National Fuel Gas Supply Corporation and Empire Pipeline Auto-Renom and MDQ Rank Curtailment Priority.

National Fuel and Empire Pipeline are pleased to announce the implementation of an auto-renom function as well as changes to our curtailment process that will utilize MDQ rank across cycles as a way of maintaining previous cycle priority.

Curtailment Priorities by Cycle

National Fuel and Empire Pipeline's priorities for intraday cycles are governed by the following language in both company's tariffs:

"Transporter shall not be required to accept an intraday nomination whose effect would be to reschedule quantities of gas flowing for other Shippers under timely nominations or intraday nominations from an earlier cycle for that day, subject to the following sentence. An intraday nomination for firm service utilizing primary firm capacity submitted during the Evening Nomination Cycle or Intraday 1 Nomination Cycle or Intraday 2 Nomination Cycle will be accepted to the extent that it would not require a rescheduling of quantities of gas flowing for other firm shippers (utilizing primary or secondary firm capacity) under timely nominations or intraday nominations from an earlier cycle for that day. No intraday nomination shall be for a quantity that is less than the quantity of gas that has been scheduled to flow on such day prior to the effective time of such intraday nomination."

And by the NAESB Standard 1.3.2(v) also included in the tariffs:

"The Intraday 3 Nomination Cycle On the current Gas Day:

- 7:00 p.m. Nominations leave control of the SR;
- 7:15 p.m. Nominations are received by the TSP (including from TTTSPs);
- 7:30 p.m. TSP sends the Quick Response to the SR;
- 9:30 p.m. TSP receives completed confirmations from Confirming Parties;
- 10:00 p.m. TSP provides scheduled quantities to the affected SR and Point Operator.

Scheduled quantities resulting from Intraday 3 Nominations should be effective at 10:00 p.m. on the current Gas Day. Bumping is not allowed during the Intraday 3 Nomination Cycle"

Thus, based on the tariff and NAESB standards above, activities utilizing primary or secondary firm capacity that were scheduled on a previous cycle will have priority over all activities that are nominated in the Evening, ID1, and ID2 cycles.

Primary nominations on Evening, ID1, and ID2 cycles are given priority over previous cycle nominations, excluding primary or secondary firm from a previous cycle as per the tariff.

For the ID3 cycle, all activities that were scheduled on a previous cycle are given priority over ID3 cycle nominations.

Note: Auto-renom does not work within a cycle. National Fuel and Empire make both constraint cuts and confirmation cuts. Confirmation cuts made after a curtailment has been run will not be auto-renom'd up to the constrained volume within the same cycle.

Auto-renom will not be available at the Niagara point (421079) due to the complexities of the confirmation process.

Currently, shippers on National Fuel and Empire are able to utilize the MDQ Rank to assign which activities will be considered system wide overrun on a contract. With this system upgrade shippers must use *MDQ Rank* to determine which activities will be considered *previous cycle* for constraint purposes. Leaving the MDQ rank field blank, is equivalent to a MDQ Rank of zero. This activity will be given the highest priority over all cycles.

Every scheduling cycle, the system will review the contract MDTQ and compare it to the activities nominated on that contract. If the sum of the activities is larger than the contract MDTQ, it will assign the activities with the highest numbered MDQ rank as overrun activities.

When evaluating what activities will be cut through constraints and two activities have the same level of service through the constraint (for example if both activities are secondary out of path through the constraint), it will use MDQ rank to determine which activities will be cut. If the MDQ ranks are the same, cuts will be prorated across the activities. Activities with no rank entered will default to zero, thus, the highest priority.

On evening and intraday cycles, the MDQ rank will be used to determine which activities will be given *previous cycle* designation. It is important for shippers to understand <u>the actual cycle</u> <u>that an activity was nominated is not going to determine if it is considered previous cycle for constraint priority. The activity is strictly going to be allocated based on the MDQ rank and the volume that was scheduled through the constraint on the previous cycle.</u>

For example, a shipper schedules 100 Mdt/day through a constraint on timely cycle with a MDQ rank of 10. On Evening cycle, they place a second nomination on that same contract for 20

Mdt/day through the same constraint and do not include a MDQ rank on the second nomination. The result will be that the activity nominated on Evening cycle will be given prior cycle priority. The nomination that was nominated on the timely cycle will be scheduled 80 Mdt/day of previous cycle priority and 20 Mdt/day of current cycle priority. This allows shippers to transfer the *space* through the constraint that they had confirmed on the earlier cycle from that activity to a current cycle activity. This removes the need to use the reduction function and redirect activities in order to maintain the previous cycle priority.

Example

Let's use released contract number B12461-408911 to illustrate how a shipper can use the MDQ rank and the auto-renom feature.

Contract ID	B12461-4089	11 Princip	al Gas Inc.			
				Last Upd Use	er: russm	01/15/2019 11:42:12/
Contract Terr	ns					
Гуре:	Release Contract			Long Term	Evergreen	Information
late Sched:	FT	Firm Transportation	on 🗌	Negotiated Rate	Notification Months to e	en Rights Period: extend end date:
ontract Start	01/15/2019	Contract End Da	ate: 02/28/2019	Delegged From		1
Jate				Reicasca From.		
laster K:	B12461	Term. Dat	e: 02/28/2019			
laster K: C <mark>ontract Hist</mark> e	B12461 D ry	Term. Dat	e: 02/28/2019	Fi	ind View All	First 🚯 1 of 2 🖲 Las
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This contract has an MDTQ of 20,159 Mdt/day receipt (20,000 Mdt/day delivered) from Roselake to Niagara. For this example the important thing to know about this contract is that it has path rights through the CONCORD SOUTH TO NORTH constraint and does not have Path rights through the LEWIS RUN SOUTH TO NORTH constraint. Let's also assume for this example that the shipper puts a higher priority on getting gas through the CONCORD SOUTH TO NORTH constraint, but would like to try to also get some gas through the LEWIS RUN SOUTH TO NORTH constraint.

Timely Cycle

We will place three timely cycle nominations on this contract.

The first nomination will be for 15,000 Mdt/day delivered at the primary points that are part of the CONCORD SOUTH TO NORTH constraint. We will give this nomination a MDQ rank of 50. As long as every other nomination has a MDQ rank greater than 50, this activity would not be assigned overrun. We will not use auto-renom on this nomination.

Nominations -	Form							(7.1	
Change to Emp	bire	Nomina	tions - Grid	Refresh				Subm	ut
TSP Nan	ne: Nationa	Fuel Gas Supp	ly Corporati	on - ST18				Segmentation-Off	
Т	SP: 0079129	59							
Svc Req Nan	ne: Principa	l Gas Inc.						Default Fuel %:	0.790
Svc Re	eq: 1234567	89						Contract Fuel Discount:	None
*Svc Req	K: B12461-40	8911 Q View Co	ontract FT			Post Rel	ease Rec CME	Q: 20,159	
Date		Receipt			Delivery				
*Beg Date:	01/22/2019	Rec Loc:	420527	Q	*Del Loc:	421079	Q	*Act CD:	-
*Beg Time:	09:00 T 🗸	Rec Loc Name:	Roselake		Del Loc Name:	Niagara			
*End Date:	02/01/2019	Up K:			Dn K:			MDQ Rank: 50	
*End Time:	09:00:00 🗸	Up ID:	123456789	Q	Dn ID:	123456789	Q	Die ID:	
		Rec Qty:	15,119		Del Qty:	15,000		PKg ID:	
		Rec Rank:	50		Del Rank:	50		*Auto-renom thru: None	7

The second nomination will be from Storage to East Eden. This nomination will also be going through the CONCORD SOUTH TO NORTH constraint and would have the priority of secondary in path as long as it stays within the contract MDTQ. For this example, we are going to nominate another 7,000 Mdt/day delivered which means in total the shipper will be over running the contract. The shipper should make sure that they give this nomination a higher number for it's MDQ rank if they want any possible cut for overrun to be taken on this activity. The shipper gives this nomination a MDQ rank of 60. They also want to auto-renom this activity through the ID3 cycle in an attempt to maximize the storage withdrawal.

Nominations - For	m							
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TSP Name: TSP:	National Fuel Gas Sup 007912959	ply Corporation	on - ST18				Segmentation-Off	
Svc Req Name:	Principal Gas Inc.						Default Fuel %:	0.790
Svc Req: *Svc Req K:	123456789 B12461-408911 Q View C	Contract FT			Post Re	elease Rec CN	Contract Fuel Discount: IDQ: 20,159	Non
Date	Receipt			Delivery				
*Beg Date: 01	/22/2019 🛐 *Rec Loc:	NFSTOR	Q	*Del Loc:	420076	Q	*Act CD:	0
*Beg Time: 09	9:00 T Y Rec Loc Name:	Nfgsc Storage		Del Loc Name:	Hamburg E. B	Eden		~
*End Date: 02	/01/2019 📴 Up K:	R12462-408891	1	Dn K:			MDQ Rank: 60	
*End Time: 09	9:00:00 V Up ID:	123456789	Q	Dn ID:	123456789	Q	Pkg ID:	
	Rec Qty:	7,056		Del Qty:	7,000		<u></u>	
	Rec Rank	: 50		Del Rank	: 50		*Auto-renom thru: Intraday 3 V	\square

The third nomination will be from Lamont to NFG Dist. Mineral Springs. This nomination will be going through the LEWIS RUN SOUTH TO NORTH constraint and would have the priority of secondary out of path as long as it stays within the contract MDTQ. In this case, the shipper is going to nominate an additional 10,000 Mdt/day delivered. They are already over the contract MDTQ. Thus, they are going to give this activity a MDQ rank of 100 to make sure it is the activity that will be classified as overrun. They will also auto-renom this activity through the ID3 cycle.

Nominations -	Form							
Change to Emp	lire	Nomina	ations - Grid	Refresh			Subr	nit
TSP Nam	ne: National	Fuel Gas Sup	ply Corporat	ion - ST18			Segmentation-Off	
TS	6P: 0079129	59						
Svc Req Nam	e: Principal	Gas Inc.					Default Fuel %:	0.790
Svc Re	eq: 12345678	39					Contract Fuel Discount:	None
*Svc Req	к: В12461-408	911 Q View C	ontract FT			Post Release Rec Cl	MDQ: 20,159	
Date		Receipt			Delivery			
*Beg Date:	01/22/2019	*Rec Loc:	420072	Q	*Del Loc:	NFGDC-MSMX	*Act CD:	0
*Beg Time:	09:00 T 🗸	Rec Loc Name:	Lamont		Del Loc Name:	Nfg Dist. Mineral Springs		
*End Date:	02/01/2019	Up K:			Dn K:	SYSTEM SUPPLY	MDQ Rank: 100	
*End Time:	09:00:00 🗸	Up ID:	123456789	Q	Dn ID:	Q	Pkg ID:	
		Rec Qty:	10,080		Del Qty:	10,000	TT: 01	
		Rec Rank	: 50		Del Rank	: 50	*Auto-renom thru: Intraday 3 💊	

The following pages are not pages that shippers can see, but for illustrative purposes, they will show how these activities are treated through the internal curtailment cut process. This is what the CONCORD SOUTH TO NORTH constraint will look like:

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Type:	Normal Curta	ailment										Ma	x Flow	Quantity:	24,000
ath ID:	10010	C	ONCORD	SOUTH 1		ORTH					C)ispla	cement	Quantity	0
	Total Original:	25,082	Tota	al New: 24,	000			Tar	get for Th	nis Cycle	: 24,000		Quant	ity to Cut:	0
	Net Original:	25,082	Ne	t New: 24,	000										
sing the dmin cor rimary ar minatio r	net quantity in/o ntracts have bee nd Secondary O <mark>ns</mark>	out of cons en exclude n-Path qua	etraint. d. antities will r	tot be cut.											
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The system groups activities from the highest priority at the top to the lowest at the bottom. You can see that 15,000 Mdt/day of Primary (activity 490360) is the highest priority, and then 5,000 Mdt/day of the 7,000 Mdt/day that was nominated from storage and is not overrun (activity 490361) is considered secondary in path and is the next highest priority. In this case the remaining 2,000 Mdt/day delivered (2,016 Mdt/day receipt) on activity 490361 is considered overrun and ends up being cut to 927.

Looking at the LEWIS RUN SOUTH TO NORTH constraint:

v Date: 0)1/24/2019 Ti	mely	Lewi	s Run path					Cuts	Previe	wed	Apply Cuts
Type: N	Normal Curtailr	ment							Ma	ax Flow Q	uantity:	8,000
Path ID: 1	0006	LEWIS	RUN SOUTH	TO NORTH	4							
	Total Original: 12	2,096	Total New: 8,	000		Target	t for This	Cycle: 8	3,000	Quantity	y to Cut:	0
dmin cont	tracts have been e	excluded.	will not be out									
mination	s secondary On-P	-aui quantities	will not be cut									
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	outoriden	11 11,11-0	, er i, i or più	nory content eye								
Include?	Contract ID	Acti	ivity Rec	Loc	Del Loc	Nom Red	c Nom De	el MDQ Rank	Pri Qty	Sch Rec	Sch Divy	CMDQ
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✓ Include? ✓ ✓ ✓ Include?	All? Cut Order: Contract ID B12463-408921 Total Original: 1,1 All? Cut Order:	008 9 FT, FT-S Act 490 008 8 IT, FT, F	Total New: 1 is, EFT, FST not 1 ivity Rec ivity Rec Total New: 1 T-S, EFT, FSC	008 in path current Loc De 1072 NI 008 overruns max r	cycle H Loc N =GDC-NY	om Rec N 1,008	lom Det 1,000	MDQ Rank 0	Secnd Qty 1,008	Sch Rec 1,008	Sch Divy 1,000	(2) (2) CMDQ 2,01
Include?	Contract ID Contract ID Contract ID Contract ID Contract ID Contract ID Contract ID	008 9 FT, FT-S Acti	Total New: 1 ivity Rec ivity Rec J365 420 Total New: 1 T-S, EFT, FSC 1 vity Rec	008 in path current i Loc De 1072 NI 008 overruns max re Loc Del	toc No	om Rec N 1,008	Iom Del	MDQ Rank 0 MDQ Rank	Secnd Qty 1,008	Sch Rec 1,008 Sch Rec	Sch Divy 1,000 Sch Divy	[2] [2] 2.01 [2] [2] CMDQ

It shows that all of the volume on activity 490362 is considered overrun. This is a lower priority than the other out of path nomination on this constraint and is subject to curtailment. Resulting with a volume of 5,937 Mdt/day delivered making it through the constraint.

Evening Cycle

Here, the shipper does not place any new nominations on evening cycle, but activities 490361 and 490362 are auto-renom'd. Let's also assume that the other activity the CONCORD SOUTH TO NORTH constraint on contract B12461-408901, reduces their volume by 300 Mdt/day delivered to 100 Mdt/day delivered, thus making some more space available. The CONCORD SOUTH TO NORTH constraint on evening would then look like this:

	01/25/2019	Evenin	g	Concord	South to No	rth path					Cuts A	pplied	
Type:	Normal Curta	liment									Max Flov	v Quantity:	24,000
Path ID:	10010		CONCORD	SOUTH TO	NORTH					Di	splacemer	nt Quantity:	0
	Total Original:	24,780	Tota	I New: 24,000			Targe	et for Th	nis Cycle:	24,000	Quar	tity to Cut:	0
	Net Original:	24,780	Ne	t New: 24,000									
sing the	net quantity in/o	ut of cor	nstraint.										
umin co	ntracts nave beer	-Path ou	ea. vantities will r	ot he cut									
minatio	ns	i-i uui qi											
✓ Includ	le All? Cut Order	: 22	FT Primary pri	ior cycle									
	Juronau		, , , , , , , , , , , , , , , , , , ,										
Include?	Contract ID		Activity	Rec Loc	Del Loc	Nom Rec	Nor	n Del	MDQ Rank	Pri Qty	Sch Rec	Sch Divy	CMDQ
~	B12461-40891	1	490360	420527	421079	15,11	9	15,000	50	15,119	15,119	15,000	20,15
~	B12463-40894	1	490368	NFSTOR	NFGDC-N	2,00	0	2,000	10	2,000	2,000	2,000	5,04
1997.051			N/12/07			1 28					100	- AK	
	Total Original:	17,119	Tota	I New: 17,119									
✓ Includ	le All? Cut Order	: 21 <	FT Secondary	in path prior cy	le								
													1 🗔 📑
Include?	Contract ID		Activity	Rec Loc	Del Loc No	m Nom c Del	M	DQ ank	Sec Pth Q	ty Sec Caj Qty	Sch F	tec Sch Divy	CMDQ
~	B12461-408901		490364	420527	420076	101	100	0	1	01	1	01 100	5
VC	B12461-408911	5	490361	NESTOR	420076	7,056 7,	000	60		5	,040 5,0	40 (5,000	20,15
-	Total Original:	5, <mark>1</mark> 41	Tota	I New: 5,141									
✓ Includ	le All? Cut Order	: 20	FT Secondary	out of path prio	rcycle								
									MDQ				
Include?	P Contract ID		Activity	Rec Loc	Del Loc	Nom F	lec No	om Del	MDQ Rank	Secnd Qty	Sch Rec	Sch Divy	
Include?	Contract ID B12463-40892	21	Activity 490369	Rec Loc 420527	Del Loc 420076	Nom F	tec No	om Del 500	MDQ Rank 0	Secnd Qty 4(Sch Rec)3 403	Sch Divy 3 400	CMDQ 2,0
Include?	Contract ID B12463-40892 Total Original:	21	Activity 490369 Tota	Rec Loc 420527	Del Loc 420076	Nom F	tec No 504	om Del 500	MDQ Rank 0	Secnd Qty 4(Sch Rec 13 403	Sch Divy 3 400	СМDQ 2,0°
Include?	Contract ID B12463-40892 Total Original:	21 403	Activity 490369 Tota	Rec Loc 420527	Del Loc 420076	Nom I	tec No	om Del 500	MDQ Rank 0	Secnd Qty 4[Sch Rec 13 40:	Sch Divy 3 400	[🔁 🔜 СМDQ 2,01
Include?	Contract ID B12463-40892 Total Original:	21 403 : 18	Activity 490369 Tota	Rec Loc 420527 Il New: 403	Del Loc 420076	Nom F	504	om Del 500	MDQ Rank D	Secnd Qty 40	Sch Rec 13 403	Sch Divy 3 400	СМDQ 2,01
Include?	Contract ID B12463-40892 Total Original: le All? Cut Order	21 403 ; 18	Activity 490369 Tota	Rec Loc 420527 Il New: 403	Del Loc 420076	Nom F	tec No	om Del 500	MDQ Rank 0	Second Qty 4(Sch Rec 13 403	Sch Divy 3 400	р (Л) (Д) (Д) (Д) (Д) (Д) (Д) (Д) (Д) (Д) (Д
Include?	Contract ID B12463-40892 Total Original: le All? Cut Order Contract ID	21 403 : 18	Activity 490369 Tota	Rec Loc 420527 al New: 403 ans Max prior cy Rec Loc	Del Loc 420076	Nom F	Rec N	om Del 500	MDQ Rank 0 MDQ Rank	Secnd Qty 40	Sch Rec 13 403	Sch Divy 3 400 Sch Divy	CMDQ 2,01
Include?	Contract ID B12463-40892 Total Original: le All? Cut Order Contract ID B12461-40891	21 403 : 18	Activity 490369 Tota <u>JT & FT overn</u> Activity 490361	Rec Loc 420527 Il New: 403 Ins Max prior cy Rec Loc NFSTOF	Del Loc 420076	Nom f	Rec No.	om Del 500 Iom Del 7,000	MDQ Rank 0 MDQ Rank 0	Second Qty 40 Ovrm Qty D 93	Sch Rec 33 403	Sch Divy 3 400 Sch Divy 4 927	CMDQ 2,01 [[7] [8] CMDQ 20,15
Include?	Contract ID B12463-40892 Total Original: Ic All? Cut Order Contract ID B12461-40891 B12463-40892	21 403 : 18 11 21	Activity 490369 Tota <u>IT & FT overn</u> Activity 490361 490369	Rec Loc 420527 Il New: 403 Ins Max prior cy Rec Loc NFSTOF 420527	Del Loc 420076	Nom F	Rec No 504 ,056 504	om Del 500 Iom Del 7,000 500	MDQ Rank 0 MDQ Rank 0 0 6	Second Qty 4(Ovrn Qty 0 93 0 10	Sch Rec 13 403 13 5ch Rec 1 101	Sch Divy 3 400 Sch Divy 927 100	CMDQ 2,01 2,01 0 0 0 0,11 2,01
Include?	Contract ID B12463-40892 Total Original: Ite All? Cut Order Contract ID B12461-40892 B12463-40892	21 403 : 18 11 21 1.035	Activity 490369 Tota JT & FT overn 490361 490369 Tota	Rec Loc 420527 Il New: 403 Ins Max prior cy Rec Loc NFSTOF 420527	Del Loc 420076	Nom F	Rec N ,056 504	om Del 500 4om Del 7,000 500	MDQ Rank 0 MDQ Rank 0 6 0 6	Second Qty 4(0 Vrm Qty 0 93 0 10	Sch Rec 3 403 40 3 5 5 4 934 1 101	Sch Divy 3 400 Sch Divy 927 100	CMDQ 2,01 []]]] CMDQ 20,15 2,01
Include?	Contract ID B12463-40892 Total Original: Re All? Cut Order B12461-40891 B12463-40892 Total Original:	21 403 : 18 11 21 1,035	Activity 490369 Tota JI & FT overn Activity 490361 490369 Tota	Rec Loc 420527 al New: 403 ins Max prior cy Rec Loc NFSTOF 420527 il New: 1,035	Del Loc 420076	Nom F	Rec N. 504 8 8 504 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	om Del 500 Iom Del 7,000 500	MDQ Rank 0 Rank 2 6	Second Qty 4(Ovrn Qty 0 93 0 10	Sch Rec 33 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 403 404 403 405 403 405 403 405 403	Sch Dlvy 3 400 Sch Dlvy 927 100	[7] [2] CMDQ 2,0' [7] [2] CMDQ 20,15 2,0'
Include?	Contract ID B12463-40892 Total Original: Cut Order Contract ID B12461-40892 B12461-40892 Total Original: R All? Cut Order	21 403 : 18 11 21 1,035 : 8	Activity 490369 Tota JI & FT overn Activity 490361 490369 Tota	Rec Loc 420527 al New: 403 ans Max prior cy Rec Loc NFSTOF 420527 al New: 1,035	Del Loc 420076	Nom f	Rec No. 504 ,056 504	om Del 500 4om Del 7,000 500	MDQ Rank 0 MDQ Rank 0 6	Seond Qty 40 Ovrn Qty 0 93 0 10	Sch Rec 33 403 40 403 40 403 40 403 40 403 40 403 40 403 40 403 41 101	Sch Dlvy 3 400 Sch Dlvy 927 100	[7] [2] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7
Include?	Contract ID B12463-40892 Total Original: Cut Order Contract ID B12461-40892 B12461-40892 Total Original: R All? Cut Order	21 403 : 18 11 21 1,035 : 8	Activity 490369 Tota JT & FT overn Activity 490361 490369 Tota	Rec Loc 420527 al New: 403 ans Max prior cy Rec Loc NFSTOF 420527 al New: 1,035	Del Loc 420076	Nom f	Rec NG 504 7 ,056 504	om Del 500 4om Del 7,000 500	MDQ Rank 0 MDQ Rank 0 6 0 0	Seond Qty 40 Ovrn Qty 0 93 0 10	Sch Rec 3 403 4 934 1 101	Sch Dlvy 3 400 Sch Dlvy 927 100	[7] [2] CMDQ 2,01 [7] [2] CMDQ 20,11 2,01
Include?	Contract ID B12463-40892 Total Original: Cut Order Contract ID B12461-40891 B12461-40892 Total Original: Re All? Cut Order Contract ID	21 403 : 18 11 21 1,035 : 8	Activity 490369 Tota 1 <u>T & FT overn</u> Activity 490361 490369 Tota IT & FT overn	Rec Loc 420527 Il New: 403 Ins Max prior cy Rec Loc NFSTOF 420527 Il New: 1,035 Ins Max current Rec Loc	Del Loc 420076 Del Loc 420076 420076 420076	Nom f	Rec N Rec N Rec N Rec N	Nom Del	MDQ Rank 0 MDQ Rank 0 0 6 0 0 8 0 0 8 0 8 0 0 8 0 8 0 8 0 8	Seond Qty 40 Ovrn Qty 0 93 0 10 0 10	Sch Rec 3 403 403 5 Sch Rec 4 934 1 101	Sch Divy 3 400 Sch Divy 927 100 Sch Divy	CMDQ 2,01 2,01 2,01 2,01 2,01 2,01 2,01

The 490361 activity was auto-renom'd to the original 7,000 Mdt/day delivered. The 927 Mdt/day delivered that had scheduled timely is now given a priority of overrun prior cycle. Due to the reduction on the other contract that was going through the constraint, it also allowed 300 Mdt/day delivered to be scheduled as overrun current cycle.

The other out of path shipper through the LEWIS RUN SOUTH TO NORTH constraint using contract B12463-408921 places an evening nomination to increase the total on the contract by 1,000 Mdt/day delivered to 2,000 Mdt/day delivered.

The LEWIS RUN SOUTH TO NORTH constraint on evening would then look like this:

Turner	Normal Curta	ilment		Lewis Run p	aut					Cuts Ap	Quartitu	
Type:	10006	I			RTH				1	Max Flow	Quantity:	8,000
ath ID:	Total Original:	13,104	Total I	New: 8,000		Tar	get for TI	his Cycle	: 8,000	Quant	tity to Cut:	0
dmin con	tracts have beer	n exclude	d.									
rimary an	d Secondary On	-Path qua	antities will not	t be cut.								
mination	IS											
Include	All? Cut Order	: 22 F	T Primary prior	cycle								
Include?	Contract ID		Activity	Rec Loc	Del Loc	Nom R	ec Nom E	el MDQ Rank	Pri Qty	Sch Rec	Sch Divy	CMDQ
1	B12463-40893	1	490367	PL00000068	NFGDC-I	NY 1,0	08 1,0	00	0 1,008	1,008	1,000	2,01
		100000	NRIASTAN				SU211 - 2897	1999 F 318			1	
	Total Original:	1,008	Total M	New: 1,008								
✓ Include	All? Cut Order	: 20 F	T Secondary or	ut of path prior cvc	le							
Include?	Contract ID		Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	MDQ Rank	Secnd Qty	Sch Rec	Sch Divy	CMDQ
monute.						100000000000000000000000000000000000000	0.000				\bigcap	1
	B12463-40892	1	490365	420072	NFGDC-NY	2,016	2,000		1,008	1,008	1,000) 2.01
☑ ☑ ☑ Include	B12463-40892 Total Original:	1,008	490365 Total P	420072 New: 1,008	NFGDC-NY	2,016	2,000	U	1,008	1,008	1,000) 2,0
☑ ☑ ☑ Include	B12463-40892 Total Original: All? Cut Order	1,008 : 18	490365 Total I	420072 New: 1,008 s Max prior cycle	NFGDC-NY	2,016	2,000		1,008	1,008	1,000) 2,01
Include?	B12463-40892 Total Original: All? Cut Order Contract ID	1,008 : 18	490365 Total P T & FT overruns Activity	420072 New: 1,008 s Max prior cycle Rec Loc	NFGDC-NY Del Loc	2,016 Nom Rec	2,000 Nom Del	MDQ Rank	Ovrn Qty	1,008 Sch Rec	Sch Divy) 2,01 [Л] [] СМДQ
Include?	B12463-40892 Total Original: All? Cut Order Contract ID B12461-40891	1,008 : 18 [490365 Total P T & FT overruns Activity 490362	420072 New: 1,008 s Max prior cycle Rec Loc 420072	NFGDC-NY Del Loc NFGDC- MSMX	2,016 Nom Rec 10,080	2,000 Nom Del 10,00	MDQ Rank	0vrn Qty 00 5,984	1,008 Sch Rec 5,984	1,000 Sch Divy 5,937) 2,0" [[2] [2] CMDQ) 20,1!
Include?	B12463-40892	1,008 1,008 11 1 5,984	490365 Total I T & FT overruns Activity 490362 Total I	420072 New: 1,008 S Max prior cycle Rec Loc 420072 New: 5,984	NEGDC-NY Del Loc NEGDC- MSMX	2,016 Nom Rec 10,080	2,000 Nom Del 10,00	MDQ Rank	0 1,008 0 0 0 0 5,984	1,008 Sch Rec 5,984	1,000 Sch Divy 5,937) 2,0 CMDQ) 20,15
Include?	B12463-40892	1,008 1,008 18 1 5,984	490365 Total I T & FT overruns Activity 490362 Total I	420072 New: 1,008 s Max prior cycle Rec Loc 420072 New: 5,984	NFGDC-NY Del Loc NFGDC- MSMX	2,016 Nom Rec 10,080	2,000 Nom Del 10,00	MDQ Rank	0vrn Qty 00 5,984	1,008 Sch Rec 5,984	1,000 Sch Dlvy 5,937) 2,0"
Include?	B12463-40892	1,008 1,008 1 5,984 1 9 (F	490365 Total I Activity 490362 Total I	420072 New: 1,008 s Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of	NFGDC-NY Del Loc NFGDC- MSMX	2,016 Nom Rec 10,080	2,000 Nom Del 10,00	MDQ Rank 30 1	0vm Qty 00 5,984	1,008 Sch Rec 5,984	(1,000) Sch Divy (5,937)) 2,0"
Include?	B12463-40892 Total Original: All? Cut Order Contract ID B12461-40891 Total Original: All? Cut Order	t1 1,008 : 18 [1 5,984 : 9 (*	490365 Total I T & FT overruns Activity 490362 Total I	420072 New: 1,008 s Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of	Del Loc NFGDC-MY NFGDC- MSMX	2,016 Nom Rec 10,080	2,000 Nom Del 10,00	MDQ Rank 00 1	0vm Qty 00 5,984	1,008 Sch Rec 5,984	1,000 Sch Divy 5,937) 2,01
Include?	B12463-40892	11 1,008 1 1 5,984 : 9 (*	490365 Total M T & FT overruns Activity 490362 Total M T Secondary of Activity	420072 New: 1,008 S Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of Rec Loc	NFGDC-NY Del Loc NFGDC- MSMX Vycle Del Loc	2,016 Nom Rec 10,080 Nom Rec	Nom Del 10,00	MDQ Rank 30 1 MDQ Rank	0vrn Qty 00 5,984 Secnd Qty	1,008 Sch Rec 5,984 Sch Rec	Sch Divy 5,937 Sch Divy) 2,0" CMDQ) 20,1! CMDQ CMDQ
Include?	B12463-40892	11 1,008 11 5,984 11	490365 Total M T & FT overruns Activity 490362 Total M T Secondary of Activity 490365	420072 New: 1,008 s Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of Rec Loc 420072	NFGDC-NY Del Loc NFGDC-MSMX VyCle Del Loc NFGDC-NY	2,016 Nom Rec 10,080 Nom Rec 2,016	2,000 Nom Del 10,00 Nom Del 2,000	MDQ Rank D0 1 MDQ Rank	0vrn Qty 00 5,984 Secnd Qty 0 605	1,008 Sch Rec 5,984 Sch Rec	Sch Divy 5,937 Sch Divy 0) 2,0°
Include?	B12463-40892	1,008 1,008 1 5,984 1 1 5,984 1 605	490365 Total I T & FT overruns Activity 490362 Total I Secondary of Activity 490365 Total I	420072 New: 1,008 s Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of Rec Loc 420072 New: 0	NFGDC-NY Del Loc NFGDC- MSMX Del Loc NFGDC-NY	2,016 Nom Rec 10,080 Nom Rec 2,016	2,000 Nom Del 2,000	MDQ Rank D0 11 MDQ Rank	0vrn Qty 00 5,984 Secnd Qty 0 605	1,008 Sch Rec 5,984 Sch Rec 0	5,937 Sch Divy 5,937) 2,0 CMDQ) 20,1! CMDQ 2,0
Include?	B12463-40892	1,008 1,008 1 5,984 1 1 5,984 1 1 5,984 1 605	490365 Total I Activity 490362 Total I Activity 490362 Total I Activity 490365 Total I Total I	420072 New: 1,008 s Max prior cycle) Rec Loc 420072 New: 5,984 ut of path current of Rec Loc 420072 New: 0	Del Loc NFGDC-NY NFGDC- MSMX Del Loc NFGDC-NY	2,016 Nom Rec 10,080	2,000 Nom Del 10,00 Nom Del 2,000	MDQ Rank D0 11 MDQ Rank	1,008 Ovrn Qty 00 5,984 Secnd Qty 0 605	1,008 Sch Rec 5,984 Sch Rec 5 0	1,000 Sch Dlvy 5,937 Sch Dlvy 0) 2,0°
Include?	B12463-40892	11 1,008 1 10 1 5,984 1 1 5,984 1 1 605 1 8 (1)	490365 Total I Activity 490362 Total I T Secondary of Activity 490365 Total I T Secondary of Activity 490365 Total I T Secondary of Activity 490365 Total I	420072 New: 1,008 Rec Loc 420072 New: 5,984 ut of path current of 420072 New: 0 s Max current cycle	NFGDC-NY Del Loc NFGDC-MSMX Del Loc NFGDC-NY	2,016 Nom Rec 10,080 Nom Rec 2,016	2,000 Nom Del 2,000	MDQ Rank D0 1 MDQ Rank	1,008 Ovrn Qty 00 5,984 Secnd Qty 0 605	1,008 Sch Rec 5,984 Sch Rec 0	Sch Divy 5,937 Sch Divy 0) 2,01 (7) (1) CMDQ) 20,15 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
Include?	B12463-40892	11 1,008 1 18 F 1 5,984 1 5,984 1 1 605 1 605 1 605	490365 Total N T & FT overruns Activity 490362 Total N Activity 490365 Total N T & FT overruns	420072 New: 1,008 S Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of 420072 New: 0	NFGDC-NY Del Loc NFGDC-MSMX Del Loc NFGDC-NY	2,016 Nom Rec 10,080 Nom Rec 2,016	2,000 Nom Del 10,00 Nom Del 2,000	MDQ Rank DQ 1 MDQ Rank	0 0vrn Qty 00 5,984 Secnd Qty 0 605	1,008 Sch Rec 5,984 Sch Rec 0	1,000 Sch Divy 5,937 Sch Divy 0) 2,01 CMDQ) 20,15 CMDQ 2,01
Include?	BI2463-40892	11 1,008 1 18 1 5,984 1 1 5,984 1 1 605 1 8 1 605	490365 Total I Activity 490362 Total I Activity 490365 Total I Activity 490365 Total I Activity Activity	420072 New: 1,008 S Max prior cycle Rec Loc 420072 New: 5,984 ut of path current of 420072 New: 0 S Max current cycle Rec Loc	NFGDC-NY Del Loc NFGDC-MSMX UVCle Del Loc NFGDC-NY Del Loc Del Loc Del Loc Del Loc	2,016 Nom Rec 10,080 Nom Rec 2,016	2,000 Nom Del 2,000 Nom Del	MDQ Rank 30 1 MDQ Rank C	1,008 Ovrn Qty 00 5,984 0 605 0 Ovrn Qty 0	1,008 Sch Rec Sch Rec 0 Sch Rec	Sch Divy 5,937 Sch Divy 0) 2,0° (, , , , , , , , , , , , , , , , , , ,
Include?	B12463-40892	1,008 1,008 1 1 5,984 1 1 5,984 1 1 605 1 1 1 1 1 1 1 1 1 1 1 1 1	490365 Total I Activity 490362 Total I 490362 Total I Activity 490365 Total I Total I Activity 490365 Total I Activity 490363 Total I Activity 490363	420072 New: 1,008 Rec Loc 420072 New: 5,984 ut of path current of Rec Loc 420072 New: 0 Rec Loc 420072 New: 0 Rec Loc 420072 Rec Loc 420072	NFGDC-NY Del Loc NFGDC-MSMX Del Loc NFGDC-NY Del Loc NFGDC-NY Del Loc NFGDC-NY	2,016 Nom Rec 10,080 Nom Rec 2,016 Nom Rec 10,080	2,000 Nom Del 2,000 Nom Del 10,00	MDQ Rank D0 11 MDQ Rank C MDQ Rank 00 1	0vrn Qty 00 5,984 0 605 0 00 0	1,008 Sch Rec 5,984 Sch Rec 0 Sch Rec 0	Sch Divy 5,937 Sch Divy 0) 2,01 CMDQ 20,15 CMDQ 2,01 CMDQ 2,015

Once again the prior cycle out of path shipper is given priority over the overrun activities. The 5,937 Mdt/day delivered of overrun that had scheduled prior cycle is given a higher priority than the secondary out of path scheduled on the current cycle. All of the remaining overrun ends up getting cut.

ID1 Cycle

The shipper we have been discussing with contract B12461-408911 becomes aware of some supplies available from Leidy and they want to use that to reduce their storage withdrawal. In order to do this and hold the previous period priority through the constraint, the shipper no longer needs to do a redirect. Instead, the shipper can simply place a nomination that has a lower numbered MDQ rank than the activity that already had the prior period designation. In this case, we will use a MDQ rank of 55 which is lower than the 60 for the storage withdrawal. See the nomination below.

Nominations - F	orm								-
Change to Empire	e	Nomina	ations - Grid	Refresh				Subr	nit
TSP Name	National	Fuel Gas Supp	oly Corporat	ion - ST18				Segmentation-Off	
TSP	00791295	9							
Svc Req Name	· Principal	Gas Inc.						Default Fuel %:	0.790
Svc Req	12345678	19						Contract Fuel Discount:	None
*Svc Req K	B12461-408	911 Q View C	ontract FT			Post Re	elease Rec CM	DQ: 20,159	
Date		Receipt			Delivery				
*Beg Date:	01/25/2019 関	*Rec Loc:	7126	Q	*Del Loc:	420076	Q	Act CD:	0
*Beg Time:	14:00 ID1 🗸	Rec Loc Name:	Leidy Transco		Del Loc Name:	Hamburg E. B	Eden		14
*End Date:	01/26/2019 関	Up K:			Dn K:			MDQ Rank: 55	
*End Time:	09:00:00 🗸	Up ID:	123456789	Q	Dn ID:	123456789	Q	Pkg ID:	
		Rec Qty:	5,040		Del Qty:	5,000		TT: 01	
		Rec Rank	50		Del Rank:	50		*Auto-renom thru: Intraday 3	1)

The effect of this nomination will not only shift more of the overrun designation to the storage activity, it will also shift more of the previous cycle priority from the storage withdrawal to this activity. The final constraint priority for ID1 through the CONCORD SOUTH TO NORTH constraint will look like this:

w Date:	01/25/2019 Intra	day 1	Cond	ord South	to Nort	th patl	h			Cu	its Appl	ied U	ndo Cuts
Type:	Normai Curtalime									Max	k Flow Qu	antity: 2	4,000
Path ID:	10010	CONCOR	RD SOUTH	TO NOR TH						Displac	cement Q	uantity: 0	
	Total Original: 29,82	10 T	otal New: 24	4,001			Target	t for This	Cycle: 24	,001	Quantity	to Cut: 0	
	Net Original: 29,82	20	Net New: 24	,001									
Ising the	net quantity in/out of	constraint.											
amin cor	itracts have been exc	luded.	vill not be cut										
minatio	15	i quantitica n	in not be cut										
🖌 Includ	e All? Cut Order: 2	2 FT Priman	v prior cycle										
	Cut of def. 2		y prior cycle										2
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom	Rec N	om Del	MDQ Rank	Pri Qty E	Elapsed Qty	Sch Rec	Sch Divy	CMDQ
\checkmark	B12461-408911	490360	420527	421079	15	5,119	15,000	50	11,969	3,150	15,119	15,000	20,15
\checkmark	B12463-408941	490368	NFSTOR	NFGDC-N	NY 2	2,000	2,000	10	1,583	417	2,000	2,000	4,40
	Total Original: 17,1	9 1	Total New: 1	7,119									
	e All2		ta da										
an monad	Cut Order: 2	FT Second	dary in path pr	ior cycle								3	7
Include?	Contract ID	Activity	Rec Loc	Del Loc R	lom I Rec I	Nom Del	MDQ Rank	Sec Pth (Qty Sec Cap	e Elapseo Qty	d Sch Rec	Sch Divy	CMDQ
~	B12461-408901	490364	420527	420076	101	100	0		80		21 1	01 10	0 42
1	B12461-408911	490379	7126	420076	5,040	5,000	(55)	3,9	990	3,9	90 3,95	3) 20,15
🖌 Includ	e All? Cut Order: 2) FT Second	dary out of pat	h prior cycle								ŝ	7
Include?	Contract ID	Activity	Rec Loc	Del Loc	No	om I	Nom Del	MDQ	Secnd Qty	Elapsed Qt	v Sch Re	c Sch Divy	CMDQ
~	B12463-408921	490369	420527	420076	Re	504	500	Rank 0	399	10)5 504	4 500	1,70
	Total Original: 504	1	Fotal New: 5	04									
Include	e All? Cut Order: 1		erruns Max or	ior cycle									
												ĺ	
Include?	Contract ID	Activ	vity Re	c Loc I	Del Loc	No	om Rec	Nom Del	MDQ Rank	Ovrn Qty	Sch Rec	Sch Divy	CMDQ
~	B12461-408911	4903	379 71:	26 4	120076		5,040	5,000	55) 1,050	979	971	20,15
\checkmark	B12461-408911	4903	361 NF	STOR 4	120076		7,056	7,000	60	1,236	0	0	20,15
	Total Original: 2,286	, 1	otal New: 9	79					\sim			\subseteq)
Includ	e All? Cut Order:	B T&FT ov	erruns Max cu	irrent cycle									(T) (T)
		Activity	Rec Los	Dalla	N	om	Nom Del	MDQ	Ovrn Otv	Flansed Oh	Seb Ree	Seb Diver	CMDO
Include?	Contract III	CITIENT VIIV	nec LOC	DerLot	D,	0.0	would be	Rank	Saurady.	- apseu uty	our neo	JOIL DIVY	SHIDE
Include?	Contract ID	400904	NESTO	D 400074		7.050	7 000		1 5 4 2	4.904		(1000	00.45

Activity 490379, the new nomination at Leidy is being given prior cycle priority because of the MDQ rank of 55. A portion of activity 490361 is being considered current cycle because all of the prior cycle priority has be allocated to the new activity.

The primary shipper using contract B12463-408931 increases their nomination by 500 Mdt/day delivered for ID1. The result on the LEWIS RUN SOUTH TO NORTH constraint is below:

v Date: 🕻	01/25/2019 Intrada	iy 1	Lewis Ru	in path					C	uts Appl	lied	nuo outs
Туре: 1	Normal Curtailment								Ma	x Flow Qu	antity: 8	3,000
ath ID: 1	10006	LEWIS RUN	SOUTH TO	NORTH								
	Total Original: 12,600	Total	New: 8,000			Targe	t for This	Cycle: 8,0	000	Quantity	to Cut: (3
dmin con rimary an mination	tracts have been exclud d Secondary On-Path q I <mark>S</mark>	led. uantities will n	ot be cut.									
1nclude	All? Cut Order: 22	FT Primary pri	or cycle								ā	
								MDQ			a second	
Include?	Contract ID	Activity	Rec Loc	De	el Loc	Nom Re	c Nom Del	Rank	Pri Qty	Sch Rec	Sch Dlvy	CMDQ
~	B12463-408931	490367	PL00000	068 NI	FGDC-NY	1,51	2 1,500	0 0	1,008	1,008	1,000	1,80
	Total Original: 1,008	Tota	New: 1,008									
Include	e All? Cut Order: 20	FT Secondary	out of path pric	or cycle								
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	MDQ Sank	Secnd Qty	Elapsed Q	ty Sch Red	Sch Divy	CMDQ
~	B12463-408921	490365	420072	NFGDC-N	2,016	2,000	0	798	2	10 1,008	3 1,000	1,80
	Total Originals 4 800	T-6-1	N									
	Total original: 1,000	TOTA	1,000									
Include	e All? Cut Order: 19 🤇	Primary curren	t cycle									
							in the second					
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Del	Rank	Pri Qty	Elapsed G	Rec Sch	Sch Divy	CMDQ
~	B12463-408931	490367	PL00000068	NFGDC	-NY 1,5	12 1,5	00	0 294	2	10 50	4 (500	1,80
	Total Original: 504	Tota	New: 504								\sim	
Include	All? Cut Order: 18	IT & FT overru	ns Max prior cy	cie								
											3	(I) 🔜
Include?	Contract ID	Activity	Rec Loc	Del Lo	c No	m Rec	Nom Del	MDQ Rank	Ovm Qty	Sch Rec	Sch Divy	CMDQ
~	B12461-408911	490362	420072	NFGD MSM2	C-	10,080	10,000	100	5,984	4,233	(4,200) 17,20
	Total Original: 5.984	Tota	New: 4.233		T.						\sim	
	. 4112											
Include	Cut Order: 8	IT & FT overru	ns Max current	cycle							1	
✓ Include							MDQ	0			1	
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	Rank	Ovm Qty	Elapsed G	ity Sch Re	c Sch Divy	CMDQ
Include?	Contract ID B12461-408911	Activity 490362	Rec Loc 420072	Del Loc NFGDC- MSMX	Nom Rec 10,080	Nom Del 10,00	Rank	2,849	Liapsed G	47 1,24	c Sch Divy 7 1,237	CMDQ 17,20

As the tariff dictates the current cycle primary nomination has a higher priority than the previous cycle overrun activities, but not the previous cycle primary and secondary activities. This has caused 500 Mdt/day delivered of the overrun that had been scheduled on the previous cycle to be cut.

ID2 Cycle

This *shuffling* of the prior cycle priority can be updated on each cycle. Note: Any gas that has already flowed (EPSQ) cannot be shifted. For ID1, we change the MDQ rank of the primary Roselake to Niagara nom (activity 490360) to 65. (This may not be something a shipper would do, but is used here for illustrative purposes.)

Nominations -	Form								_
Change to Emp	bire	Nomina	tions - Grid	Refresh				Su	bmit
TSP Nan	ne: National	Fuel Gas Supp	ly Corporati	ion - ST18				Segmentation-Off	
Svc Req Nan Svc Re	ne: Principa eq:	I Gas Inc.						Default Fuel %: Contract Fuel Discount	0.790
*Svc Req	К: В12461-408	1911 Q	FT			Post Rele	ease Rec CMD	Q: 20,159	
Date		Receipt			Delivery			11-1-00-	
*Beg Date:	01/22/2019	*Rec Loc:	420527	Q	*Del Loc:	421079	Q	ACTOD:	0
*Beg Time:	18:00 ID2 🗸	Rec Loc Name:	Roselake		Del Loc Name:	Niagara			4
*End Date:	01/23/2019	Up K:			Dn K:			MDQ Rank: 65	
*End Time:	09:00:00 🗸	Up ID:	123456789	Q	Dn ID:	123456789	Q	Pkg ID:	
		Rec Qty:	15,119		Del Qty:	15,000		TT: 01	
		Rec Rank:	50		Del Rank:	50		*Auto-renom None	~
								thru:	

CONCORD SOUTH TO NORTH	I constraint will look like this:
------------------------	-----------------------------------

	01/25/2019 Intrad	ay 2	Concor	d South to	North pat	h			Cuts	Applie	d Und	o Cuts
Type:	Normai Curtailmen			NORTH					Max Flo	ow Quan	itity: 24,0	000
Path ID: 1	10010	CONCORD	SOUTH IC	NORTH					Displacem	ent Qua	ntity: 0	
	Total Original: 29,820	Tota	I New: 24,00	1		Target	for This Cy	cle: 24,0	D1 Qua	antity to	Cut: 0	
	Net Original: 29,820	Ne	t New: 24,00	1								
Jsing the n	net quantity in/out of contracts have been exclu	onstraint. ided										
Primary an	d Secondary On-Path	quantities will r	not be cut.									
omination	15											
Include	e All? Cut Order: 22	FT Primary pr	ior cycle									
											10	
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	MDQ Rank	Pri Qty E	lapsed Qty S	ch Rec S	ich Divy Cl	MDQ
~	B12461-408911	490360	420527	421079	15,119	15,00	00 (65)	2,857		2,857	2,834)	20,159
~	B12463-408941	490368	NFSTOR	NFGDC-N	Y 2,000	2,00	10 10	1,250	750	2,000	2,000	3,900
	Total Original: 4.857	Tota	al New: 4.85	7								
- Include	Cut Order: 21	FT Secondary	in path prior	cycle							1.62	1 🖬
Include?	Contract ID	Activity R	ac Loc D	elloc Non	Nom	MDQ	Sec Pth Ohr	Sec Cap	Elapsed	Sch	Sch (MDO
monute :	D40404 400004	400004	00007 4	Rec	Del 400	Rank	Sec 1 al day	Qty	Qty	Rec	Divy	
	B12461-400901	490304 4	4	20076 6	101 100	655	00	2.00	30	5.040	5 000	203
	B12461-406911	490379 7	120 4	20076 5,	040 5,000	00	2	5,99	4 1,040	5,040	3,000	20,158
N	012401-400511	400001 11	I STOR	20070 7,	000 1,000	00	/	5,74	1,500	1,000	(1,000)	20,100
8	Total Original: 12,197	Tota	al New: 12,1	97								
✓ Include	Total Original: 12,197 e All? Cut Order: 20	Totz FT Secondary	al New: 12,19	97 rior cycle								
Include	Total Original: 12,197 e All? Cut Order: 20	Tota FT Secondary	al New: 12,19	97 rior cycle							10	
Include?	Total Original: 12,197 e All? Cut Order: 20 Contract ID	FT Secondary Activity	al New: 12,19 y out of path p Rec Loc	97 rior cycle Del Loc	Nom Rec	Nom Del	MDQ Se Rank	cnd Qty E	lapsed Qty S	ch Rec S	🖸	
Include?	Total Original: 12,197 e All? Cut Order: 20 Contract ID B12463-408921	FT Secondary Activity 490369	New: 12,19 out of path p Rec Loc 420527	rior cycle Del Loc 420076	Nom Rec 504	Nom Del 500	MDQ Rank Se 0	cnd Qty E 315	lapsed Qty S 189	ch Rec S	ich Divy Cl	MDQ 1,449
Include?	Total Original: 12,197 e All? Cut Order: 20 Contract ID B12463-408921	FT Secondary Activity 490369	Rec Loc 420527	P7 rior cycle Del Loc 420076	Nom Rec 504	Nom Del 500	MDQ Se Rank 0	cnd Qty E 315	lapsed Qty S	ch Rec S	ich Divy Cl 500	0
Include?	Total Original: 12,197 All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504	Tota FT Secondary Activity 490369 Tota	al New: 12,19 y out of path p Rec Loc 420527 al New: 504	arior cycle Del Loc 420076	Nom Rec 504	Nom Del 500	MDQ Rank 0	cnd Qty E 315	lapsed Qty S 189	ch Rec S	ich Divy Cl 500	DQ 1,449
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 a All? Cut Order: 18	Tota FT Secondary Activity 490369 Tota	Rec Loc 420527 al New: 504	a7 rior cycle Del Loc 420076	Nom Rec 504	Nom Del 500	MDQ Se Rank 0	cnd Qty E 315	lapsed Qty S 189	ch Rec S	ich Divy Cl 500	MDQ 1,449
Include?	Total Original: 12,197 e All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 e All? Cut Order: 18	Tota FT Secondary Activity 490369 Tota	al New: 12,19 y out of path p Rec Loc 420527 al New: 504 uns Max prior	Del Loc 420076	Nom Rec 504	Nom Del 500	MDQ Se Rank 0	ond Qty E 315	lapsed Qty S	ch Rec S	l C ich Divy Cl 500	MDQ 1,449
Include?	Contract ID Contract ID Cut Order: 12,197 Cut Order: 20 Contract ID Cut Order: 504 Cut Order: 18 Cut Other C	Total FT Secondary Activity 490369 Total IT & FT overm Activity	al New: 12,19 y out of path p Rec Loc 420527 al New: 504 uns Max prior Rec Loc	37 rior cycle Det Loc 420076	Nom Rec 504	Nom Del 500 n Rec	MDQ Se Rank 0 0	cnd Qty E 315	lapsed Qty S 189	ch Rec S	l E ich Divy Cl 500	1,449
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 a All? Cut Order: 18 Contract ID B12461-408911	Total	Al New: 12,19 y out of path p Rec Loc 420527 Al New: 504 Rec Loc 420527	37 rior cycle Del Loc 420076 cycle s Del L cycle t 4210	Nom Rec 504	Nom Del 500 n Rec 1 15,119	MDQ Se Rank 0	Cond Qty E 315 IDQ Qtank 0 65	vrn Qty 6,443	ch Rec 504	I C Soo	1,449
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 a All? Cut Order: 18 Contract ID B12461-406911 Total Original: 6,443	Tota FT Secondary Activity 490369 Tota IT & FT overn Activity 490360 Tota	Al New: 12,19 y out of path p Rec Loc 420527 Al New: 504 Uns Max prior Rec Loc 420527 Al New: 704	a7 rior cycle	Nom Rec 504	Nom Del 500 n Rec 15,119	MDQ Se Q Nom Del R 15,000	IDQ 05	Vrm Qty Sch 6,443	ch Rec 504 504 Rec 5cl 773 (I Divy Cl	1,449 1,449
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID 812463-408921 Total Original: 504 a All? Cut Order: 183 Contract ID 812461-408911 B12461-408911 143 Total Original: 6,443 a All? Cut Order: 6	Tota FT Secondary Activity 490369 Tota Activity 490360 Tota Tota	al New: 12,19 vout of path p Rec Loc 420527 al New: 504 Rec Loc 420527 al New: 773 uns Max prior	77 rior cycle Del Loc 420076 cycle Del L 20076 Del L 20076 Del L 20076	Nom Rec 504	Nom Del 500 n Rec 1 15,119	MDQ Se 0 Nom Del R 15,000	IDQ 65	vrn Qty Sch 6,443	ch Rec 504	I C Solo	1,449
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 a All? Cut Order: 18 Contract ID B12461-408911 Total Original: 6,443 a All? Cut Order: 6,443 a All? Cut Order: 8	Tota FT Secondary Activity 490369 Tota Activity 490360 Tota IT & FT overm	Rec Loc 420527 al New: 504 Rec Loc 420527 al New: 504 Rec Loc 420527 al New: 773	a7 rior cycle Del Loc 420076 cycle del Loc 4210 cycle	Nom Rec 504	Nom Del 500 n Rec 1 15,119	MDQ Se Rank 0 Nom Del R 15,000	IDQ 65	vrn Qty Sch 6,443	ch Rec Sol 504 Rec Sol 773 (I C Soo	1,449 1,449 10Q 20,159
Include?	Total Original: 12,197 a All? Cut Order: 20 Contract ID B12463-408921 Total Original: 504 a All? Cut Order: 18 Contract ID B12461-408911 Total Original: 6,443 a All? Cut Order: 6 Contract ID B12461-408911 Total Original: 6,443 contract ID 6 Contract ID 8 Contract ID 8	Total FT Secondary Activity 490369 Total IT & FT overna Activity Activity Activity	Al New: 12,19 A out of path p Rec Loc A20527 Al New: 504 Uns Max prior Rec Loc A20527 Al New: 773 Uns Max prior Rec Loc Rec Loc	a7 rior cycle Del Loc 420076 cycle 2 Del L cycle Del Loc	Nom Rec 504 79 Nom Rec	Nom Del 500 n Rec 15,119 Nom Del	MDQ Se 0 Nom Del R 15,000	ond Qty E 315 IDQ 0 Lank 0 Ovrn Qty E	lapsed Qty S 189 vrn Qty Sch 6,443	ch Rec Sol 504 Rec Sol 773 (I Divy Cl 500	1,449 1,449 10Q 20,159

The nominations that are on the primary path on activity 490360 have now been shifted to overrun, while the secondary in path nominations are no longer overrun. The danger here is that another primary nomination on this cycle from a different shipper would have a higher priority than these activities, even though 490360 was originally a primary nomination scheduled on timely cycle. For this reason, <u>shippers must be very aware of the MDQ rank</u> <u>priority they are giving ID cycle nominations to make sure they don't accidentally *bump* what they think is *scheduled gas* into a position where it can be cut.</u>

No changes were made that effect the LEWIS RUN SOUTH TO NORTH constraint, but we will include it here as a reference.

w Date: 0)1/25/2019 Intrad Iormal Curtailmen	lay 2 t	Lewis Ru	n path					Cu	ts Appl	ied L	Indo Cuts
Type.	0006			NODTH					max		anuty. c	,000
Path ID:	Total Original: 12 600	LLWISK	ofal New: 8 000	NORTH		Targe	t for This	Cycle: 8	100	Quantity	to Cut: 0	i i
dmin con rimary an mination	tracts have been exclu d Secondary On-Path s	ided. quantities wi	ill not be cut.									
Include	All? Cut Order: 22	FT Primary	prior cycle									
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	MDQ Rank	Pri Qty	Elapsed Qty	Sch Red	Sch Divy	CMDQ
~	B12463-408931	490367	PL0000068	NFGDC-	NY 1,5	12 1,5	00	0 1,028	484	4 1,512	1,500	1,74
	Total Original: 1,512	т	otal New: 1,512									
Include	All? Cut Order: 20	FT Second	ary out of path prior	cycle								
							1100				1	
Include?	Contract ID	Activity	Rec Loc	Del Loc	Rec	Nom Del	Rank	Secnd Qty	Elapsed Qty	Sch Rec	Sch Divy	CMDQ
~	B12463-408921	490365	420072	NFGDC-NY	2,016	2,000	0	630	378	3 1,008	1,000	1,63
	Total Original: 1,008	Т	otal New: 1,008									
Include	All? Cut Order: 18	IT & FT ove	erruns Max prior cyc	le								
Include?	Contract ID	Activit	ty Rec Loc	Del Loc	No	m Rec	Nom Del	MDQ Rank	Ovrn Qty	Sch Rec	Sch Divy	CMDQ
	B12461-408911	49036	420072	NFGD0 MSMX	2-	10,080	10,000) 100	5,480	3,342	3,316	14,73
	Total Original: 5,480	т	otal New: 3,342									
Include	All? Cut Order: 8	IT & FT o	verruns Max prior c	ycle								
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	MDQ Rank	Ovrn Qty	Elapsed Qty	Sch Red	Sch Divy	CMDQ
~	B12461-408911	490362	420072	NFGDC- MSMX	10,080	10,00	0 10	0 2,462	2,13	8 2,138	2,121	14,73

ID3 Cycle

The NAESB "No Bumping" rule takes effect. The shipper using primary capacity on contract B12463-408931 tries to nominate their full contract MTDQ of 2,000 Mdt/day delivered in ID3. This is what the LEWIS RUN SOUTH TO NORTH constraint will look like on ID3:

w Date:	02/04/2019 Intrad	lay 3	Lewis R	un path					C	uts App	olied	
Type:	Normal Curtailmen	t							м	ax Flow G	uantity:	8,000
Path ID:	10006	LEWIS RUN	SOUTH TO	NORTH								
	Total Original: 13,104	Tota	I New: 8,710			Targe	et for This	Cycle: 8	,710	Quantit	y to Cut:	0
dmin cor	ntracts have been exclu	ided.										
rimary ar	nd Secondary On-Path	quantities will n	ot be cut.									
	A112											
metuu	e All? Cut Order: 22	FT Primary pri	or cycle								î	17 199
Include?	Contract ID	Activity	Reclos	Del Loc	Nom	Nom	MDQ	Pri Oby	Elanced Of	v Sch Rec	Sch Dhru	CMDO
TR /	B12462 409024	400267		NEODO	Rec	Del	Rank	754	70	0 4 547	4 500	4 60
2	B12463-406931	490367	PL00000066	NFGDC-	NY 2,0	116 2,00	0	J /54	(5	0 1,512	1,500	1,002
	Total Original: 1,512	Tota	I New: 1,512									
Includ	e All? Cut Order 20	ET Sexondes	out of path priv	ar cucle								
	Cut Oldel. 20	1 1 Secondary	out of paul pric	1 6 9 6 16							Î	D
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom	Nom Del	MDQ S	ecnd Qty	Elapsed Qb	Sch Rec	Sch Dlvy	CMDQ
~	B12463-408921	490365	420072	NFGDC-NY	2.016	2.000	0	462	54	6 1.008	1.000	1,47
						10 - D						
	Total Original: 1,006	TOLA	1 New: 1,000									
Includ	e All? Cut Order: 190	IT & FT overru	ins Max prior cy	/cle								
							10000					
Include?	Contract ID	Activity	Rec Loc	Del Loc	Nom Rec	Nom Del	Rank	Ovrn Qty	Elapsed Qt	y Sch Rec	Sch Divy	CMDQ
\checkmark	B12461-408911	490362	420072	NFGDC- MSMX	10,080	10,000	100	1,741	3,73	9 5,480	5,437	12,979
	Total Original: 5,480	Tota	I New: 5,480									
Includ	e All? cut Orden 11	Dimension										
	Cut Older. 111	Philidly curren									1	2
	Contract ID	Activity	Rec Loc	De	Loc	Nom Rec	Nom Del	MDQ	Pri Qty	Sch Rec	Sch Divy	CMDQ
Include?			01.0000		CDC NV	2,016	3 2,000		170	170	169	1,683
Include?	(B12463-408931)	490367	PLUUUUU	068 NF	GDC-NT		ap centracity	1	\checkmark	- Second	0,003	14.400.0
Include?	B12463-408931	490367	FLUUUUL	068 NF	GDC-NT							
Include?	B12463-408931	490367 Tota	I New: 170	068 NF	GDC-NT							
Include?	B12463-408931 Total Original: 170 e All? Cut Order: 8	490367 Tota	I New: 170	cvcle	GDC-INT							
Include?	B12463-408931 Total Original: 170 e All? Cut Order: 8	490367 Tota	I New: 170	cycle	GDC-INT						1	3
Include?	B12463-408931 Total Original: 170 e All? Cut Order: 8 Contract ID	490367 Tota IT & FT overru Activity	I New: 170	oos Nf	0C 1	Nom Rec	Nom Del	MDQ Rank	Ovrn Qty	Sch Rec	Sch Divy	CMDQ
Include?	B12463-408931 Total Original: 170 e All? Cut Order: 8 Contract ID B12461-408911	490367 Tota IT & FT overru Activity 490362	Rec Loc 420072	cycle Del I NFG MSN	oc I DC-IX	Nom Rec 10,080	Nom Del 10,000	MDQ Rank) 100	Ovm Qty 4,600	Sch Rec 503	Sch Divy 499	СМDQ 12,97

While the nomination on B12463-408931 is primary, on ID3 it is a lower priority than the prior cycle overrun because the NAESB No Bumping rule takes effect.

This nomination also illustrates how contract MDTQ is effected in curtailments for intraday nominations. B12463-408931 nominated their contract MDTQ of 2,000, but they ended up with a curtailment priority equal to overrun for part of the nomination due to the Elapsed Prorated Scheduled Quantity (EPSQ).

Nominations are placed on a daily Mdt basis in the nomination system, but for curtailment purposes they are considered as having 1/24th of the MDQ per hour through a constraint on each cycle. You then add up all of the hours to get the daily amount that would be considered the effective MDQ for the curtailment.

The curtailment system shown in these examples works off of receipt volumes so we are going to use receipt volumes in these calculations to tie to the screen shot above.

Recall that on contract B12463-408931:

- 1,008 Mdt/Day receipt was nominated on timely cycle.
- 1,512 Mdt/Day receipt was nominated on ID1 cycle.
- 2,016 Mdt/Day receipt was nominated on ID3 cycle.

First, let's calculate the amount of gas that had flowed (the EPSQ) at the start of ID1:

This contract flowed 1,008 Mdt from timely through ID1 or 5 hr X 1,008 Mdt/24 hr = 210 Mdt.

Next, let's calculate how much gas flowed between the start of the ID1 cycle and the start of the ID3 cycle:

On ID1 the new daily target was 1,512 Mdt/day but we had already flowed 210 Mdt, so for the rest of the day you would need to flow 1,512 Mdt – 210 Mdt = 1,310 Mdt to reach your daily target. There are 19 hours from the start of ID1 until the end of the gas day, so the hourly rate starting at ID1 would be 1,310 Mdt/19 hr = 69 Mdt/hr. For the 8 hours between ID1 and ID3 we would flow 8 hr X 69 Mdt/hr = 552 Mdt.

Therefore, the EPSQ at the start of ID3 is = 210 Mdt + 552 Mdt = 758 Mdt

Next, let's calculate the maximum amount of gas that can flow primary for the rest of the gas day:

The contract MDQ is 2,016 Mdt/day or 84 Mdt/hr.

Since we are placing this nomination on ID3 there are 11 hours left in the day (11 hr X 84 Mdt/hr = 924 Mdt). This means this contract can flow a total of 924 Mdt primary for the rest of the day.

Next, let's calculate the adjusted MDTQ for the contract:

If we add that to the EPSQ to the maximum amount of gas that can flow primary for the rest of the gas day that would be the new total for Mdt/day you can flow for the day as primary through the constraint. 758 + 924 Mdt = 1,682 Mdt/day is the total that can be nominated on ID3 as primary through the constraint.

Next, let's apply this to the ID3 constraint in the example:

Of the 1,682 Mdt/day we already had prior period priority for 1,512 Mdt. So we would get 1,682 Mdt - 1,512 Mdt = 170 Mdt of primary current cycle. The remaining 2,016 Mdt – 1,682 Mdt = 334 Mdt would be considered overrun current cycle.

Note: For billing purposes overrun is only calculated on a daily basis, so even though this nomination was treated as overrun for the constraint on ID3, it would not be billed as overrun.

In Summary

- Primary nominations on Evening, ID1 and ID2 cycles are given priority over previous cycle nominations (excluding primary or secondary firm from a previous cycle) as per the tariff.
- Currently, Shippers can utilize MDQ rank to assign which activities represent priorities (secondary firm, secondary, interruptible/overrun) on a contract for curtailment purposes.
 - \circ $\;$ The highest numbered MDQ rank would be assigned as the lowest priority.
- With this system upgrade, the MDQ rank will be used to identify activities that will be considered previous cycle noms for curtailment purposes.
- During the curtailment and confirmation processes for Evening and Intraday cycles, the MDQ rank will be used to determine which activities will be given previous cycle designation.
 - This allows Shippers to transfer the space through a constraint that has been confirmed on an earlier cycle from that activity to a current cycle activity.
 - This removes the need to reduce or redirect activities in order to retain the previous cycle priority.
- Shippers should be aware of the MDQ rank priority they assign to Intraday cycle noms to make sure they don't inadvertently bump scheduled gas (from a previous cycle) into a position where it can be curtailed in the current cycle.
- Leaving the MDQ rank field blank is equivalent to a MDQ rank of zero.
 - The MDQ rank of zero is the highest priority.
- An auto-renom drop down will appear on your nomination screen to allow you to choose what nom cycle you wish to Auto-renom thru.
 - Auto-renom does not work within a cycle.