

IDC Regional Congestion Management Training Document 9/2008

>NNL Re-Dispatch Worksheet

Introduction / Background

A TLR Level 5 carries with it both firm Interchange Transaction impacts as well as Network and Native Load (NNL) impacts. When an RC is called upon to provide NNL relief as part of a TLR Level 5, it is often challenging to determine which units can be moved within the Balancing Authority Area to achieve that relief. The NNL Re-Dispatch Worksheet is a new IDC tool available to RCs and BAs to assist in determining how units in the BA can be moved (which units and how much) to meet NNL relief requirements.

Implementation Details / New Features

When a Flowgate is impacted by a TLR Level 5, the Congestion Management Report (CMR) indicates the Control Area NNL Responsibility as shown below. In this example, a TLR Level 5a was called, and DUK has 66.4MW of NNL relief requirements on this Flowgate for the next hour. Once the TLR is acknowledged, the user navigates to the *NNL Re-Dispatch Worksheet* display by clicking on the hyperlink under the *Service Point* column.

Control Area NNL Responsibility										
Sink SC	Service Point	Scaled P-Max	Flowgate NNL MW	Aggregated % Impact	Current NNL Relief Provided	Next Hour Inc/Dec NNL Responsibility	NIS Dispatched MW	Next Hour Total NNL Responsibility	NNL Acknowledgement	
									Time	MW
VAC	DUK	7806.0	951.5	12.2	0.0	66.4	0.0	66.4	10:28	66.4
Total NNL Responsibility:								66.4		66.4

Clicking on the *Service Point* hyperlink brings up the *NNL Generator Details* display which shows the per generator contribution tot total NNL on the Flowgate. From this display, click on the *NNL Re-Dispatch Worksheet* button. Doing so will bring up two new windows:

1. The *Unit Configuration* display
2. The *NNL Re-Dispatch Worksheet* display

Screen shot of the *NNL Generator Details* display:

>NNL Generator Details for DUK (SC: VACS)

Flowgate:	[OTDF] [1245] [McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2]
TLR Level:	TLR Level 5A
Direction:	Normal
Existing IHL Responsibility:	0.0
Inc/Dec IHL Responsibility:	66.4
Total IHL Responsibility:	66.4
LSF to Swing:	-0.041

Poke this button to pull up:

1. The *Unit Configuration* display
2. The *NNL Re-Dispatch Worksheet* display

NNL Re-Dispatch Work Sheet

Generator	Scaled P-Max	Flowgate NNL MW	GLDF %	GSF
BELEWS1 18.000 1	605.0	47.3	7.8	0.037
BELEWS1 18.000 L	403.0	31.5	7.8	0.037
BELEWS2 18.000 2	605.0	47.3	7.8	0.037
BELEWS2 18.000 L	403.0	31.5	7.8	0.037
COWANS1 13.800 1	71.0	19.7	27.7	0.236

Screenshot of the *Unit Configuration* display:

TLR NNL RE-Dispatch for DUK

TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total IHL: 66.4
 Existing IHL: 0.0
 IHL Change: 66.4

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INC Units		DEC Units	
Available	Active	Available	Active
RIVBND6 18.000 6 (-32.26) LINCLN1 13.800 1 (-25.78) LINCLN2 13.800 2 (-25.78) LINCLN3 13.800 3 (-25.78) LINCLN4 13.800 4 (-25.78) LINCLN5 13.800 5 (-25.78) LINCLN6 13.800 6 (-25.78) LINCLN7 13.800 7 (-25.78) LINCLN8 13.800 8 (-25.78) LINCLN9 13.800 9 (-25.78) LINCLN10 13.800 A (-25.78) LINCLN11 13.800 B (-25.78) LINCLN12 13.800 C (-25.78) LINCLN13 13.800 D (-25.78) LINCLN14 13.800 E (-25.78) LINCLN15 13.800 F (-25.78) LINCLN16 13.800 G (-25.78) MILLCKG1 13.800 1 (-15.44) MILLCKG2 13.800 2 (-15.44) MILLCKG3 13.800 3 (-15.44) MILLCKG4 13.800 4 (-15.44) MILLCKG5 13.800 5 (-15.44) MILLCKG6 13.800 6 (-15.44) MILLCKG7 13.800 7 (-15.44) MILLCKG8 13.800 8 (-15.44)		MCGUIRE1 24.000 1 (27.70) COWANS1 13.800 1 (27.70) COWANS2 13.800 2 (27.70) COWANS3 13.800 3 (27.70) COWANS4 13.800 4 (27.70) MCGUIRE2 24.000 2 (12.44) ROWANC1 18.000 1 (11.21) ROWANC2 18.000 2 (11.21) ROWANC3 18.000 3 (11.21) ROWANC4 18.000 4 (11.21) ROWANC5 18.000 5 (11.21) ROWANS1 18.000 6 (11.21) MARSHAL1 20.000 1 (10.60) MARSHAL1 20.000 L (10.60) MARSHAL2 20.000 2 (10.60) MARSHAL2 20.000 L (10.60) MARSHAL3 24.000 3 (10.60) MARSHAL4 24.000 4 (10.60) OXFORD 7.2000 1 (7.82) OXFORD 7.2000 2 (7.82) BELEWS1 18.000 1 (7.82) BELEWS1 18.000 L (7.82) BELEWS2 18.000 2 (7.82) BELEWS2 18.000 L (7.82) ROCKHMG3 18.000 1 (7.82)	

Save Configuration

The **Unit Configuration** display

1. Two columns sorted by GLDF
 - a. INC Units – units you want to increase to relieve congestion
 - b. DEC Units – units you want to decrease to relieve congestion
2. From the **Available INC** and **Available DEC** columns, select units you want to move to meet the NNL relief requirement. Use the right arrows to move units from the **Available** column to the **Active** column.
3. Use up and down arrows to change the dispatch order of units once they are in the **Active** column.
4. Poke the **Save Configuration** button
5. Poke the **Back to Work Sheet** link to navigate to the **NNL Re-Dispatch Worksheet**

Screenshot of the **Unit Configuration** display once units are selected:

TLR NNL RE-Dispatch for DUK
TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total IML: 66.4
Existing IML: 0.0
IML Change: 66.4

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INC Units		DEC Units	
Available	Active	Available	Active
RIVRBND6 18.000 6 (-32.26)	LINCLN1 13.800 1 (-25.78)	MCGUIRE1 24.000 1 (27.70)	COWANS1 13.800 1 (27.70)
LINCLN3 13.800 3 (-25.78)	LINCLN2 13.800 2 (-25.78)	COWANS3 13.800 3 (27.70)	COWANS2 13.800 2 (27.70)
LINCLN4 13.800 4 (-25.78)	MILLCKG1 13.800 1 (-15.44)	COWANS4 13.800 4 (27.70)	COWANS4 13.800 4 (27.70)
LINCLN5 13.800 5 (-25.78)	MILLCKG2 13.800 2 (-15.44)	MCGUIRE2 24.000 2 (12.44)	ROWANC1 18.000 1 (11.21)
LINCLN6 13.800 6 (-25.78)	MILLCKG3 13.800 3 (-15.44)	ROWANC2 18.000 2 (11.21)	ROWANC2 18.000 2 (11.21)
LINCLN7 13.800 7 (-25.78)		ROWANC4 18.000 4 (11.21)	ROWANC3 18.000 3 (11.21)
LINCLN8 13.800 8 (-25.78)		ROWANC5 18.000 5 (11.21)	
LINCLN9 13.800 9 (-25.78)		ROWANS1 18.000 6 (11.21)	
LINCLN10 13.800 A (-25.78)		MARSHAL1 20.000 1 (10.60)	
LINCLN11 13.800 B (-25.78)		MARSHAL2 20.000 2 (10.60)	
LINCLN12 13.800 C (-25.78)		MARSHAL3 20.000 3 (10.60)	
LINCLN13 13.800 D (-25.78)		MARSHAL4 24.000 4 (10.60)	
LINCLN14 13.800 E (-25.78)		OXFORD 7.2000 1 (7.82)	
LINCLN15 13.800 F (-25.78)			
LINCLN16 13.800 G (-25.78)			
MILLCKG4 13.800 4 (-15.44)			
MILLCKG5 13.800 5 (-15.44)			
MILLCKG6 13.800 6 (-15.44)			
MILLCKG7 13.800 7 (-15.44)			
MILLCKG8 13.800 8 (-15.44)			
ALLEN 3 16.000 3 (-14.05)			
ALLEN 3 16.000 L (-14.05)			
ALLEN 4 16.000 4 (-14.05)			
ALLEN 4 16.000 L (-14.05)			
BREC61 18.000 1 (-13.70)			
		ROCKHMG2 18.000 2 (7.78)	
		DANWARR1 13.800 1 (7.72)	

Save Configuration

Screenshot of an altered INC Unit dispatch order on the *Unit Configuration* display:

INC Units	
Available	Active
RIVRBN06 18.000 6 (-32.26)	MILLCKG1 13.800 1 (-15.44)
LINCLN3 13.800 3 (-25.78)	MILLCKG2 13.800 2 (-15.44)
LINCLN4 13.800 4 (-25.78)	MILLCKG3 13.800 3 (-15.44)
LINCLN5 13.800 5 (-25.78)	LINCLN1 13.800 1 (-25.78)
LINCLN6 13.800 6 (-25.78)	LINCLN2 13.800 2 (-25.78)
LINCLN7 13.800 7 (-25.78)	
LINCLN8 13.800 8 (-25.78)	
LINCLN9 13.800 9 (-25.78)	
LINCLN10 13.800 A (-25.78)	
LINCLN11 13.800 B (-25.78)	
LINCLN12 13.800 C (-25.78)	
LINCLN13 13.800 D (-25.78)	
LINCLN14 13.800 E (-25.78)	
LINCLN15 13.800 F (-25.78)	
LINCLN16 13.800 G (-25.78)	
MILLCKG4 13.800 4 (-15.44)	
MILLCKG5 13.800 5 (-15.44)	
MILLCKG6 13.800 6 (-15.44)	
MILLCKG7 13.800 7 (-15.44)	
MILLCKG8 13.800 8 (-15.44)	
ALLEN 3 16.000 3 (-14.05)	
ALLEN 3 16.000 L (-14.05)	
ALLEN 4 16.000 4 (-14.05)	
ALLEN 4 16.000 L (-14.05)	
BRECG1 18.000 1 (-13.70)	

- The dispatch order of INC units was manually changed even though the GLDFs indicate that the LINCLN units have a greater relief impact than the MILLCK units.
- The MILLCK units will be incremented first in the *NNL Re-Dispatch Worksheet*.

The NNL Re-Dispatch Worksheet Display

1. The *NNL Re-Dispatch Worksheet* display will show the units and order of the selections made in the *Unit Configuration* display.
2. As an initial default, all re-dispatch MWs will be attributed to the first unit in each column; these default values of course may not be realistic.
 - o In the example below, the NNL relief requirements are 66.4MW. In order to meet that requirement, the initial default values state that the MILLCKG1 unit will need to increase its output by 153.9MW and the COWANS1 unit will need to decrease its output by 153.9MW. This change in dispatch will result in the BA meeting its NNL relief requirement of 66.4MW.
3. It is up to the RC or BA to enter the MW each unit has available to increase and decrease. Enter this availability in the *Inc Avail* and *Dec Avail* columns.

Screenshot of the initial default *NNL Re-Dispatch Worksheet* display:

- **Total NNL** – the total amount of relief requirement on the Flowgate
- **Existing NNL** – the total amount of NNL relief requirement currently being met from previous hour NNL re-dispatch activity (this comes into play for subsequent TLR issuances)
- **NNL Change** – the change in NNL requirements from the previous TLR issuance
- **NNL Re-Dispatch** – the amount of total NNL relief provided with the current Inc Avail and Dec Avail MW in the worksheet. This number changes as values are entered in the Avail columns.

4. You can see that the calculated **Inc MW** and **Dec MW** values change as you enter values into the **Inc Avail** and **Dec Avail** data fields.
5. Since you arranged units in the **Unit Configuration** display based on dispatch order, you should start at the top of the list and enter Availability values moving down the list. As values are entered, the tool automatically calculates how much more relief is required from the next unit down in the list.
6. At some point as you move down the Inc and Dec lists, the **Inc Avail** and **Dec Avail** values will be greater than the calculated **Inc MW** and **Dec MW**. At this point you have met the relief requirements. This is verified by inspecting the **NNL Re-Dispatch** value in the left hand box.
7. Once the available **Inc Avail** and **Dec Avail** columns are fully populated, poke the **Save Work Sheet** button. A summary of this dispatch can be e-mailed to the BA by poking the [Send Email to BA](#) button. More on this at the end of this document. Close the **NNL Re-Dispatch Worksheet** with the upper right X after you save.
8. If you need to make changes to the units listed, save the worksheet and then poke the **Unit Configuration** button to navigate back to the **Unit Configuration** display.
9. The last saved worksheet for the current TLR issuance will be will be available in the TLR History.

TLR NNL RE-Dispatch for DUK

TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total INHL: 66.4

Existing INHL: 0.0

INHL Change: 66.4

INHL Re-Dispatch: 66.4

Total Increment Re-Dispatch: 199.7 MW

Increment Generators for DUK						
Generator	% GLDF	Status	Inc Avail	Inc MW	Disabled	
MILLCKG1 13.800 1	-15.44	IN	<input type="text" value="76"/>	76.0	<input type="checkbox"/>	
MILLCKG2 13.800 2	-15.44	IN	<input type="text" value="76"/>	76.0	<input type="checkbox"/>	
MILLCKG3 13.800 3	-15.44	IN	<input type="text" value="76"/>	47.7	<input type="checkbox"/>	
LINCLN1 13.800 1	-25.78	IN	<input type="text" value="N/A"/>	0	<input type="checkbox"/>	
LINCLN2 13.800 2	-25.78	IN	<input type="text" value="N/A"/>	0	<input type="checkbox"/>	

Total Decrement Re-Dispatch: 199.7 MW

Decrement Generators for DUK					
Generator	% GLDF	Status	Dec Avail	Dec MW	Disabled
COWANS1 13.800 1	27.70	IN	<input type="text" value="80"/>	80.0	<input type="checkbox"/>
COWANS2 13.800 2	27.70	OUT	<input type="text" value="0"/>	0	<input checked="" type="checkbox"/>
ROWANC1 18.000 1	11.21	IN	<input type="text" value="154"/>	119.7	<input type="checkbox"/>
ROWANC2 18.000 2	11.21	IN	<input type="text" value="N/A"/>	0	<input type="checkbox"/>
ROWANC3 18.000 3	11.21	IN	<input type="text" value="N/A"/>	0	<input type="checkbox"/>

View All Data

Hide Disabled

View Saved

Save Work Sheet

Send Email to BA

Unit Configuration

Reset

- Inc MW** and **Dec MW** values are calculated as you enter numbers in the **Inc Avail** and **Dec Avail** fields.
- Note that not all of the MILLCKG3 availability was required to meet the NNL relief requirement of 66.4MW.

Resets worksheet to the initial default values

Saved at 08:27 10:34

SIDE NOTE: the status of the COWANS2 unit on the DEC side was OUT on the initial default screen. This unit status is from the SDX. I checked the **Disabled** button to remove it from the calculation.

Subsequent hour TLR Issuances:

In our example, the TLR 5a was reissued, and the NNL relief requirements have decreased for the next hour. Note from the screenshot below a decrease in NNL relief requirements of 24.1MW resulting in a total NNL relief requirement of 42.3MW.

Screenshot of the CMR of the reissued TLR Level 5a:

Sink SC	Service Point	Scaled P-Max	Flowgate NNL MW	Aggregated % Impact	Current NNL Relief Provided	Next Hour Inc/Dec NNL Responsibility	NIS Dispatched MW	Next Hour Total NNL Responsibility	NNL Acknowledgement	
									Time	MW
VACS	DUK	7806.0	951.5	12.2	66.4	-24.1	0.0	42.3	11:27	-24.1
Total NNL Responsibility:								42.3		-24.1

- The NNL Re-Dispatch Worksheet looks at NNL relief requirements on an hour-by-hour basis. As the TLR progresses hour to hour, the NNL Re-Dispatch Worksheet tool calculates based on changes to NNL relief requirements. The assumption is that you have already met (or are currently meeting) your NNL relief requirements from the last TLR issuance.
- For this example, since the NNL relief requirements have decreased for the next hour, we can now undo some of the NNL re-dispatch we implemented last hour.
- As such, the INC Units and DEC Units are now swapped in the **Unit Configuration** display.

Screenshot of the **Unit Configuration** display for a re-issue with a negative NNL change:

TLR NNL RE-Dispatch for DUK

TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total NNL: 42.3
Existing NNL: 66.4
NNL Change: -24.1

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INC Units		Available
Available	Active	Available
MCGUIRE1 24.000 1 (27.70)		RIVRBN06 18.000 6 (-32.26)
COWANS1 13.800 1 (27.70)		LINCLN1 13.800 1 (-25.78)
COWANS2 13.800 2 (27.70)		LINCLN2 13.800 2 (-25.78)
COWANS3 13.800 3 (27.70)		LINCLN3 13.800 3 (-25.78)
COWANS4 13.800 4 (27.70)		LINCLN4 13.800 4 (-25.78)
MCGUIRE2 24.000 2 (12.44)		LINCLN5 13.800 5 (-25.78)
ROWANC1 18.000 1 (11.21)		LINCLN6 13.800 6 (-25.78)
ROWANC2 18.000 2 (11.21)		LINCLN7 13.800 7 (-25.78)
ROWANC3 18.000 3 (11.21)		LINCLN8 13.800 8 (-25.78)
ROWANC4 18.000 4 (11.21)		LINCLN9 13.800 9 (-25.78)
ROWANC5 18.000 5 (11.21)		LINCLN10 13.800 A (-25.78)
ROWANS1 18.000 6 (11.21)		LINCLN11 13.800 B (-25.78)
MARSHAL1 20.000 1 (10.60)		LINCLN12 13.800 C (-25.78)
MARSHAL1 20.000 L (10.60)		LINCLN13 13.800 D (-25.78)
MARSHAL2 20.000 2 (10.60)		LINCLN14 13.800 E (-25.78)
MARSHAL2 20.000 L (10.60)		LINCLN15 13.800 F (-25.78)
MARSHAL3 24.000 3 (10.60)		LINCLN16 13.800 G (-25.78)
MARSHAL4 24.000 4 (10.60)		MILLCKG1 13.800 1 (-15.44)
OXFORD 7.2000 1 (7.82)		MILLCKG2 13.800 2 (-15.44)
OXFORD 7.2000 2 (7.82)		MILLCKG3 13.800 3 (-15.44)
BELEWS1 18.000 1 (7.82)		MILLCKG4 13.800 4 (-15.44)
BELEWS1 18.000 L (7.82)		MILLCKG5 13.800 5 (-15.44)
BELEWS2 18.000 2 (7.82)		MILLCKG6 13.800 6 (-15.44)
BELEWS2 18.000 L (7.82)		MILLCKG7 13.800 7 (-15.44)
ROCKHMG3 18.000 1 (7.82)		MILLCKG8 13.800 8 (-15.44)

- Since the NNL Re-Dispatch Worksheet calculates to the NNL Change, we can move away from our off-economic dispatch by decreasing the units we increased the previous hour
- Note the swapped columns from the first hour.

[Save Configuration](#)

Screenshot of 2nd hour selected units in the *Unit Configuration* display:

TLR NNL RE-Dispatch for DUK
TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total INIL: 42.3
Existing INIL: 66.4
INIL Change: -24.1

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INC Units			DEC Units		
Available		Active	Available		Active
MCGUIRE1 24.000 1 (27.70)		COWANS1 13.800 1 (27.70)	RIVRND6 18.000 6 (-32.26)		MILLCKG1 13.800 1 (-15.44)
COWANS3 13.800 3 (27.70)		COWANS2 13.800 2 (27.70)	LINCLN3 13.800 3 (-25.78)		MILLCKG2 13.800 2 (-15.44)
COWANS4 13.800 4 (27.70)		ROWANC1 18.000 1 (11.21)	LINCLN4 13.800 4 (-25.78)		MILLCKG3 13.800 3 (-15.44)
MCGUIRE2 24.000 2 (12.44)		ROWANC2 18.000 2 (11.21)	LINCLN5 13.800 5 (-25.78)		LINCLN1 13.800 1 (-25.78)
ROWANC4 18.000 4 (11.21)		ROWANC3 18.000 3 (11.21)	LINCLN6 13.800 6 (-25.78)		LINCLN2 13.800 2 (-25.78)
ROWANC5 18.000 5 (11.21)			LINCLN7 13.800 7 (-25.78)		
ROWANS1 18.000 6 (11.21)			LINCLN8 13.800 8 (-25.78)		
MARSHAL1 20.000 1 (10.60)			LINCLN9 13.800 9 (-25.78)		
MARSHAL1 20.000 L (10.60)			LINCLN10 13.800 A (-25.78)		
MARSHAL2 20.000 2 (10.60)					
MARSHAL2 20.000 L (10.60)					
MARSHAL3 24.000 3 (10.60)					
MARSHAL4 24.000 4 (10.60)					
OXFORD 7.2000 1 (7.82)					
OXFORD 7.2000 2 (7.82)					
BELEWS1 18.000 1 (7.82)					
BELEWS1 18.000 L (7.82)					
BELEWS2 18.000 2 (7.82)					
BELEWS2 18.000 L (7.82)					
ROCKHMG3 18.000 1 (7.82)					
ROCKHMG4 18.000 2 (7.82)					
ROCKHMG5 18.000 3 (7.82)					
ROCKHMG1 18.000 1 (7.78)					
ROCKHMG2 18.000 2 (7.78)					
DANRIVR1 13.800 1 (7.72)					

Save Configuration

The same set of units moved last hour were chosen for this hour – this is NOT a requirement.

Screenshot of 2nd hour initial default *NNL Re-Dispatch Worksheet* display:

TLR NNL RE-Dispatch for DUK
5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Note that calculations are based on the NNL change.

<p>Total INIL: 42.3 Existing INIL: 66.4 INIL Change: -24.1 INIL Re-Dispatch: 24.1</p> <p>View All Data</p> <p>Hide Disabled</p> <p>Save Work Sheet</p> <p>Unit Configuration</p> <p>Reset</p> <p style="color: red;">Not saved yet</p>	<p>Total Increment Re-Dispatch: 55.9 MW</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="7">Increment Generators for DUK</th> </tr> <tr> <th>Generator</th> <th>GLDF</th> <th>Status</th> <th>Inc Avail.</th> <th>Inc MW</th> <th>Disabled</th> <th></th> </tr> </thead> <tbody> <tr> <td>COWANS1 13.800 1</td> <td>27.70</td> <td>IN</td> <td>80.0</td> <td>55.9</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>COWANS2 13.800 2</td> <td>27.70</td> <td>OUT</td> <td>0.0</td> <td>0</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>ROWANC1 18.000 1</td> <td>11.21</td> <td>IN</td> <td>154.0</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>ROWANC2 18.000 2</td> <td>11.21</td> <td>IN</td> <td>N/A</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>ROWANC3 18.000 3</td> <td>11.21</td> <td>IN</td> <td>N/A</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table>	Increment Generators for DUK							Generator	GLDF	Status	Inc Avail.	Inc MW	Disabled		COWANS1 13.800 1	27.70	IN	80.0	55.9	<input type="checkbox"/>		COWANS2 13.800 2	27.70	OUT	0.0	0	<input checked="" type="checkbox"/>		ROWANC1 18.000 1	11.21	IN	154.0	0	<input type="checkbox"/>		ROWANC2 18.000 2	11.21	IN	N/A	0	<input type="checkbox"/>		ROWANC3 18.000 3	11.21	IN	N/A	0	<input type="checkbox"/>		<p>Total Decrement Re-Dispatch: 55.9 MW</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="7">Decrement Generators for DUK</th> </tr> <tr> <th>Generator</th> <th>GLDF</th> <th>Status</th> <th>Dec Avail.</th> <th>Dec MW</th> <th>Disabled</th> <th></th> </tr> </thead> <tbody> <tr> <td>MILLCKG1 13.800 1</td> <td>-15.44</td> <td>IN</td> <td>76.0</td> <td>55.9</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>MILLCKG2 13.800 2</td> <td>-15.44</td> <td>IN</td> <td>76.0</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>MILLCKG3 13.800 3</td> <td>-15.44</td> <td>IN</td> <td>76.0</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>LINCLN1 13.800 1</td> <td>-25.78</td> <td>IN</td> <td>N/A</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>LINCLN2 13.800 2</td> <td>-25.78</td> <td>IN</td> <td>N/A</td> <td>0</td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table>	Decrement Generators for DUK							Generator	GLDF	Status	Dec Avail.	Dec MW	Disabled		MILLCKG1 13.800 1	-15.44	IN	76.0	55.9	<input type="checkbox"/>		MILLCKG2 13.800 2	-15.44	IN	76.0	0	<input type="checkbox"/>		MILLCKG3 13.800 3	-15.44	IN	76.0	0	<input type="checkbox"/>		LINCLN1 13.800 1	-25.78	IN	N/A	0	<input type="checkbox"/>		LINCLN2 13.800 2	-25.78	IN	N/A	0	<input type="checkbox"/>	
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Note the last hour dispatch values are shown as the default when the worksheet is initially opened. They can be changed.

Screenshot of **2nd** hour saved *NNL Re-Dispatch Worksheet* display:

TLR NNL RE-Dispatch for DUK
TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total Increment Re-Dispatch: 55.9 MW

Increment Generators for DUK					
Generator	% GLDF	Status	Inc Avail.	Inc MW	Disabled
COWANS1 13.800 1	27.70	IN	80.0	55.9	<input type="checkbox"/>
COWANS2 13.800 2	27.70	OUT	0.0	0	<input checked="" type="checkbox"/>
ROWANC1 18.000 1	11.21	IN	0	0	<input type="checkbox"/>
ROWANC2 18.000 2	11.21	IN	N/A	0	<input type="checkbox"/>
ROWANC3 18.000 3	11.21	IN	N/A	0	<input type="checkbox"/>

Total Decrement Re-Dispatch: 55.9 MW

Decrement Generators for DUK					
Generator	% GLDF	Status	Dec Avail.	Dec MW	Disabled
MILLCKG1 13.800 1	-15.44	IN	76.0	55.9	<input type="checkbox"/>
MILLCKG2 13.800 2	-15.44	IN	0	0	<input type="checkbox"/>
MILLCKG3 13.800 3	-15.44	IN	0	0	<input type="checkbox"/>
LINCLN1 13.800 1	-25.78	IN	N/A	0	<input type="checkbox"/>
LINCLN2 13.800 2	-25.78	IN	N/A	0	<input type="checkbox"/>

Total NNL: 42.3

Existing NNL: 66.4

NNL Change: -24.1

NNL Re-Dispatch: 24.1

View All Data

Hide Disabled

View Saved

Save Work Sheet

Send Email to BA

Unit Configuration

Reset

Saved at 08/27 11:32

Note the first hour NNL re-dispatch shown below. For the first hour we came off economics by turning on three MILLCKG units and turning off a COWANS unit and a ROWAN unit.

For the next hour we can now get back closer to economics by incrementing (turning back on) the COWANS unit and decrementing (turning back off) one of the MILLCKG units

Screenshot of **first hour** saved *NNL Re-Dispatch Worksheet* display:

Total Increment Re-Dispatch: 199.7 MW

Increment Generators for DUK					
Generator	% GLDF	Status	Inc Avail.	Inc MW	Disabled
MILLCKG1 13.800 1	-15.44	IN	76	76.0	<input type="checkbox"/>
MILLCKG2 13.800 2	-15.44	IN	76	76.0	<input type="checkbox"/>
MILLCKG3 13.800 3	-15.44	IN	76	47.7	<input type="checkbox"/>
LINCLN1 13.800 1	-25.78	IN	N/A	0	<input type="checkbox"/>
LINCLN2 13.800 2	-25.78	IN	N/A	0	<input type="checkbox"/>

Total Decrement Re-Dispatch: 199.7 MW

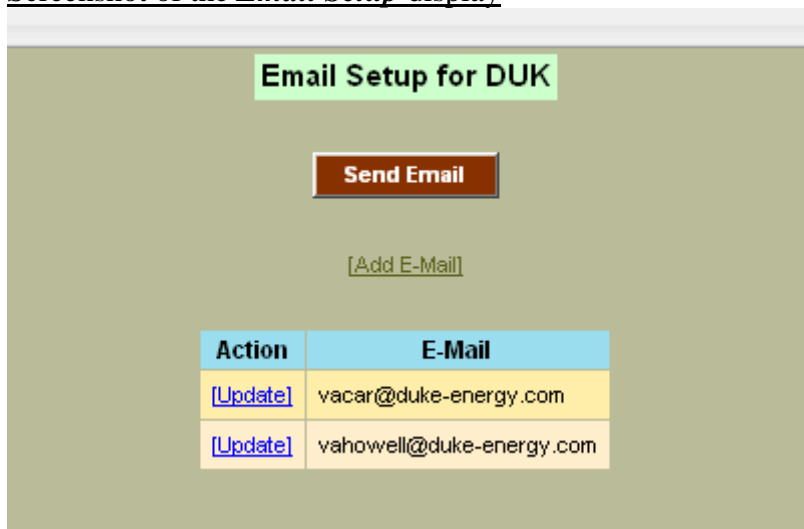
Decrement Generators for DUK					
Generator	% GLDF	Status	Dec Avail.	Dec MW	Disabled
COWANS1 13.800 1	27.70	IN	80	80.0	<input type="checkbox"/>
COWANS2 13.800 2	27.70	OUT	0	0	<input checked="" type="checkbox"/>
ROWANC1 18.000 1	11.21	IN	154	119.7	<input type="checkbox"/>
ROWANC2 18.000 2	11.21	IN	N/A	0	<input type="checkbox"/>
ROWANC3 18.000 3	11.21	IN	N/A	0	<input type="checkbox"/>

Other Features

The Email to BA Feature

1. The RC can e-mail the BA the saved results of the *NNL Re-Dispatch Worksheet* by poking the *Send Email to BA* button.
2. Poking the *Send Email to BA* button will bring up the *Email Setup* display shown below. Adding email addresses to the distribution list is intuitive.
3. Poking the *Send Email* button will send the last saved NNL Re-dispatch to all email addresses shown on the list.
4. The email will have an attached htm file. A sample of the htm attachment is shown below.
5. If the impacted BA is an IDC user, the BA has the ability to modify the NNL spreadsheet and save. The BA can then e-mail the NNL dispatch top the RC at his discretion.

Screenshot of the *Email Setup* display



Screenshot of a sample htm email to the BA attachment:

TLR NNL RE-Dispatch for DUK

TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

Total IHL:	42.3
Existing IHL:	66.4
IHL Change:	-24.1
RC IHL Re-Dispatch:	24.1
BA IHL Re-Dispatch:	24.1

Increment Generators for DUK							
Generator	% GLDF	Avail. RC Inc	Inc RC MW	Disabled by RC	Avail. BA Inc	Inc BA MW	Disabled by BA
COWANS1 13.800 1	27.70	80.0	55.9		80.0	55.9	
Total INC:			55.9			55.9	

Decrement Generators for DUK							
Generator	% GLDF	Avail. RC Inc	Dec RC MW	Disabled by RC	Avail. BA Inc	Dec BA MW	Disabled by BA
MILLCKG1 13.800 1	-15.44	76.0	55.9		76.0	55.9	
Total DEC:			55.9			55.9	

Not Meeting the NNL Relief Requirement

1. The **NNL Re-Dispatch Worksheet** will let you know if your NNL re-dispatch does not meet the NNL relief requirements.
2. In the screenshot below note the red banner message and the red **NNL Re-Dispatch** value in the left hand box.
3. If you are not meeting your NNL relief requirement with the current mix of INC and DEC units, then go back to the **Unit Configuration** display and select more INC and DEC units until you can establish an NNL re-dispatch that meets the relief requirements.

Screenshot of re-dispatch not meeting NNL relief requirements:

TLR NNL RE-Dispatch for DUK
TLR Level 5A on Flowgate (1245) - McGuire-Riverbend (Norman) 230kV Line 1 flo Line 2

The Required Relief has not been provided through NNL Re-Dispatch

Total Increment Re-Dispatch: 174.0 MW

Increment Generators for DUK					
Generator	% GLDF	Status	Inc Avail.	Inc MW	Disabled
LINCLN1 13.800 1	-25.78	IN	79	79.0	<input type="checkbox"/>
LINCLN2 13.800 2	-25.78	IN	79	79.0	<input type="checkbox"/>
MILLCKG1 13.800 1	-15.44	IN	79	16.0	<input type="checkbox"/>

Total Decrement Re-Dispatch: 174.0 MW

Decrement Generators for DUK					
Generator	% GLDF	Status	Dec Avail.	Dec MW	Disabled
COWANS1 13.800 1	27.70	IN	20	20.0	<input type="checkbox"/>
ROWANC1 18.000 1	11.21	IN	154	154.0	<input type="checkbox"/>

Total NNL:	82.3
Existing NNL:	0.0
NNL Change:	82.3
NNL Re-Dispatch:	66.0

View All Data

Hide Disabled

Save Work Sheet

Unit Configuration

Reset

Not saved yet

- In this example the Dec units are set to their max decrement availability. This yields an NNL re-dispatch of only 66MW as shown in the red highlight in the left hand box. We need 82.3MW of NNL relief.
- Go back and add more Inc and Dec units from the **Unit Configuration** display until the relief requirements can be met, or meet required NNL relief requirements by other approved methods.