Tank Farm Maintenance Procedure  Effluent Treatment Facility

USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

<table>
<thead>
<tr>
<th>Change History (&lt;last 5 Rev-Mods&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rev-Mod</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>A-2</td>
</tr>
<tr>
<td>A-1</td>
</tr>
<tr>
<td>A-0</td>
</tr>
</tbody>
</table>

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform method for calibration of Eastech Flow Controls ultrasonic flow meters, series 4400, located at the Treated Effluent Disposal Facility.

1.2 Scope

Procedure instructions provide for the initial setup, calibration check, and calibration of Eastech ultrasonic flow meters, series 4400.

2.0 INFORMATION

2.1 Terms and Definitions

- GPM – Gallons per Minute.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Radiation and Contamination Control

3.1.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure, TFC-ESHQ-RP_RWP-C-03.

3.2 Environmental Compliance

3.2.1 In the event of a spill/leak/release, notify the SOM/FWS and respond per ETF-ERP-85B-003, Emergency Spill or Release at ETF.

4.0 PREREQUISITES

None.
5.0 PERFORMANCE

5.1 Initial Setup and Calibration Check

Special Instructions

Breakers 13 and 15 will be opened to prevent inadvertent starting of pump 68C-P-10.

5.1.1 OPEN breakers 13 and 15, Motor controller, in panelboard 6653.

5.1.2 CONFIRM normal operating screen is displayed – screen displays:

<table>
<thead>
<tr>
<th>Flow</th>
<th>XX.XX GPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totl</td>
<td>XXXX GAL</td>
</tr>
<tr>
<td>X100</td>
<td></td>
</tr>
<tr>
<td>Vel.</td>
<td>XX.XX FPS</td>
</tr>
<tr>
<td>Status</td>
<td>OK</td>
</tr>
</tbody>
</table>

5.1.3 WHILE normal operating screen is displayed, PRESS “MENU” key – screen prompts:

Select Operation
01> Review Meter
02> Program
03> Daily Totals
04> Data Logger
05> System Setup

5.1.4 PRESS “0” and “2” keys – screen prompts:

Enter Password to
Continue
00000000
5.1 Initial Setup and Calibration Check (Cont.)

5.1.5 PRESS “ENTER” key – screen prompts:

<table>
<thead>
<tr>
<th>Program/Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>01&gt; Measure Units</td>
</tr>
<tr>
<td>02&gt; Sensor Install</td>
</tr>
<tr>
<td>03&gt; Totalizer</td>
</tr>
<tr>
<td>04&gt; 4-20 Inputs</td>
</tr>
<tr>
<td>05&gt; Damping</td>
</tr>
</tbody>
</table>

-----------OR---------
| Program/Cal |
| 06> Lost Signal |
| 07> Flow Sim. |
| 08> Integrator |
| 09> Setpoints |
| 10> Relays |
| 06> Meter Factor |

5.1.6 PRESS “0” and “7” keys – screen prompts:

| Flow Sim = 00 GPM |
| Vel 00 FPS |
| FwdT 00 GAL |
| RevT 00 X 100 |
| Relays |

NOTE - Flow rate is adjusted by entering the simulated flow value with the numeric keys and pressing “ENTER.”

5.1.7 VARY flow rate per data sheet AND

RECORD as-found local control unit GPM readings on PM/S data sheet.

5.1.8 PRESS “MENU” key three times to return to normal operating screen.
5.1 Initial Setup and Calibration Check (Cont.)

5.1.9 IF as-found values are not within specified tolerance per data sheet, GO TO Section 5.2,

    OR

IF as-found values are within specified tolerance, but deemed marginal, and optimization is desired, GO TO Section 5.2,

    OR

IF as-found values are within tolerance per PM/S data sheet, RECORD as-found data in as-left section of data sheet AND

GO TO Section 5.3, Restoration.

5.2 Calibration

5.2.1 WHILE normal operating screen is displayed, PRESS “MENU” – screen prompts:

<table>
<thead>
<tr>
<th>Select Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>01&gt; Review Meter</td>
</tr>
<tr>
<td>02&gt; Program</td>
</tr>
<tr>
<td>03&gt; Daily Totals</td>
</tr>
<tr>
<td>04&gt; Data Logger</td>
</tr>
<tr>
<td>05&gt; System Setup</td>
</tr>
</tbody>
</table>

5.2.2 PRESS “0” and “2” keys – screen prompts:

Enter Password to Continue
00000000
5.2 Calibration (Cont.)

5.2.3 **PRESS** “ENTER” key – screen prompts:

Program/Cal
- 01> Measure Units
- 02> Sensor Install
- 03> Totalizer
- 04> 4-20 Inputs
- 05> Damping

----------OR----------
Program/Cal
- 06> Lost Signal
- 07> Flow Sim.
- 08> Integrator
- 09> Setpoints
- 10> Relays
- 11> Meter Factor

5.2.4 **PRESS** “0” and “4” keys – screen prompts:

4-20 Loop Output
- 01) Adjust Fwd
- 02) Adjust Rev
- 03) Fullscale

5.2.5 To adjust or calibrate 4 to 20 mA outputs, **PRESS** the “0” and “1” keys – screen prompts:

<table>
<thead>
<tr>
<th>&gt;1) Up</th>
<th>2) Down</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;3) Coarse</td>
<td>4) Fine</td>
</tr>
<tr>
<td>&gt;5) 4 mA</td>
<td>6) 20 mA</td>
</tr>
</tbody>
</table>

5.2.6 **PRESS** “5” key to adjust Zero; the cursor will appear before the 5) 4 mA line.

5.2.7 **PRESS** the “3” key for coarse adjustment,

**OR**

**PRESS** the “4” key for fine adjustment.
5.2 Calibration (Cont.)

5.2.8 PRESS the “1” key to adjust the mA upwards,

OR

PRESS the “2” key to adjust downwards to change LCU reading until output is optimized within tolerance per PM/S data sheet.

5.2.9 PRESS the “6” key to adjust Span; the cursor will appear before the 6) 20 mA line.

5.2.10 PRESS the “3” key for coarse adjustment,

OR

PRESS the “4” key for fine adjustment.

5.2.11 PRESS the “1” key to adjust the mA upwards,

OR

PRESS the “2” key to adjust downwards to change LCU reading until output is optimized within tolerance per data sheet.

5.2.12 PRESS “ENTER” key.

5.2.13 PRESS “MENU” key to return to normal operating screen.

5.2.14 REPEAT Section 5.1 AND

RECORD data in as-left section of PM/S data sheet.

5.3 Restoration

5.3.1 CLOSE breakers 13 and 15, motor controller, in panelboard 6653.

5.3.2 RESTORE to as-found conditions.

5.3.3 ENSURE alarms are re-set or cleared.

5.3.4 INFORM SOM test is complete and instrument/equipment/system may be returned to service.
5.4 Acceptance Criteria

Acceptance criteria has been met when steps in this procedure have been satisfactorily performed and results are recorded on the data sheet(s).

5.5 Review

5.5.1 INFORM FWS test is complete.

5.5.2 (FWS) REVIEW AND ENSURE the following:

- Completed data sheets meet the acceptance criteria
- Comments sections are filled out appropriately
- Work requests needed as a result of this procedure are identified and generated
- Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Comments/Remarks section of the data sheet.

5.6 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.