MEMORANDUM

TO: Dan Blankenship / RFTA
CC: Angela Henderson / RFTA
FROM: Tony Haschke PE / SGM
DATE: January 18, 2022
SUBJECT: CNG Support – 2021 Annual Report

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

Noteworthy issues include:

- The COVID-19 pandemic has created many challenges for RFTA.

1. SGM started to resume most monthly inspections in 2021. Tony had COVID in December 2021; therefore, that monthly inspection was cancelled.
2. RFTA provided the NCHRP COVID-19 Matrices. I was able to review the emergency response RFTA has in place.
3. RFTA's response includes a focus primarily on:
   - riders and bus operators to wear masks on buses and in RFTA facilities as of 4/13/2020. Current TSA mask mandate is in effect through 3/18/2022,
   - bus and facility cleaning activities,
   - installed plexiglass barriers on buses to shield bus operators from COVID droplets when passengers board and alight from buses,
   - windows and roof vents on buses kept open during service to improve ventilation on buses,
   - hand sanitizers,
   - modifications to seating to provide social distancing for bus operators, currently at 100% of vehicle seated capacity, but no standees,
   - planning for service reductions, if required due to staff shortages caused by COVID-related illnesses,
   - CDC information for employees,
   - generous and lenient attendance and sick leave policies to help protect employees,
   - communications with employees and the public.

- On the 2/24/2021 site visit the double doors into the fueling bay from the breakroom and vice versa could both be opened at the same time. One door needs to be shut before the other door can open to maintain pressure differential and to isolate the Fueling Bay from the Administration building. Scott repaired the doors while I was onsite. I was able to confirm the repairs had been completed and confirm the corrected operation of the double doors.
- On the 4/6/2021 site visit the double doors into the fueling bay from the breakroom and vice versa could both be opened at the same time, again. Please let me know when a solution to this door issue is accomplished.
- On the 5/18/2021 and 6/18/2021 site visits the doors worked correctly!

- On the 2/24/2021 site visit, I was able to quiz four RFTA staff members:
  1. I quizzed Maria De Rodriguez. She is a new driver who was very receptive to learning more about CNG. I told her to watch the refresher videos to help continue her knowledge on the CNG fleet.
  2. Gustavo Quevedo was operating the fueling of a CNG bus. When he finished fueling the bus, I quizzed him on fueling procedures. Gustavo always answers the questions accurately.
  3. Jose Vasquez was quizzed with Vehicle Maintenance questions. Jose answered the questions accurately.
  4. I quizzed Justin Hughes with Building Maintenance questions. Justin answered the questions accurately.
- On the 4/6/2021 site visit, I was able to quiz three RFTA staff members:

  1. Jerimie Richards is a driver who was very receptive to learning more about CNG. I told him to watch the refresher videos to help continue his knowledge on the CNG fleet.

  2. Gustavo Quevedo was operating the fueling of a CNG bus. When he finished fueling the bus, I quizzed him on fueling procedures. Gustavo mentioned since the construction is in place it is hard to safely evacuate during an alarm. Gustavo also recommended that through the building it is hard to evacuate because walking areas can be filled with tools, parts, etc. Gustavo always answers the questions accurately.

  3. I quizzed McKenzie Covington with Building Maintenance questions. “Mac” is new Building Maintenance person who was very receptive to learning more about CNG. Mac answered the questions accurately.
- On the 5/18/2021 site visit, I was able to quiz five RFTA staff members and one Trillium staff member:
  1. Scott Raymer passed the general office staff questions.
  2. John Ries is a driver and trainer and was very knowledgeable about CNG. I told him to watch the refresher videos to help continue his knowledge on the CNG fleet.
  3. Saul Zepeda was operating the fueling of a CNG bus. When he finished fueling the bus, I quizzed him on fueling procedures. Saul always answers the questions accurately.
  4. I quizzed Eric Duarte with Vehicle Maintenance questions. Eric answered the questions accurately.
  5. Justin Hughes with Building Maintenance answered the questions accurately.
  6. I was also able to discuss with David Owens from Trillium how the compressor station was operating and his routine maintenance schedule. David is very knowledgeable of the entire compressor and fueling station processes and the importance of regular maintenance.
- On the 6/18/2021 site visit, I was able to quiz five RFTA staff members:
  1. I quizzed Peter Masierski. He is a driver who was very receptive to learning more about CNG. I told him to watch the refresher videos to help continue his knowledge on the CNG fleet.
  2. Saul Zapeda was patiently waiting for the electricity to be turned back on so he could resume fueling. I quizzed him on fueling procedures, he answered the questions correctly.
  3. Jeff Close with Vehicle Maintenance answered the questions accurately as well.
  4. I quizzed Jason Korinek with Building Maintenance questions. Scott introduced Jason as a very new employee and let me take Jason on a tour (~20 minutes) of the entire facility to show all the safety and building features for CNG fueling and maintenance. Jason was very receptive to learning more about CNG. Jason answered the questions accurately with a little help.
  5. Kevin Craig passed the miscellaneous staff questions.

- On the 7/28/2021 site visit, I was able to quiz five RFTA staff members and two MW Golden staff Members:
  1. Pete Johnson is a driver. I asked him to watch the refresher videos to help continue his knowledge on the CNG fleet.
  2. Saul Zepeda is a hostler. I quizzed him on fueling procedures. Saul always answers the questions accurately.
  3. I quizzed Daniel Fogle and Joe Paradise with Vehicle Maintenance questions. They both answered the questions accurately. They did mention the construction crews smoke on the construction site.
  4. Mitch Kidweil was quizzed with general questions. Mitch answered the questions accurately.
  5. I stopped by the MW Golden jobsite trailer and talked with Dante and Noah about the dangers of CNG and smoking onsite. They were about to have a subcontractors safety meeting, so I asked them to cover the dangers and safety protocols for CNG. I asked them to cover the main topics of not smoking in the parking lot above the compressor station or near the fueling bay. I also asked them to discuss towing trailers and having the safety chains tied up so that they cannot drag on the ground and create sparks. They were both willing to share the information with all their subs in the safety meeting.
- Pablo accompanied me on this site visit. I brought him up to speed on CNG dangers and safety protocols. Pablo will be able to perform inspections in the future when I am on vacation. On my 8/25/2021 site visit Pablo and I were able to quiz four RFTA staff members:
  1. Jeremy Brockway is a driver who answered the questions correctly. I asked him to watch the refresher videos to help continue his knowledge on the CNG fleet.
  2. Saul Zapeda was fueling a bus. I quizzed him on fueling procedures when he finished. Saul answered the questions accurately.
  3. I quizzed Jose Jr. Salguero with Vehicle Maintenance questions. Jose answered the questions accurately as well.
  4. I quizzed Petronila Nevarez. Petronila passed the miscellaneous staff questions.
- On the 9/14/2021 site visit, I was able to quiz 2 MW Golden staff members and 3 RFTA staff members:
  1. MW Golden staff Dante and Noah were in the fishbowl getting it ready for demolition. I asked since they were so close to the fueling bay and compressor station if we could go over CNG. They were responsive to answer questions. They also answered them all correctly. I did confront them again on sharing the CNG dangers and safety protocols with their subcontractors at the next safety meeting. They were responsive to this request. I offered the CNG videos if anyone needed for further instruction.
  2. Salvador Vallejo was fueling a CNG bus. When he finished fueling the bus, I quizzed him on fueling procedures. Salvador just finished training and his first day working was Sunday. I helped him understand the questions and why they are so important to follow all safety procedures and protocols. He had a personal cell phone at the table in the bay. I ask him to keep it off in the fueling bay. I also asked him to take it outside the fueling bay to use it.
  3. I quizzed Eric Duarte with Vehicle Maintenance questions. Eric always answers the questions accurately.
  4. I quizzed Maria Carranza with Building Maintenance/Housekeeping questions. When asked about training she said she has been there 20 years but has not had CNG or other training. I informed her to simply ask her supervisor for time for training. I then went to see Scott Keagan to let him know her response to training. He was just as surprised as I was about Maria's lack of training. Scott told me he will follow up with Angela Henderson.

- On my 10/27/2021 site visit, I was able to quiz 2 RFTA staff members:
  1. I quizzed David Maraviaga. He is a driver. David answered the questions correctly. I asked him to watch the refresher videos to help continue his knowledge on the CNG fleet.
  2. I quizzed Bill Engelman with Building Maintenance questions. Bill answered the questions accurately with a little help. He did note the change in Building evacuation due to all the construction. Also, the smoking area is now moved to the upper parking lot.
- Building maintenance staff continues to do a commendable job keeping equipment maintained which enables the continued safe and uninterruptable CNG fueling. The facility is clean, organized and well maintained.
- Most staff interviewed did indicated that they have received recent training. I reminded them that they can watch online the CNG safety videos as a refresher training. The staff are always cheerful, professional, safety conscious, and helpful.
- SGM was able to login to the Building Automation System (BAS) computer in February, April, May, June, August, September, October and December of 2021.
- Review of the Maintenance PM Checklists quarterly.
  1. <u>Bus Wash</u>
     Task 777-1898 Check Over Speeds. Over speeds were noted several times and seem to be increasing in December. Is this an area of concern? Or shall I stop recording these over speeds?
     a. 1 over speed on 7/1, 7/7, 713, 8/10, 8/26, 8/30, 8/31, 10/4, 10/12, 10/15, 11/3, 11/9, 12/11, 12/12, 12/17, 12/24.
     b. 2 over speeds on 7/14, 10/11, 12/4, 12/8, 12/18, 12/19, 12/25.
     c. 3 over speeds on 11/27, 11/30, 12/1, 12/2, 12/5, 12/6.
     d. 4 over speeds on 10/14, 12/15, 12/22.
     e. 5 over speeds on 9/14, 11/26, 12/20, 12/21, 12/26, 12/27.
     f. 7 over speeds on 11/23, 12/14, 12/28.
     g. 8 over speeds on 11/28, 12/23.
     h. 9 over speeds on 11/10, 11/22.
     i. 10 over speeds on 12/13.
     j. 11 over speeds on 11/29, 12/29.
     k. 14 over speeds on 12/16.
     l. 15 over speeds on 12/30.
     m. 26 over speeds on 11/24.
     Bus wash was OFF on 10/19 - 10/20.
  2. <u>CNG</u>
     Task 777-1639 Check Skid for Any Alarms. Several alarm comments are indicated as “see notes.” Comment details were not provided for review.
     a. Maintenance Door alarm on 7/8 and 7/27
     b. High Stage alarm on 7/10 and 7/28
     c. Skid A Low Oil alarm on 7/12
     d. Air Valve alarm on 8/10
     e. Main Motor Fail alarm on 9/24
     f. “See Notes” indicated. These may be potential alarms on 7/20, 8/8 and 9/27
     g. Multiple alarms on 12/16 in PLC screen due to power outage on 12/15.
     h. Check Hours A, B, & C shows, “A 8325 ASLEEP B…” on 10/13 - 11/2, 11/4 - 11/19, 11/24 - 11/25, 11/27 - 12/3, 12/6 - 12/9, 12/13 - 12/14, 12/20 - 12/22.

  3. <u>Daily</u>

Task 777-1360 Fueling Area Rubber Door 1 Check. Door appeared to not work 7/13 - 7/15. Doors were later noted as "okay."

4. LIFTS
   Comments on 7/26, 8/22 and 9/22 indicate "see notes." Comment details were not provided for review.

Unannounced Safety Inspection Summary

Task: At least once a quarter, confirm safety procedures are being followed by on-site observation. Procedures include use of fuel bay and maintenance bays. *Eight inspections and observations were made throughout the year.*

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, 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.*

Quarterly Safety Inspections

Tasks:

1. SGM Reviews the maintenance checklists and methane detector calibration record completed by RFTA staff and/or contractors in Trapeze every quarter to: Confirm whether maintenance and methane detector calibration are being documented regularly. *Yes to maintenance performed by RFTA staff. Yes to methane detection calibration (performed in June 2021 and January 2021, due in January 2022).*

2. 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. SGM started receiving electronic copies of daily, monthly and quarterly maintenance logs from the Trapeze AssetWorks software after the first quarter of 2017. SGM has reviewed the files for all four quarters of 2021.

3. 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.

4. Run and review trend logs from BAS: Identify any irregular operations or malfunctions through the review of trend logs. *Trend logs are reviewed at least quarterly and any discrepancies noted are passed on to RFTA staff and Grimes Service Company, Inc.*

Progress Report: Grimes Service Company, Inc. was contracted to perform quarterly service to equipment, which is now subcontracted to a new contractor. 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 on December 21, 2020. The calibration by GSC was completed per manufacturer's recommendations on January 12, 2021.

Inspection Summary

CNG Support Inspection Report						
#	Inspection	Freq.	Pass/ Fail	Date	Inspector	Recommendation
1	Fueling procedures	Quarterly	pass	2/24/2021 4/6/2021 5/18/2021 6/18/2021 7/28/2021 8/25/2021 9/14/2021 10/27/2021	Tony & Dave / SGM Tony / SGM Tony / SGM Tony / SGM Tony / SGM Tony & Pablo / SGM Tony / SGM Tony / SGM	
2	Vehicle maintenance procedures	Quarterly	pass	2/24/2021 4/6/2021 5/18/2021 6/18/2021 7/28/2021 8/25/2021 9/14/2021 10/27/2021	Tony & Dave / SGM Tony / SGM Tony / SGM Tony / SGM Tony / SGM Tony & Pablo / SGM Tony / SGM Tony / SGM	
3	Building maintenance procedures	Quarterly	pass	2/24/2021 4/6/2021 5/18/2021 6/18/2021 7/28/2021 8/25/2021 9/14/2021 10/27/2021	Tony & Dave / SGM Tony / SGM Tony / SGM Tony / SGM Tony / SGM Tony & Pablo / SGM Tony / SGM Tony / SGM	
4	Grimes Service & New Contractor					
a	Electronic detector testing	Semi - annual	pass	6/14/2021	GSC	Due in the winter 2021/2022.
b	EF & MAU Maintenance	Semi - annual	pass	TBD	New Contractor	Due in the winter 2021/2022.
c	Sequence of Operations testing	Semi - annual	pass	6/14/2021	GSC	Due in the winter 2021/2022.
d	BAS trend log review	Semi - annual	pass	6/14/2021	GSC	Due in the winter 2021/2022.
e	Report communication	Semi - annual	pass	6/14/2021	GSC	Due in the winter 2021/2022.
5	Trillium Service	Monthly	pass	6-10/2021	Trillium	Due monthly.
6	Physical detector testing	Annual	pass	6/14/2021	GSC	Due in the winter 2021/2022.

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