



① MOC 7

**STEPS 1 and 2: Document Change**

<b>Title:</b> Southbound Flow on 30" System to Accommodate Increased Marcellus Production  <b>Description of Change:</b> Production in the Marcellus area is growing quickly. Because of these increased inputs on the northern part of the Texas Eastern pipeline, we are quickly approaching a situation that will require southbound flow from PA to LA. This MOC evaluation is address the minimum flow needs (approx. 200 MMSCFD) to meet this new demand. No compression will be involved, and the pipeline set-up (i.e. lines commoned-up or split-out) will not change from the current state. This flow will also require us to remove the Line 25 bypass line check valves at Mt. Pleasant, Barton, and Egypt. This is a permanent change.		Y / N
	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b> <b>Expiration Date:</b>	N
	<b>Emergency Change?</b>	N

**Name of Change Initiator:**

Quince Och

**Name of Manager / Supervisor:**

Greg Bilinski

**MOC Coordinator:**

Quince Och

**Initiation Date:**

August 8, 2012

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
CR Transmission – Gary Dial	Safe and compliant operation of the facilities, implementation procedures, OPP
NER Transmission – Tom Tirlia	Safe and compliant operation of the facilities, implementation procedures, OPP
Facilities Operations – Quince Och	Implementation procedures, OPP, Identify affected Departments
Pipeline Integrity – Bob Travers	Internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Asset Planning – Julian Cao	Impact to customer entitlements. Impact to potential incremental projects in the works. Operating envelope.
Capacity Planning – Walter Wang	Operating envelope
Gas Control – Tom Atkinson	CRM compliance
EHS – Kim Jackson	Air permits / regulations, PCB migration, gas quality support
Operational Compliance – Rick Kivela	MOPs flowing south, OPP to protect these MOPs
Regulatory Affairs – Berk Donaldson	FERC compliance
Measurement Integrity – Mark Macpherson	Gas quality zoning

Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
CR Transmission – Gary Dial	1. Develop implementation plans for each location 2. Ensure personnel at each location understands the implementation and operational requirements for these operating modes 3. Excavate, blow down, and remove the clappers from one bypass line check valve at each of the following locations: Mt. Pleasant, Barton, Egypt 4. Install differential pressure switches on the bypass block valve at each of these locations. 5. Procedures and updated schematics to be attached
NER Transmission – Tom Tirlia	6. Develop implementation plans for each location 7. Ensure personnel at each location understands the implementation and operational requirements for these operating modes 8. Provide OPP for 30" system from Holbrook west. 9. Procedures and updated schematics to be attached



Facilities Operations – Quince Och	<p>10. We have evaluated this scenario and determined that pulling a single check valve clapper at each location will not allow us to compress from north to south at these locations. Should we need this capability in the future, an additional review will be required under which we remove the remaining bypass check valve clappers at each location.</p> <p>11. Review implementation plan</p> <p>12. Support CR and NER in implementing this flow mode.</p> <p>35. Enter the full scope of the project into ECP (all changes &amp; modifications)</p>
Pipeline Integrity – Bob Travers	<p>13. Revise Area internal corrosion plans to account for reverse flow</p> <p>14. Modify risk model as appropriate</p> <p>15. Revise SOP 2-2160 to include discharge temperature limits for south flow</p> <p>16. (All may be completed after change is implemented)</p>
Asset Planning – Julian Cao	<p>17. No issue with current customers' entitlements in traditional flow direction (south to north).</p> <p>18. No impact to current potential projects. The modification would allow the flow to reverse sooner than these projects have anticipated.</p> <p>19. No impact to operating conditions for compressor units as the flow will bypass the stations</p>
Capacity Planning – Walter Wang	<p>20. By removing check valve clappers on one of the bigger size line, we can back flow up to 200 mmcf through Egypt without any reverse compression. This will be able to meet our immediate demand during this fall.</p>
Gas Control – Tom Atkinson	<p>21. Verify any changes with alarm limits in new configuration (MP, Barton, Egypt). Codes to provide new MOP's.</p> <p>22. Identify status bit within the PLC or a manual status bit that can be used as indicator for direction of flow, similar to UNCH and OPEL</p> <p>23. Review schematics for operational configuration.</p> <p>24. Designate changes as IPO's and follow appropriate SOP for communication to controllers.</p>
EHS Compliance – Kim Jackson	<p>25. Waste, water, PCB concerns to be addressed</p>
Air Permit – Kim Jackson	<p>34. Assess locations and obtain approval as needed for impacted locations</p>
Operational Compliance – Rick Kivela	<p>26. Based on hydrostatic test pressures and design factors, MAOP for southbound flow is limited to 936 psig on the south side of Holbrook and most other stations. There is a Class 2 pressure deferral of 900 psig on Line 10 on the south side of Wheelersburg Station. Alarms and controls must be in place to prevent exceeding these pressures when flowing south.</p> <p>27. If any compressor stations on the 30-inch system will compress to the south, additional research will be needed to determine if there are any other pressure deferrals in Class 2 areas on the system.</p> <p>28. All applicable pipeline integrity issues must be addressed</p> <p>29. PLDs and CSDs must be revised, as needed, to reflect southbound flow and maximum allowable operating pressure. Specifically, the PLDs over the entire flow path must be updated to show the southbound MOP.</p> <p>30. Receipt points across the entire flow path must have their primary OPP reset to the southbound MOP when flowing south.</p>
Regulatory Affairs – Berk Donaldson	<p>31. No impact</p>
Measurement Integrity – Mark Macpherson	<p>32. Implement revised Gas Quality procedures for the purpose of gas quality zone tagging when this mode of operation is in effect.</p> <p>36. Update the TETLP Tariff gas quality specifications to add a control point at Berne for the C2+ exclusion zone.</p>
SER Transmission – Larry Shed	<p>33. N/A</p>

**STEP 4: Management Approvals of Implementation Plan**

Management Approval Required (all required)	Signature	Date
CR DTO – Gary Dial	See attached	
NER DTO – Tom Tirlia	See attached	
Director, Facilities Operations – Quince Och	See attached	
Director, Pipeline Integrity – Bob Travers	See attached	
Director, Gas Control – Tom Atkinson	See attached	



Director, Asset Planning – Julian Cao	See attached	
Capacity Planning – Walter Wang	See attached	
Director, EHS – Kim Jackson	See attached	
Director, Operational Compliance – Rick Kivela	See attached	
Director, Rates Certificates – Berk Donaldson	See attached	
Director, Measurement Integrity – Mark Macpherson	See attached	
VP, Field Operations – Tom Wooden		

**STEP 5: Completion of Pre-Change Actions**

Responsible Party	Actions	Change Coordinator	
		Initial	Date
CR DTO – Gary Dial	Items 1 – 5, 26, 28, 29, 30	QEO	3/1/13
NER DTO – Tom Tirila	Items 6 – 9, 26, 28, 29, 30	QEO	3/1/13
SER DTO – Larry Shed	Item 30	QEO	3/1/13
Director, Facilities Operations – Quince Och	Items 11, 12, & 35	QEO	3/1/13
Director, Pipeline Integrity – Bob Travers	N/A	QEO	3/1/13
Director, Gas Control – Tom Atkinson	Items 21 – 24	QEO	3/1/13
Director, Asset Planning – Julian Cao	N/A	QEO	3/1/13
Capacity Planning – Walter Wang	N/A	QEO	3/1/13
Director, EHS – Kim Jackson	25	QEO	3/1/13
Director, Operational Compliance – Rick Kivela	Item 29	QEO	3/1/13
Director, Rates Certificates – Berk Donaldson	N/A	QEO	3/1/13
Director, Measurement Integrity – Mark Macpherson	Item 32	QEO	3/1/13
Approval for Pre-Change Actions		Date	
VP, Field Operations – Tom Wooden		Approved via e-mail	
		6/18/13	

**Completion of Pre-Change Actions Requiring Permits or Additional Approvals**

Responsible Party	Actions	Change Coordinator	
		Initial	Date
Air Compliance/Permit – Kim Jackson	Item 34	QEO	6/17/13

**Management Approval for Change Implementation**

Responsible Party	Signature	Date
VP, Field Operations – Tom Wooden	Approved via e-mail	6/18/13

**STEP 6: Implement Change**

Action	Record of Completion			
	Change Coordinator		Manager / Supervisor	
	Initial	Date	Initial	Date
Change complete and implemented			QEO	6/18/13

**STEP 7: Completion of Post-Change Actions**

Action (If no actions required, write N/A)			
Responsible Party	Actions	Change Coordinator	
		Initial	Date
CR DTO – Gary Dial	Item 13		9/11/15



NER DTO – Tom Tirliia	Item 13, completion of 8 (Berne valve automation project)		9/11/15
Director, Pipeline Integrity – Bob Travers	Items 14 & 15		9/11/15
Director, Measurement Integrity – Mark Macpherson	Item 36		9/11/15

**STEP 8: Close MoC Entry, document in MoC Register, & capture Lessons Learned**

<b>Closed By:</b> [Redacted]	<b>Date:</b> 9/11/15
<p><b>Lessons Learned:</b></p> <ol style="list-style-type: none"> <li>Modified the MOC form in three ways:</li> <li>Assigned numbers to the action items in Step 3 so that each item could be assigned to a responsible party and be tracked more explicitly.</li> <li>Updated Step 5 of the MOC form to assign responsibility for pre-change action items and provide executive approval of action item completions.</li> <li>Updated Step 7 of the MOC form to assign responsibility for post change action items.</li> <li>Facility modifications at compressor stations with only electric compression do not pose air permitting risks.</li> <li>At compressor stations with gas fired compression, facility modifications do trigger air permitting risks if 'the units could physically be used to compress gas in the opposite direction'. Even in situations where we do not intend to use the units for reverse compression, the simple fact that those units could be used in this manner is a trigger for emission calculations and air permitting risks.</li> <li>In reverse flow evaluations such as this one, OPP evaluation of the receipt area is required.</li> <li>In reverse flow situations on grandfathered parts of the 30" system, the receipt points across the entire flow path must have their primary OPP reset to 936 psig when flowing south.</li> <li>PLDs over the entire southbound flow path must be updated to show the southbound MOP.</li> <li>M&amp;R pressure control / OPP set point changes will be addressed 1-2 weeks prior to the need to flow south. Gas Control will reset alarm points in SCADA and Measurement Integrity will retag gas quality data during this time.</li> <li>For the Air Permitting group to perform their review, all aspects of the work must be input into the ECP database 'as a group'. This is contrary to the design of the database, and requires generalizations of some inputs and the attachment of a spreadsheet to the database request. When inputting this type data into the database, it is best to have someone in the ECP step you through the process so you best characterize the scope of work.</li> <li>As a result of diminishing flows up the 30" system and from REX at Clarington, Ohio, high BTU Marcellus gas in excess of the 1100 Btu limit does not blend and can cause issues for our delivery customers (especially power plants). To address this problem, we have to update the gas quality specification in our TETLP Tariff to add another C2+ exclusion zone control point at Berne. Consequently, this will also lead to the need for ultrasonic check measurement and a mainline gas quality lab Berne. Both of which will be installed under the TEAM 2014 expansion project.</li> </ol>	



② MOC 22

**STEPS 1 and 2: Document Change**

<b>Title:</b> TETLP 30" Mainline South Compression <b>Description of Changes:</b> Changes in valve configuration at Wheelersburg Station to facilitate south compression. Changes in valve configuration at Gladeville Station to facilitate south compression. Changes to Unit Control, Station Control, OPP, ESD and SCADA systems at 30" mainline stations required for bi-directional compression or flow.	Permanent Change?	Y / N
	Temporary Change?	N
	Expiration Date:	
	Emergency Change?	N

**Name of Change Initiator:**

Quince Och

**Name of Manager / Supervisor:**

Greg Bilinski

**MOC Coordinator:**

Dan Harris

**Initiation Date:**

June 17, 2013

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
CR Transmission – Gary Dial	Develop implementation procedures, implementation of procedures, OPP, training and safe, compliant operation of the facilities
Facilities Operations – Quince Och	Identify Departments affected by the proposed changes, Review procedures prior to implementation, OPP
Pipeline Integrity – Bob Travers	Identify impact of proposed changes on internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Asset Planning – Julian Cao	Provide proposed conceptual flow design Impact on customer entitlements, impact on future incremental project, operating conditions that define envelope
Capacity Planning – Walter Wang	Operational capacity calculations, operational envelope
Gas Control – Tom Atkinson	CRM compliance
EHS – Kim Jackson	Identify impact of proposed change on EHS procedures and compliance
Operational Compliance – Rick Kivela	Determine MOP and OPP compliance for south flow
Regulatory Affairs – Berk Donaldson	FERC compliance
Measurement Integrity – Mark Macpherson	Gas quality zoning

Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
CR Transmission – Gary Dial	1. Develop implementation plans. 2. Ensure personnel understand the implementation and operational requirements. 3. Procedures and updated schematics to be attached. 4. Implement plans.
Facilities Operations – Quince Och	5. Review implementation plan. 6. Support CR in implementing this operating mode.
Pipeline Integrity – Bob Travers	7. Revise Area internal corrosion plans to account for south flow. 8. Modify risk model as appropriate. 9. Revise SOP 2-2160 to include discharge temperature limits for south compression. 10. (All may be completed after change is implemented.)
Asset Planning – Julian Cao	11. Provide conceptual flow design.
Capacity Planning – Walter Wang	12. Evaluate potential issues with current customer entitlements.
Gas Control – Tom Atkinson	13. Evaluate operating capacity in south compression mode. 14. Verify any changes with alarm limits in south compression mode. 15. Identify method to be used to indicate direction of compression. 16. Review schematics for operational configuration. 17. Designate changes as IPOs and follow appropriate SOP for communication to controllers.



EHS – Kim Jackson	18. Identify impact of proposed change on EHS procedures and compliance.
Operational Compliance – Rick Kivela	19. Determine appropriate MOP for south compression mode. 20. Determine if there are any pressure deferrals in Class 2 areas that would be affected by the south compression mode. 21. Determine all pipeline integrity issues that must be addressed as a result of the change in operating mode. 22. PLDs and CSDs must be revised to reflect south compression MOP.
Regulatory Affairs – Berk Donaldson	23. Identify any FERC compliance issues associated with the south compression mode.
Measurement Integrity – Mark Macpherson	24. Identify any necessary revisions to the Gas Quality procedures as a result of the south compression mode.

**STEP 4: Management Approvals**

Management Approval Required (all required)	Signature	Date
CR Transmission – Gary Dial	Email	6/19/13
Facilities Operations – Quince Och	Email	6/19/13
Pipeline Integrity – Bob Travers	Email	6/18/13
Asset Planning – Julian Cao	Email	6/17/13
Capacity Planning – Walter Wang	Email	6/17/13
Gas Control – Tom Atkinson	Email	6/18/13
EHS – Kim Jackson	Email	6/17/13
Operational Compliance – Rick Kivela	Email	6/18/13
Regulatory Affairs – Berk Donaldson	Email	6/17/13
Measurement Integrity – Mark Macpherson	Email	6/17/13
VP, Field Operations – Tom Wooden	Email	6/20/13

**STEP 5: Completion of Pre-Change Actions**

Responsible Party	Actions	Change Coordinator	
		Initial	Date
CR Transmission – Gary Dial	Items 1-4	[Redacted]	6/19/13
Facilities Operations – Quince Och	Items 5-6	[Redacted]	6/19/13
Pipeline Integrity – Bob Travers	Items 7-10	[Redacted]	6/18/13
Asset Planning – Julian Cao	Items 11-12	[Redacted]	6/17/13
Capacity Planning – Walter Wang	Items 13	[Redacted]	6/17/13
Gas Control – Tom Atkinson	Items 14-17	[Redacted]	6/18/13
EHS – Kim Jackson	Items 18	[Redacted]	6/17/13
Operational Compliance – Rick Kivela	Items 19-22	[Redacted]	6/18/13
Regulatory Affairs – Berk Donaldson	Items 23	[Redacted]	6/17/13
Measurement Integrity – Mark Macpherson	Items 24	[Redacted]	6/17/13

**STEP 6: Implement Change**

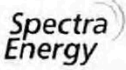
Responsible Party	Actions	Change Coordinator	
		Initial	Date
CR Transmission – Gary Dial	Items 4	[Redacted]	6/19/13

**STEP 7: Completion of Post-Change Actions**

Responsible Party	Actions	Change Coordinator	
		Initial	Date
CR Transmission – Gary Dial	Items 4	[Redacted]	6/20/13
Facilities Operations – Quince Och	Items 6	[Redacted]	6/20/13
Pipeline Integrity – Bob Travers	Items 7-10	[Redacted]	6/21/14

**STEP 8: Close MoC Entry, document in MoC Register, & capture Lessons Learned**

Closed By: [Redacted]	RODWESIA CLARKE	Date: 11/06/2014
Lessons Learned:		

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③ MOC 13

**STEPS 1 and 2: Document Change**

<b>Title:</b> Description of Change: Establish MOP change to 936 psig on parts of TETLP. Change will be applicable to Lines 10,15,25,30 between Tompkinsville Station and Athens Station.		Y / N
	Permanent Change?	Y
	Temporary Change? Expiration Date:	
	Emergency Change?	N

**Change Lead:**

Bob Travers

**Name of Manager / Supervisor:**

Greg Bilinski

**MOC Coordinator:**

Bob Travers

**Initiation Date:**


6/1/14

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
Operational Compliance (Kivela)	Official issuance of MOP change will come from here
Pipeline Integrity (Travers)	This change will impact the following areas: 1. ILI anomaly due dates 2. PLD's will need revision 3. GIS will need revision 4. SOP's will need revision to accommodate MOP terminology
Facilities Operation (Och)	OPP revisions
Field Operations (Dial)	Safe and compliant operations of the facilities, implement procedures, reset and document OPP changes.
Gas Control (Atkinson)	These changes will impact the following: 1. Alarm limits and SCADA graphics 2. Controller training for MOP changes 3. OQ material review 4. Posted capacity to external EBB 5. Operational Compliance discussion regarding MOP VS MAOP verbiage


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Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
Operational Compliance (Kivela)	<ol style="list-style-type: none"> <li>Develop strategy for withdrawing from special permits for Mt. Pleasant, Owingsville and Wheelersburg. Make necessary notifications based on this strategy.</li> <li>Notify PHMSA of special permit related activities that will not be conducted in 2014 due to the MOP reduction. Affects Owingsville anomaly investigations that are being cancelled this year, but there may be other activities.</li> <li>Issue official notice of MOP change.</li> </ol>
Pipeline Integrity (Travers)	<ol style="list-style-type: none"> <li>Complete SOP revisions and prepare for release</li> <li>Release SOP revisions</li> </ol>
GIS (Brann)	<ol style="list-style-type: none"> <li>Prepare for GIS revision on change date</li> <li>Revise GIS upon MOP change</li> <li>Update affected PLDs with new 936 psig MOP.</li> <li>Release PLD's</li> </ol>
Central Region Operations (Dial)	<ol style="list-style-type: none"> <li>Identify the compressor stations and receipt M&amp;Rs in the flow path, reset the OPP at each facility to protect the 936 psig MOP, and update the associated 7T-106 &amp; 7T-107 forms in SAP</li> <li>Reschedule anomalies based on new MOP.</li> </ol>
Gas Control (Atkinson)	<ol style="list-style-type: none"> <li>Prepare SCADA modifications (alarm limits and graphics) to be implemented on initiation date utilizing new operating pressure and proper alarm set points. May need to incorporate outcome of MAOP VS MOP discussion.</li> <li>Implement SCADA modifications.</li> <li>Develop training method and material for controller dispersal.</li> <li>Train controllers</li> <li>Review OQ material for changes that might need to occur.</li> <li>Initiate discussion with Capacity Planning for posting potential to EBB utilizing new operating pressure and proper alarm set-points.</li> </ol>

**STEP 4: Management Approvals of Implementation Plan**

Management Approval Required (all required)	Signature	Date
Greg Bilinski		8/25/2014


**STEP 5: Completion of Pre-Change Actions**

Responsible Party	Actions	Change Lead	
		Initial	Date
Operational Compliance (Kivela)	[1] [2]	EMAIL	8-25-14
Pipeline Integrity (Travers)	[4] [5]		9-15-14
GIS (Brann)	[6] [8]		10-6-14
CR Field Operations (Dial)	[10]	EMAIL	9-2-14
Gas Control (Atkinson)	[12] [14] [16] [17]	EMAIL	8-25-14

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**Completion of Pre-Change Actions Requiring Permits or Additional Approvals [N/A]**

Responsible Party	Actions	Change Lead	
		Initial	Date
N/A			


**Management Approval for Change Implementation**

Responsible Party	Signature	Date
Greg Bilinski		10/6/14


**STEP 6: Implement Change**

Action (If no actions required, write N/A)			
Responsible Party	Actions	Change Lead	
		Initial	Date
Rick Kivela	[3]	EMAIL	10-7-14

**STEP 7: Completion of Post-Change Actions**

Action (If no actions required, write N/A)			
Responsible Party	Actions	Change Lead	
		Initial	Date
Cindy Brann	[7] [9]		11/6/15
Gary Dial	[11]	EMAIL	10-15-14
Tom Atkinson	[13] [15]	EMAIL	11-18-14

**STEP 8: Close MoC Entry, document in MoC Register, & capture Lessons Learned**

Closed By: 	Date: 2-2-2015
Lessons Learned: N/A	

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#6  
8/30/14

**STEPS 1 and 2: Document Change**

<b>Title:</b> Team South Projects' southwest bound flow (Flow Reversal) through Holbrook and Barton Compressor Station utilizing Unit 2T (only) at Holbrook and all electric units at Barton  <b>Description of Change:</b> Supply sourced east of the Holbrook Compressor station flowing south to Kosciusko and SESH delivery points as a firm transportation path, known as Team South for 300,000 Dth per day. This requires that unit 2T at Holbrook and all electric units at Barton be reversed for south bound compression. In addition, bypass piping at Egypt, Barton and Mt. Pleasant stations will be modified to allow full bypass flow through these stations.		Y / N
	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b>	N
	<b>Expiration Date:</b>	
	<b>Emergency Change?</b>	N

**Name of Change Initiator:**

Joe Dellaquila

**Name of Manager / Supervisor:**

Tom Tirlia

**MOC Coordinator:**

Bill Quinn


**Initiation Date:**

August 19 2014

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
NER Transmission – Joe Dellaquila	Safe and compliant operation of the facilities, implementation procedures, OPP
NER Transmission – Randy Putt-Uniontown Area	Safe and compliant operation of the facilities, implementation procedures, OPP
NER /Pipeline Integrity – Bill Quinn	Internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Facilities Operations – Quince Och	Implementation procedures, OPP, Identify affected Departments
Central Transmission – Steve Gheen	Safe and compliant operation of the facilities, implementation procedures, OPP
Central Transmission – Tim Gagle-Tuscumbia Area	Safe and compliant operation of the facilities, implementation procedures, OPP Training for Operators and relief Operators at Barton completed and documented on 8/25/14. 7T-107 HPS-10A for new device and 7T-107 HPS-15 for south flow device updated 8-27-14. CSD's have been field verified and corrected. Inspections and DOT documentation of new equipment/devices at Barton in progress and will be completed by 8/28/14. SAP asset worksheets for Barton are in progress and will be submitted when complete
Central /Pipeline Integrity – Doug Barnes	Internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Asset Planning – Julian Cao	Impact to customer entitlements. Impact to potential incremental projects in the works. Operating envelope.
Capacity Planning – Walter Wang	Calculate operating capacity for reverse Flow
Gas Control – Tom Atkinson	CRM compliance
EHS – Kim Jackson	Air permits / regulations, PCB migration, waste, water
Operational Compliance – Rick Kivela	MOPs flowing south, OPP to protect these MOPs
Regulatory Affairs – Berk Donaldson	FERC compliance
Measurement Integrity – Sarah Mohammed	Gas quality zoning
NE Marketing – Bob Riga	Impact on producers

Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
NER Transmission – Joe Dellaquila	1. Develop implementation plans for each location 2. Provide OPP for 30" system from Holbrook southwest 3. Procedures and updated schematics to be attached

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⑤ MOC 20

**STEPS 1 and 2: Document Change**

<b>Title: Texas Eastern Appalachia to Market 2014 (TEAM 2014)</b>	<b>Change Type</b>	<b>Y / N</b>
<b>Description of Change:</b> Team 2014 has modified multiple facilities across the TETLP system (as noted below). Additional southbound and northbound capacities associated with this project are 300MMSCFD and 300 MMSCFD, respectively.	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b>	N
	<b>Expiration Date:</b> _____	N
<b>Emergency Change?</b>		N
<b>MoC Plan Approval Target:</b> <i>October 1, 2014</i>	<b>Project Implementation Target:</b> <i>November 1, 2014</i>	

**MOC Expansion Project Scope:**

Forward Haul Expansion	Scope	Should it be in MOC?
Uniontown (electric/gas)	Upgrade 16,000 HP electric unit to 20,000 HP	Yes - due to upgrade gas units
	Upgrade 2-12,250 HP Mars to 13,300 HP each	
Delmont (gas)	Retire 18,500 HP Frame 5	Yes - due to uncertainty on readiness for 11/1 in-service date
	Retire four 2,000 HP reciprocating units	
	Add 26,000 HP electric unit	
	Add 26,000 HP Titan 250	
Armagh (gas)	Add 18,100 HP Titan 130	Yes - has not been addressed
	Install CEMS unit	
Entriiken (gas)	Add 26,000 HP Titan 250	Yes - has not been addressed
	Install CEMS unit	
<b>Forward Haul Path</b>	<b>From Holbrook to Lambertville/Goathals</b>	
<b>Back Haul Expansion</b>	<b>Scope</b>	
Wheelersburg (electric)	Piping modifications to reverse the big 15,000 HP electric unit	No - covered under MOC reversal last year
Kosciusko (electric/gas)	Piping modifications to reverse the 16,875 HP electric unit	Yes - has not been addressed
Union Church (gas)	Install filter separator to prevent liquid carry over.	
	Partial reversed compression required	No - covered under MOC reversal last year
	Compress south using MOC procedure.	
	No station piping modification required	
<b>Back Haul Path</b>	<b>From Holbrook to SESH and Egan</b>	

**Name of Change Initiator:**

Quince Och

**Name of Manager / Supervisor / Director:**

Quince Och

**MOC Coordinator:**


John Malaer

**Initiation Date:**

9/3/2014

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Responsible Party		Responsibilities
Position	Person	
NER DTO	Tom Tirlia	Ensure overall safe and compliant operation of the facilities, implementation procedures, implementation of OPP requirements, etc.
CR DTO	Gary Dial	Ensure overall safe and compliant operation of the facilities, implementation procedures, implementation of OPP requirements, etc.
SER DTO	Larry Shed	Address OPP, Operational Modes, and Development Operator Training for Kosciusko.
Facilities Operations	Quince Och	Review implementation plan

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*(6a) MOC 31.0*  
**STEPS 1 and 2: Document Change**


<b>Title: Ohio Pipeline Energy Network (OPEN): Phase 1 of 2</b>	<b>Change Type</b>	<b>Y / N</b>
<b>Description of Change:</b> The Ohio Pipeline Energy Network (OPEN) project will provide transportation service from Ohio shale production to markets along the Texas Eastern system in Ohio and to the Midwest, Southeast and Gulf Coast. The OPEN Project consists of approximately 76 miles of new 30" diameter pipeline in Columbiana, Carroll, Jefferson, Belmont, and Monroe counties; a new compressor station in Colerain Township in Belmont County, OH; and flow reversal work at certain Texas Eastern existing compressor stations. The flow capacity for this project is 550 MMSCFD.  This MoC addresses the changes associated with the early in service date for a portion of the OPEN flow capacity. The remaining changes will be covered in the OPEN Phase 2 MoC.	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b> <b>Expiration Date:</b> _____	N
	<b>Emergency Change?</b>	N
<b>MoC Approval Target:</b> <i>September 1, 2015</i>	<b>Project Implementation Target:</b> <i>September 15, 2015</i>	

<b>MoC Project Scope:</b>	
<u>Flow Reversal Work at Existing Compressor Stations</u>	
<p><i>Flow reversal work at six existing compressor stations to accommodate reverse flow (or bi-directional flow) capability along Texas Eastern's existing mainline at the compressor stations below. The proposed work at these facilities are principally piping or internal compressor component-related, and <u>no changes</u> in rated compressor station HP, compressor engines or other drivers was made.</i></p>	
<b>Facility Location</b>	<b>Scope</b>
Berne (Monroe County, OH)	Modifications to piping for flow reversal.
Tompkinsville (Monroe County, KY)	Modifications to piping for flow reversal and modifications to Unit 1 and Unit 2 aero assembly.
Kosciusko (Attala County, MS)	Installation of a filter separator.
	<i>Note: Modifications to the Kosciusko facility for other flow reversal work are covered in the "TEAM 2014" MoC. For more detail, reference the aforementioned MoCs.</i>

<b>Name of Change Lead:</b>	<b>Name of Manager / Supervisor / Director:</b>
Quince Och	Diana Goff
<b>MoC Coordinator:</b>	<b>Initiation Date:</b>
Rodmesia Clarke	06/12/2015

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Department (Responsible Party) Associated with Change		Responsibilities (Risks/Issues)
Position	Person	
CR DTO	Gary Dial	Ensure overall safe and compliant operation of the facilities, implementation procedures, implementation of OPP requirements, etc.

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*609 MOC 31.0*  
**STEPS 1 and 2: Document Change**

<b>Title: Ohio Pipeline Energy Network (OPEN): Phase 1 of 2</b>	<b>Change Type</b>	<b>Y / N</b>
<b>Description of Change:</b> The Ohio Pipeline Energy Network (OPEN) project will provide transportation service from Ohio shale production to markets along the Texas Eastern system in Ohio and to the Midwest, Southeast and Gulf Coast. The OPEN Project consists of approximately 76 miles of new 30" diameter pipeline in Columbiana, Carroll, Jefferson, Belmont, and Monroe counties; a new compressor station in Colerain Township in Belmont County, OH; and flow reversal work at certain Texas Eastern existing compressor stations. The flow capacity for this project is 550 MMSCFD.  This MoC addresses the changes associated with the early in service date for a portion of the OPEN flow capacity. The remaining changes will be covered in the OPEN Phase 2 MoC.	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b> <b>Expiration Date:</b> _____	N
	<b>Emergency Change?</b>	N
<b>MoC Approval Target:</b> <i>September 1, 2015</i>	<b>Project Implementation Target:</b> <i>September 15, 2015</i>	

**MoC Project Scope:**

Flow Reversal Work at Existing Compressor Stations


*Flow reversal work at six existing compressor stations to accommodate reverse flow (or bi-directional flow) capability along Texas Eastern's existing mainline at the compressor stations below. The proposed work at these facilities are principally piping or internal compressor component-related, and no changes in rated compressor station HP, compressor engines or other drivers was made.*

<u>Facility Location</u>	<u>Scope</u>
Berne (Monroe County, OH)	Modifications to piping for flow reversal.
Tompkinsville (Monroe County, KY)	Modifications to piping for flow reversal and modifications to Unit 1 and Unit 2 aero assembly.
Kosciusko (Attala County, MS)	Installation of a filter separator.  <i>Note: Modifications to the Kosciusko facility for other flow reversal work are covered in the "TEAM 2014" MoC. For more detail, reference the aforementioned MoCs.</i>

<b>Name of Change Lead:</b>	<b>Name of Manager / Supervisor / Director:</b>
Quince Och	Diana Goff
<b>MoC Coordinator:</b>	<b>Initiation Date:</b>
Rodmesia Clarke	06/12/2015

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

<b>Department (Responsible Party) Associated with Change</b>		<b>Responsibilities (Risks/Issues)</b>
<b>Position</b>	<b>Person</b>	
CR DTO	Gary Dial	Ensure overall safe and compliant operation of the facilities, implementation procedures, implementation of OPP requirements, etc.

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**66 MOC 31.1**  
**STEPS 1 and 2: Document Change**

Title: Ohio Pipeline Energy Network (OPEN) Phase 2 of 2	Change Type	Y / N																
<p><b>Description of Change:</b> The Ohio Pipeline Energy Network (OPEN) project will provide transportation service from Ohio shale production to markets along the Texas Eastern system in Ohio and to the Midwest, Southeast and Gulf Coast. The OPEN Project consists of approximately 76 miles of new 30" diameter pipeline in Columbiana, Carroll, Jefferson, Belmont, and Monroe counties; a new compressor station in Colerain Township in Belmont County, OH; and flow reversal work at certain Texas Eastern existing compressor stations. The flow capacity for this project is 550 MMSCFD.</p> <p>This MoC addresses the remaining changes associated with the OPEN project. The changes necessary for the early flow capacities were covered in the OPEN Phase 1 MoC.</p>	<b>Permanent Change?</b>	Y																
	<b>Temporary Change?</b> Expiration Date: _____	N																
	<b>Emergency Change?</b>	N																
<b>MoC Approval Target:</b> <i>October 1, 2015</i>	<b>Project Implementation Target:</b> <i>November 1, 2015</i>																	
<b>MoC Project Scope:</b>																		
<p><u>Ohio Extension</u></p> <p>The new 30" diameter pipeline will be in the following counties: Columbiana County (~12.9 miles), Carroll County (~0.2 miles), Jefferson County (~35.5 miles), Belmont County (~24.5 miles), and Monroe County (~2.7 miles).</p> <p><u>New Compressor Station</u></p> <table border="0"> <thead> <tr> <th><u>Facility Location</u></th> <th><u>Scope</u></th> </tr> </thead> <tbody> <tr> <td>Colerain</td> <td>Installation of two new 9,400 horsepower (HP) gas turbine compressor station located near Colerain Township, Belmont County.</td> </tr> </tbody> </table> <p><u>New Metering and Regulating (M&amp;R) Stations and Tap Valves</u></p> <table border="0"> <thead> <tr> <th><u>M&amp;R and Tap Valves</u></th> <th><u>Scope</u></th> </tr> </thead> <tbody> <tr> <td>Kensington Receipt M&amp;R Station</td> <td>Installation of an ultrasonic receipt metering and regulating station and launcher assembly</td> </tr> <tr> <td>Brush Creek M&amp;R Station</td> <td>Installation of an ultrasonic delivery metering and regulating station with tee tap along with a pig launcher assembly in Jefferson County for DTI; installation of ultrasonic receipt meter and regulating station with tee tap for Chesapeake in Jefferson County</td> </tr> <tr> <td>Salem Township Receipt M&amp;R Station</td> <td>Installation of an ultrasonic receipt metering and regulating station with tee tap</td> </tr> <tr> <td>Regulator Station</td> <td>Installation a quadruple regulating station in Switzerland Township, Monroe County</td> </tr> <tr> <td>Tee Taps</td> <td>Installation of tee taps near Franklin Township, Columbiana County, Ross Township, Jefferson County, and Smithfield Township, Jefferson County to accommodate future receipt tie-ins</td> </tr> </tbody> </table> <p><u>Other New Aboveground Facilities</u></p> <p>Installation of tap valves at the Monroe County receive site and an addition of mainline valves at Brush Creek and</p>			<u>Facility Location</u>	<u>Scope</u>	Colerain	Installation of two new 9,400 horsepower (HP) gas turbine compressor station located near Colerain Township, Belmont County.	<u>M&amp;R and Tap Valves</u>	<u>Scope</u>	Kensington Receipt M&R Station	Installation of an ultrasonic receipt metering and regulating station and launcher assembly	Brush Creek M&R Station	Installation of an ultrasonic delivery metering and regulating station with tee tap along with a pig launcher assembly in Jefferson County for DTI; installation of ultrasonic receipt meter and regulating station with tee tap for Chesapeake in Jefferson County	Salem Township Receipt M&R Station	Installation of an ultrasonic receipt metering and regulating station with tee tap	Regulator Station	Installation a quadruple regulating station in Switzerland Township, Monroe County	Tee Taps	Installation of tee taps near Franklin Township, Columbiana County, Ross Township, Jefferson County, and Smithfield Township, Jefferson County to accommodate future receipt tie-ins
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① MOC 51

**STEPS 1 and 2: Document Change**

<p><b>Title:</b> Gulf Market Reverse Flow with Compression  <b>Description of Change:</b> Multiple phase project:  Phase 1 (2016 scope): Support up to 250 mmscfd of southbound flow through piping modifications and additional compression. In addition, the project scope includes the installation of 2 chromatographs (1 each) at M&amp;R 71287 and 71424 and modifying 2 launchers at Opelousas.</p> <ul style="list-style-type: none"> <li>▪ Wheelersburg; The modification of station piping to allow for bi-directional compression on six, existing 2,500 horsepower (HP) compressor units. Additionally, Wheelersburg station automation work will be expanded. (The Wheelersburg station automation work is not a part of the scope of the Gulf Market capital expansion project as detailed in the FERC filing, but there is a planned overlap of station automation work and the capital expansion work, thus the scope of the change is included in this MoC.) <ul style="list-style-type: none"> <li>○ <i>Note: Modifications to the Wheelersburg facility for other flow reversal work are covered in the "TETLP 30" Mainline South Compression," "TEAM 2014" and "TEAM South" MoCs. For more detail, reference the aforementioned MoCs.</i></li> </ul> </li> <li>• Owingsville; The modification of station piping to support southbound flow with compression. Additionally, the installation of Selective Catalytic Reduction (SCR), Dry Gas Seals (DGS), will take place at Owingsville for Units 1 through 4. (The TETCO Emissions work is not a part of the scope of the Gulf Market capital expansion project as detailed in the FERC filing, but there is a planned overall of the emissions work and capital expansion work, thus the scope of the change is included in this MoC.)</li> <li>• Mt Pleasant; Piping modifications to support southbound flow with compression.</li> <li>• Egypt; Perform piping modifications to support southbound flow with compression.</li> <li>• Opelousas piping modifications to support GM southbound flow with compression. <ul style="list-style-type: none"> <li>○ <i>Note: The units at Opelousas have been compressing southbound (completed MoC 4JUN12). Unit operation will continue when piping modifications are complete and prior to this MoC being complete. Flow will remain the same as pre-piping modification. Flow will only increase when this MoC is complete and Gulf Market project is considered complete.</i></li> </ul> </li> </ul>	<b>Permanent Change?</b> Y	<b>Y / N</b> Y	
	<b>Temporary Change?</b> <b>Expiration Date:</b> _____ N	N	
	<b>Emergency Change?</b>		

**Change Lead:**

Rich Fink

**Name of Manager / Supervisor:**

Quince Och

**MOC Coordinator:**

Rich Fink

**Initiation Date:**

May 26, 2016

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
CR Transmission – Gary Dial	Safe and compliant operation of the facilities, implementation procedures, OPP
SER Transmission – Thanh Phan	Safe and compliant operation of the facilities, implementation procedures, OPP



8a MOC 52

367mm

STEPS 1 and 2: Document Change

<b>Title:</b> Access South, Adair Southwest, Lebanon Extension	<b>Permanent Change?</b>	Y		
	<b>Temporary Change?</b>	N		
	<b>Expiration Date:</b>			
<b>Description of Change:</b>  Phase 2 (2017) execution: Texas Eastern Access South/Adair Southwest/Lebanon Expansion design to connect the Ohio Marcellus & Utica gas suppliers to new markets in the Midwest & Southeast. The combination of these 3 projects will account for 622 MMCF of gas to new customers. <ul style="list-style-type: none"> <li>• Access 320 MMCF</li> <li>• Adair 200 MMCF</li> <li>• Lebanon 102 MMCF (complete Aug 1, 2017)</li> </ul> <p>Due to mechanical completion issue the original MoC has been amended into MoC 1 of 2. However, for this MoC, when placed into service the capacity shall account for 367MM/day of additional gas to new customers.</p> <p>Facility &amp; pipeline scope of work:</p> <ul style="list-style-type: none"> <li>• Holbrook:             <ul style="list-style-type: none"> <li>○ Piping modifications for reverse flow capability with compression.</li> </ul> </li> <li>• Athens:             <ul style="list-style-type: none"> <li>○ Piping modifications for reverse flow capability with compression.</li> <li>○ 4 GE frame-3 turbines will receive DGS, Electric Start, and GRM (Gas Release Measurement).</li> </ul> </li> <li>• Between Athens and Wheelersburg 36" diameter 9.1 mile pipe loop.</li> <li>• Owingsville:             <ul style="list-style-type: none"> <li>○ 4 GE frame 3 turbines with SCR and conec impellers.</li> <li>○ The addition of gas cooling.</li> </ul> </li> <li>• Danville:             <ul style="list-style-type: none"> <li>○ 3 Clark HBA reciprocating units will be retrofitted with the latest clean burn technology (Dresser Enginuity).</li> <li>○ 2 GE frame-3 turbines will receive DGS, SCR, CO Catalyst and-GEMS. Replacing the regenerator.</li> <li>○ 1 GE frame-5 turbine will receive CO catalyst and GEMS. Replacing the regenerator.</li> <li>○ The addition of gas cooling.</li> </ul> </li> <li>• Gladeville:             <ul style="list-style-type: none"> <li>○ Piping modifications for reverse flow capability with compression.</li> </ul> </li> <li>• Tompkinsville:             <ul style="list-style-type: none"> <li>○ The addition of gas cooling.</li> </ul> </li> <li>• Egypt:             <ul style="list-style-type: none"> <li>○ New impellers on all 3 electric units.</li> </ul> </li> <li>• Kosciusko:             <ul style="list-style-type: none"> <li>○ Reverse existing M&amp;R's (73904) for Kinder, Sonat, and (74217) Gulf South reversal.</li> <li>○ Replace 0.5 miles of existing pipe with larger diameter (16") and add filter separation.</li> </ul> </li> </ul>			<b>Emergency Change?</b>	

Change Lead:

Richard Fink

Name of Manager / Supervisor:

Quince Och

MOC Coordinator:

Initiation Date:



Richard Fink

November 2, 2017

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
SER Transmission – Thanh Phan	Safe and compliant operation of the facilities, implementation procedures, OPP
CR Transmission – Bobby Arnold	Safe and compliant operation of the facilities, implementation procedures, OPP
NER Transmission – Tom Tirlia	Safe and compliant operation of the facilities, implementation procedures, OPP
Facilities Operations – Quince Och	Review of implementation procedures, OPP, Identify affected Departments
Pipeline Integrity – Gary Dial	Internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Asset Planning – Ken Skweres	Impact to customer entitlements. Impact to potential incremental projects in the works. Operating envelope.
Capacity Planning Role – Walter Wang/Von Dreier	Calculating and posting operational station capacities
Gas Control – Tom Atkinson	CRM compliance
IT SCADA – Robert Prather	SCADA graphics are complete and ready for in-service
EHS – Kim Jackson	Air permits / regulations, PCB migration, gas quality support, RCRA compliance (Subpart BB) CWA (SPCC Plan Update and Sanitary System), GC Set Up/Lab
Operational Compliance – Rick Kivela/Nathan Atanu	Verify OPP to protect MOP
Regulatory Affairs – Berk Donaldson/Austin Isensee	FERC compliance
Measurement Integrity – Sarah Mohammed	Gas quality zoning and data collection

Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
SER Transmission – Thanh Phan  <div style="border: 1px solid black; padding: 2px;">Documentation to be forwarded to the MoC coordinator</div>	<ol style="list-style-type: none"> <li>1. Develop implementation plans for each of the affected locations.</li> <li>2. Train local personnel at each of the affected locations, document attendance. With the goal that personnel understand the plan and operational requirements for various operating modes.</li> <li>3. Check station bypass lines for checkvalves or restrictions that could obstruct gas flow.</li> <li>4. Verify, modify, or install differential pressure switches on the bypass block valve at each of the locations.</li> <li>5. Update procedures and schematics.</li> </ol>
CR Transmission – Bobby Arnold  <div style="border: 1px solid black; padding: 2px;">Documentation to be forwarded to the MoC coordinator</div>	<ol style="list-style-type: none"> <li>6. Develop implementation plans for each of the affected locations.</li> <li>7. Train local personnel at each of the affected locations, document attendance. With the goal that personnel understand the plan and operational requirements for various operating modes.</li> <li>8. Check station bypass lines for checkvalves or restrictions that could obstruct gas flow.</li> <li>9. Verify, modify, or install differential pressure switches on the bypass block valve at each of the locations. (Post)</li> <li>10. Update procedures and schematics.</li> </ol>
NER Transmission – Tom Tirlia  <div style="border: 1px solid black; padding: 2px;">Documentation to be forwarded to the MoC coordinator</div>	<ol style="list-style-type: none"> <li>11. Develop implementation plans for each of the affected locations.</li> <li>12. Train local personnel at each of the affected locations, document attendance. With the goal that personnel understand the plan and operational requirements for various operating modes.</li> <li>13. Check station bypass lines for checkvalves or restrictions that could obstruct flow.</li> <li>14. Verify, modify, or install differential pressure switches on the bypass block valve at each of the locations.</li> <li>15. Update procedures and schematics.</li> </ol>



Discipline Engineering – Quince Och	16. Review implementation plans. 17. Support Region(s) while implementing this management of change.
Pipeline Integrity – Gary Dial	18. Corrosion Technician to revise internal corrosion plans to account for reverse flow. <b>Post action item.</b> 19. Modify risk model as appropriate. <b>Post action item.</b> a. SOP 2-2160 to include discharge temperature limits for south flow was revised.
Asset Planning – Ken Skweres	20. Check flow conditions on performance maps and mark changes as necessary. 21. Verify possible impact to other projects whether current or potential/future. Modification may impact flow direction prior to the initiation of a project.
Capacity Planning – Walter Wang/Von Dreier	22. Calculate operational capacity based on piping modification, HP additions, and/or new facilities.
Gas Control – Tom Atkinson	23. Prepare and implement SCADA modifications (alarm limits, verification, and graphics) 24. Inform and train Gas Controllers through the system design update tool and notification protocol. 25. Review OQ material for changes that may need to occur.
IT SCADA – Robert Prather	26. Build/Update site Points, Facilities, and Screens in SCADA to match configuration documentation and diagrammatic 27. Complete multiple examinations in SCADA through internal reviews, Gas Control reviews, and point to point verification 28. Implement the final product into the Production system for Gas Control to utilize
EHS Compliance – Kim Jackson	29. Waste, water, PCB concerns to be addressed; gas quality support, SCR Procedures, Lab Svc-GC System Set Up
Air Permit – Kim Jackson	30. Assess locations and obtain approval as needed for impacted locations and EPASS Update
Operational Compliance – Rick Kivela/Nathan Atanu	31. Verify that OPP devices are in place to protect MOP,
Regulatory Affairs – Berk Donaldson/Austin Isensee	32. FERC Compliance filings and request for In-Service.
Measurement Integrity – Sarah Mohammed	33. Implement revised Gas Quality procedures for the purpose of gas quality zone tagging for this mode of operation. 34. When applicable, confirm that associated M&R's, GC's, or fuel meters (new, upgrade, or part of project) provide necessary data to the gas measurement system.

**STEP 4: Management Approvals of Implementation Plan**

Management Approval Required (all required)	Signature	Date
SER MTO – Thanh Phan	Thanh Phan	09/20/2017
CR MTO – Bobby Arnold	Robert Arnold	10/31/2017
NE MTO – Tom Tirlia	Tom Tirlia	10/30/2017
Manager, Discipline Engineering – Quince Och	Richard Fink for Quince Och	10/31/2017
Director, Pipeline Integrity – Gary Dial	Gary Dial Approves moving forward, Integrity actions are post in-service	10/27/2017
Director, Gas Control – Tom Atkinson	Tom Atkinson confirms ready for service for the 367,000 MdtH	10/31/2017
Director, Asset Planning – Ken Skweres	Ken Skweres approves the 367,000 Dth/d interim increase	10/31/2017
Manager, Capacity Planning – Walter Wang/Von Dreier	Von Dreier approves the 367,000 Dth/d interim increase	10/31/2017
Manager, EHS Ops Support– Kim Jackson	Kim Jackson	10/25/2017
Manager, Operational Compliance – Rick Kivela/Nathan Atanu	Nathan Atanu	10/02/2017
Rates Certificates – Berk Donaldson/Austin Isensee	Berk Donaldson & Austin Isensee confirms ready for service for the 367,000 Dth/d	10/31/2017



Manager, Measurement Integrity – Sarah Mohammed	Sarah Mohammed	10/26/2017
VP, Field Operations – Tom Wooden	[REDACTED]	11/1/2017

**STEP 5: Completion of Pre-Change Actions**

Responsible Party	Actions	Change Lead	
		Initial	Date

**Completion of Pre-Change Actions Requiring Permits or Additional Approvals**

Responsible Party	Actions	Change Lead	
		Initial	Date

**Management Approval for Change Implementation**

Responsible Party	Signature	Date

**STEP 6: Implement Change**

Action (If no actions required, write N/A)			
Responsible Party	Actions	Change Lead	
		Initial	Date

**STEP 7: Completion of Post-Change Actions**

Action (If no actions required, write N/A)			
Responsible Party	Actions	Change Lead	
		Initial	Date
Gary Dial	Corrosion Plan(s)		
Kim Jackson	Some of EHS & Air Permitting/Stack testing		
Bobby Arnold	Gladeville Bypass switch		
Bobby Arnold	Barton Gas Cooling?		

**STEP 8: Close MoC Entry, document in MoC Register, & capture Lessons Learned**

Closed By:	Date:
------------	-------

**Lessons Learned:**

Kick-off Meeting 08/09/2017

Attendees: Ron Cobb, Andrew Nelson, Terry Bigbee, Walter Wang, Von Drier, Nathan Atanu, Ryan Berindean, Sarah Mohammed, Steve Gheen, Chris Harris, Tom Atkinson

**NOTE:**

**30 to 60 days prior to in-service:** Compliance filings consist of recourse rate filing and approval filed by Rates/Certificates. The fully executed negotiated rate agreement provided by Business Development is filed by Tariffs group. Non-conforming provisions to service agreement shall be prepared and filed by the Tariffs group.

**15 to 30 days prior to in-service:** The request for In-service is prepared by Rates/Certificates and ECP. As part of the filing, photographic documentation of the restoration progress (backfill, grading, contouring and proper stabilization per ECP/FERC guidelines). The photographic documentation shall be provided by October 9, 2017 and supplemented on October 16, 2016 (if necessary), when the Request for in-service will be filed.

**Possible Risk:**

Long wall mining activities in western PA, WV, & Ohio, may have an impact for South flows when AAL is put into service. Currently Line 30 is out-of-service.

- Adding IT SCADA graphic designer/implementer as part of the sign-off. Requested by GC & Engineering request.
- Sarah requested fuel meter locations and info to be provided.
  - Time to activate GC's in-service
  - Also noted that one GC probe is requiring replacement at Holbrook as per Jay Briggs. E&C added to their scope.
- Central Region; has begun executing their implementation plan/program with the facilities.
- Piping loops tied in, but cannot be used for equipment/facility commissioning. Considered an incremental increase in capacity is not allowed until FERC authorizes the necessary permits.
- Owingsville: work is in progress.
  - GE F-3 Impellers are in-service and rotating and have not increased capacity.
  - GE F-5 work in-progress
  - Unrelated to AA that may have minor impact, Gulf Market 2016 project added a new stationary generator. However, it was not designed for standby service and is being replaced.
- Danville: work is in-progress.
- Gladeville: work is in progress.
  - **Not necessarily a risk but an awareness: the differential switch that alerts during low delta and opens bypass valve will not be installed prior to in-service, but will be post. Switch not onsite.**
  - Piping mod complete.
  - Transmission project replacing/upgrading switchgear. Similar to switch gear replacement at Wheelersburg during Gulf Market.
  - Plan to run the big unit for testing purposes.
  - Gas Control remarks that Gladeville is critical for South flows.
- Barton:
  - Electric unit Impellers are in-service and rotating and have not increased capacity.
- Egypt:
  - Electric unit Impellers are in-service and rotating and have not increased capacity.
- Kosciusko:
  - Completed late last year M&R 73904 Kinder/Sonat and M&R 74217 Gulf South reversal along with pipe mod/resize are complete. First flow cannot occur until FERC authorizes increased capacity.
  - SER will release the implementation plan with gas handling procedures and training documentation in the near future.

Meeting 08/16/2017

Attendees: Thanh Phan, Terry Bigbee, Walter Wang, Nathan Atanu, Austin Isensee, Tom Atkinson, Sam Faruki, Robert Prather, Wasi Uddin

- Safety Moment: Robert Prather spoke to the importance for staying hydrated at all times. Especially now with upper 90's and heat indexes going well over 100° and speaking of his own experience this past weekend, working outside becomes a challenge.
- Kosciusko:
  - SER action items are complete and Erik Reed has forwarded to me.
- Capacity Planning:
  - Model is ready and will verify accuracy with flow.
- IT SCADA:

- Robert mentioned that Anthony Chapman will be the point person for this MoC.
- Wasi: Critical to the development and completion of graphics. The SCADA group will need markup or final CSD, PLD, MSD, as-built, etc. to help in the creation graphics.
- Rates & Certificates:
  - Forward all restoration/progress photos of facilities as they are being backfilled, final graded, and seeded or rocked. Delays with restoration caused by weather contact Austin Isensee ASAP!
  - Sooner the better, these photos will be inserted in Facility Filing submittals. Current plan is to submit filings by Oct. 9, 2017
- Longwall mining concerns:
  - Not stopping the project completion and primary services would be met. This is a posting and scheduling issue if it had an impact on flows.

**Meeting 08/23/2017**

Attendees: Ron Cobb, Terry Bigbee, Ken Skweres, Nathan Atanu, Tom Atkinson, Steve, Gheen, Chris Harris, Sam Faruki, John Henry, Rob Prather, Anthony Chapman, Wasi Uddin, Michael Wolf, Buddy Newbold, Barry Buchanan, Andy Nakanishi

- Safety Moment
- CR:
  - Implementation plans and training are in progress and are running concurrent with project.
  - Gladeville diff switch is a post action item and will not impede the project or station from operating.
  - CEMS installations for some sites may not be operational due to the lack of probes in the exhaust. Air folks are aware and have no concerns.
- NER:
  - Follow-up.
- SER:
  - Complete, waiting on complete/approval email.
- SCADA:
  - Graphic development. Sites, pipeline, and M&R diagrammatic IT SCADA has except for Barton.
  - FYI: Line-outs included and run to the end device and do not stop at the PLC – especially important for safety protective devices.
  - Graphic development. IT SCADA is researching the need for fuel meter diagrammatic.
- Compliance:
  - Will review OPP first week of September

**Meeting: 09/13/2017**

Attendees: Ron Cobb, Terry Bigbee, Walter Wang, Von Dreier, Kim Jackson, Nathan Atanu, Tom Atkinson, Robert Prather, Anthony Chapman, Eric Reed

- Safety Moment:
  - Robert Prather talked about lending helping hands with cleaning properties post Hurricane Harvey.
    - Wear proper PPE to protect oneself from mold and other hazards!
    - Absolutely, do not mix chemicals together for a more powerful brew for tackling the dangers of mold!
- CR:
  - Implementation plans and training are in progress and are running concurrent with project.
  - Danville one of 3 (3-way) valves was received. Control coolant temperature of the engine. Follow up with E&C
  - Barton gas cooling. Follow up with E&C
- NER:
  - Need to follow up.
- SER:
  - Work complete, documentation received.
- Capacity Planning:
  - Have in possession all the impeller surge maps.
  - T-ville the electric usage is set from 26 megawatt to 36 megawatt.
  - Confirm that the station PLC reflects the change!
  - Gas control asks to verify that the existing equipment & wiring can handle the added megawatts. Study (may be complete).
- IT SCADA:
  - All document going thru the PLC Lab for review.
  - Request that all meter stations listed in the project be provided to SCADA for review and determine if a need for graphics exists. The intent is not to drop the ball and delay in-service.
- EHS;
  - Updating spread sheet listing tasks and will provide.
- Action Items:
  - RWF get update from Ryan
  - RWF touch base with NER
  - RWF touch base with Austin

**Meeting 09/20/2017**

Attendees: Ron Cobb, Terry Bigbee, Walter Wang, Von Dreier, Nathan Atanu, Austin Isensee, Anthony Chapman, Wasi Uddin, Troy Connor, Chris Harris

- Safety Moment: Now that fall and the hunting season is fast approaching, employees working on the ROW need to use extreme caution and stay vigilant. Wearing bright colored vests will differentiate us from the animals being hunted.
- SER:
  - Complete email sent.
- NER:
  - Holbrook piping modifications, implementation and gas handling plans and checklist are in progress.
  - Gas conditioners have been removed.
- CR
  - Implementation plan, checklist and training moving forward.
  - Exercise Gladeville's units? AA only states piping modification.
  - Temperature parameters were needed.
  - T-ville, substation is mechanically complete
  - Barton gas coolers not in service and not sure will be for Nov. 1.
  - Commissioning of 4 - GE frame 3's at Owingsville ran into a wall while using the DR 27.5" 21 vane impellers. The aggressive nature of these impellers overrun the current flows and run up against the turbine EGT. The F-5 unknown how commissioning will go. Closer we get to the projects end, more is learned.
- IT SCADA:
  - Graphics are moving forward through the review and lineout.
  - Graphics completion Danville 9/25, Gladeville 9/29, Holbrook 10/16.
  - Owingsville 9/28 and Barton 10/13 for final review.
  - T-ville 10/5 lineout
  - M&R 73904 & 74217 are complete and in production, verify with Sarah that can see.
  - CR to provide a complete meter station list
- Compliance:
  - OPP verification complete by the end of next week.
- Regulatory:
  - Filing negotiated rates.
  - In service filing the week of Oct 9<sup>th</sup> with authorization request the week of Oct 23<sup>rd</sup>.
  - In service date is fast approaching, restoration photos should begin rolling into Austin.
- Action Items:
  - Touch base with Ryan E&C
  - Touch base with Sarah Measurement

**Meeting 09/27/2017**

Attendees: Ron Cobb, Von Dreier, Nathan Atanu, Ryan Berindean, Tom Atkinson, Wasi Uddin, James Muschenheim

- Safety Moment:
  - Ron Cobb spoke of a recent experience. Emphases on being aware of your surroundings. While traveling to Barton, Ron noticed another pickup truck heading in the same direction. First thought, is that truck going to the same location? While in route Ron also noticed a dog standing on the side of the road. Anticipating that the dog would cross in front of him, Ron began to slow down. Also concerning to Ron, did the person in that other truck see the dog? As it turned out he did and slowed down as well. Fortunately for all, the dog stayed to the side of the road, so will live another day! About the other truck, Ron was right it was going to the same place. Once parked at the site, Ron made a point to commend the other driver following safe-work-practices, being aware of his surroundings and taking precautionary measures when he noticed the dog standing alongside the road! Job well done by all three!
- SER:
  - Complete email sent.
- NER:
  - CSD check prints were reviewed and are in the process of being edited
  - Procedures are 90% complete, awaiting final new valve ID assignments
  - 90% of major gas piping has been tied-in
  - Taps for new OPP are being installed this week
  - Backfill has started, but no final grading or seeding has been initiated (the request for photos of this process has been forwarded to local personnel)
  - Requested that E&C provide a punch list moving forward tracking outstanding items with responsible parties, but have not received that yet
- CR
  - Implementation plan, checklist and training moving forward.
  - Exercise Gladeville's units? AA only states piping modification.

- Temperature parameters were received.
- Barton gas coolers not in service, E&C has a recovery plan in place for the Nov.1 in service date.
- Commissioning 2 of 4 - GE frame 3's at Owingsville ran into a wall with the DR 27.5" 21 vane impellers. The DR impellers were replaced with the GM phase 1 Conmec impellers. This should allow the units to go through commissioning, but will affect AA capacity.
  - The impellers have no effect to capacity at M&R 73904 & 74217.
- IT SCADA:
  - Are there RTU implications on the pipeline valve at Lebanon?
  - Still need for M&R stations, CR will provide a complete list of M&R's
  - SCADA has
    - MR-74503: Danville Fuel – Ticket is waiting on field for Lineout
    - MR-73527: Holbrook Fuel – Waiting on callback to get answers on the site configuration so site can be built
    - MR-73904: KOSC Rev – Site is in Production
    - MR-74217: KOSC Bi-Di – Site is in Production
- Gas Control:
  - On target.
  - Developing the training module for the controllers.
- Compliance:
  - On target.
  - The Central Region provided to compliance the latest check print diagrammatics from the central region to continue OPP review. Other Regions to follow.
- Regulatory:
  - Working directly with Construction on-site Engineering Inspectors for progress and restoration photos.
  - In service filing the week of Oct 9<sup>th</sup> with authorization request the week of Oct 23<sup>rd</sup>.
  - In service date is fast approaching, restoration photos should begin rolling into Austin.
- Action Items:
  - Touch base with Sarah Measurement
  - Ask Anthony (SCADA) to respond to Athens, line 10 Kosi and Berne

Meeting: 10/04/2017

Attendees: Ron Cobb, Terry Bigbee, Ken Skweres, Von Dreier, Sarah Mohammed, Keith Cargill, Andy Nakanishi, James Muschenhiem

- Safety Moment: Fall weather awareness with leaves falling from trees and higher amounts of rain various terrains become slippery (concrete, grass, dirt, etc.) Always be aware of the potential for slips, use appropriate shoes and avoid running and/or making sudden turns.
- NER:
  - In progress and still tracking.
  - More about the Holbrook GC: not part of AA scope, E&C is installing a GC sample probe on the suction and discharge line for 1T and 2T. The new sample line will be added to an existing chromatograph under M&R 78052. The new gas quality points will be track under a SCADA ticket as well.
- CR:
  - In progress and still tracking.
  - Forwarded prints to Compliance group for OPP review.
- SER:
  - M&R 904 & 217 at Kosi not seeing GC but is seen in Houston Measurement Integrity.
- IT SCADA:
  - We still DO NOT have information to proceed with SCADA development process. The sites below require RTU configuration sheets and MR number assignment before any SCADA development process tracking can occur. Please submit information into the New Interconnect DB.
  - Lab Site New Analyzer (O2 and H2O)
  - RCV Site #1 Bern-Holb Segment
  - RCV Site #1 Bern-Holb Segment



PROJECT/TRACKING	Row Date	PLD	END	M&O	P&M	Contg Sheet	Ticket	Points Created	Graphics	Lineout Box	Scheduled Lineout	Lineout Done	Prod Box	Prod Review	Notes
<b>Process Update</b>															
Schenectady - Reversal on 1T	6/20/2017		03/23		03/23		34486	03/23	04/10	04/10	06/28	06/29	07/07	07/10	Process Completed
Berne Impeller U7 add Ln 25	6/20/2017		03/17		03/17		34746	04/07	04/23	04/26	07/06	07/06	09/10	09/13	Process Completed
Athens Reversal on U1-4, add Ln 25	6/12/2017		05/01		05/01		32153	05/15	06/15	06/20	06/27	06/27	06/30	06/30	Process Completed
Gladeville - Station Reversal	7/17/2017		06/05		06/05		35910	07/10	07/18	07/27	10/03	10/03	10/03	10/04	***Process Completed
Danville - Station Reversal and Gas Coolers	7/21/2017		06/05		06/05		35914	06/24	07/26	07/29	10/03	10/03	10/04		***Gas Control QC check in progress
Danville Fuel MR 74503 and MR 74504	11/1/2017				08/15		37438	08/16	08/21	09/10	Pending				Not ready for lineout (9/27 per Brandon R)
Owingsville - Gas Coolers, Emissions	5/19/2017		08/08		08/08		37245	08/15	09/19	09/19	Pending				Check back with TRH on 11/21
Owingsville Fuel Meter MR 74516	11/1/2017				10/04		Pending								***Footprints ticket not generated; information in NIS
Holbrook - Reversal on Recip & 1 Turbine	11/1/2017		07/01		07/01		37083	08/05	08/08	08/09	Pending				Will be ready for lineout end of October
Holbrook Generator Fuel MR 73527	11/1/2017						35902	09/17	Pending						***Scheduled for lineout 10/09
Barton - Gas Coolers, Impellers	11/1/2017		08/14		08/14		37407	08/15	08/16	09/19	Pending				Trying to schedule lineout
Tompkinsville - 12,500HP Electric and Gas Coolers	11/1/2017						36009	09/19	Pending						***SCADA still working on data points with updated P&M
Tompkinsville Generator Fuel Meter MR 74518	11/1/2017				10/04		Pending								***Footprints ticket not generated; information in NIS
L33 500 New Analyzer (02 and H=20)	11/1/2017						Pending								Need additional information to start SCADA process
RCV Site #1 Berns-Hubb Segments	11/1/2017						Pending								Need additional information to start SCADA process
RCV Site #2 Berns-Hubb Segment	11/1/2017						Pending								Need additional information to start SCADA process

\*\*\* UPDATED

- Rates:
  - Submitted Tariff Record Sept. 23<sup>rd</sup>.
  - Planned filing October 12<sup>th</sup> 2017, with request authorization Oct. 25<sup>th</sup>.
- Gas Control:
  - On target
- Capacity Planning:
  - Currently on target. Waiting on progress updates or issues for modeling.

Meeting: 10/11/2017

Attendees: Ron Cobb, Walter Wang, Von Dreier, Kim Jackson, Austin Isensee, Ryan Berindean, Tom Atkinson, Anthony Chapman, Wasi Uddin, Eric reed, Troy Connor, Fred Trevino, Keith Cargill

- Safety Moment:
  - Ron attended a safety summit and during table talk discussed the importance about being forthright and honest when communicating or sharing information. The influence information has and how it impacts others.
- Many questions as to AA readiness of various sites, Ryan to provide an update.
- Will run a what-if scenario in case a few sites are not ready.
- Approved MoC at risk if all sites as per project not complete by Nov.1.
- NER:
  - In progress and still tracking.
  - More about the Holbrook GC: not part of AA scope, E&C is installing a GC sample probe on the suction and discharge line for 1T and 2T. The new sample line will be added to an existing chromatograph under M&R 78052. The new gas quality points will be track under a SCADA ticket as well.
  - Waiting on valve contractor to commission, service and line-out. Does not go into the interconnect database.
- CR:
  - In progress and still tracking.
  - Gladeville units are running and will try and move some gas. Three days scheduled for commissioning. SCADA graphic appeared to perform as expected.
  - T-ville 100 hour run, shooting for Oct. 25<sup>th</sup>.
  - Barton at risk?? Gas cooler and commissioning. Need gas to commission, Gas Coolers may be bypassed.
  - Danville at risk?? Likely the recip units. Commissioning no later than Oct 18 for in-service. Outages needed for tuning and commissioning.
  - Berne to Athens loop?? Slip noticed, engineering personnel and others dispatched to repair. Putting pressure on other lines.
  - Owingsville impellers?
- SER:
  - Customer moisture analyzer identified that 65 lbs of water vapor was in the meter tube at M&R 73904 and will require dewatering. Engineering is aware and is planning and scheduling for first flow. Suspect M&R 70215 GS may be affected as well.
- IT SCADA
  - In progress, believe to have all that is needed.





Item Description	File Date	P.D.	ISO	M/D	Area	Conf. Item	Issue	Points Created	Graphs	Layout Box	Scheduled Layout	Layout Done	Prod Box	Prod Review	Notes
Unmet - Removal of UT	6/29/2017	0823	0828		3488	0823	04/30	04/30	06/28	06/28	07/07	07/07			SCADA Process Completed
Removal of UT add LN 23	6/29/2017	0817	0817		3478A	0487	04/23	04/28	07/06	07/06	07/06	07/06			SCADA Process Completed
4th Street Revenue on J1-A, add LN 21	6/12/2017	0870	05/01		3353	0513	04/13	06/02	06/27	06/27	06/30	06/30			SCADA Process Completed
Chickville - Station Revenue	7/17/2017	0862	06/02		3382	0719	07/18	07/27	10/11	10/09	10/09	10/09			SCADA Process Completed
Chickville - Station Revenue and Gas Corders	7/21/2017	0869	06/02		3384	0624	07/26	07/28	10/08	10/09	10/09	10/09			***SCADA Process Completed (Prod possibly delayed)
MSD Revenue - MR 7336	8/25/2017	0877	08/08		3508	1543	05/23	07/24	07/24	08/12	08/12	08/14	08/15		SCADA Process Completed
MSD B-G Project - MR 74217	7/20/2017	0874	04/24		3424	1007A	05/25	06/17	06/19	06/28	06/28	06/28			SCADA Process Completed
Chickville Fuel MR 7532 and MR 7534	11/2/2017	0879	08/19		3428	0816	08/21	09/13	09/13						***Field not ready. Codes temperature not in ed. Checked back on 10/11 waiting on response from Brandon R.
Chickville - Gas Corders, Enclosures	8/18/2017	0870	08/08		3725	0873	08/23	09/13	09/13						***Data received to begin SCADA process.
Chickville Fuel Meter MR 74518	11/2/2017	0864	08/08		3404	3843	Pending								***Field not ready per Joseph W on 10/10. Values not completed. Check back 10/17.
Hobbsville - Revenue on Barch & I Turbine	11/2/2017	0781	07/31		3783	0805	08/08	08/08	Pending						***SCADA Process Completed
Public Gas Generator Fuel MR 7327	11/2/2017	0882	08/17		3502	1009	10/10	10/10	10/10	10/10	10/11	10/11			***SCADA Process Completed
Barton - Gas Corders, meters	11/2/2017	0814	08/14		3767	0813	08/16	08/19	Pending						***Field not ready per Tim B. on 10/11. Check back on 10/25. Wires not pulled.
Temperature - 12,500# Internal and Gas Corders	11/2/2017	0874	08/14		3689	0919	Pending								***target for field layout 10/17 and on 10/25 190 hour test.
Temperature Sensor for Fuel Meter MR 74518	11/2/2017	0864	08/14		3642	Pending									***Data received to begin SCADA process.
MSD B-G 7332 New Alulian Barch (22 and 120)	11/2/2017	0894	08/14		3840	Pending									Need additional information to start SCADA process.
MSD B-G 7333 MR 482 & Barch-MoB Segment	11/2/2017	0894	08/14		3840	Pending									***Data received to begin SCADA process.
Public Gas Generator Fuel MR 7327	11/2/2017	0884	08/14		3848	Pending									***Data received to begin SCADA process.

- EHS
  - In progress and tracking well.
- Regulatory:
  - Delay request for in-service until Oct 19<sup>th</sup>, continue forwarding restoration photos.
  - Ask for waiver of negotiated rates
- GC
  - Requests modeling capacity and to include Barton for the possible what if. Barton not operating is not an issue if other sites perform without fail.
- Capacity Planning
  - As per GC's request will do the modeling.

Meeting: 10/18/2017

Attendees:

- Safety Moment: Be aware of your surroundings.
  - Ryan spoke of an event that occurred this past weekend with he and his family. Returning home at night, Ryan was utilizing the right turn lane to enter their development, he stopped the car. His wife asked why stop? Ryan responded with do you see the guy walking in the middle of the turning lane. His wife said and that she would have not seen him. Of course the guy walking began to stare at Ryan and making gestures and arguments and the guy turned to other vehicles and did the same thing. Ryan patiently waited until the guy had left the turn lane and then proceeded to the house. The moral is that we don't know what can happen at a moment's notice and should always be vigilant and ready to react.
- Comment, all aspects of this MoC must be complete before the project can go into service.
  - Several meetings taking place today to identify and prioritize various risks to AA availability at in-service and how these risks are being addressed.
- NER:
  - Tracking well, did a walk through yesterday.
  - Mechanically complete 18<sup>th</sup> or 19<sup>th</sup>.
  - Substantial complete on the 26<sup>th</sup>.
  - Purge and pressurize yard on the 27<sup>th</sup> ESD test and re-pressurize
  - Tentative completion on the 29<sup>th</sup>.
  - Initial check of 30" valves still need commissioned, needed gas to commission.
  - Restoration photos should be getting to regulatory. **If not contact Troy Connor.**
  - New GC probe installed.
- CR:
  - Tracking, running parallel with construction.
  - Potential project risks are being elevated and prioritized.
  - Barton: major electrical work and commissioning work needs to be complete.
- SER:
  - M&R de-watering one cleaning pig (used & worn) was run. This brought the water vapor down to acceptable limits, wanting to have dryer a new pig was ordered and a second run will occur.
- IT SCADA:
  - Weekly tracking of SCADA development



Change Description	Flow Data	PLD	ESD	MSD	ESD	MSD	Form Created	Graphics	Lineout Box	Schedule Lineout	Lineout Done	Field Box	Field Review	Notes
Compressor - Reversal on 25	6/25/2012	06/25	06/25	06/25	34489	34723	06/25	06/25	06/25	06/25	06/25	06/25	06/25	SCADA Process Completed
Benton Station 25 Field on 25	6/25/2012	06/25	06/25	06/25	34746	34747	06/25	06/25	06/25	06/25	06/25	06/25	06/25	SCADA Process Completed
Atlanta Reversal on 25 Field on 25	6/25/2012	06/25	06/25	06/25	35153	02/26	06/25	06/25	06/25	06/25	06/25	06/25	06/25	SCADA Process Completed
Charlotte - Station Reversal	7/17/2012	06/05	06/05	06/05	35938	02/26	07/24	07/27	08/03	08/03	08/03	08/03	08/03	SCADA Process Completed
Danville - Station Reversal and Gas Coolers	7/17/2012	06/05	06/05	06/05	35934	06/24	07/26	07/29	08/03	08/03	08/03	08/03	08/03	SCADA Process Completed (Field implementation possibly delayed)
KSC Reversal MR 73904	8/15/2012	08/15	08/15	08/15	35343	05/23	07/24	07/24	08/03	08/03	08/03	08/03	08/03	SCADA Process Completed
KSC B. Dr Project MR 74217	7/5/2012	04/24	04/24	04/24	35033	05/23	06/07	06/19	06/28	06/28	06/28	06/28	06/28	SCADA Process Completed
Danville Fuel MR 74533 and MR 74534	11/3/2012	08/25	08/25	08/25	37438	08/16	08/21	08/20	Pending					Field not ready. Check back on 10/25 waiting on response from Brandon R.
Owingsville Gas Coolers, Impellers	9/19/2012	06/18	08/04	08/04	37245	08/15	09/19	09/18	Pending					Field not ready. Cooler temperature not wired. Check back on 10/25 waiting on response from B.R.G.
Owingsville Fuel Meter MR 74516	11/1/2012	10/04	10/04	10/04	36941	10/15	10/16	Pending						***In QA process
Holbrook - Reversal on Range 6 - Turbine	11/1/2012	07/13	07/13	07/13	37983	08/05	08/06	08/09	Pending					***Field not ready per Joseph W on 10/11. Valves not completed. Check back 10/24
Holbrook Generator Fuel MR 73927	11/1/2012	07/13	07/13	07/13	37983	08/05	08/06	08/09	Pending					SCADA Process Completed
Barton Gas Coolers, Impellers	11/7/2012	08/14	08/14	08/14	37407	08/13	08/14	08/19	Pending					***Field not ready per Tim B. on 10/11. Check back on 10/25. Valve not operational
Tompkinsville - 12,500HP Turbine and Gas Coolers	11/7/2012	08/14	08/14	08/14	36949	09/25	10/21	Pending						***New setpoint registers in updated PNM. Lineout scheduled for 10/18
Tompkinsville Generator Fuel Meter MR 74518	11/1/2012	10/04	10/04	10/04	38442	10/15	10/18	Pending						***In QA process
Lab Site LS 78055 New Analyzer (O2 and H2O)	11/1/2012	10/04	10/04	10/04	38443	10/15	10/18	Pending						Need additional information to start SCADA process
Lab Site 78055 507 470 - 3 Bins HO2 Segment	11/1/2012	10/04	10/04	10/04	38444	10/15	10/18	Pending						Data required to begin SCADA process
Lab Site 78055 MR 700 - 3 Bins HO2 Segment	11/1/2012	10/04	10/04	10/04	38444	10/15	10/18	Pending						Data required to begin SCADA process
														*** UPDATED

- o Barton CS - SCADA graphics are ready for field lineout. Response from technician is that the valve is not operational. SCADA will check back on 10/25.
- o Holbrook CS - SCADA graphics are ready for field lineout. Response from technician is that valves need servicing and not complete. SCADA will check back on 10/24.
- o Owingsville CS Gas Cooler – SCADA graphics are ready for field lineout. Response from technician is that cooler temperature has not been wired.
- o Tompkinsville CS - SCADA graphics are ready for field lineout. The plan is for a field lineout on 10/18 and on 10/25 the field will perform the 100 hour run test.
- o Kosci MR 73904 – SCADA process completed. New lateral has water in the line.
- o Lab Site LS-78055 New Analyzer (O2 and H2O) – Need configuration uploaded to New Interconnect Database to begin SCADA process.

- EHS:
  - o Tracking well
- Asset Planning:
  - o V-Message: Waiting pattern, work is done. Need to find out the in-service availability for Barton, Danville, and loop and how this impacts the system and capacity. Owingsville impeller capacity impact has been identified.

Meeting 10/25/2012

Attendees: Thanh Phan, Bobby Arnold, Ron Cobb, Terry Bigbee, Von Dreier, Ryan Berindean, Tom Atkinson, Steve Gheen, Chris Harris, James Muschenheim, Fred Trevino, Tim Gagle, Jim McGuffey, Pat Becker, Dan rem, Chris Upshaw

- Safety Moment:
  - o Tim Gagle shared a personal safety moment. Phones are an extension of our lives and we sometimes forget having them on our person. During this project and moving from one part of the property to another, Tim was approaching an electronic restricted area near the compressor building when a fellow employee noticed Tim's cell phone. The employee had stopped Tim prior to entry into the area and asked that he return to the office and leave his phone. Tim being grateful was sure to meet up with employee and express his gratitude and congratulated the employee for having the guts to stand-up and say something. **The employee did not ignore and was not concerned with who he spoke too. Safety applies to everyone!**
- NER:
  - o MoC Items:
    - o Complete 7T-106 & 107 forms for relief valve and OPP verification – COMPLETE.
    - o Update CSD, PLD and/or MSD of the different flow modes depending on project scope – 95% complete, awaiting PLD revisions.
    - o Verify updated/revised start/stop, ESD (routine, isolation and actual), purge/pack procedures were written by Area and posted when approved. COMPLETE.
    - o Verify training of site personnel as to the changes, proper operation and address any safety related concerns were completed by the Area. SCHEDULED.
    - o Complete attendance record SCHEDULED.
    - o Provide any and all supporting documentation to MoC facilitator
    - o Remaining Schedule:
      - o Mechanical Completion 10/18
      - o Substantial Completion 10/25
      - o Turbine Station Purge & Pack 10/27, Recip Station 10/28 or 29<sup>th</sup>
      - o ESD Test 10/29
      - o SCADA Line-out 10/30
      - o Restoration photos should be getting to regulatory. **If not contact Troy Connor.**
      - o Plan to pursue a 50 hour run then pull startup strainers.
- CR:
  - o Tracking well, actions and implementation running parallel with construction.



- o Potential risks are continually being elevated and prioritized, still at the forefront. Ryan to provide an up-date between now and Fridays meeting.
  - Barton: Tie-in scheduled for Saturday 28<sup>th</sup> (shifted from 25<sup>th</sup>) with gas reintroduced on the 29<sup>th</sup>. Purge & pack then perform and ESD and re-purge & pack. Continue towards completion. Schedule refinement needed: Station not quite ready to run after pressurization will take some time with extra support.
  - Athens to Berne loop, line 25 anomalies (ovalty) found. One requires a cut-out, tie-in on Saturday 28<sup>th</sup>. Four may not require investigation. Engineering, pipeline integrity and Region working on.
- o T-ville 100 hour run begins Friday, witches hat a concern. Historically cracking after about 10 hours, will monitor closely and work with removal as quickly as possible.
- SER:
  - Today 25<sup>th</sup> run another cleaning pig, last run with old pig netted good results. Plan for this run is to have better results.
  - IT SCADA:
    - o Sheet most current

Item Description	File Code	PLD	CSO	MSD	PHS	Conf #	Issue	Points Created	Graphic #	Lineout #	Schedule #	Lineout Core	Prod Bar	Prod Review	Notes
Normal - Reconnect IT	803039		0303				3488	0303	0400	0400	0609	0609	0767	0767	SCADA Process Completed
Berne/Barton Fuel Meter CS	803039		0303				3486	0467	0465	0606	0606	0706	0910	0910	SCADA Process Completed
Athens/Berne Fuel Meter CS	803039		0303				3533	0516	0516	0603	0607	0607	0600	0600	SCADA Process Completed
Gravelley Station Review	803039		0303				3516	0310	0310	0307	0307	0303	0303	0303	SCADA Process Completed
Danville - Station Review and Gas Coolers	803039		0303				3514	0324	0324	0303	0303	0303	0303	0303	SCADA Process Completed
ITSC - Review MR 7304	803039		0303				3541	0324	0324	0303	0303	0303	0303	0303	SCADA Process Completed (Field implementation possibly delayed)
ITSC - ESD Project MR 7417	803039		0303				3503	0325	0307	0303	0303	0303	0303	0303	SCADA Process Completed
Danville Fuel Meter MR 7450 and MR 74504	803039		0303				3438	0316	0321	0310					Field not ready for lineout. Check back on 10/25 waiting on response from Brandon FI
Danville Fuel Meter MR 7450	803039		0303												***Need additional information to start SCADA process
Owingsville Gas Cooler Emissions	803039		0304				3641	0316	0316	0316	0316	0316	0316	0316	***Need additional information to start SCADA process
Owingsville Fuel Meter MR 74516	803039		0304				3641	0316	0316	0316	0316	0316	0316	0316	***Need additional information to start SCADA process
Holbrook - Reversal of Reciprocating Turbine	803039		0303				3703	0303	0303	0303	0303	0303	0303	0303	***Field not ready for lineout per Joseph W. Check back 10/26
Holbrook Generator Fuel Meter MR 74517	803039		0304				3582	0307	0309	0310	0310	0310	0310	0310	SCADA Process Completed
Barton Gas Cooler Equippers	803039		0304				3467	0316	0316	0316	0316	0316	0316	0316	Field not ready for lineout. Check back on 10/25 waiting on response
Tompkinsville - 12500 BTU Furnace and Gas Coolers	803039		0304				3608	0316	0316	0316	0316	0316	0316	0316	***Field not ready for lineout per Brandon FI (Proposed lineout date beyond 10/31)
Tompkinsville Generator Fuel Meter MR 74518	803039		0304				3642	0316	0316	0316	0316	0316	0316	0316	***Need additional information to start SCADA process
Lab Gate L2 7005 New Analyzer Berne (CS and HSC)	803039		0304				3645	0316	0316	0316	0316	0316	0316	0316	***Ready for field lineout
PCV Site 7005 MP 130 3 Den-Holo Segment	803039		0304				3644	0316	0316	0316	0316	0316	0316	0316	***Ready for field lineout
PCV Site 7005 MP 130 3 Den-Holo Segment	803039		0304				3644	0316	0316	0316	0316	0316	0316	0316	***UNLIMATED

- o Notes for 10/24 communications:
- o Barton CS:
  - SCADA graphics are ready for field lineout. Response from technician is that the valves are not operational. SCADA will check back on 10/25 to schedule lineout. Globalogix (commissioning) is supposed to be on site 10/25 to place gas coolers in service (depending on construction schedule). US Valve will also be there for the valves.
- o Holbrook CS:
  - SCADA graphics are ready for field lineout. SCADA will check back on 10/24 to schedule lineout. Gas will need to be introduced into the yard to check North/South flow valve orientations; this will be done sometime after the 10/26.
- o Owingsville CS Gas Cooler:
  - SCADA graphics are ready for field lineout. Response from technician is that cooler temperature has not been wired. Globalogix is to be on site 10/27-10/28.
- o Owingsville Fuel Meter MR 74516:
  - Transmitter was installed on 10/24. Need config sheet. Points currently built are incorrect. Lineout is scheduled for 10/27.
- o Tompkinsville CS:
  - SCADA graphics are ready for field lineout. Attempted to lineout on 10/18 but due to communication issues with Unit 3 the lineout was halted. Please update team when lineout will resume.
- o Tompkinsville Generator Fuel MR 74518:
  - Need power wires ran to RTU and will also need config for RTU. Waiting to schedule lineout until these items are complete.
- o Danville CS Fuel Meters MR 74503/74504:
  - RTU has been shipped. Piping installation has been started. Still need meter and conduit/wiring. Line out TBD.
- o Danville CS Fuel Meters MR 74506:
  - Transmitters are installed. Need config for RTU. No SCADA process started. Will try to schedule lineout for later this week or first of next week.
- EHS:
  - o Complete
- Others: waiting on final word as to when complete and confirm transportation.
- Measurement:
  - o Email comment: several fuel meters (not all) related to the project have not been lined out and



possibly in some case not started the work.

Meeting: 10/27/2017

Attendees: Thanh Phan, Bobby Arnold, Ron Cobb, Ryan Berindean, Tom Atkinson, Steve Gheen, Pat Becker, Dan Rem, Charlie Shuckhart, Terry Bigbee, Von Dreier

- Safety Moment:
  - Being aware of the surroundings, construction and housekeeping at the sites offer plenty of obstructions that one must keep their eyes open at all times.
- Barton and Athens to Berne loop will not be complete for the November 1 2017 in-service. Discussions late on the 26<sup>th</sup> between various parties and Contracts team determined and agreed that 416 MM/day will be acceptable.
- Modifying the MoC to not include both Barton and Athens to Berne loop was unknown at the time of the meeting.
  - However after contacting Kyle Shafer the MoC process has no hard fast rules for these situations on the MoC. He suggested that everyone agree to the amendment and to create another MoC for the two sites.
  - Meeting time was used for discussing the MoC change and what the process meant to each other.
- T-ville was to begin 100 hour run on Saturday.
  - Lack of confidence and knowing past history with cracking of the witch's hat the Region will request to remove shortly after startup providing high differential and debris isn't evident.
- Various departments are holding until they know what HP will be available before signing the MoC.

#### AA Status Updates

10/29/2017 meeting:

- Tomkinsville new electric unit 100 hour run did not begin on Saturday as was planned, due to possible starter motor issues. Siemens technicians will be onsite at start of day this morning to begin diagnostics.
  - Witches-hat monitor after first flow for differential and if construction and manufacturer agree pull before the 100 hour run is up. Have had a history of the witches-hat frame cracking shortly startup.
- Owingsville GE frame 5 did not start, due to starting turbine issues. Suspect possible restriction or blockage to or at source control.
  - This morning the site crew will investigate the cause and make a start attempt later this morning.
- Gladeville witches-hat pulled station purged and packed.
- Danville one recip unit has not ran, plan to start today.
- Circle back with BD for the postponement of AA in-service possibly an extra day or two. BD may propose an alternative for Nov. 1, question as to shared facilities and if a lower flow is even a possibility.

10/30/2017

- Tomkinsville new electric unit 100 hour run Siemens technicians are waiting on new settings for relays and will attempt a start around 4:00 PM EST. New settings required to further diagnose the start issue. It is possible this may solve the starting issue.
  - Monitor witches-hat after first flow for differential. Convince construction and manufacturer to agree to pull before the 100 hour run is up. Have had a history of the witches-hat frame cracking shortly startup.
- Owingsville GE frame 5 did not start, due to starting turbine issues. Investigation identified a 35 lb. (backpressure) restriction caused by the flame arrestors at the Source Control and were removed now at 7 lb. of backpressure. The starting issues still exist. Starter rolls the GE to 1300 to 1400 RPM and fires. GE does not continue to ramp up to 3400 RPM even through the servo indicates more fuel being added. The 3400 to 3500 RPM is the magic number for starter clutch to disengage allowing the turbine to breakaway and ramp-up. Turbine goes down on high EGT.
  - Dan Baker and Ron Elkins heading to the site for the morning and will trouble shoot the problem.
- Gladeville witches-hat pulled station purged and packed, ready to run.
- Danville pressure checked the piping and compressors, and rolled the unit on air. Will test start today, based on line conditions will determine how long the unit can run. Danville will need to two F-3 units on as well to create a differential for the recip.
- Regulatory:
  - Interim in-service remove from FERC filing dated 10/26/2018
    - Tomkinsville new electric unit.
    - Owingsville GE F5 (decision made 9:00am tomorrow)
  - Asset Planning & Capacity Planning is evaluating the new interim volumes less T-ville new electric unit and possibly O-ville F5 by EOD today. Also verify if there is a volume benefit with adding back Athens to Berne Loop.

I will amend this MoC into (3) three MoC's that will run parallel with each other. For those with action/mitigative measures who have already completed and signed-off on the original MoC, I foresee no change. The NER and SER action/mitigative measures completion and sign-off only apply to the original (1) MoC.

- AA Phase 2 MoC Original 1 of 3 - Forecast in-service Nov. 3<sup>rd</sup> FERC filed 10/26/2017
  - Holbrook:
    - Piping modifications for reverse flow capability with compression.
  - Athens:
    - Piping modifications for reverse flow capability with compression.
    - 4 GE frame-3 turbines will receive DGS, Electric Start, and GRM (Gas Release Measurement).
  - 36" diameter 9.1 mile pipe loop added between Athens & Wheelersburg.
  - Owingsville:
    - 4-GE frame 3 with Comec impellers
    - The addition of gas cooling.
  - Danville:
    - 3 Clark HBA reciprocating units will be retrofitted with the latest clean burn technology (Dresser Enginuity).
    - 2 GE frame-3 turbines will receive DGS, SCR, CO Catalyst and CEMS. Replacing the regenerator.
    - 1 GE frame-5 turbine will receive CO catalyst and CEMS. Replacing the regenerator.
    - The addition of gas cooling.
  - Gladeville:
    - Piping modifications for reverse flow capability with compression.
  - Tompkinsville:
    - The addition of gas cooling.
  - Egypt:
    - New impellers on all 3 electric units.
  - Kosciusko:
    - Reverse existing M&R's (73904) for Kinder, Sonat, and (74217) Gulf South reversal.
    - Replace 0.5 miles of existing pipe with larger diameter (16") and add filter separation.
- AA Phase 2 MoC 2 of 2 - Forecast in-service Nov 8
  - Owingsville:
    - 1 GE frame-5 turbine will receive DGS, CEMS. The regenerator will be washed, tested and repaired accordingly. Location added throttling valve.
  - Tompkinsville:
    - 1 new 16,800 HP electric motor-driven compressor package.
  - 36" diameter 4.6 mile pipe loop added between Berne & Athens
  - Barton:
    - New impellers on all 7 electric units.
    - The addition of gas cooling

Holbrook complete

10/27 (Today): Purge & Pack Turbine Yard – COMPLETE

10/27 (Today): Turbine Station ESD Test – COMPLETE

10/27 (Today): SCADA Line-out – COMPLETE

10/29 (Sunday): Purge & Pack Recip Yard

10/29 (Sunday): Recip Station ESD Test

10/31/2017

- Settled on 367MM/day
- FERC authorization in hand

Meeting 11/01/2017

Attendees:

- Safety Moment:

**86 MOC 52****470mm****STEPS 1 and 2: Document Change**

<b>Title:</b> Access South, Adair Southwest, Lebanon Extension  <b>Description of Change:</b> Original Scope: Phase 2 (2017) execution: Texas Eastern Access South/Adair Southwest/Lebanon Expansion design to connect the Ohio Marcellus & Utica gas suppliers to new markets in the Midwest & Southeast. The combination of these 3 projects will account for 622 MM/day of gas to new customers. <ul style="list-style-type: none"> <li>• Access 320 MMCF</li> <li>• Adair 200 MMCF</li> <li>• Lebanon 102 MMCF (complete Aug 1, 2017)</li> </ul>	<b>Permanent Change?</b>	<b>Y/N</b> Y
	<b>Temporary Change?</b>	N
	<b>Expiration Date:</b> _____	
<b>AA MoC 470 2 of 2 Current Scope</b> Due to mechanical completion issue the original MoC has been amended into MoC 2 of 2. However, for this MoC, when placed into service the capacity shall increase from 367MM/day to 470MM/day of additional gas to new customers. The Owingsville GE frame 5 makes up 30 MM/day and the 5 impellers Feb. 2018 will make up for the remaining 20MM/day. Reaching the total 622MM/day completing the AAL project.  <b>Facility &amp; pipeline scope of work:</b> <ul style="list-style-type: none"> <li>• Athens to Berne 36" diameter 4.6 mile pipe loop.             <ul style="list-style-type: none"> <li>○ Region support for In Service from Steve Gheen, Ashley Clemons, Jim McGuffey, and Barry Howard</li> </ul> </li> <li>• Barton:             <ul style="list-style-type: none"> <li>○ New impellers on all 7 electric units.</li> <li>○ The addition of gas cooling.</li> <li>○ Region support for in service from Steve Gheen, Tim Gagle, Winston Celestine, Chris Upshaw, Ron Cobb</li> </ul> </li> <li>• Owingsville:             <ul style="list-style-type: none"> <li>○ The addition of gas cooling for 4 GE F3 turbines</li> <li>○ Region support for In Service from Steve Gheen, Jim McGuffey, and Bart Johnson</li> </ul> </li> <li>• Tompkinsville:             <ul style="list-style-type: none"> <li>○ The addition of gas cooling</li> <li>○ 1 new 16,800 HP electric motor-driven compressor package.</li> <li>○ Region support for In Service from Steve Gheen, Ashley Clemons, Jim McGuffey, and Barry Howard</li> </ul> </li> </ul>		<b>Emergency Change?</b>

**Change Lead:**

Richard Fink

**Name of Manager / Supervisor:**

Quince Och

**MOC Coordinator:**


Richard Fink

**Initiation Date:**

November 8, 2017

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
CR Transmission – Bobby Arnold	Safe and compliant operation of the facilities, implementation procedures, OPP

	US OMS Management of Change Procedure	Version: 6.13.2013
	Form for Change Documentation, Analysis, & Approval	Page 1

⑨ MOC 59

**STEPS 1 and 2: Document Change**

<b>Title:</b> Gulf Market Phase 2 <b>Description of Change:</b> Phase 2 (2017 scope) execution: Texas Eastern Gulf Markets Expansion Project to create 350 MMdth/d of mainline reverse haul capacity from M2 to WLA and 150 MMdth/d of forward haul capacity from STX to WLA. 500 MMdth/d is destined for Gulf markets, primarily Cameron LNG in WLA, and 150 MMdth/d is destined for M1 markets. Partial in service 100 or 200 MMdth/d August 1, 2017  <ul style="list-style-type: none"> <li>Opelousas; Installed 1 new Electric Drive and Centrifugal compressor with gas cooling. The 9 existing Clark HBA-8T, bi-direction piping and launcher modifications were completed in late 2016 as part of phase 1 GM.</li> <li>Greenfield construction of Speaks Compressor Station; Solar Turbine and centrifugal compressor with gas cooling</li> <li>Gillis; Reverse compression. Launcher and receiver modifications and install new compressor area aero assemblies, dry gas seals and electric starters on both GE Frame 3/Clark centrifugal compressors.</li> </ul>		<b>Y / N</b>
	<b>Permanent Change?</b>	Y
	<b>Temporary Change?</b> <b>Expiration Date:</b>	N
	<b>Emergency Change?</b>	

**Change Lead:**

Rich Fink

**Name of Manager / Supervisor:**

Quince Och

**MOC Coordinator:**

Rich Fink

**Initiation Date:**

04/12/2017

**STEP 3: Evaluate Implications of Change and Develop Action Plan**

Departments (Responsible Party) Associated with Change	Risks/Issues
SER Transmission – Thanh Phan	Safe and compliant operation of the facilities, implementation procedures, and OPP
Facilities Operations – Quince Och	Implementation procedures, OPP, Identify affected Departments
Pipeline Integrity – Gary Dial	Internal corrosion monitoring programs, anomaly programs, pipe coating integrity, cleaning run schedule
Asset Planning – Ken Skweres	Impact to customer entitlements. Impact to potential incremental projects in the works. Operating envelope.
Capacity Planning Role – Walter Wang	Calculating and posting south bound operational station capacities
Gas Control – Tom Atkinson	CRM compliance
EHS – Kim Jackson	Air permits / regulations, PCB migration, gas quality support, RCRA compliance (Subpart BB) CWA (SPCC Plan Update and Sanitary System), GC Set Up/Lab
Operational Compliance – Rick Kivela	Verify OPP to protect MOP for southbound flow
Regulatory Affairs – Lisa Connolly / Leanne Sidorkewicz	FERC compliance
Measurement Integrity – Sarah Mohammed	Gas quality zoning

Departments (Responsible Party) Associated with Change	Actions / Mitigative Measures (Attach Supporting Documentation as Necessary)
SER Transmission – Thanh Phan	<ol style="list-style-type: none"> <li>Develop implementation plans for each location.</li> <li>Educate and confirm personnel for each location understands the implementation and operational requirements for these operating modes.</li> <li>Investigate station bypass lines for checkvalves or restrictions</li> </ol>