



January 24, 2022

Mr. Gregory Ochs
Director, Central Region
Pipeline and Hazardous Materials Safety Administration
901 Locust Street, Suite 462
Kansas City, MO 64106

Re: CPF 3-2021-103-NOA – Notice of Amendment – Control Room Management

Dear Mr. Ochs,

Tallgrass Energy, LP (Tallgrass or the Company) has compiled the following responses for Items 1-16 listed in the Notice of Amendment (NOA) received on December 22, 2021, indicating apparent inadequacies found within our Alarm Management and Control Room Management plans or procedures during an inspection conducted from May 7 – 11, 2018 and December 4 – 6, 2018.

Item 1:

PHMSA Allegation:

§ 195.446 Control room management - (a) General: Tallgrass's O&M 1100_GL - Control Room Management (CRM) Revised: April 1, 2020, did not adequately develop procedures that describe or define the types of pipeline assets covered by the CRM plan. Tallgrass must amend O&M 1100_GL CRM plan to correctly identify the type of pipeline assets cover by the CRM plan.

Tallgrass Item 1 Response:

As an initial matter, Tallgrass is unable to identify an April 1, 2020, version of its O&M 1100_GL referenced herein by PHMSA. Since 2018, Tallgrass has provided PHMSA three versions of its O&M 1100_GL with revision dates of March 22, 2018, February 26, 2021, May 1, 2021, and October 1, 2021. Consequently, Tallgrass will be responding as to the differences between these revisions. As demonstrated in Attachment 1, Tallgrass' assets are subject to change; and thus, the applicability of Section 1 is revised to reflect these asset changes. For example, there have been changes in the assets since the March 22, 2018, version and the October 1, 2021, versions of O&M 1100_GL demonstrating that Tallgrass revises this section of the O&M 1100_GL. Tallgrass' current revision of O&M 1100_GL accurately reflects those assets under Tallgrass control which fall under CRM regulations.

Item 2:

PHMSA Allegation:

§ 195.446 Control room management - (b) Roles and responsibilities: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, and the AO-C Loss of Communication Guidelines was inadequate because it did not provide sufficient direction on how the pipeline will be confirmed by the controller to have shut down in a safe manner should three or more pipeline facilities suffer loss of communication. The AO-C Loss of Communication and the O&M 1100_GL requires amendment to address how the controller will determine that the pipeline has been shut down safely in the event of a loss of communication to at least three or more facilities (valves or pump stations).

Tallgrass Item 2 Response:

As to the first issue, the AO-C Communication Failure Guideline provided to auditors in 2018, requires that when a loss of 3 or more pumping stations occurs, controllers are required to confirm the status of station shutdowns by evaluating the pressure profiles across the pipeline. By evaluating the pressure profiles, controllers are able to discern that the pipeline is shutdown safely. The AO-C Communication Failure Guideline then directs controllers to perform a low suction origin shutdown if any of the stations still appear to be running. The AO-C Communication Failure Guideline further instructs controllers to issue an Immediate Shut Down (ISD) command from SCADA or PLC Wonderware Machine, and to then verify this automated shutdown action has executed correctly by observing adjacent station transmitters and the hydraulic profile to ensure that the stations and valves are responding appropriately to the ISD command.

Specifically as to PHMSA's assertion that the AO-C Guideline does not provide adequate instructions for controllers when at least three or more facilities have lost communication for 30-40 minutes, Tallgrass' AO-C Communication Failure Guideline (as provided to PHMSA) states that if the Subject Matter Expert (SME) is able to attribute the outage and is confident the outage can be resolved in 10 minutes, then the SME can request the controller extended the shut-down time to a maximum of 40 total minutes. However, if the SME cannot identify and attribute the cause of the outage, or if cannot resolve the outage within the 40-minute extension, then the Controller must shut down the pipeline and isolate it to the extent that pressures can be monitored at sites adjacent to the outage area that have working transmitters.

Regardless of either of the above, instances regarding a loss to either three (3) adjacent valve or pump station sites, and whether a shutdown has occurred or not requires controllers to monitor line status to verify operational status of the pipeline by utilizing the flow and pressure transmitters adjacent to the outage area. See Attachment 2: AO-C Loss of Communication for these procedures. Because there is not a total loss of visibility or control of the entirety of the system, the procedures allow controllers to aptly monitor ongoing conditions while responding to

the Abnormal Operating Condition. Tallgrass asserts that this is the best evidence that appropriate shut-down has occurred.

Finally, Tallgrass is currently in the process of rewriting O&M 1100_GL and AO-C. During that process, it continues to identify opportunities to clarify its objectives and directives to controllers for managing total and partial outages. Tallgrass anticipates the approval and implementation of these procedures by March 31, 2022.

Item 3:

PHMSA Allegation:

§ 195.446 Control room management - (b) Roles and responsibilities: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, did not adequately address the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions regarding the Tallgrass Pony Express Pipeline ERP/Oil Spill Response Plan. Tallgrass's O&M 1100_GL require an amendment to include controller roles and responsibilities regarding timelines and communication detailed in the Tallgrass Pony Express Pipeline ERP/Oil Spill Response Plan and all other relative oil spill response plans.

Tallgrass Item 3 Response:

Through its review of all applicable ERP/Oil Spill Response Plan (OSRP) for Tallgrass' current assets, Tallgrass did not identify any additional duties for its controllers beyond those contained in O&M 1100_GL and the additional emergency response and abnormal condition procedures referenced therein. These procedures are created to reflect responsibilities surrounding the execution of the ERP and OSRP, specifically relating to the expectation surrounding communications and the execution of the plans. Tallgrass reasonably believes that no additional level of safety is obtained by listing out the requirements contained within the ERP/Oil Spill Response Plan (OSRP), which would be wholly duplicative, or by linking/referencing them as containing additional duties into its O&M 1100_GL; specifically, Section 5.2 (see Attachment 3). In contrast, Tallgrass believes that to do so would likely create undue confusion and potentially result in a loss of critical time in responding to an emergency or abnormal conditions. If in the future, additional duties arise under an existing or future OSRP for Tallgrass' controllers that are not already included in or in addition to Tallgrass' emergency response procedures, Tallgrass will ensure that those additional duties are either incorporated directly into its procedures or provide a specific reference to the duty(ies) as contained in the OSRP.

Item 4:

PHMSA Allegation:

§ 195.446 Control room management - (b) Roles and responsibilities: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, Section 4.3 did not adequately address the controller's responsibility to take specific actions and to communicate with others when the pipeline is transporting different commodities. Furthermore, it did not address the multiple commodities operated from this control room for which different appropriate actions are required. The O&M 1100_GL CRM plan requires amendment to clarify the appropriate actions by commodity and to reference any guidance associated with these actions.

In addition, the Lakewood 360 backup control room location did not have the same capabilities of the primary control room, such as leak detection. The OCC Evacuation and Resumption Plan, which is applicable when the controller leaves the primary control room location, did not call out the differences between the primary and backup control room locations. The OCC Evacuation and Resumption Plan and the O&M 1100_GL CRM plan require amendment to address these differences in the control rooms and provide clarification to the controllers regarding roles and responsibility changes in how to detect a leak at the back up control room location.

Tallgrass Item 4 Response:

In the event the OCC is contacted when a potential emergency situation exists by either internal and external stakeholders, Tallgrass controllers' primary responsibility is to remotely control the system to mitigate further impacts to life and property. Controllers are able to provide basic information consistent with Tallgrass Public Awareness messaging, which is commodity specific. Tallgrass will incorporate this existing practice into O&M 1100_GL by including reference for the controller to provide information to the caller that is consistent with the Public Awareness messaging for the respective commodity to the extent such opportunity exists.

As to the issue identified by PHMSA for the Lakewood 360 backup control room, Tallgrass disagrees that the OCC Evacuation and Resumption Plan and O&M1100_GL do not adequately address the roles and responsibilities of how to detect a leak at the back up control room location. The 2017 version of the OCC Evacuation and Resumption Plan identifies that Tallgrass was using the Krohne Leak Detection System (LDS) and clearly demonstrates the number of monitors and other supporting equipment available at each location. See Attachment 4: "Current Backup Site Configurations" that contain the 2017 and 2021 versions of the Tallgrass OCC Evacuation and Resumption Plan. Importantly, Tallgrass evaluates at regular intervals and with the addition of any new assets the number and type of equipment available in both the Primary and Secondary control rooms to determine whether controllers can effectively perform their defined roles and responsibilities using the equipment provided to them. Tallgrass asserts that its documents are sufficient to meet its obligations under §195.446(b)(3).

Item 5:

PHMSA Allegation:

§ 195.446 Control room management - (b) Roles and responsibilities: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, Section 9.1 Shift Change Procedures were inadequate because the procedures incorrectly referred to suppressed alarms. While Tallgrass may use other types of alarm inhibit functions, Tallgrass verbally stated suppressing alarms was a function that was not utilized. The O&M 1100_GL CRM plan requires amendment to exclude suppressed alarms (this is not applicable to other alarm inhibit methods) if not utilized as identified during the inspection.

Tallgrass Item 5 Response:

Tallgrass has clarified the language related to alarm suppression in its shift change procedures in previous updates made to O&M 1100_GL. Attached for reference as Attachment 5 are screenshots from the Tallgrass Alarm Management Plan indicating how user suppressed alarms are reported and covered during shift change, as well as the language in O&M 1100_GL specifying that user-suppressed alarms are applicable to only the liquids controllers.

Please note that the Tallgrass Alarm Management Plan is currently being revised to include significant modifications related to suppression. The current version of the Plan is being re-written to revise the terminology surrounding suppression to reflect the alarm action more accurately by using the term "shelving". Additional clarification is being added to reflect that user shelved alarms are now automatically un-shelved after a 3-hour period, allowing the alarm to return to its current state. Tallgrass anticipates the approval and implemental of these procedures by March 31, 2022.

Item 6:

PHMSA Allegation:

§ 195.446 Control room management - (a) General: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, and the HMI Philosophy for Liquids procedures were inadequate because the documents did not clearly define the types of changes to the SCADA system(s) that constituted additions, expansions, or replacements to ensure API RP 1165 would be implemented. In addition, O&M 1100_GL CRM plan and HMI Philosophy for Liquids procedures were inadequate because the plans did not indicate how Section 5 of API RP 1165 would be implemented, including for design and performance requirements.

Tallgrass Item 6 Response:

Tallgrass has completed updates to its Liquids HMI Philosophy document similar to those implemented in its Natural Gas HMI Philosophy provided on September 17, 2021. These

revisions provide clarification on the types of changes to the SCADA system(s) that constitute additions, expansions, or replacements to ensure API RP 1165 would be implemented. See HMI Introduction for Liquid and Natural Gas Assets as Attachment 6. Tallgrass does not believe any additional revisions to O&M 1100_GL or its HMI Philosophy procedure are necessary.

Item 7:

PHMSA Allegation:

§ 195.446 Control room management - (c) Provide adequate information: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, and the OCC Evacuation and Resumption Plan were inadequate because the procedures did not reference the OCC Backup Site Test Checklist that Tallgrass utilized as one of the records to demonstrate compliance for the back-up OCC/SCADA test.

The procedures did not include reference SCADA server tests and the records to demonstrate compliance of SCADA server tests. The procedure must be amended to define the reference to "Telco" and to ensure that it is consistent with AO-C Loss of Communications types of communication services.

Tallgrass Item 7 Response:

Regarding PHMSA's assertion that Tallgrass' OCC Evacuation and Resumption Plan were inadequate because the procedures did not reference the OCC Backup Site Test Checklist, Tallgrass states that it has purposefully excluded reference to the OCC Backup Checklist. The OCC Evacuation and Resumption Plan is not meant to be guidance for annual testing and will therefore not contain the testing protocol; this belongs in O&M 1100_GL and it has been added to the relevant section.

As to PHMSA's concerns regarding Tallgrass' procedures not including reference to SCADA server tests and the associated records to demonstrate compliance of SCADA server tests. It is important to note that Tallgrass believes this is not necessary as the SCADA back-up servers are automatic and tertiary redundancy is in place. During testing the SCADA servers, this automatic redundancy is manually overridden by the SCADA SME by by-passing the interim back-up server located in Lakewood in order to verify the back-up servers at the Fort Collins Backup facility. Regarding the second item, report out of the system. The OCC Backup Checklist contains the information on which server is primary and which one is secondary server, but due to cyber security reasons, the official server names are omitted. SCADA server fail over – current primary and then fail-over server – needs to be check over. This is being added to our OCC Backup Checklist.

Regarding the reference to "Telco" in the version of OCC Evacuation and Resumption plan reviewed by PHMSA, this service was discontinued many years ago; and Tallgrass has

removed this reference from the plan. Additionally, to prevent future confusion regarding any terminology contained in O&M 1100_GL, a new “Definitions” section was added to the procedure in the latest rewrite.

Tallgrass is in the process of adding this additional clarification to O&M 1100_GL and any associated procedures. Tallgrass anticipates the approval and implementation of these procedures by March 31, 2022.

Item 8:

PHMSA Allegation:

§ 195.446 Control room management - (d) Fatigue mitigation: Tallgrass’s O&M 1100_GL - Control Room Management Revised: April 1, 2020, were inadequate because the procedure did not address how shift lead’s/supervisor’s actual hours worked would be recorded when serving as a qualified controller. Additionally, the procedures did not clarify how the 65-hour maximums in seven sliding days would be identified for leads/supervisors. Furthermore, the procedure did not identify who was responsible for approving an hours-of-service deviation performed by a Lead/Supervisor when acting as a qualified controller. The procedure must be amended to include a method for tracking actual hours of service for leads/supervisors and to include a process for approving leads/supervisors’ hours of service deviations.

Tallgrass Item 8 Response:

Tallgrass Leads and Supervisors work a flexible schedule to accommodate emergency coverage without exceeding established “Hours of Service” “HOS” limits. However, the O&M 1100_GL has been updated to read that when a Lead or Supervisor has been permanently added to a shift rotation on the Controller Work Schedule to accommodate long term console coverage, this Lead or Supervisor will then be held to the HOS policy and all deviations will be approved by the OCC Manager or above. These deviations and approvals will reside in the existing HOS Deviation Library found on the Tallgrass’ OCC CRM SharePoint site for both Gas and Liquids. Tallgrass anticipates the approval and implementation of these procedures by March 31, 2022.

Item 9:

PHMSA Allegation:

§ 195.446 Control room management - (e) Alarm management: Tallgrass’s Alarm Management Plan Section 3 was inadequate because the process did not ensure all alarms that support the safe pipeline operation were accurate. The Alarm Management Plan did not address volume levels associated with tanks, valves associated with isolation or emergency response requirements, and other specific points that may be identified through special needs or calculated (soft) point alarming. In addition, leak detection alarms were

also not included in the Alarm Management Plan. The procedure requires amendment to include a process to ensure all alarms are accurate and support the safe operation of the pipeline.

Tallgrass Item 9 Response:

Tallgrass added additional safety related points to its “Safety Related Alarms” list in 2019, and respectfully believes it is more than sufficient to meet the issues identified herein. Furthermore, while Tallgrass disagrees with PHMSA’s assertion that its current process is insufficient to ensure to accuracy of its alarms, Tallgrass is currently undertaken significant effort to rewrite its Alarm Management Plan in order to clarify the alarm process and any associated documentation of the process. Below is the current structured 4 step process utilized by Tallgrass that will be clarified in the rewrite of the Alarm Management Plan:

1. A structured documentation and rationalization process;
2. Management of Change to assess, approve, and communicate all changes, including training of Controllers, ensuring that no changes to alarms occur without proper risk assessment and approvals;
3. An annual review of all safety related alarms in the system; and
4. SCADA credential security allowing only a limited number of controlled administrators to alter an alarm setpoint once built in the system.

Tallgrass anticipates the approval and implementation of these procedures by March 31, 2022.

Item 10:

PHMSA Allegation:

§ 195.446 Control room management - (e) Alarm management: Tallgrass’s Alarm Management plan did not adequately address false alarms or points affecting safety that have been forced as part of the monthly alarm reviews. In addition, for forced or manual values, the procedure did not define how the time exceeding that required for the associated maintenance or operating activities would be identified. AO-F was incorrectly referenced as the Component Failure or Malfunction Guideline, which is AO-E, not AO-F. The Alarm Management Plan requires amendment to include AO-F Leak Detection and Response Guideline as this also addresses actions to take when a leak detection alarm is determined to be false. The process must be amended to address how false alarms will be consistently documented by the controller. The Alarm Management Plan, and Section 11.1 of O&M 1100_GL did not clarify how monthly reviews would address false alarms recorded by controllers during shift turnovers (shift reports or controller logs).

Tallgrass Item 10 Response:

Tallgrass has complied with the requirements of the Final Order in CPF 3-2020-1008 by updating O&M 1100_GL and associated procedures as well as having undertaken a significant rewrite of our Tallgrass Alarm Management Plan and AO-E procedure to explain the handling of communication of false alarms during shift turnovers. Tallgrass anticipates that these revisions will be accepted and implemented into the procedures by March 31, 2022. Attachment 7 demonstrates these updates.

Item 11:

PHMSA Allegation:

§ 195.446 Control room management - (e) Alarm management: Tallgrass's Alarm Management Plan and O&M 1100_GL Section 11.1 were inadequate because the procedures did not define what record would be used to demonstrate compliance for the verification of correct safety-related alarm set-point values and alarm descriptions, when associated field instruments are calibrated or changed at least once each calendar year, but at intervals not to exceed 15 months. Additionally, the procedures did not explain how the Manager will review the alarm system to verify safety-related alarm settings and descriptions and what documentation would be utilized to verify correct alarm setpoint values and alarm descriptors, such as Tallgrass PACs (Proposed Alarm Changes) or Enterprise Management of Change (EMOC).

Tallgrass Item 11 Response:

Tallgrass is in the process of adding additional clarification to the Tallgrass Alarm Management Plan, O&M 1100_GL, and any associated procedures. These modifications will be completed by March 31, 2022.

Item 12:

PHMSA Allegation:

§ 195.446 Control room management - (e) Alarm management: Tallgrass' Alarm Management Plan and O&M 1100_GL Section 11.1 were inadequate because the plans did not define how deficiencies identified during monthly reviews specific to points taken off-scan would be addressed. The Alarm Management Plan and Section 11.1 of O&M 1100_GL did not clarify how deficiencies identified by controllers in Shift Reports or controller logs were addressed.

Tallgrass Item 12 Response:

Tallgrass is in the process of adding additional clarification to O&M 1100_GL and any associated procedures. Tallgrass anticipates these revisions will be accepted and implemented by March 31, 2022.

Item 13:

PHMSA Allegation:

§ 195.446 Control room management - (f) Change management: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, was inadequate because it did not define what types of changes can be processed as an emergency through verbal communications to the controller. While O&M 1100_GL Section 12 did address emergency management of change (EMOC) and referenced OM 155 GL, EMOC in these documents refers to Enterprise Management of Change and not emergency changes. The operator indicated verbally that Maximum Operating Pressure (MOP) would be available through the Geographic Information System (GIS) and that this was utilized by the controller to determine current MOP and pressure restrictions. However, this was not included as part of the process for emergency changes.

Tallgrass Item 13 Response:

Prior to receiving this NOA, Tallgrass had previously recognized the need to clarify these procedures to reflect what is actually occurring when an emergency management of change is initiated. Tallgrass has already undertaken a significant effort to revise O&M 1100_GL and associated procedures in order to ensure the consistent use of terms across procedures and clarify the current processes being utilized for emergency changes. Tallgrass anticipates these changes will be approved and implemented by March 31, 2022.

Additionally, Tallgrass controllers utilize multiple means for identifying the MOP for each of Tallgrass' assets. Tallgrass' GIS system is not the only means of identifying MOP. Importantly, in addition to the GIS system, Tallgrass trains its controllers to quickly calculate MOP based upon alarm set points which are readily available in SCADA for each device. Moreover, the alarm set points in the SCADA system are derived from the MOP by asset and set to ensure acknowledgement of abnormal operations are recognized by the controllers. Additionally, controllers for our liquids systems are capable of recognizing MOP based upon geographical locations.

Item 14:

PHMSA Allegation:

§ 195.446 Control room management - (f) Change management: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, was inadequate because the process did not define what records would demonstrate changes in field equipment affecting control room operations coordinated with control room personnel. The procedures did not assure that coordination with the control room occurred before the controller received the alarms and not after receiving alarms. Various operation and maintenance procedures were not integrated as required by 49 CFR § 195.446(a) at the time of the inspection because the procedures did not require coordination with the control room when making field changes.

Tallgrass Item 14 Response:

Tallgrass respectfully disagrees with the issue raised by PHMSA in response to O&M 703_L - Pressure Limiting and Relief Device Inspections. Validation does not occur during the inspection and calibration of field devices by field personnel under Tallgrass' policies. Alarm setpoints and descriptors are set during initial commissioning and are not permitted to change without following the Tallgrass O&M155_Management of Change process, specifically regarding safety related alarms. Field personnel are not qualified or trained in certifying that alarm descriptors meet the requirements outlined in the Tallgrass Alarm Management Plan, controller training material, or the O&M 1100_GL procedure. Furthermore, verification of safety related alarm setpoints and descriptors occurs pursuant to Tallgrass' OCC monthly and annual alarm reporting process as outlined in the Tallgrass Alarm Management Plan. This is not a field function unless a change is being made.

Regarding PHMSA's concern that Tallgrass' procedures don't require adequate coordination with the control room, Tallgrass has developed and is awaiting internal approval of an OCC Communication Protocol document which will be referenced in all field procedures in which OCC controls or monitors devices. This document will outline the protocol for communication between OCC and the various respective function groups to ensure safe operations during periods where Tallgrass is implementing temporary and permanent changes, which also includes normal maintenance activities. The acceptance of this protocol is currently being evaluated under Tallgrass' Standards Approval process and anticipates its integration with existing procedures by March 31, 2022.

Item 15:

PHMSA Allegation:

§ 195.446 Control room management - (h) Training: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, did not adequately define the roles and responsibilities to address how cross-training would be accomplished for controllers on the hazardous liquid pipeline systems. For gas operations, this definition was found in Section 13.4 Gas System Training and Evaluation for New Controllers. However, this information was not included in the procedure for Hazardous Liquid systems. Section 13.2 of the CRM procedures indicated that the controllers would be trained and qualified for the PXP system only. However, the control room also operated the Red Tail assets identified as part of the Tallgrass Midstream (TMID) assets. Tallgrass's O&M 1100_GL procedures require amendment to clarify whether or not cross-training will be performed when more than one console exists in a control room, and how training and qualification requirements will cover liquid assets in addition to PXP.

Tallgrass Item 15 Response:

Tallgrass is in the process of adding additional clarification to O&M 1100_GL and any associated procedures. Tallgrass anticipates the approval and implemental of these procedures by March 31, 2022.

Item 16:

PHMSA Allegation:

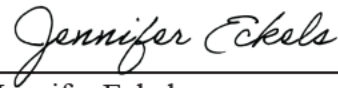
§ 195.446 Control room management - (h) Training: Tallgrass's O&M 1100_GL - Control Room Management Revised: April 1, 2020, was inadequate because it did not address how Tallgrass will determine operating setups that are periodically, but infrequently used. Additionally, the O&M 1100_GL did not identify the procedures that would be used infrequently such as those required for purging, abandonment, or pigging. The procedures require amendment to address how Tallgrass will determine operating setups that are periodically, but infrequently used and identify the required related procedures.

Tallgrass Item 16 Response:

Tallgrass is in the process of adding additional clarification to O&M 1100_GL and any associated procedures. Tallgrass will implement these procedures by March 31, 2022.

Tallgrass appreciates PHMSA's feedback in this matter, and shares PHMSA's commitment to pipeline safety and continuous program improvement. If you have any remaining concerns or questions regarding this response, please do not hesitate to contact me.

Sincerely,



Jennifer Eckels
Manager - Compliance
370 Van Gordon Street
Lakewood, CO 80228
Phone: (303) 763-3486

CC: Tallgrass: Byron Gale, Jay Meyers, Jarid Kling, Nicole Longwell, Crystal Heter
PHMSA: Karen Butler, Maureen Williams

Enclosures: Attachment 1:
March 22, 2018, version of OM1100_GL
October 1, 2021, version of OM1100_GL

Attachment 2:
Procedure for Managing Outages at Adjacent Valve Sites
Procedure for Managing Outages at a Series of Pump Stations

Attachment 3:
EOC Controller Responsibilities; OM1100_GL Section 5.2

Attachment 4:
Current backup site configurations from 2017
Current backup site configurations from 2021

Attachment 5:
Tallgrass Alarm Management Plan Alarm Suppression
Tallgrass OM1100_GL Section 9.1 Shift Change Procedures

Attachment 6:
Tallgrass Hazardous Liquids HMI Philosophy Document Introduction
Tallgrass Natural Gas HMI Philosophy Document Introduction

Attachment 7:
Tallgrass Alarm Management Plan – False or Malfunctioning Alarms