MEMORANDUM

TO: Dan Blankenship/RFTA
CC: Mike Hermes/RFTA
FROM: Dan Richardson/SGM
DATE: December 31, 2015
SUBJECT: CNG Support

Project Summary

The purpose of this project is to support the Roaring Fork Transportation Authority (RFTA) in its effort to maintain the CNG-related safety components at the GMF.

Executive Summary

Inspections were conducted and there are no significant areas of concern to report.

Noteworthy issues include:

- A new MCI fueled by CNG went into service on 12/30. John Filippone has begun training drivers and Blake Schultz has begun maintenance training videos. While it seems that CNG features remain the same, it is recommended that all training materials be updated to include MCI-specific information.
- John Filippone has updated the evacuation plans so that the color-coding is more intuitive. This is expected to better train RFTA staff. *The Emergency Response Plan (ERP) will need to be updated (if it hasn't been already) now that the evacuation plan has changed.*
- The annual combustible gas detector calibration inspection should be scheduled ASAP.
- Building maintenance staff continues to do a commendable job keeping equipment maintained so that CNG fueling is safe and as uninterrupted as possible.
- Staff that was interviewed about safety protocol generally was well informed.
- Grimes Service Co. Inc. (GSC) has subcontracted its equipment maintenance tasks to Al Ray's Heating and Air, Inc. (AR). There were no recent AR maintenance reports or invoices to review this period.

Unannounced Safety Inspection Summary

Task: At least once a month, confirm safety procedures are being followed by on-site observation. Procedures include use of fuel bay and maintenance bays.

Progress Report: Since the last report, fueling, vehicle maintenance, building maintenance, driver and administration staff on duty at the time was randomly surveyed with the questions listed in the 'Inspection Checklist'. In general, all staff was familiar with CNG safety protocol and was adhering to CNG procedures as outlined in the training manual. RFTA staff has consistently 'passed' inspections.

Hearing protection is provided at the CNG fueling dispenser, but it appears that it is not used. While this is unrelated to CNG safety, encouraging its use would benefit staff and RFTA.

Quarterly Safety Inspections

Tasks:

1. Review maintenance checklists and methane detector calibration record completed by RFTA staff and/or contractors: Confirm whether maintenance and methane detector calibration is being documented regularly. *Yes to maintenance performed by RFTA staff.*

2. Review contractor bids and/or invoices: Verify that costs and billing are justified. *No invoices were present this time period.*

3. Physical inspection of equipment: Confirm whether maintenance is occurring regularly and that it is being performed properly. Inspected equipment includes CNG-related HVAC equipment, overhead doors, methane detectors (visual inspection only), horns and strobes, emergency generator and BAS system. *Spot visual inspection of equipment and maintenance records indicates that maintenance is being completed.*

4. Functional testing of the sequence of operations: Confirm whether the sequence of operations for CNG safety components as listed in the Emergency Response Plan is functioning as intended. This test will include setting off one methane detector for the sole purpose of verifying sequence of operations. *As verified by the CNG alarm drill this fall, all aspects of RFTA's safety plan continue to operate as intended. The ERP will need to be updated (if it hasn't been already) now that the evacuation plan has changed.*

5. Run and review trend logs from BAS: Identify any irregular operations or malfunctions through the review of trend logs.

Progress Report: GSC was contracted to perform quarterly service to equipment, which is now subcontracted to AR. RFTA Facilities Maintenance staff also performs daily, monthly and quarterly maintenance. RFTA staff has maintained its increased maintenance inspection interval from monthly to daily on several components that are critical to the CNG safety system.

All work appeared to be performed as required and there are no obvious signs to the contrary. RFTA staff maintenance logs were thorough and indicated no obvious signs of system failure.

Annual Safety Inspections

Task: Physical test of all methane detectors: Conduct 20% and 40% test of all methane detectors.

Progress Report: This inspection was conducted in late December of 2014. The calibration by GSC was completed per manufacturer's recommendations. *A new inspection should be scheduled ASAP.*

Inspection Summary

CNG Support Inspection Report						
#	Inspection	Freq.	Pass/ Fail	Date	Inspector	Recommendation
1	Fueling procedures	Mnthly	pass	10/22/2015, 11/12/2015, 12/31/2015	Dan R /SGM	
2	Vehicle maintenance procedures	Mnthly	pass	See above	Dan R /SGM	Ensure new employees are reminded about CNG safety procedures, especially the new MCI
3	Building maintenance procedures	Mnthly	pass	See above	Dan R /SGM	
4	Grimes Service & Al Ray's					
a	Electronic detector testing	Qrtrly	pass	unknown	GSC	
b	EF & MAU Maintenance	Qrtrly	pass	unknown	AR	
c	Sequence of Operations testing	Qrtrly	pass	unknown	GSC	
d	BAS trend log review	Qrtrly	pass	unknown	GSC	
e	Report communication	Qrtrly	pass	unknown	GSC	
5	Trillium Service	Qrtrly	n/a			None at this time.
6	Physical detector testing	Annual	n/a	TBD	GSC	
7	Other					Stress the importance of understanding the evacuation plan to all staff and place an evacuation plan in the fueling bay.

Inspection descriptions:

1. Verify that RFTA staff follows fueling procedures as outlined in 'Mechanics Training Manual for Compressed Natural Gas (CNG) Transit Vehicles' (CNG Training Manual).
2. Verify that RFTA staff follows vehicle maintenance procedures as outlined in the CNG Training Manual.
3. Verify that RFTA staff follows best practice maintenance procedures as outlined in 'GMF Maintenance Manual'.
4. Verify that Grimes Service Company is complying with its preventative maintenance contract as outlined in its May 1, 2013 Scope of Work.
5. Verify that Trillium CNG is complying with its service contract as outlined in its Exhibit D. Physically test methane detection system with gas.
6. Miscellaneous