

2100 - Design

Effective 8/1/2013

[1. GENERAL](#)

[2. EQUIPMENT AND FITTING INVENTORY](#)

[3. EQUIPMENT EVALUATION PROCEDURES FOR MUELLER MACHINES AND VALVES](#)

[FORMS AND REFERENCES](#)

1. GENERAL

1. Project designer should consult relevant Operating Manuals and review applicable Operating Instructions for each procedure in job/work order.
2. Project designer should specify that a copy of appropriate Equipment Lists and Operating Instructions be reviewed by employees performing tapping work and that these documents are retained on project site for each procedures in the project work order package.
3. Project owner should schedule tap/stop with appropriate supervisor(s). Project owner is to document tap/stop date in UGPM by assigning a task to the relevant supervisor(s). Relevant supervisor is to complete task by confirming tap/stop date. Scheduling of tap/stop date should allow sufficient time to review procedures and prepare equipment.

2. EQUIPMENT AND FITTING INVENTORY

1. This section applies to all Mueller equipment and Mueller 4" and larger fitting supply. Currently there is no centralized inventory established or maintained for TDW equipment and fittings for steel applications.
2. Drilling/Stopping equipment should be evaluated and inventoried each year. The company Equipment Log is to be used to document equipment inventory and annual testing. The data base in the Equipment Log will be exported to Essentials Software when Essentials becomes active. The existing Mueller equipment is to be input into the Equipment Log in the following format:
 1. Input each machine or valve in the Equipment Log as:

OPERATIONS > CATEGORY > MECHANICALTOOLS > SUBCATEGORY > MUELLER MACHINES AND VALVES
 2. Equipment Log EQUIPMENT ID: Because the Essential Software Program is limited to 12 digits, the equipment is to be identified with a unique 12 digits ID. Format is to be 5 digit equipment number -three digit office location-two digit sequence number. For machines and valves that have a letter designation such as 'H-' or a leading '0' as part of the Catalogue Number, then only the final 5 digits of the equipment number is to be used.
 3. Three digit office locations to be:

COL

COLUMBIA

GCS
AIK
ABB
CHS
SUM
BEA
BLU
FLO
GDM
MAR
SMT
HRT
CHW
GMB
GEO
GLC

CAMDEN
AIKEN
ABBEVILLE
CHARLESTON
SUMMERVILLE
BEAUFORT
BLUFFTON
FLORENCE
DILLON
MARION
SUMTER
HARTSVILLE
CHERAW
MYRTLE BEACH
GEORGETOWN
LAKE CITY

4. Example Numbering:

39330-COL-01

10917-LEX-01

10917-LEX-02

5. Marking of equipment - die stamp and permanent marker with clear paint overspray are to be used initially. Future ID application may be standardized.

6. Equipment Log LOCATION: Typically OPERATIONS BLDG or TRUCK #xxxx

7. Equipment Log ASSIGNED TO: To be blank

8. Equipment Log MODEL: Input E5, D5, EH5, DH5, C1-36, 4" SLIDE GATE VALVE, 5" GATE VALVE, etc.

9. Equipment Log INSPECTION FREQUENCY: To be ANNUAL

3. Mueller 4" and larger fittings supply should be maintained in each office in an area designated as such.

4. Process for ordering and accounting associated with Mueller 4" and larger fittings supply to be handled according to the following:

1. New additions to supply- purchased as Capital with the following accounting distribution:

Bus Unit:	GA
Account:	1180270 (Construction Work In Process)
Oper Unit:	Applicable Oper Unit
Dept:	Applicable Cost Center
Work Order:	002020
Res Code:	235 (Valves Fittings and Supplies)
Activity:	MASI (Mains - System Improvement)

2. Existing fitting in Mueller 4" and larger fittings supply - a determination needs to be made regarding the account distribution of existing fittings. If the original accounting distribution is unknown, then the fitting should not be charged to a capital project. If the original accounting for the fitting is known and agrees with the use, then no changes to accounting are required. If the original accounting is known and does not agree with the use, then the accounting is to be changed to the appropriate blanket work order (typically 002020), 6 digit work order, or O&M.
3. Update Mueller 4" and Larger Supply Fitting spreadsheet on SharePoint at <https://dominionenergyo365.sharepoint.com/sites/sceggas/engineering/Shared%20Documents/Forms/AllItems.aspx>
4. Mueller 4" and larger fittings supply to be verified annually by Operations Manager and to be accurate as of December 31st of each year.
5. Mueller equipment and control valves shall be evaluated annually, to include:
 1. Mueller E5, D5, EH5, DH5, C1-36 machines and associated valves
 2. Equipment is to be evaluated yearly during working activities or on a fabricated jig and is to include use of equipment under pressure.
 3. Upon inspection and pressure testing of equipment, classify all the equipment that no longer functions as intended (Non-Satisfactory Test) as 'TO BE REPAIRED' OR 'TO BE RETIRED' on the attached Annual Equipment Evaluation Form for Non-Satisfactory Tests. Upon appropriate repair or retirement, update the Equipment Log and Sharepoint Inventory.
 4. Replaced or retired equipment is to be discarded in local metal dumpster.
6. Equipment Inventory Modifications - Additions and Subtractions
 1. Purchase of equipment will be handled by local office and input into Equipment Log and added to SharePoint Inventory.
 2. If equipment is removed from inventory, it shall be removed from the Equipment Log and SharePoint Inventory.
7. It is the responsibility of the local operations manager to complete an Annual Equipment Evaluation Form for Non- Satisfactory Tests as per this procedure and to retain copies for a period of 5 years.
8. It is the responsibility of the local operations manager to verify accuracy of the Equipment Inventory located on Gas SharePoint Site and to provide yearly updates as per this procedure.

3. EQUIPMENT EVALUATION PROCEDURES FOR MUELLER MACHINES AND VALVES

1. Procedure for E-5 (39330), D-5 (39305), D-4, and E-4 Machines and H-10917 Slide Gate/Control Valve:
 1. Utilize existing Mueller test apparatus with welded and tapped 2" H-17190 fitting or tapped 2" H-17161 fitting.
 2. For 2" H-10917 Slide Gate/Control Valve, connect to 2" H-17190 fitting.
 3. For 2.5" H-10917 Slide Gate/Control Valve, connect to 2" H-17161 fitting
 4. For 3" H-10917 Slide Gate/Control Valve in Abbeville and Dillon, connect to 2" H17190 fitting with 2.5" to 3" bushing.
 5. Place the drilling machine on control valve and tighten machine adapter nipple into control valve.

6. With control valve closed, inject air or air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
 7. With control valve open, inject air or air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
2. Procedure for EH-5 (39341) and DH-5 (39315) Machines and H-10917 Slide Gate/Control Valve:
 1. Utilize existing Mueller test apparatus with welded and tapped 2" H17190 fitting.
 2. Connect H-10917 control valve to the 2" fitting. If testing 2.5", 3" or 4" H-10917 Slide Gate/Control Valve, then use applicable bushing to connect control valve to 2" fitting.
 3. Place the drilling machine on control valve and tighten machine adapter nipple into control valve.
 4. Verify bleeder valve of machine is closed.
 5. With control valve closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100- 125 psig and check for leaks for 2 minutes. Successful test for valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree. 6. With control valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
3. Procedure for Line Stopper Unit No. 1 (H-17135) Machines and 2.5" H-10917 Slide Gate/Control Valve:
 1. Utilize existing Mueller test apparatus with welded and tapped 2" H17161 fitting.
 2. Connect 2.5" H-10917 control valve to the 2" fitting with 2.5" bushing (507782).
 3. Place the line stopper machine on control valve and tighten machine adapter nipple into control valve.
 4. With control valve closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100- 125 psig and check for leaks for 2 minutes. Successful test for valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
 5. With control valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
4. Procedure for 5" Gate Valve (88611):
 1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt the 5" Gate Valve (88611) to the fitting.
 3. With 5" Gate Valve (88611) closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for 5" Gate Valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig.
5. Procedure for C1-36 (39260) Machine:
 1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.

3. Bolt the C1-36 Machine (39260) and adapter to the 5" Gate Valve (88611).
 4. With 5" Gate Valve (88611) open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for C1-36 Machine (88611) is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
6. Procedure for Unit No. 2 Stopping (H-17235) and Completion (H-17246) Machine:
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt the successfully tested 5" Gate Valve (88611) to the fitting.
 3. Bolt the Unit No. 2 Stopping Machine or the Unit No. 2 Completion Machine to the 5" Gate Valve.
 4. With 5" Gate Valve (88611) open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for Unit No. 2 Stopping Machine or Completion Machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
7. Procedure for 9-1/4" Gate Valve (83953):
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt Valve Adapter (83513) to the 4" fitting.
 3. Bolt the 9-1/4" Gate Valve (83953) to the Valve Adapter.
 4. With Gate Valve closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for gate valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig.
8. Procedure for Unit No. 3 Stopping (H17335) or Unit No. 3 Completion (H-17345) Machine:
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt Valve Adapter (83513) to the 4" fitting.
 3. Bolt successfully tested 9-1/4" Gate Valve (83953) to the Valve Adapter.
 4. Bolt the Unit No. 3 Stopping Machine (H-17335) or Unit No. 3 Completion Machine (H-17345) to the Gate Valve.
 5. With Gate Valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for Unit No. 3 Stopping or Completion Machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
9. Procedure for Unit No. 3SW Stopping (H17340) or Completion (H-17346) Machine:
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt Valve Adapter (83513) to the 4" fitting.

4. Bolt Unit No. 3SW Stopping Machine (H17340) or Unit No. 3SW Completion Machine (H-17346) to the Gate Valve.
 5. With Gate Valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for Unit No. 3SW Stopping Machine or the Unit No. 3SW Completion Machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
10. Procedure for 9-1/4" Gate Valve (83721):
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt Valve Adapter (83513) to the 4" fitting.
 3. Bolt the 9-1/4" Gate Valve (83721) to the Valve Adapter.
 4. With Gate Valve closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for gate valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig.
11. Procedure for Unit No. 3SW-500 Stopping (H17342) or Completion (H-17347) Machine:
1. Utilize existing Mueller test apparatus with welded and tapped 4" H17255 fitting.
 2. Bolt Valve Adapter (83513) to the 4" fitting.
 3. Bolt successfully tested 9-1/4" Gate Valve (83721) to the fitting.
 4. Bolt Unit No. 3SW-500 Stopping Machine or Unit No. 3SW-500 Completion Machine to the Gate Valve.
 5. With Gate Valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for Unit No. 3SW-500 Stopping Machine or the Unit No. 3SW-500 Completion Machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.
12. Procedure for 14" Gate Valve (83318):
1. Bolt 14" Gate Valve (83318) to 12" Bottom Out fitting on test apparatus
 2. Bolt 4SW Stopping Machine or 4SW Completion Machine to gate valve.
 3. With Gate Valve closed, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for gate valve is accomplished if blowing gas is not observed and pressure does not drop below 75 psig.
13. Procedure for Unit No. 4SW Stopping (H17440) or Completion (H-17445) Machine:
1. Bolt 14" Gate Valve (83318) to 12" Bottom Out fitting on test apparatus
 2. Bolt 4SW Stopping Machine or 4SW Completion Machine to gate valve.
 3. With Gate Valve open, inject air or nitrogen into Sav-a-Valve on test apparatus. Bring pressure to 100-125 psig and check for leaks for 2 minutes. Successful test for Unit No. 4SW Stopping Machine or the Unit No. 4SW Completion Machine is accomplished if blowing gas is not observed and pressure does not drop below 75 psig on test tree.

FORMS AND REFERENCES [PDF files]

- [DI 2100 - Annual Equipment Evaluation Form for Non-Satisfactory Tests](#)

(UNCONTROLLED IF PRINTED)