

# Commercially Similar Paths (Motion 47)

NAESB OS Preparatory Workgroup

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# Commercially Similar Paths – Motion 47

- Motion 47 came into being with the notion that
  - Defenders should be those Request and Reservations with Commercially Similar Paths as the Challenger, and
  - that the Defender should not have to give up a disproportionate amount to what the Challenger gains, and
  - that whatever rules are developed for a flowgate methodology would also apply to contract path methodology.

- Motion 47 as written:

When a Challenger cannot be accommodated because AFC is not available on one or more flowgates, the Transmission Provider must identify potential Defenders. A potential Defender must provide relief on all of the flowgates where AFC is not available for the Challenger. The capacity taken away from the Defender shall not be more than 105% (rounded to the nearest MW) of the capacity made available to the Challenger.

Motion 47 also includes a second paragraph with similar wording, but for ATC paths.

# Concerns with current motion 47

- In application, it is overly restrictive when compared to the original intent behind the motion.
- Preemption/Competitions are about Reservations (POR-POD), and the current language of Motion 47 delves into TP evaluation of AFC.
- On BPA's flowgate based system, Motion 47 effectively eliminates the likelihood of conducting preemption and competition except for identical POR-POD combinations. Paul Sorenson's statement that Motion 47 "literally stops preemption and competitions" has been proven out on BPA's flowgate network.
- Everyone agrees that you should not take away 100 MW from the Defender to provide 10 MW of relief to the Challenger, but you also can't take away 4 MW from a Defender to provide the final 3 MW of relief to the Challenger.
- It is based upon individual or multiple flowgate TDF settings which are hard to understand let alone audit.
- TDFs and individual flowgate capacity may change over the time of a reservation which will change any given recall to gain ratio.

# Motion 47 – Current Language

**Motion 47 has two parts**

- 1. A potential Defender must provide relief on all of the flowgates where AFC is not available for the Challenger.**

**The purpose for this was to ensure that each individual Defender would in and of itself provide some relief to the Challenger. It was to protect a ROFR Defender providing relief on just one flowgate from needless harm if another ROFR Defender providing relief on a second flowgate matched leaving the Challenger with no gain.**

- 2. The capacity taken away from the Defender shall not be more than 105% (rounded to the nearest MW) of the capacity made available to the Challenger.**

**The purpose for this was to guard against a defender having to give up a disproportionate amount of capacity compared to what the Challenger would gain. For instance, a Defender should not have to give up 100 MW of capacity in order to give the Challenger 10 MW.**

# Part 1 – Rethinking

## The first part of Motion 47

- Deals with flowgates, not reservations,
- Is very confusing and hard to explain,
- Difficult to audit because the TDF calculations involved vary with each POR-POD combination.
- Overly restricts the Defender selection.
- Its design was to protect ROFR defenders from needless harm should another ROFR Defender match leaving the Challenger nothing.
- Other protections are now in place to guard against this, such as the “do no harm” motion and the 105% rule.

# Part 1 – Simple Example

**Simplified AFC Only Example**

	FG 1	FG 2	FG 3	FG 4	FG 5	
<b>ATC</b>	100	50	50	50	100	
<b>Challenger (400)</b>	100	100		100	100	
<b>Capacity Needed</b>	0	50		50	0	
<b>TSR 1 (150)</b>			50	50	50	<b>Relieves FG4, but not FG2</b>
<b>TSR 2 (150)</b>	50	50	50			<b>Relieves FG2, but not FG4</b>

Under the current motion 47, neither of these would be a Defender because they don't provide relief on all constrained flowgates.

If we delete the first part of Motion 47, these would now be possible Defenders because combined they will provide relief to all of the constrained paths. What happens to TSR1 should TSR2 decide to match and the Challenger get no gain?

If the "Do No Harm" motion is tweaked a little, then it will protect TSR1 from being harmed for nothing. Also, the 105% rule will protect it if it is greater than whatever marginal value we come up with in part 2 of Motion 47.

# Part 1 – Simple Example Issue

**Simplified AFC Only Example**

	FG 1	FG 2	FG 3	FG 4	FG 5	
<b>ATC</b>	100	50	50	50	100	
<b>Challenger (400)</b>	100	100		100	100	
<b>Capacity Needed</b>	0	50		50	0	
<b>TSR 1 (150)</b>		10	50	50	50	<b>Relieves FG4, but not FG2</b>
<b>TSR 2 (150)</b>	50	50	50	10		<b>Relieves FG2, but not FG4</b>

But what if TSR1 relieved 10 MW in FG2 and TSR2 relieved 10 MW in FG4? They both provide relief to the Challenger.

If TSR2 matches and TSR1 doesn't, the challenger will still get a 10 MW improved offer, but TSR1 is giving up 160 MW to provide that.

That is long after the 105% has been applied to choosing a defender.

## Part 1 – Recommendation

Recommendation: The following wording, “A potential Defender must provide relief on all of the flowgates where AFC is not available for the Challenger.” should be deleted.

# Part 2 – Illustration of 105% Rule

**Purpose: To make sure that not “too much more” capacity is taken from the Defender than will be made available to the challenger. What is too much?**

Existing Motion 47 Rule: The capacity taken away from the Defender shall not be more than 105% (rounded to the nearest MW) of the capacity made available to the Challenger.

Defender Reservation Loss	10	53	54	56	90	105	106	5250
Challenger Reservation Gain	9	50	50	50	85	100	100	5000
105% of Challenger Gain	9.45	52.50	52.50	52.50	89.25	105	105	5250
Max Recallable Using the Current 105% Rule	9	53	53	53	89	105	105	5250
Valid Defender using the Current Rule?	No	Yes	No	No	No	Yes	No	Yes

The above illustrates that the 105% rule works good for larger capacity needs, but becomes overkill for the smaller capacities. What if a TP was willing to give up a certain amount of capacity above the 105% for smaller requests, such as 5 MW shown in the illustration below.

TP's Marginal Loss Capacity for this Example	5	5	5	5	5	5	5	5
Max Recallable using New Rule	14	55	55	55	90	105	105	5250
Valid Defender using a larger of 105% or 5 MW Rule	Yes	Yes	Yes	No	Yes	Yes	No	Yes

Proposed New Rule: The capacity taken from a defender cannot be more than the greater of 105%, or some marginal loss capacity set by the TP, than what is gained by the challenger. Any marginal loss capacity must be posted in the TP's Business Practices.

# Part 2 – 105% Rule Over Time

		Day 1			Day 2			Day 3		
		FG1	FG2	FG3	FG1	FG2	FG3	FG1	FG2	FG3
	AFC	0	100	100	100	100	0	100	0	100
Defender	100	30	38	30	30	38	30	30	38	30
Challenger	100	35	40	25	35	40	25	35	40	25
		Day 1			Day 2			Day 2		
Defender Loss		100			83			100		
Challenger Gain		86			100			95		
Difference		14 Loss			17 Gain			5 Loss		
Pass 105% Rule		No - 116%			Yes - 83%			Yes - 105%		
		<b>Net Loss of 2 MW or 104% of Challenger Gain</b> <b>Average of the 105% Rule =101.3</b>								

- Flowgate AFC changes over time as do TDFs if there is an outage
- A Defender could fail the 105% rule on one day and pass on another day.
- In the above example, the TP loses 14 MW on Day 1, gains 17 MW on Day 2, and loses 5 MW on Day 3 for a net loss of 2 MW.
- Is this a valid Defender?

# Part 2 – 105% Rule Real BPA Examples

## Lessons Learned

1. As written, a Reservation can be a Defender against a certain POR-POD Challenger one time but not another depending upon which flowgate(s) are constrained at the time.
2. Different flowgates can be constrained at different times over the course of a competition timeline causing different results over time.
3. The 105% rule must apply to the total capacity given up over time, not to a given flowgate at a particular time.
4. For BPA, leaving Motion 47 as it is would make preemption and competition almost impossible.

# Proposed New Motion 47

- The net capacity taken from a defender over time cannot be more than the greater of 105%, or some marginal loss capacity set by the TP, than the net gained by the challenger over time. Any marginal loss capacity must be posted in the TP's Business Practices.

# Proposed New Motion 47

## Appendix

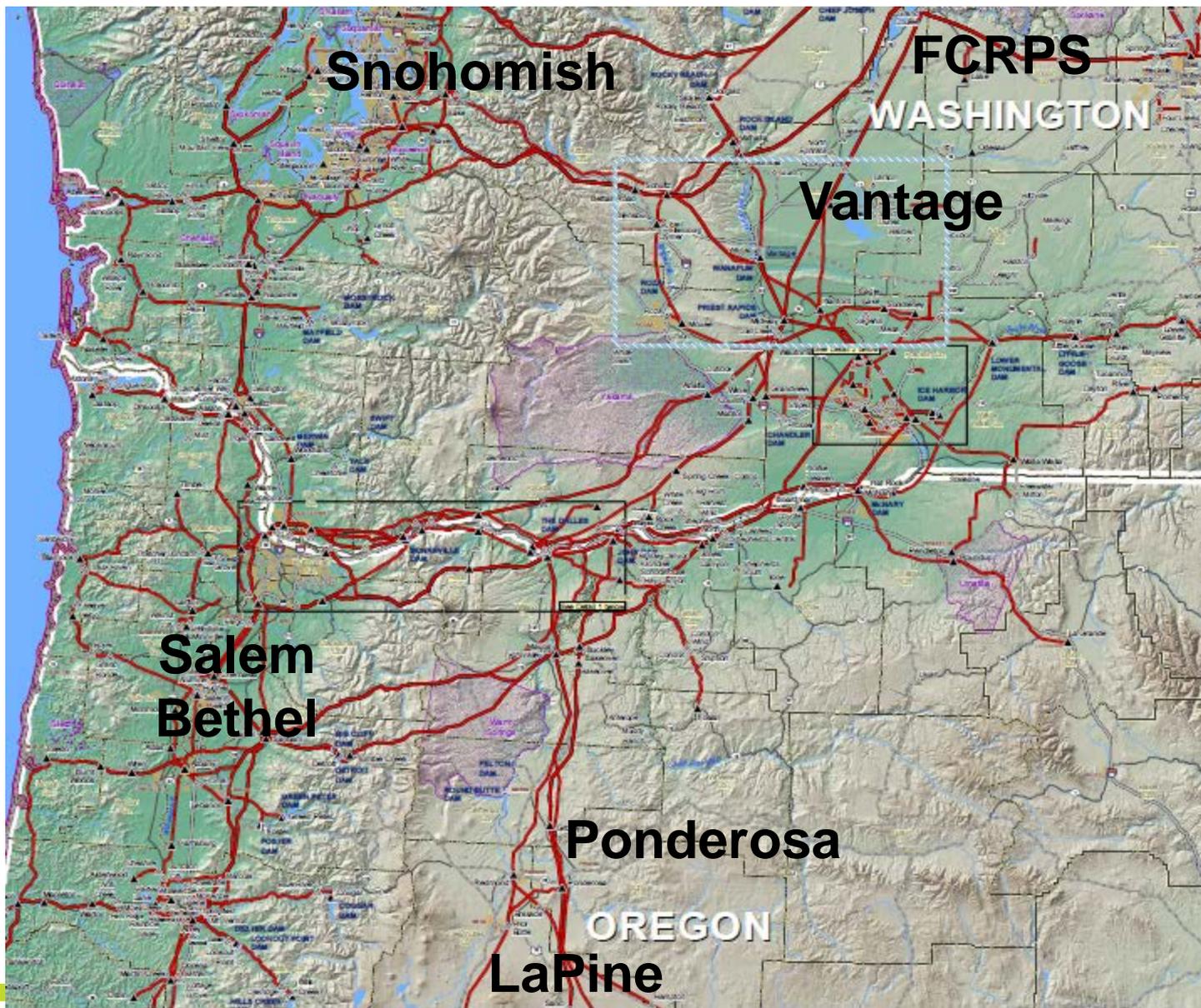
### BPA Examples from Prior Presentations

# Part 2 – 105% Rule Real BPA Examples

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
Available		0	0	0	0	0	0	0	0	0	0	0
<b>Challenger</b>												
FCRPS - Tacoma 230	100	75.08	14.57	9.1	-16.15	-1.78	-9.81	-1.82	-19.26	2.33	3.76	1.39
Needs		75.08	14.57	9.10	0.00	0.00	0.00	0.00	0.00	2.33	3.76	1.39
% Available	0%	0%	0%	0%						0%	0%	0%
Best Counter-offer	0											
Short	100											
<b>Defender</b>												
FCRPS - Salem AL 150	100	19.4	61.5	-5.5	31.1	54.4	16.4	12.5	20.1	18.2	15.1	13.7
% of what the Challenger Needs		26%	422%	-60%	0%	0%	0%	0%	0%	781%	402%	986%
Recall Factor to grant the challenger need	3.87	3.87	0.24	-1.67	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.10
<b>Calculation</b>												
Percent of Defender Needed		100%	24%	-167%	0%	0%	0%	0%	0%	13%	25%	10%
Total Recall from Defender	100.00	3.87	0.24	-1.67	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.10
Total Increase for Challenger	25.84											
Recall/Gain Ratio	387%	387%	24%		.	.	.	.	.	13%	25%	

- The Challenger and Defender are both for 100 MW, but on dissimilar paths.
- There is zero AFC on any of the Flowgates.
- Of the 100 MW needed by the Challenger, 75 MW goes through CCN.
- Of the 100 MW held by the Defender, 19.4 goes through CCN
- 100% of the Defender capacity is needed to satisfy 26% of the Challenger need, so 100 MW will need to be Recalled to increase the Challenger by 26 MW.
- Defender Recall (100 MW) / Challenger Gain (26 MW) = 387%, well over the 105% Rule

# Part 2 – 105% Rule Real BPA Examples



What about very similar paths?

Vantage to Bethel and FCRPS to Salem or LaPine and Ponderosa both going to Snohomish

# Part 2 – 105% Rule Real BPA Example 1

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
<b>Available AFC before competition</b>		0	0	0	0	0	0	0	0	0	0	0
<b>Challenger</b>												
Vantage 230 - Bethel 115	100	18.4	61.5	-80.0	57.4	73.3	15.8	12.4	19.3	13.6	16.0	19.6
Capacity Short by		18.4	61.5	0.0	57.4	73.3	15.8	12.4	19.3	13.6	16.0	19.6
% Available	0%	0%	0%							0%	0%	
Best Counter-offer	0											
<b>Defender</b>												
FCRPS - Salem AL 150	100	19.4	61.5	-5.5	31.1	54.4	16.4	12.5	20.1	18.2	15.1	13.7
% of what the Challenger Needs		105%	100%	0%	54%	74%	104%	101%	104%	134%	94%	70%
Recall Factor to grant the challenger		95%	100%	0%	185%	135%	96%	99%	96%	75%	106%	143%
<b>Calculation</b>												
Highest Percent to Recall	185%											
Total Recall from Defender	100											
Total Increase to Challenger	54											
Recall/Gain Ratio	185%											

- The Challenger and Defender are both for 100 MW, but on very similar paths.
- There is zero AFC on any of the Flowgates.
- Of the 100 MW needed by the Challenger, 57 MW goes through NOH.
- Of the 100 MW held by the Defender, 31 MW goes through NOH.
- 100% of the Defender capacity is needed to satisfy 54% of the Challenger need, so 100 MW will need to be Recalled to increase the Challenger by 54 MW.
- Defender Recall (100 MW) / Challenger Gain (54 MW) = 185%, well over the 105% Rule

# Part 2 – 105% Rule Real BPA Example 2

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
<b>Available AFC before competition</b>		0	100	100	100	100	100	100	100	100	100	100
<b>Challenger</b>												
Vantage 230 - Bethel 115	100	18.4	61.5	-80.0	57.4	73.3	15.8	12.4	19.3	13.6	16.0	19.6
Capacity Short by		18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Available	0%	0%	163%							735%	625%	
Best Counter-offer	0											
<b>Defender</b>												
FCRPS - Salem AL 150	100	19.4	61.5	-5.5	31.1	54.4	16.4	12.5	20.1	18.2	15.1	13.7
% of what the Challenger Needs		105%	-	-	-	-	-	-	-	-	-	-
Recall Factor to grant the challenger need		95%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Calculation</b>												
Highest Percent to Recall	95%											
Total Recall from Defender	95											
Total Increase to Challenger	100											
Recall/Gain Ratio	95%											

- The Challenger and Defender are both for 100 MW, but on very similar paths.
- There is zero AFC on CCN, but 100 MW on the rest of the Flowgates.
- Of the 100 MW needed by the Challenger, 18.4 MW goes through CCN.
- Of the 100 MW held by the Defender, 19.4 MW goes through CCN.
- 95% of the Defender capacity is needed to satisfy 100% of the Challenger need, so 95 MW will need to be Recalled to increase the Challenger by 100 MW.
- Defender Recall (95 MW) / Challenger Gain (100 MW) = 95%, well under the 105% Rule

# Part 2 – 105% Rule Real BPA Example 3

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
Available AFC before competition		0	0	0	0	0	0	0	0	0	0	0
<b>Challenger</b>												
LaPine to Snohomish	100	68.0	9.0	43.0	-53.0	-74.0	-19.0	-15.0	-25.0	4.0	-14.0	-22.0
Capacity Short by		68.0	9.0	43.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0
% Available	0%	0%	0%	0%						0%		
Best Counter-offer	0											
<b>Defender</b>												
Ponderosa to Snohomish	100	64.0	12.0	43.0	-54.0	-74.0	-19.0	-14.0	-24.0	3.0	-14.0	-23.0
Recall Factor to grant the challenger need		106%	75%	100%	0%	0%	0%	0%	0%	133%	0%	0%
<b>Calculation</b>												
Highest Percent to Recall	133%	<b>100% Recall will provide the challenger of 3/4 of what it needs in WJD</b>										
Total Recall from Defender	100											
Total Increase to Challenger	75											
Recall/Gain Ratio	133%											

- The Challenger and Defender are both for 100 MW, and on very similar paths.
- There is zero AFC on all of the Flowgates.
- Of the 100 MW needed by the Challenger, 4 MW goes through WJD.
- Of the 100 MW held by the Defender, 3 MW goes through WDJ.
- 100% of the Defender capacity is needed to satisfy 75% of the Challenger need, so 100 MW will need to be Recalled to increase the Challenger by 75 MW.
- Defender Recall (100 MW) / Challenger Gain (75 MW) = 133%, well over the 105% Rule

# Part 2 – 105% Rule Real BPA Example 4

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
<b>Available AFC before competition</b>		0	0	0	0	0	0	0	0	10	0	0
<b>Challenger</b>												
LaPine to Snohomish	50	34.0	4.5	21.5	-26.5	-37.0	-9.5	-7.5	-12.5	2.0	-7.0	-11.0
Capacity Short by		34.0	4.5	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Available	0%	0%	0%	0%						500%	0%	
Best Counter-offer	0											
<b>Defender</b>												
Ponderosa to Snohomish	100	64.0	12.0	43.0	-54.0	-74.0	-19.0	-14.0	-24.0	3.0	-14.0	-23.0
Recall Factor to grant the challenger need		53%	38%	50%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Calculation</b>												
Highest Percent to Recall	53%		<p><b>The Defender has enough capacity to provide a full offer to the challenger, but must give up 53 to give challenger 50, 53/50 =106%, greater than 105% but less than 5 MW.</b></p>									
Total Recall from Defender	53											
Total Increase to Challenger	50											
Recall/Gain Ratio	106%											

- The Challenger is for 50 MW and Defender has 100 MW. Same paths as before.
- There is zero AFC on all but WJD which has enough to satisfy the challenger.
- Of the 50 MW needed by the Challenger, 34 MW goes through CCN.
- Of the 100 MW held by the Defender, 64 MW goes through CCN.
- 53 MW of the Defender capacity is needed to satisfy 50 MW of the Challenger need..
- Defender Recall (53 MW) / Challenger Gain (50 MW) = 106%, just over the 105% Rule, but only 3 extra MW to satisfy the Defender.

# Part 2 – 105% Rule Real BPA Example 5

	Total Capacity	CCN	CCS	MEL	NOH	NOJD	P-A	Rav-P	SOA	WJD	WMN	WOS
<b>Available AFC before competition</b>		50	0	0	0	0	0	0	0	10	0	0
<b>Challenger</b>												
LaPine to Snohomish	50	34.0	4.5	21.5	-26.5	-37.0	-9.5	-7.5	-12.5	2.0	-7.0	-11.0
Capacity Short by		0.0	4.5	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Available	0%	147%	0%	0%						500%	0%	
Best Counter-offer	0											
<b>Defender</b>												
Ponderosa to Snohomish	100	64.0	12.0	43.0	-54.0	-74.0	-19.0	-14.0	-24.0	3.0	-14.0	-23.0
Recall Factor to grant the challenger need		0%	38%	50%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Calculation</b>												
Highest Percent to Recall	50%		<b>The Defender has enough capacity to provide a full offer to the challenger, and must give up 50 to give challenger 50, 50/50 =100%, less than the 105%</b>									
Total Recall from Defender	50											
Total Increase to Challenger	50											
Recall/Gain Ratio	100%											

- The Challenger is for 50 MW and Defender has 100 MW. Same paths as before.
- All flowgates have enough AFC to satisfy the Challenger except for CCS and MEL which have zero. MEL has the higher recall factor (50%).
- Of the 50 MW needed by the Challenger, 21.5 MW goes through MEL.
- Of the 100 MW held by the Defender, 43 MW goes through MEL.
- The Defender must give up 50% of its capacity on MEL to satisfy the Challenger.
- Defender Recall (50 MW) / Challenger Gain (50 MW) = 100%.