

RE: BRITISH COLUMBIA TRANSMISSION CORPORATION (“BCTC”)
PROJECT NO. 3698539
AN APPLICATION TO AMEND THE BCTC OPEN ACCESS TRANSMISSION TARIFF
 (“OATT”)

AND

A COMPLAINT BY TRANSCANADA ENERGY LTD. (“TCE”)
REGARDING A SERVICE AGREEMENT BETWEEN TCE AND BCTC
FOR LONG TERM FIRM POINT-TO-POINT TRANSMISSION SERVICE

REBUTTAL TESTIMONY OF
CRAIG R. ROACH, Ph.D.

ON BEHALF OF TRANSCANADA ENERGY, LTD.

APRIL 22, 2009

TABLE OF CONTENTS

I.	INTRODUCTION AND SUMMARY.....	- 1 -
A.	INTRODUCTION.....	- 1 -
B.	SUMMARY	- 3 -
II.	REVIEW OF THE FERC ORDERS 890, 890-A, 890-B, AND 890-C	- 6 -
III.	REVIEW OF FERC-ORDERED “SEAMS” AGREEMENT.....	- 10 -
A.	THE SPP/MISO SEAMS AGREEMENT	- 10 -
B.	THE SPP/AECI SEAMS AGREEMENT	- 13 -
C.	THE PJM/MISO SEAMS AGREEMENT.....	- 15 -
D.	MODULE F, PART II OF THE MISO OATT	- 17 -
IV.	REVIEW OF SOME BCTC RESPONSES TO INFORMATION REQUESTS	- 19 -

1 **I. INTRODUCTION AND SUMMARY**

2

3 **A. INTRODUCTION**

4

5 Q. Please state your name, position and business address.

6 A. My name is Craig R. Roach. I am the President of Boston Pacific Company, Inc. My
7 business address is 1100 New York Avenue, NW, Suite 490 East, Washington, DC
8 20005.

9

10 Q. Are you the same Craig R. Roach who filed Direct Testimony on March 13, 2009 in the
11 parallel part of this proceeding?

12 A. Yes.

13

14 Q. What is the purpose of your Rebuttal Testimony?

15 A. The purpose of my Rebuttal Testimony is to respond to British Columbia Transmission
16 Corporation's ("BCTC's") statements concerning FERC policies for the calculation of
17 Firm Available Transfer Capability ("Firm ATC").

18

19 Specifically, on November 21, 2008, BCTC filed an application with the British
20 Columbia Utilities Commission ("BCUC" or "Commission") to amend its Open Access
21 Transmission Tariff ("OATT"). Part 6 of this application contained BCTC's proposal to
22 address issues concerning Firm ATC on the British Columbia to Alberta transmission
23 path ("BC>AB path"). Most importantly, BCTC notes that it ignores transmission

1 constraints in Alberta when it sets the amount of firm transmission service that can be
2 sold into Alberta. Specifically, BCTC states:

3
4 Firm ATC is determined in accordance with Attachment C of BCTC's OATT, modeled
5 on the transmission capability of BCTC's Transmission System. BCTC determines Firm
6 ATC mathematically as the Firm Total Transfer Capability (TTC), less the sum of
7 existing transmission commitments, Transmission Reliability Margin (TRM) and
8 Capacity Benefit Margin (CBM). **The transmission capability of adjoining**
9 **transmission systems is not taken into account in this calculation.**¹ [Emphasis Added]
10

11 Q. Do you agree with BCTC's proposed policy of not taking into account the transmission
12 capability of adjoining transmission systems?

13 A. No. More importantly, BCTC implies that ignoring constraints in neighboring areas
14 reflects FERC policy for Open Access Transmission Tariffs ("OATTs"). I do not agree
15 this reflects FERC policy.

16
17 Q. What is BCTC's evidence supporting its view on FERC policy?

18 A. BCTC has presented a "survey" of utility practices in Section 6.6 of its application as
19 support for its position. I deal with this survey in Section IV.
20

21 Q. Is the survey the best way to gauge FERC policy on this matter?

22 A. No, especially since at the time of the survey many transmission providers – as well as
23 NERC – were still bringing their policies into alignment with FERC's recent orders. My
24 view is that, if one wants to know what FERC thinks about coordinating transmission
25 service between neighboring areas, the best way to do that is to review what FERC itself
26 has recently said on the matter. The two best sources for determining FERC's policy on

¹ *Application to Amend the Open Access Transmission Tariff*, BCTC, November 21, 2008 at page 118.

1 this issue are (a) the FERC 890 Orders – Order 890, Order 890-A, Order 890-B and
2 Order 890-C plus (b) FERC-approved “seams agreements” or “Joint Operating
3 Agreements (JOAs).”
4

5 Q. Is it your understanding that the Commission expects that BCTC’s tariff, business
6 practices, and policies would be consistent with FERC’s requirements?

7 A. Yes. For example, the Commission seems to agree with using FERC’s Order 890
8 guidelines to set operating procedures for ATC-related issues. I understand that the
9 Commission had directed BCTC to establish provisions to handle ATC-related issues that
10 are consistent with FERC Order 890 guidelines. Specifically, the Commission stated the
11 following in its July 3, 2008 “Suspension Order” approving the temporary suspension of
12 releasing additional firm ATC on the BC>AB path:

13 BCTC is directed to include, in its next Rate Design review and/or FERC-890
14 compliance filing, whichever comes first, a Tariff section which formally
15 establishes, consistent with general OATT principles, and the FERC-890
16 guidelines, provisions for how BCTC will handle future situations, similar in
17 nature to that addressed in the Application.²
18

19 **B. SUMMARY**
20

21 Q. Above, you suggested the “two best sources” for determining FERC policy. Did you
22 review these for purposes of your Testimony?

23 A. Yes.
24

25 Q. How would you summarize what you found in the FERC 890 Orders?

² Order No. G-110-08, BCUC, July 3, 2008 at page 3.

1 A. After reviewing FERC Orders 890, 890-A, 890-B, and 890-C, it is evident that FERC
2 requires the system conditions of adjoining areas to be accounted for when calculating
3 the amount of transfer capability that is available between two systems – that is, when
4 calculating Firm ATC. Later in this Testimony, I support this view with direct quotes
5 from the 890 Orders.

6
7 In addition, NERC’s Board of Trustees has adopted the standards developed for ATC
8 calculation, and has submitted them to FERC for approval. FERC has issued a proposed
9 rulemaking to approve them, this proceeding is now in its comment phase. Consistent
10 with FERC principles, these NERC standards also make it clear that transmission
11 conditions in adjoining areas must be taken into account when determining ATC.³

12
13 Q. How would you summarize what you found in the second source?

14 A. The same conclusion is also supported by my review of FERC-approved JOAs. Put in
15 place well before the 890 Orders were finalized, these agreements were created for the
16 specific purpose of resolving issues that arise between neighboring transmission systems.
17 The FERC-approved JOAs provide compelling evidence against the BCTC implication
18 that transmission constraints in neighboring areas should be ignored. The JOAs are
19 founded upon the exchange of extensive information among the parties, and explicitly
20 call for taking account of the effect of granting transmission service in one area on
21 transmission congestion in another area, and vice-versa.

22

³ See, e.g., NERC Standard MOD-001-1 at A.3, and NERC Standard MOD-029-1 at B. R1.1.1.2 and R1.1.1.3. Both Standard MODs are available in FERC Docket No. RM08-19.

1 Q. Which JOAs did you review for purposes of your Testimony?

2 A. Boston Pacific has reviewed four JOAs, including those between (a) the Southwest
3 Power Pool (SPP) RTO and the Midwest Independent System Operator (MISO), (b) the
4 SPP RTO and Associated Electric Cooperative, Inc. (AECI), (c) the MISO and the PJM
5 Interconnection, and (d) MISO's Module F, Part II Service (replaces the MISO/Mid-
6 Continent Area Power Pool (MAPP) Seams Operating Agreement). Our review is
7 summarized later herein and, once again, direct quotes from these JOAs are provided to
8 support my conclusion.

9

10 Q. What is your overall conclusion?

11 A. In sum, I believe that drawing upon these FERC Orders, NERC standards, and FERC-
12 approved JOAs provides far more compelling evidence on FERC's policy than the survey
13 presented by BCTC. And this more compelling evidence shows that FERC clearly
14 requires transmission constraints in adjoining transmission systems be taken into account
15 when calculating Firm ATC.

16

17 Q. Stepping back, is there any other support for your overall conclusion?

18 A. Yes, if I may be blunt, common sense supports this conclusion. If BCTC ignores
19 transmission constraints in Alberta, it will consistently oversell firm transmission service.
20 That is, it will sell more transmission service than can actually flow on the path during
21 substantial portions of the year. In so doing, it will diminish the service provided to
22 existing transmission customers.

23

1 Any number of analogies reveals the lack of common sense in this. Say there was a
2 bridge between two cities, and that the safe weight limit on the bridge dictated that only
3 five cars could pass over at a time. Even if a highway was built on one side that could
4 deliver ten or twenty cars at a time to the entrance of the bridge, the safety limit would
5 dictate that only five could cross over at any one time. At a minimum, it would be over-
6 promising to suggest that the safety limit could be ignored and that more cars would
7 actually get across the bridge. Indeed, with the new highway on one side of the bridge, a
8 bottleneck would be created at the entrance to the bridge, and the bottleneck would
9 diminish the quality of travel for the people who originally traveled over the bridge.

10
11 It simply would make no sense to assume away the bottleneck at the entrance to the
12 bridge when judging how many cars could reliably travel between the two cities. The
13 same point is true for BCTC's proposal to ignore the limitations on the transmission lines
14 between the two Provinces.

17 **II. REVIEW OF THE FERC ORDERS 890, 890-A, 890-B, AND 890-C**

18
19 Q. Let's begin with the FERC 890 Orders. Would you provide some broad background to
20 start?

21 A. Yes. Order No. 890 was proposed by FERC on February 16, 2007 in an effort to remedy
22 remaining opportunities for undue discrimination under the pro forma OATT adopted
23 more than a decade earlier in Order Nos. 888 and 889. Order Nos. 890-A, 890-B, and

1 890-C were subsequently provided, in part, to clarify specific reforms provided in Order
2 No. 890. One central theme in these orders is the required exchange of information
3 among transmission providers to achieve accurate ATC calculations. For example, in
4 Order No. 890-A, FERC affirmed that data must be exchanged between neighboring
5 transmission systems and that the ATC values calculated should be consistent across
6 systems. FERC states that, in order to calculate accurate ATC values, conditions on
7 adjacent transmission systems must be accounted for. FERC stated the following:

8
9 [W]e clarify that adjacent transmission providers must coordinate and exchange
10 data and assumptions to achieve consistent ATC values on either side of a single
11 interface. This is applicable to any neighboring transmission providers no matter
12 whether they use the same or different ATC methodologies.⁴
13

14 Note, too, that in the quote above, FERC states that “this is applicable to *any* neighboring
15 transmission providers.” This would presumably include transmission providers that
16 have a tariff based on the pro forma OATT such as BCTC and transmission providers
17 operating a pool system such as Alberta.

18
19 Q. Is there any further definition by FERC of the term “consistent”?

20 A. Yes. On June 23, 2008, FERC issued Order 890-B to provide further clarification in
21 response to intervenor comments. One of the issues that FERC discusses in detail is
22 “consistency and transparency of ATC Calculations.” First, FERC reemphasizes its
23 statements provided in Order 890-A, and even seems to go a step further by defining
24 “*consistent* ATC values” as being “*identical* ATC values.”

⁴ *Preventing Undue Discrimination and Preference in Transmission Service (Order No. 890-A)*, FERC Docket Nos. RM05-17-001, 002 and RM05-25-001, 002, December 28, 2007 at paragraph 52.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

The Commission affirms the clarification provided in Order No. 890-A that adjacent transmission providers must coordinate and exchange data and assumptions to achieve consistent ATC values on either side of a single interface. We disagree with petitioners arguing that “consistent” ATC values should not be interpreted as identical.⁵

Q. Was there push back by intervenors on the use of the word identical?

A. Yes. And in response to intervenors’ assertions that having identical ATC values on either side of a single interface is “not reasonably achievable”, FERC went on to say:

We recognize that factors such as timing of reservation requests, acceptances, and confirmations, and multiple interfaces between and among transmission providers, can make it difficult to achieve coincidental, identical postings of ATC values on both sides of an interface. However, as the Commission explained in Order No. 890, if all of the ATC components and certain data inputs and assumptions are consistent, the ATC calculation methodologies being finalized by NERC through the reliability standards development process should produce predictable and sufficiently accurate, consistent, equivalent, and replicable results. We therefore disagree that the directive to coordinate and exchange data and assumptions to achieve consistent ATC values on either side of an interface was newly imposed in Order No. 890-A. The Commission simply clarified that the requirement stated in Order No. 890 applies equally to calculations of ATC on either side of an interface.⁶

The language which is repeated here suggests that the results of any ATC calculation should, on either side of a seam, be “accurate, consistent, equivalent, and replicable.”

Q. Was there follow-up discussion and determinations in subsequent 890 Orders?

A. Yes. In Order 890-C FERC further clarified the statement that it made in 890-B:

The requirement, then, is not to achieve identical postings of ATC values on either side of an interface, as NorthWestern contends. The requirement is, instead,

⁵ *Preventing Undue Discrimination and Preference in Transmission Service (Order No. 890-B)*, FERC Docket Nos. RM05-17-003 and ROM05-25-003, June 23, 2008 at paragraph 15.

⁶ *Ibid.*

1 to achieve consistency in such values through the development of ATC
2 calculation methodologies that produce sufficiently accurate, consistent,
3 equivalent, and replicable results. In some instances, it may be possible for
4 transmission providers under these methodologies to achieve identical ATC
5 values on either side of an interface. In others, such as when there are differences
6 in reservation status or when there are multiple interfaces between the
7 transmission providers, it may not be possible or even practical to achieve
8 identical values.⁷

9

10 Q. Does FERC mandate a specific methodology for the calculation of ATC?

11 A. No. However, FERC specifies which ingredients must be included and requires that
12 certain principles be upheld. In the original Order 890, FERC states:

13 All ATC calculation methodologies derive ATC by modeling the system to
14 establish TTC, expressed in terms of contract paths or flowgates, and reducing
15 that figure by existing transmission commitments (i.e., ETC), a margin that
16 recognizes uncertainties with transfer capability (i.e., TRM), and a margin that
17 allows for meeting generation reliability criteria (i.e., CBM). These calculation
18 methodologies are developed based on physical characteristics of the transmission
19 provider's transmission system, historical modeling practices, and processes
20 developed for collection of input data related to transmission provider's own
21 system conditions **as well as relevant data that model neighboring systems'**
22 **conditions.** [Emphasis added]⁸

23

24 Q. Are others working on standards for ATC calculations?

25 A. Yes. In the original Order 890, FERC acknowledged that NERC was developing
26 standards for three ATC calculation methodologies. NERC's Board adopted those
27 methodologies in August 2008, and as of March 19, 2009 FERC has issued a Notice of

⁷ *Preventing Undue Discrimination and Preference in Transmission Service (Order No. 890-C)*, FERC Docket Nos. RM05-17-004 and RM05-25-004, at paragraph 9.

⁸ *Preventing Undue Discrimination and Preference in Transmission Service (Order No. 890)*, FERC Docket Nos. RM05-17-000 and RM05-25-000, at Paragraphs 208 and 209.

1 Proposed Rulemaking (now in its 60-day comment period) indicating a desire to approve
2 NERC's proposals.⁹

3 Q. Do NERC's methodologies for ATC calculation require consideration of transmission
4 conditions in other areas?

5 A. Yes. For example, when detailing requirements for calculating TTCs, NERC requires the
6 Transmission Operator to use a transmission model which includes at least (a) "all
7 Transmission Operator areas contiguous with its own Transmission Operator area" and
8 (b) "any other Transmission Operator area linked to the Transmission Operator's by joint
9 operating agreement".¹⁰

10 Q. In sum then, what is your conclusion from reviewing the 890 Orders?

11 A. My conclusion from reviewing the 890 Orders is that FERC policy is to require
12 consideration of transmission conditions in adjoining transmission system when
13 determining Firm ATC, and to require that these considerations lead to "accurate,
14 consistent, equivalent, and replicable" results on either side of the relevant seams.

15
16
17 **III. REVIEW OF FERC-ORDERED "SEAMS" AGREEMENT**

18
19 **A. THE SPP/MISO SEAMS AGREEMENT**

20
21 Q. Were the 890 Orders the first time FERC spoke to this issue?

⁹ Ibid., at paragraph 210, and 126 FERC ¶ 61,249, at Summary.

¹⁰ NERC Standard MOD-029-1 at B. R1.1.1.2 and R1.1.1.3.

1 A. No, not at all. While FERC has spoken most recently on these ATC-related issues in the
2 context of its major updates for open access transmission tariffs in the 890 Orders, FERC
3 has spoken frequently on these same issues for many years. As already noted in the
4 Summary, the other place to look for FERC's views is in what are termed "seams"
5 agreements or more technically Joint Operating Agreements (JOAs). For example,
6 Boston Pacific has served as the External Market Advisor for the Board of Directors of
7 the Southwest Power Pool (SPP) since 200_. When SPP filed for approval of its
8 application to become a Regional Transmission Organization (RTO), one of the first
9 requirements imposed by FERC was that SPP negotiate a JOA with its neighbor the
10 Midwest Independent System Operator (MISO). The original JOA was signed by SPP
11 and MISO in December 2004.

12
13 Q. What relevant conclusion do you draw from your review of the FERC-required JOA
14 between SPP and MISO?

15 A. The unmistakable conclusion from reading the JOA is that it requires the neighboring
16 entities to take account of transmission constraints in each other's territory when
17 calculating ATCs and the related Available Flowgate Capacity (AFCs), and when
18 approving transmission reservations. For example, in the SPP/MISO JOA under the title
19 "ATC/AFC Calculations", it is made clear that (a) information must be exchanged so that
20 accurate ATC/AFC calculations are possible and (b) transmission reservations in one area
21 may have to be denied "in order to avoid potential overloading of facilities" in a
22 neighboring area. The opening paragraph in Section 5.1 reads as follows:

23 Purpose: The calculation of Total Transfer Capability ("TTC") and Available
24 Transfer Capability ("ATC") is a forecast of transmission capacity that may be

1 available for use by transmission customers. Use of transmission capacity in one
2 system can impact the loadings, voltages and stability of neighboring systems.
3 Because of this interrelationship, neighboring entities must exchange pertinent
4 data for each entity to determine the TTC and ATC/AFC values for its own
5 transmission system. The exchange of data related to calculation of TTC and
6 ATC is necessary to assure reliable coordination, and also to permit either Party to
7 determine if, due to lack of transmission capacity, it must refuse a transmission
8 reservation in order to avoid potential overloading of facilities.¹¹
9

10 Q. Is this same issue addressed in other sections of the SPP/MISO JOA?

11 A. Yes. Similarly, under the title “Analysis of Long Term Firm Transmission Service
12 Requests”, the SPP/MISO JOA makes it clear that the neighboring system must explicitly
13 take account of the impact of granting service in one area on transmission congestion in
14 the other area. Section 9.3.4 Item (a) states:

15 The Parties will coordinate the calculation of ATC values associated with the
16 service, based on contingencies on the systems of each Party that may be
17 impacted by the granting of the service.¹²
18

19 Q. What has been the practical implication for the required coordination?

20 A. The practical implication of the JOA is that SPP and MISO must agree to coordinate
21 congestion management. And, to focus that congestion management, the two Parties
22 agree to identify transmission facilities that are of mutual concern – these are termed
23 “Reciprocal Coordinated Flowgates (RCFs).” As stated in Section 6.1 of the Congestion
24 Management Process attached to the JOA, respect of RCFs affects both the calculation of
25 ATCs/AFCs and real time operations.

26 In order to coordinate congestion management on a proactive basis, Operating
27 Entities may agree to respect each other’s Flowgate limitations during the
28 determination of AFC/ATC and the calculation of firmness during real-time
29 operations. Entities agreeing to coordinate this future-looking management of

¹¹ *Joint Operating Agreement between the Midwest Independent Transmission System Operator, Inc. and Southwest Power Pool, Inc.* at Original Sheet No. 24.

¹² *Ibid.* at Original Sheet No. 46.

1 Flowgate capacity are Reciprocal Entities. The Flowgates used in that process are
2 Reciprocal Coordinated Flowgates.¹³
3
4

5 **B. THE SPP/AECI SEAMS AGREEMENT**
6

7 Q. Are these FERC-approved JOAs always between RTOs?

8 A. No. FERC has approved JOAs not only between RTOs and ISOs, but also between
9 RTOs/ISOs and independent utilities.
10

11 Q. Would you provide an example?

12 A. Yes. One recent proposal for a JOA was between the SPP RTO and Associated Electric
13 Cooperatives, Inc. (AECI); transmission and operating services are provided by AECI to
14 six regional generation and transmission entities and fifty-one distribution companies in
15 parts of three states.
16

17 Q. What is relevant and important to the issue at hand in that JOA?

18 A. What is relevant and important to the issue at hand is that the SPP-AECI JOA obligates
19 the two Parties to cooperate in at least three important respects – congestion management,
20 transmission planning, and transmission project cost allocation. In addition, the JOA
21 requires significant exchanges of information and establishes a governing committee to
22 assure cooperation. These requirements are summarized in the submittal letter:

23
24 The JOA obligates SPP and AECI to cooperate on issues such as congestion
25 management, transmission planning, and project expansion cost allocation. The
26 JOA provides for the exchange of information and data, calculations of

¹³ Ibid., *Congestion Management Process* at Original Sheet No. 108.

1 transmission capability, emergency operations, joint transmission expansion
2 planning, and protocols for scheduling, coordination of voltage control and
3 reactive power, and dispute resolution. Additionally, the JOA establishes an
4 Operating Committee, (“OC”) comprised of representatives of SPP and AECI to
5 oversee efforts to implement the agreement.¹⁴
6

7 Q. Does the JOA require that the parties take account of actions affecting transmission in
8 each other’s territory?

9 A. Yes. The SPP/AECI JOA requires the Parties to take account of the transmission impacts
10 of one another’s actions. When calculating ATCs/AFCs to assess requests for short-term
11 transmission service, each party must consider impacts on a neighbor even if a
12 transmission reservation is not required on the neighboring system. The JOA states,

13
14 Each Party shall consider impacts on the other Party’s facilities in its AFC/ATC
15 calculation and short-term transmission service evaluation processes from service
16 requests to use its transmission system that can be scheduled upon without a
17 corresponding transmission reservation on the other Party’s system. However,
18 each Party shall only consider such facilities on the other Party’s system with a
19 response factor of equal to or greater than 5%, or as otherwise agreed upon by
20 both Parties, to reservations on the first Party’s system.¹⁵
21

22 Q. Does this apply to long-term transmission requests?

23 A. Yes. Similarly, for long-term transmission service requests, the Parties must account for
24 all impacts and the need for system upgrades. The JOA states:

25
26 Analysis of Long-Term Firm Transmission Service Requests. In accordance with
27 applicable procedures under which the Parties provide long-term firm
28 transmission service (one year or more), the Parties will coordinate with each
29 other and conduct, in a timely manner, any studies required to determine the
30 impact of, and necessary upgrades required to provide, such requested service.¹⁶

¹⁴ Submittal letter, September 10, 2008, for *Joint Operating Agreement Among and Between Southwest Power Pool, Inc. and Associated Electric Cooperative, Inc.*

¹⁵ JOA at Original Sheet No. 19, Item 5.2.1.

¹⁶ JOA at Original Sheet No. 26, Item 7.3.4.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

C. THE PJM/MISO SEAMS AGREEMENT

Q. Are the principles you see in the two SPP JOAs you discussed above found in other FERC-required JOAs?

A. Yes. For example, the PJM-MISO Joint Operating Agreement includes substantial language demonstrating that system conditions in one RTO must be considered by the other when computing transmission capacities. The following language shows that operators in one system must take account of other systems' constraints when determining the amount of transmission capacity they may make available for sale, and may not simply compute that transmission based on their own system constraints as BCTC has proposed.¹⁷

The calculation of TTC and ATC pertains to a forecast of transmission capacity that may be available for use by transmission customers. Use of transmission capacity in one system can impact the loadings, voltages and stability of neighboring systems. Because of this interrelationship, neighboring entities must exchange pertinent data for each entity to determine the TTC and ATC/AFC values for its own transmission system. The exchange of data related to calculation of TTC and ATC is necessary to assure reliable coordination, and also to permit either Party to determine if, due to lack of transmission capacity, it must refuse a transmission reservation in order to avoid potential overloading of facilities.¹⁸

Q. Do you find in this JOA some of the same constructs used in the SPP JOAs?

¹⁷ Note that much of the language in this JOA is similar to that of the SPP/MISO JOA.
¹⁸ *Joint Operating Agreement Between the Midwest Independent Transmission System Operator, Inc. And PJM Interconnection, L.L.C.*, October 15, 2007, at Original Sheet No. 27. We note that, since our research began, this version of the PJM-MISO JOA has been updated to a new version effective February 19, 2009. The paragraph quoted has been altered somewhat, but remains substantively the same.

1 A. Yes. For example, as in other JOAs, the PJM-MISO agreement recognizes that
2 certain flowgates are affected by transmission decisions in multiple operating
3 areas, and that all systems influence the capacity for transmission over these
4 Reciprocal Coordinated Flowgates (RCFs). Data from each system influencing
5 the RCF are required to properly calculate how much firm and non-firm capacity
6 the entity controlling the operation of the Flowgate may offer for sale.

7
8 Coordination Process for Reciprocal Coordinated Flowgates. The Parties will
9 establish and finalize the process and timing for exchanging their respective
10 ATC/AFC calculations and Firm Flow calculations/allocations with respect to all
11 RCFs. Further, the process will allocate Flowgate capacity on a future-looking
12 basis, including the allocation of Firm and Non-Firm Capability (Priority 7, 6, and
13 2) for use in both internal dispatch and selling of transmission service.¹⁹
14

15 Q. What are the practical implications of these FERC-required and –approved JOAs?

16 A. The practical implication is that transmission constraints in one adjoining area can limit
17 the amount of transmission service allowed in the other area. This JOA explicitly states
18 that, since transmission sold by one party can unduly affect Flowgates on the other
19 party’s system, the first party must restrict the amount of capacity it sells based on the
20 other party’s AFC calculations for Reciprocal Coordinated Flowgates. After stating that
21 “procedures are necessary to assure that each Party respects the other Party’s
22 flowgates,”²⁰ the JOA makes it clear that transmission service must take account of
23 transmission capabilities in neighboring areas:
24

25 Requirements:
26 (a) The Parties will exchange firm and non-firm AFC for all relevant Flowgates.

¹⁹ Ibid. at Original Sheet No. 36.
²⁰ Ibid. at Original Sheet No. 32.

1 (b) Each Party will accept or reject transmission service requests based upon
2 projected loadings on its own Flowgates as well as on RCFs under Article VI.

3 (c) Each Party will limit approvals of transmission service reservations, including
4 roll-over transmission service, so as to not exceed the lesser of the sum of the thermal
5 or stability capabilities of the tie lines that interconnect the Parties, provided that firm
6 transmission service customers with terms of one year or longer retain the rollover
7 rights and reservation priority granted to them under the applicable Party's OATT,
8 and further provided that if explicitly stated in the applicable service agreement, a
9 Party may limit rollover rights for new long-term firm service if there is not enough
10 ATC to accommodate rollover rights beyond the initial term.²¹
11

12
13 **D. MODULE F, PART II OF THE MISO OATT**
14

15 Q. Do you have any other JOAs that you would like to discuss here?

16 A. Yes. I would like to add one more. Module F, Part II of the Midwest ISO's OATT, was
17 conditionally approved by FERC on June 13, 2008 as a replacement for the MISO/Mid-
18 Continent Area Power Pool (MAPP) Seams Operating Agreement. That Seams
19 Operating Agreement was set to expire March 31, 2009, and has governed the provision
20 of transmission services by MISO to non-ISO utilities belonging to MAPP since February
21 2005.²²
22

23 Q. What is the significance of this JOA?

24 A. As with the SPP/AECI Seams Agreement, these agreements between MISO and MAPP
25 demonstrate that taking account of constraints on neighboring systems in the
26 determination of TTC and ATC/AFC is not simply an issue for neighboring RTOs and
27 ISOs. Instead, they show FERC's expectation that any adjacent transmission providers,

²¹ Ibid. at Original Sheet No. 32.

²² *Joint MAPP-MISO Filing of Revisions to MAPPCOR-MISO Seams Operating Agreement*, Re: FERC Docket Nos. ER04-691-023, EL04-104-022 and ERO4-960-002, et al. October 31, 2008, pages 1-3. Accessed at http://www.mappcor.org/assets/FERC/SOA%20Extension_10_31_2008.pdf.

1 including utilities abutting RTOs or ISOs, should take account of conditions on
2 neighboring systems in their calculations of transmission capacity across seams.

3
4 Q. What principles in this Seams Agreement would you draw attention to?

5 A. As with the other JOAs described herein, Module F Part II (“Part II”) rests upon the
6 notion that conditions in both control areas affect the transmission capabilities between
7 the two. Part II requires both the Transmission Provider [MISO] and the Congestion
8 Management Customer [any utility adjacent to MISO taking Part II service] to account
9 for conditions on the other’s network in the course of their operations. For example, as
10 demonstrated in the quote below (pertaining to generation merit order information
11 exchange), Part II explicitly states that certain data are needed to compute accurate values
12 for TTC, ATC, and AFC. Similar quotes could be provided for the exchange of data
13 regarding transmission outages, generator status, interchange schedules, transmission
14 service requests, and AFC for all Coordinated Flowgates.²³

15
16 As necessary to permit the Transmission Provider and the Congestion
17 Management Customer to develop a reasonably accurate dispatch for the
18 calculation of TTC and ATC/AFC values under any modeled condition, they shall
19 provide each other with a typical generation merit order or the generation
20 participation factors of all units on an affected balancing authority basis. The
21 generation merit order will be updated as required by changes in the status of the
22 unit; however, a new generation merit order need not be provided more often than
23 prior to each peak load season.²⁴
24

25 Q. Again, are there practical implications of these FERC-required principles?

²³ *Midwest ISO FERC Electric Tariff, Third Revised Volume No. 1* at Original Sheet Nos. 850Z.08-850Z.14.

²⁴ *Ibid*, at Original Sheet No. 850Z.09.

1 A. Yes. Notably, Part II also directs that the two parties must reject transmission service
2 requests based on the impact to the other's Flowgates. This demonstrates that Part II
3 envisions that the amount of firm transmission available for sale by one party is
4 dependent upon system constraints in the neighboring area.

5

6 To determine if a transmission service reservation (or interchange schedule) will impact
7 Flowgates to an extent greater than the (firm or non-firm) AFC and to assure that the
8 Transmission Provider and the Congestion Management Customer respect each other's
9 Flowgates, the Transmission Provider and the Congestion Management Customer will
10 transfer Firm and Non-firm AFC for all Coordinated Flowgates. **The Transmission
11 Provider and the Congestion Management Customer will continue to accept or
12 reject transmission service requests based upon projected loadings on their own
13 Flowgates as well as the loadings on the other party's Flowgates so as not to exceed
14 the posted AFC.**²⁵ [Emphasis added]

15

16

17 **IV. REVIEW OF SOME BCTC RESPONSES TO INFORMATION REQUESTS**

18

19 Q. Did you review BCTC's responses to Information Requests?

20 A. Yes. I reviewed some of those most relevant to the FERC policy issue addressed in my
21 Testimony.

22

23 Q. Would you like to comment on some of them?

24 A. Yes. There are three that I would like to respond to.

25

26 Q. What is the first of these three?

²⁵ Ibid, at Original Sheet No. 850Z.13.

1 A. The first of the three is BCTC’s response to Information Request 2.11.1 from BCUC.
2 The question asks BCTC to respond to the TCE claim that BCTC fails to take into
3 account conditions on neighboring systems when calculating the TRM element in ATC
4 calculations and, therefore, BCTC does not conform to FERC requirements. BCTC
5 provides a lengthy response, but the core of the answer appears to be that “In Order No.
6 890 paragraph 273, FERC set out seven factors that may be taken into account in
7 determining TRM [Transmission Reliability Margin]. None of those factors requires a
8 Transmission Provider to increase TRM by the amount of the difference between its Firm
9 TTC and the forecast [of] hourly import limits on an adjacent transmission system.”²⁶

10

11 Q. How would you respond?

12 A. I would respond by saying that BCTC is addressing the wrong question. BCTC is
13 addressing the question of how FERC might want a Transmission Provider to reflect
14 conditions on neighboring transmission systems not whether FERC wants those
15 conditions to be reflected. As to “whether,” it is abundantly clear from the quotes I have
16 provided from the 890 Orders and from the JOAs that FERC requires (a) ATC
17 calculations to be consistent on either side of an interface and (b) that all ATC
18 calculations take into account conditions in adjoining transmission systems. It also is
19 common sense that no one should be selling firm transmission service that it knows,
20 based on real-world operating experience over many years, it cannot actually provide.

²⁶ See BCTC Response to BCUC IR 2.11.1, dated April 6, 2009, in Doc. No. B1-17 (April 15, 2009), paragraph 2.

1 It appears BCTC is saying that, since FERC did not give pinpointed advice on how the
2 situation at hand might be reflected in TRM or in TTC, this somehow undermines the
3 fundamental principles set by FERC in the 890 Orders.²⁷ BCTC's logic is not
4 convincing.

5
6 Q. What is the second BCTC response to which you would like to respond?

7 A. The second BCTC response that I would like to address is to Information Request 2.19.1
8 from BCUC. While acknowledging FERC's requirement that ATCs be consistent on
9 either side of an interface, BCTC asserts that, for long-run ATC, this is not possible
10 because "The AESO does not offer a long-term firm service, and so does not calculate a
11 long-term ATC."²⁸

12
13 Q. How would you respond?

14 A. I do not agree. I do not see AESO's practices or policies on long-term firm ATC as
15 determining whether BCTC has enough valid information to take account of conditions in
16 an adjacent area on BCTC's own long-term ATC calculation. Specifically, AESO
17 provides a readily accessible historical database of hourly import capability. For
18 example, by our calculations, that import capability was at or above 480 MW in only
19 approximately 76% of all hours in 2007 and only 60% of all hours in 2008.²⁹ Put another

²⁷ Ibid., see final paragraph.

²⁸ See BCTC Response to BCUC IR 2.19.1, dated April 6, 2009, in Doc. No. B1-17 (April 15, 2009), paragraph 1.

²⁹ Boston Pacific summary based on data on January 1, 2007-December 31, 2008, retrieved from AESO's Available Transfer Capacity Reports Query, <http://itc.aeso.ca/itc/public/atcQuery.do>, accessed April 21, 2009.

1 way, if 480 MW was used as the Long-Term Firm ATC, it would reflect the judgment
2 that the right level for Firm Transmission Service on the Intertie was 480 MW, even
3 though that much firm service could actually be provided only 60% to 76% of the time.
4 These are the kind of data that would allow BCTC and the AESO to come to agreement
5 on a consistent Long-Term Firm ATC that takes account of conditions in Alberta.

6
7 Q. What is the third and final BCTC response you want to comment on?

8 A. The third response is to TCE's Information Request 2.1.2. In this response, BCTC
9 provides documentation for the survey mentioned earlier, mostly in the form of email
10 responses from surveyed transmission providers and notes from phone calls.

11
12 Q. What did you think of the information presented in the survey?

13 A. I did not find it to be compelling. BCTC itself admitted that four of the ten utilities it
14 surveyed took account of constraints on neighboring systems. But even those six from
15 which it claimed support were unconvincing.

16
17 As an example, consider Hydro-Quebec Transenergie (HQT). BCTC spends much if not
18 most of the discussion in its survey review on HQT, and says that HQT's interfaces with
19 the New York and New England ISOs are the most similar to that between British
20 Columbia and Alberta.³⁰ It is worth noting immediately that many of HQT's interfaces
21 along those boundaries have direct current (DC) components instead of or in addition to

³⁰ BCTC OATT Amendment Application, page 148.

1 alternating current (AC) components.³¹ Compared to AC connections, DC connections
2 are more controllable, and help isolate a system from its neighbors. More importantly,
3 BCTC's October 20, 2008 communication with HQT indicates that, at that time, HQT did
4 not coordinate transmission capacities with its neighbors.³² However, a December 23,
5 2008 announcement on HQT's OASIS website³³ indicated that such policies are currently
6 being revised, in light of FERC 890.

7
8 Specifically, HQT states:

9 "In light of FERC Order 890, the Transmission Provider will undertake work in
10 2009 to align capacities posted on its OASIS site with those posted on
11 neighboring systems. New capacity values will be posted as work progresses. As
12 of the posting of this notice, the Transmission Provider will study any new request
13 for transmission service over its interconnections taking into account limits on
14 neighboring systems."

15
16 HQT's new OATT filing is on-going with Quebec's Régie de l'énergie.³⁴ This statement
17 calls the conclusions BCTC draws from HQT's example into question in my mind,
18 because HQT's practices are being reconsidered.

19
20 Q. Does this conclude your Testimony?

21 A. Yes.

³¹ Hydro-Québec TransÉnergie – Oasis, <http://www.transenergie.com/oasis/hqt/en/schemas.htmlx>, last accessed April 21, 2009.

³² See BCTC Response to TCE IR 2.1.2, dated April 6, 2009, in Doc. No. B1-17 (April 15, 2009), at Attachment *HQ 2008 10 20 Email Response*.

³³ Hydro-Québec TransÉnergie – Oasis, General notice archives, <http://www.transenergie.com/oasis/info/ilot/avis.doc>, last accessed April 21, 2009.

³⁴ See <http://www.regie-energie.qc.ca/audiences/3669-08/index3669.htm> and http://www.regie-energie.qc.ca/audiences/3669-08_2/index3669.htm.