation in the Western energy markets. The California Senate provided that data to McCullough Research. PacifiCorp also provided California ISO settlement data through discovery in this matter.</p>
WC/854	<p>Driscoll's Final Procedures & Forney's Perpetual Loop</p> <p>Exhibit 854 contains documents that were produced to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the "Committee"), as part of its investigation into manipulative practices in the Western energy markets. After its review and analysis of these documents, FERC ordered that these documents be made available to the public.</p>
WC/860	<p>August 19, 2000 Death Star</p> <p>Exhibit 860 is an extract prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/862	<p>Enron Ricochet Counterparties</p> <p>Exhibit 862 is an extract prepared by McCullough Research from a query of the Enpower records database. See discussion under WC/804 above.</p>

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON
UM 1002**

Wah Chang,)	
	Petitioner,)	AFFIDAVIT OF ROBERT McCULLOUGH IN SUPPORT OF WAH CHANG'S RESPONSE TO PACIFICORP'S MOTION TO STRIKE DIRECT TESTIMONY AND EXHIBITS
v.)	
PacifiCorp,)	
	Respondent.)	

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 Response to PacifiCorp's Motion to Strike Direct Testimony and Exhibits. I make this affidavit based on my personal knowledge.

2. I am the principal of McCullough Research LLC, an energy consulting firm. I have been retained by Wah Chang as an expert witness in this proceeding. My prefiled and in-person testimony on behalf of Wah Chang and my curriculum vitae were admitted into evidence during the 2001 hearing.

3. My Direct Testimony on behalf of Wah Chang in the current phase of this docket has been prefiled as Exhibit WC/800 and my current curriculum vitae has been prefiled as Exhibit WC/801.

4. Attached as Exhibit A to this affidavit is a chart listing 61 exhibits submitted by Wah Chang to the Oregon Public Utility Commission. This affidavit comments on all the exhibits listed in Exhibit A except WC/1108 (a letter agreement between PacifiCorp and Dow Jones). I understand that Wah Chang does not intend to offer some of the exhibits listed on

1 Exhibit A. The exhibits that I comment on are referred to in this affidavit as the “Regulatory
2 Exhibits.”

3 5. I am familiar with the Regulatory Exhibits as the result of my extensive work for
4 various clients in connection with governmental investigations and regulatory and legislative
5 proceedings arising from the 2000-2001 western energy market crisis. The descriptions of the
6 source and reliability of the Regulatory Exhibits in Exhibit A are true and correct. As stated in
7 Exhibit A, information in the Regulatory Exhibits, or in the data bases from which the
8 Regulatory Exhibits have been prepared, has been presented to and considered by FERC, the
9 United States Congress, the California Senate and the U.S. Department of Justice.

10 6. Many of the Wah Chang exhibits described in Exhibit A to this affidavit are
11 materials obtained by FERC in the course of its two year PA02-2-000 investigation and which
12 form the basis of FERC’s more than 400 page findings and conclusions. By order issued
13 March 21, 2003, FERC determined that the release of those documents was necessary and in the
14 public interest and, thus, ordered those documents to be made publicly available. Those
15 materials are available from FERC on its website, located at
16 <http://www.ferc.gov/industries/electric/indus-act/wec/enron/info-release.asp>.

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1 7. Each of the Regulatory Exhibits that Wah Chang intends to offer, as set forth in Exhibit
2 A, bears on the issues in this proceeding and presents the kind of information relied upon by
3 reasonably prudent persons in the conduct of their serious affairs.

4 DATED: April 7, 2006

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7 _____
8 ROBERT McCULLOUGH

9 SIGNED AND SWORN to before me this 7th day of April 2006.



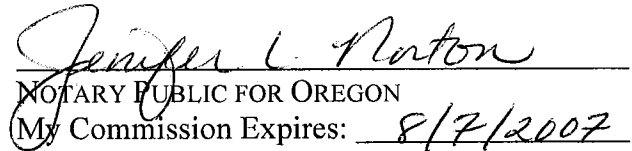
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19 NOTARY PUBLIC FOR OREGON
20 My Commission Expires: 8/7/2007
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EXHIBIT A TO ROBERT McCULLOUGH AFFIDAVIT

APPENDIX 2

A. Enron Hearsay Exhibits (31)

With Wah Chang Explanation of Source and Reliability in Bold

Exhibit	Description
WC/803	<p>Enron "Inc Sheets" (on disk)</p> <p>Exhibit 803 contains documents produced by Enron to McCullough Research in response to a data request by Snohomish PUD. McCullough Research later provided the documents to FERC in the course of FERC proceeding PA02-2-000. FERC subsequently issued an order making the documents available to the public. The documents also became a basis of the testimony of the FERC staff and the California Parties, a group of parties to FERC proceeding including the California Attorney General and the California Public Utility Commission.</p>
WC/804	<p>Enron Enpower record (20000522 Ricochet)</p> <p>Exhibit 804 is a McCullough Research excerpt from records in Enron's official accounting system known as "Enpower." Enron provided its Enpower records to FERC in PA02-2-000. FERC later issued an order making the Enpower database available to the public.</p>
WC/806	<p>Tim Belden (Enron) Presentation re: Western Power Markets</p> <p>Exhibit 806 is an email from Enron's Tim Belden, with its attachment. FERC issued data requests to Enron for documents, including Enron's emails, as part of its investigation in proceeding PA02-2-000, and Enron produced them to FERC. After review and analysis, FERC made the Enron documents, including emails, available to the public. McCullough Research obtained this document from FERC's website, located at http://www.ferc.gov/industries/electric/indus-act/wec/enron/info-release.asp.</p>
WC/808	<p>Death Star Templates (on disk)</p> <p>Exhibit 808 is a data compilation prepared by McCullough Research from the Inc Sheets discussed above under WC/803 and Enpower queries to CAPS reconciliations.</p>

Exhibit	Description
WC/811	<p>Enron Record of Transaction</p> <p>Exhibit 811 is a McCullough Research excerpt from the Enpower records discussed above under WC/804.</p>
WC/814	<p>Email from Tim Belden to Greg Piper, May 12, 2000</p> <p>Exhibit 814 is an email from Tim Belden of Enron to Greg Piper. See discussion under WC/806 above.</p>
WC/815	<p>Email from Tim Belden re "Out of Market," May 23, 2000</p> <p>Exhibit 815 is an email from Tim Belden of Enron. See discussion under WC/806 above.</p>
WC/820	<p>Yoder-Hall Memo dated December 8, 2000</p> <p>Exhibit 820 is a memorandum from Christian Yoder and Stephen Hall, attorneys for Enron, to Richard Sanders, regarding manipulative trading practices in the Western energy markets. This memorandum is perhaps the most well known and widely distributed document in the Western energy crisis. It was submitted as part of a sworn affidavit in FERC proceeding PA02-2-000. Its authenticity and the accuracy of its contents has never been in dispute and it has been relied upon by virtually every party involved in energy crisis litigation. FERC ordered this memorandum to be made available to the public.</p>
WC/822	<p>Tim Belden Presentation August 5, 2000</p> <p>Exhibit 822 is a power point presentation attached to an Enron email. The email states that the presentation was made by Mary Hain to FERC. Mary Hain was an Enron attorney for Enron's trading desk. A substantially similar presentation was made by Tim Belden, who had presented it to the Oregon Public Utility Commission in August 2000 at a meeting attended by Robert McCullough. Mr. McCullough also made a presentation to the Commission at the meeting.</p>
WC/824	<p>Tim Belden emails (on disk)</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/825	<p>Tim Belden email, dated November 5, 2001</p> <p>Exhibit 825 is an email from Tim Belden at Enron. See discussion under WC/806 above.</p>

Exhibit	Description
WC/826	<p>Christian Yoder email</p> <p>Exhibit 826 is an email from Christian Yoder, one of Enron's attorneys, which was previously produced by Enron to FERC. See discussion under WC/806 above.</p>
WC/827	<p>Presentation by Tim Belden, dated March 25, 2001</p> <p>Exhibit 827 is a presentation made by Tim Belden at Enron, which was attached to emails produced by Enron in FERC proceedings. See discussion under WC/806 above.</p>
WC/828	<p>Bill Williams (Enron) email, dated April 17, 2001</p> <p>Exhibit 828 is an email from Bill Williams of Enron. See discussion under WC/806 above.</p>
WC/829	<p>Steve C. Hall email Attaching Draft Memorandum re: "Trading Strategies," November 14, 2000</p> <p>Exhibit 829 is an email from Steve C. Hall, one of Enron's attorneys, which attaches a rough draft of the Yoder Hall Memorandum that is Wah Chang exhibit 820. This document was among the documents obtained and made public by FERC as part of its PA02-2-000 investigation.</p>
WC/830	<p>Kim Ward (Enron) email dated May 4, 2001</p> <p>Exhibit 830 is an email from Kim Ward of Enron. See discussion under WC/806 above.</p>
WC/832	<p>Enron Buy-Resales</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/834	<p>Bill Williams (Enron email), dated August 30, 2001</p> <p>Exhibit 832 is an email from Bill Williams of Enron. See discussion under WC/806 above.</p>
WC/838	<p>Stanley Cocke (Enron) email dated July 13, 2001</p> <p>Exhibit 838 is an email from Stanley Cocke of Enron. See discussion under WC/806 above.</p>
WC/844	<p>PacifiCorp/Enron Buy Sells by Month</p> <p>Exhibit 844 is a document prepared by McCullough Research from a query to the Enpower database. See discussion under WC/804 above.</p>

Exhibit	Description
WC/845	<p>Enron email to Portland Shift re Project Red Congo</p> <p>Exhibit 845 is an email from John Forney of Enron with handwritten notes. See discussion under WC/806 above.</p>
WC/846	<p>Handwritten Notes</p> <p>Exhibit 846 is the handwritten notes of an Enron attorney made while he was reviewing Enron trader tapes. Enron produced the notes to McCullough Research in response to a data request by Snohomish PUD, which subsequently filed them with FERC in FERC proceedings against Enron.</p>
WC/852	<p>Enron May 6 Data Request Supplemental, Nov. 15, 2002</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/854	<p>Driscoll's Final Procedures & Forney's Perpetual Loop</p> <p>Exhibit 854 contains documents that were produced to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the "Committee"), as part of its investigation into manipulative practices in the Western energy markets. After its review and analysis of these documents, FERC ordered that these documents be made available to the public.</p>
WC/855	<p>Enpower records of Death Stars with PacifiCorp</p> <p>Exhibit 855 is a compilation report prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/857	<p>Accomplishments of Michael Driscoll for year end 2000</p> <p>Exhibit 857 contains documents Enron produced to FERC in response to data requests in PA02-2-000. After its review and analysis of the documents Enron produced, FERC ordered that they be made available to the public.</p>
WC/858	<p>July 1, 2000 Enpower record (Death Star Deal Comments)</p> <p>Exhibit 858 is an extract prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/859	<p>July 1, 2000 Enpower and Inc Sheet</p> <p>Exhibit 859 is a data compilation prepared by McCullough Research from a query of the Enpower database discussed above under WC/804 and from the Inc Sheets discussed above under WC/803.</p>

Exhibit	Description
WC/860	<p>August 19, 2000 Death Star</p> <p>Exhibit 860 is an extract prepared by McCullough Research from a query of the Enpower database. See discussion under WC/804 above.</p>
WC/862	<p>Enron Ricochet Counterparties</p> <p>Exhibit 862 is an extract prepared by McCullough Research from a query of the Enpower records database. See discussion under WC/804 above.</p>
WC/1107	<p>Email from JMF to Portland Shift re Project Red Congo Document number Ecf000227557</p> <p>Exhibit 1107 is an e-mail from Enron's John Forney with handwritten notes. See discussion under WC/806 above.</p> <p>Exhibit 1107 is the same as Exhibit 845.</p>

B. Other Hearsay Exhibits (30)

Exhibit	Description
WC/807	<p>Enron Trading Hub Correlation Matrix</p> <p>Exhibit 807 is an attachment to an e-mail from Enron’s Tim Belden. See discussion under WC/806 above.</p>
WC/809	<p>Prepared Initial Tape Testimony of Barry E. Sullivan, Witness for the Staff of FERC</p> <p>Exhibit 809 is the written testimony of Barry E. Sullivan, a member of and witness for the FERC staff, providing testimony in the indicated dockets pertaining to FERC’s show cause orders and investigation into manipulation in the Western energy markets. FERC has made Mr. Sullivan’s testimony available to the public.</p>
WC/812	<p>Conv. Between Les at Enron and Harry at City of Redding</p> <p>Exhibit 812 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. The Committee provided that transcript to McCullough Research, which assisted the Committee with its investigation.</p>
WC/813	<p>City of Redding Conversations</p> <p>Exhibit 813 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/818	<p>Docket No. EL03-159-000, Ex. No. MID-4</p> <p>Wah Chang does not intend to offer this exhibit.</p>
WC/819	<p>City of Redding Conversations</p> <p>Exhibit 819 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the “Committee”), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>

Exhibit	Description
WC/821	<p>City of Redding Conversations</p> <p>Exhibit 821 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the "Committee"), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/823	<p>City of Redding Conversations</p> <p>Exhibit 823 is a transcript of City of Redding trader conversations, which were produced by the City of Redding to the California State Senate Select Committee to Investigate Price Manipulation of the Wholesale Energy Market (the "Committee"), as part of its investigation into municipal utilities. See discussion under WC/812 above.</p>
WC/836	<p>Reliant Trade Conversations, dated June 19, 2000; June 20, 2000; June 21, 2000; and June 23, 2000</p> <p>Exhibit 836 is a transcript of conversations involving Reliant Energy operations managers and plant managers. The contents of those conversations were a component of a settlement reached between FERC and Reliant. McCullough Research obtained a copy from a January 2003 FERC Information Release following Reliant's settlement with FERC.</p>
WC/837	<p>Testimony of Ann M. Hatcher on Behalf of Silicon Valley Power in FERC Dockets</p> <p>Exhibit 837 is the written testimony of Ann M. Hatcher, a division manager of Silicon Valley Power, filed with FERC in the indicated dockets. This testimony is also identified as Exhibit No. SNO-525 in EL03-137/180 and is available on FERC's eLibrary website. The trader conversation quoted in Ms. Hatcher's testimony and in Mr. McCullough's testimony is also available at www.enrontapes.com.</p>
WC/839	<p>Order on Complaint</p> <p>Utah Associated Municipal Power Systems</p> <p>Docketed June 29, 1998</p> <p>Exhibit 837 is an order issued by FERC.</p>
WC/840	<p>David Pierce (NRG) email, dated November 12, 2000</p> <p>Exhibit 840 is an email submitted by NRG to FERC as part of FERC's PA02-2-000 investigation. After its review and analysis of documents submitted by NRG, FERC made them available to the public.</p>

Exhibit	Description
WC/841	<p>Letter from Harvey L. Reiter to Donald Gelinas (with attached Affidavit of Arlen Orchard), May 22, 2002</p> <p>Exhibit 841 is the sworn affidavit of the Sacramento Municipal Utility District (“SMUD”), and accompanying letter, submitted to FERC as part of its PA02-2-000 investigation. After its review and analysis of documents submitted by SMUD, FERC made them available to the public.</p>
WC/842	<p>2005 Discovery Buy Resell by Counterparty</p> <p>Exhibit 842 is a compilation prepared by McCullough Research from materials provided by PacifiCorp in response to discovery requests in this proceeding.</p>
WC/847	<p>Index of Relevant Material and email from Paul Cummings</p> <p>Exhibit 847 is a City of Redding memorandum obtained through discovery by the California Parties and filed with FERC as part of the “100 days’ evidence” proceeding in EL00-95, FERC’s California refund docket. FERC has made this document available to the public.</p>
WC/848	<p>Agreement and Stipulation in FERC Docket re City of Redding, CA</p> <p>Exhibit 848 is the Agreement and Stipulation between FERC Staff and the City of Redding settling FERC’s show cause cases against the City. It is an official FERC record.</p>
WC/851	<p>Chart Describing November 6, 2000, Death Star</p> <p>Exhibit 851 is an excerpt from a data set the City of Modesto submitted in its affidavit to FERC in response to FERC’s June 25, 2003 Show Cause Order in proceeding EL03-193. FERC made the documents available to the public.</p>
WC/853	<p>PacifiCorp Over Scheduling</p> <p>Exhibit 853 is a data set prepared by McCullough Research by querying data from the California ISO. The California ISO provided that data pursuant to a request from the California Senate as a part of its investigation into manipulation in the Western energy markets. The California Senate provided that data to McCullough Research. PacifiCorp also provided California ISO settlement data through discovery in this matter.</p>
WC/863	<p>Statement of Terry Winter before Congress, July 22, 2002</p> <p>Exhibit 853 is the sworn testimony of Terry Winter, CEO of the California ISO, to a subcommittee of the U.S. House of Representatives.</p>

Exhibit	Description
WC/864	Attachment I.K.1 to PGE Affidavit Filed in FERC Docket No. PA02-2-000 Exhibit 864 is an attachment to the affidavit of Portland General Electric submitted to FERC in response to FERC's data request in PA02-2-000. FERC made this document available to the public.
WC/866	Transcript of Scheduler Telephone Conv., April 26, 2000 Exhibit 866 is an attachment to the affidavit of Portland General Electric submitted to FERC in response to FERC's data request in PA02-2-000. FERC made this document available to the public.
WC/867	August 23, 2000 ISO Interchange Data from Hildebrandt. This data was provided to Senator Joseph Dunn of the California State Senate by Eric Hildebrandt of the market surveillance office of the California ISO. McCullough Research received the document from Senator Dunn's office on September 16, 2002. Senator Dunn had retained McCullough Research to assist with his investigation of the Western energy crisis.
WC/868	August 23, 2000 CAPS Supplemental Bids Exhibit 868 is an excerpt from the Enron accounting system known as CAPS, which the Snohomish PUD obtained from Enron and filed with FERC.
WC/1100	Timothy M. Belden Plea Agreement, filed October 17, 2002 Exhibit 1100 is the criminal plea agreement by Timothy M. Belden of Enron. This court document is a public record available from the court in which Belden plead guilty.
WC/1101	John M. Forney Plea Agreement, filed August 5, 2004 Exhibit 1101 is the criminal plea agreement by John M. Forney. This court document is a public record available from the court in which Forney pled guilty.
WC/1102	Jeffrey S. Richter Plea Agreement, filed February 4, 2003 Exhibit 1102 is the criminal plea agreement by Jeffrey S. Richter. This court document is a public record available from the court in which Richter pled guilty.
WC/1105	Order on Complaint, <i>Utah Associated Municipal Power Systems v. PacifiCorp</i> , Docket No. EL 98-32-00, 83 FERC ¶ 61, 337, issued June 29, 1998 Exhibit WC/1105 is an order issued by FERC.

Exhibit	Description
WC/1108	<p>Letter from Edward Silliere of Dow Jones to “Gentlemen” RE: Guidelines for Participants, California-Oregon Border (COB) Electricity Price Index, dated February 1, 1995</p> <p>Exhibit WC/1108 is a letter agreement between PacifiCorp and Dow Jones concerning the Dow Jones electricity price indices.</p>
WC/1109	<p>ISO Market Monitoring & Information Protocol Issued by Roger Smith on October 13, 2000</p> <p>Exhibit 1109 is a FERC-filed tariff of the California ISO.</p>
WC/1117	<p><i>Electric Utility Week</i> Articles</p> <p>Exhibit 1117 is articles from a widely distributed energy industry publication. (They are offered to show that PacifiCorp management was on notice of industry speculation that market manipulation was occurring.)</p>

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

UM 1002

Wah Chang,)	AFFIDAVIT OF BERNE MARTIN HOWARD IN SUPPORT OF (1) WAH CHANG'S REPLY IN SUPPORT OF MOTION TO EXCLUDE AND (2) WAH CHANG'S RESPONSE TO PACIFICORP'S MOTION TO STRIKE
)	
Petitioner,)	
v.)	
PacifiCorp,)	
)	
Respondent.)	

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

I, BERNE MARTIN HOWARD, being first duly sworn, depose and say:

1. I make this exhibit in support of (1) Wah Chang's Reply in Support of Motion to Exclude Information from Protective Order and (2) Wah Chang's Response to PacifiCorp's Motion to Strike Direct Testimony and Exhibits. This affidavit is based on my personal knowledge.

2. I am the principal of Bench Mark Heuristics, LLC, an electric power industry consulting firm. I have been retained on behalf of Wah Chang in connection with this proceeding. My prefiled and in-person testimony on behalf of Wah Chang were admitted into evidence during the 2001 hearing.

3. I have worked in the electric power industry for over 25 years. I was an employee of Portland General Electric Company and affiliated enterprises for about 15 years and worked on a broad variety of analytical, regulatory and negotiation efforts during that time. In 1995 I left Portland General Electric Company to become a partner in an energy consulting firm, McCullough Research. In April 2000 I left McCullough Research to form my own consulting

1 business and have continued to work on projects for clients involving electric power markets and
2 regulatory change.

3 4. This affidavit presents information about certain statements made by PacifiCorp
4 concerning Exhibit WC/906.

5 5. The Declaration of Susan K. Roberts in Support of PacifiCorp's Response to
6 Wah Chang's Motion to Exclude Information from Protective Order states, at page 2, line 25:
7 "Exhibit WC/906 contains approximately 98,828 pages of Excel spreadsheets." The
8 "approximately 98,828 pages of Excel spreadsheets" apparently are part of "the equivalent of
9 over 110,000 pages" of documents referred to at page 2, line 18 of Ms. Roberts' Declaration.

10 6. Similarly, Exhibit 1 to PacifiCorp's Motion to Strike Direct Testimony and
11 Exhibits states that WC/906 contains "Excel zipped files 98,828 pages" and counts the "98,828
12 pages" among the "Total pages submitted 100,718" of Wah Chang exhibits listed in Exhibit 1.

13 7. Exhibit WC/906 is a compact disk containing twenty compressed digital computer
14 data files, with a total of 159 megabytes of data, approximately 25% of the capacity of the disk.

15 8. Each compressed file contains a set of Microsoft Excel files. In total, there are
16 350 Excel files on the disk.

17 9. I have examined a subset of 26 of these Excel files. Each Excel file I examined
18 consists of one data worksheet containing data for transactions and charges relating to the
19 California Independent System Operator (CAISO) and one Excel pivot table that summarizes the
20 contents of the data worksheet. The data worksheets are all in the same format, and the Excel
21 pivot tables are all in substantially the same format, differing slightly depending on the content
22 of the data worksheets.

23 10. Each data worksheet and each pivot table can be examined in its entirety without
24 opening and closing Windows or restarting Excel.

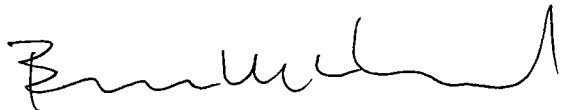
25 11. I have no reason to think that any Excel file in WC/906 that I have not examined
26 is any different from the ones I did examine.

1 12. The volume of data on WC/906 is not unusually large or difficult to process
2 compared with similar kinds of data files sometimes used in regulatory proceedings.

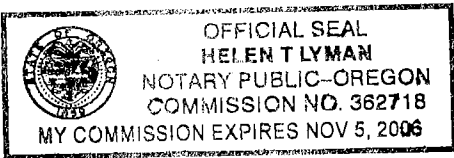
3 13. As stated above, PacifiCorp has characterized WC/906 as containing " * * *
4 approximately 98,828 pages of Excel spreadsheets." This is misleading because it suggests that
5 the contents of the exhibit must be printed on paper to be read or to be useful. In fact the files
6 are intended to be used with a computer and would not normally be printed.

7 14. As an analogy, consider the "burden" of processing the amount of data on
8 WC/906 if it were a music CD. In the analogy, there would be less than 20 minutes of sound on
9 the CD, and it could be listened to completely three times in less than an hour. The music file
10 could be printed as page after page of 0s and 1s, which would take about 250,000 pages.¹ But
11 this is not how music data is normally used, and an objection to a sound file because it is
12 burdensome to read its printed content is unreasonable. Similarly, Excel files are normally used
13 with a computer and are not printed out.

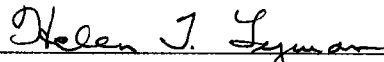
14 DATED: April 6, 2006.

15 
16 _____
BERNE MARTIN HOWARD

17 SIGNED AND SWORN to before me this 6th day of April, 2006.



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23
24



NOTARY PUBLIC FOR OREGON
My Commission Expires: Nov 5, 2006

25 ¹ 1,333,924,800 bits, printed on 8 1/2" x 11" paper, 100 bits printed per line and 54 lines per page
26 at 1/4" margins all sides. Of course, in standard legal format, with larger margins, numbered lines, double
spaced, and perhaps a larger font, the printout could easily approach a million pages.

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4 **BEFORE THE PUBLIC UTILITY COMMISSION**
5 **OF THE STATE OF OREGON**

6 **UM 1002**

7 Wah Chang,

8 Petitioner,)

9 v.)

10 PacifiCorp,)

11 Respondent.)

**CERTIFICATE OF SERVICE OF
WAH CHANG'S RESPONSE TO
PACIFICORP'S MOTION TO STRIKE
PETITIONER'S DIRECT TESTIMONY
AND EXHIBITS AND AFFIDAVIT OF
ROBERT McCULLOUGH IN SUPPORT**

12 I certify that on April 7, 2006, I served (a) Wah Chang's Response to PacifiCorp's
13 Motion to Strike Petitioner's Direct Testimony and Exhibits (sealed version); (b) Wah Chang's
14 Response to PacifiCorp's Motion to Strike Petitioner's Direct Testimony and Exhibits (Public
15 Version; Redacted); and (c) Affidavit of Robert McCullough in Support of Wah Chang's
16 Response to PacifiCorp's Motion to Strike Direct Testimony and Exhibits, by hand delivery or
17 by U.S. mail, properly addressed with first class postage prepaid, to the following parties or
18 attorneys of parties:

19
20 PAUL GRAHAM
21 JASON JONES
22 DEPARTMENT OF JUSTICE
23 REGULATED UTILITY &
24 BUSINESS SECTION
25 1162 COURT ST NE
26 SALEM OR 97301-4096
paul.graham@state.or.us
jason.w.jones@state.or.us

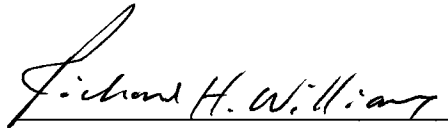
LAWRENCE REICHMAN (Hand Delivery)
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lreichman@perkinscoie.com
cgarrett@perkinscoie.com

PAGE 1 - CERTIFICATE OF SERVICE OF WAH CHANG'S RESPONSE TO PACIFICORP'S
MOTION TO STRIKE PETITIONER'S DIRECT TESTIMONY AND EXHIBITS AND
AFFIDAVIT OF ROBERT McCULLOUGH IN SUPPORT (UM 1002)

1 PAUL M WRIGLEY
2 PACIFIC POWER & LIGHT
3 825 NE MULTNOMAH STE 800
4 PORTLAND OR 97232
5 paul.wrigley@pacificcorp.com

6 DATED at Portland, Oregon, this 7th day of April, 2006.

7 LANE POWELL PC

8 

9 Richard H. Williams, OSB No. 72284

10 Of Attorneys for Wah Chang
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**PAGE 2 – CERTIFICATE OF SERVICE OF WAH CHANG’S RESPONSE TO PACIFICORP’S
MOTION TO STRIKE PETITIONER’S DIRECT TESTIMONY AND EXHIBITS AND
AFFIDAVIT OF ROBERT McCULLOUGH IN SUPPORT (UM 1002)**