PM000034

Revision 2

FIRE HYDRANT, PIV, AND ISOLATION VALVE INSPECTION

Maintenance Procedure
Information Only
[FP01]

APPROVED FOR USE

1.0 INTRODUCTION

This procedure provides work steps to safely perform inspections of Fire Hydrants, Isolation Valves, and Post Indicator Valves (PIV).

This procedure generates the following Quality records in accordance with the following:

- WP 13-1, Quality Assurance Program Description (QAPD)
  - ATTACHMENT 1- SIGN-OFF SHEET
  - ATTACHMENT 3 - ISOLATION VALVE CHECKLIST
  - ATTACHMENT 4 - PIV CHECKLIST
- Resource Conservation and Recovery (RCRA)
  - ATTACHMENT 2 - FIRE HYDRANT CHECKLIST

2.0 REFERENCES

BASELINE (DEVELOPMENTAL)

NFPA 24	Private Fire Service Mains and Their Appurtenances
NFPA 25	Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
NFPA 291	Fire Flow Testing and Marking of Hydrants
NM 4890139088	WIPP Hazardous Waste Facility Permit, TSDF, New Mexico Environment Department, October 27, 1999
WP 10-2	MOIM
WP 10-WC3010	Maintenance PM/MWI Controlled Document Processing
WP 10-WC3011	Maintenance Process
WP 12-FP.01	Fire Protection Program
WP 12-FP3001	Fire Protection Impairment Procedure
WP 12 IS.01	Industrial Safety Program
WP 13-1	Quality Assurance Program Description

REFERENCED (REQUIRED ON-HAND)

None required

3.0 MATERIAL LIST

ITEM	MATERIAL DESCRIPTION	QTY	UNIT	PR / WHSE STOCK NO.
1	Rags	N/A	N/A	38-01634
2	Lubricant, power lube	1	Can	X-51-04036

4.0 EQUIPMENT LIST

SPECIAL EQUIPMENT

ITEM	DESCRIPTION
1	Spanner wrenches
2	“T” handle wrench
3	Hydrant wench
4	Keys for PIV’s
5	Squirt oil can
6	Deflection device/diffuser
7	Small adjustable open end (Crescent)
8	Screw driver (straight)

5.0 PRECAUTIONS

The JOB HAZARDS CHECKLIST indicates types of hazards that may be present during the performance of this work. See the indicated section for precautions and mitigating actions.

JOB HAZARDS CHECKLIST

HAZARD	MITIGATED AT SECTION
OTHER HAZARD	[ ] 8.1
CHEMICAL HAZARD	[ ] 8.1, [ ] 8.2, [ ] 8.4

6.0 LIMITATIONS

[ ] 6.1. HOLD AND WITNESS POINTS

None required

[ ] 6.2. TAGOUT/LOCKOUT

None required

[ ] 6.3. OTHER LIMITATIONS

- The order of completion of this work may be modified, or sections may be performed in parallel.
- Brackets at the beginning of steps are optional place-keeping aids, and may be checked off as work progresses.
- All personnel affixing initials to this package shall provide the information listed in the PERSONNEL DATA TABLE.
- Troubleshooting or other activities outside the scope of this PM may require the initiation of a work order as directed by the Responsible Engineer.

7.0 PREREQUISITES

[ ] 7.1. ADMINISTRATIVE

[ ] 7.1.1. Personnel performing this work review these work instructions.

[ ] 7.1.2. Record work order number on Attachments.

[ ] 7.1.3. Notify Central Monitoring Room (CMR) of fire hydrant and isolation valve inspection (Annual only), or PIV inspection (as required).

SIGN-OFF EST

[ ] 7.2. TASK PREPARATION

[ ] 7.2.1. Obtain materials and equipment shown in Materials and Equipment section.

8.0 PERFORMANCE

WARNING

This warning applies to section [ ] 8.1

Area around fire hydrant shall be clear of any obstructions that would hinder access to fire hydrant in case of an emergency.

WARNING

Chemical Hazard Exists

This warning applies to section [ ] 8.1

Personnel shall be familiar with the chemical manufacturer's Material Safety Data Sheet for chemicals used during the performance of this work

[ ] 8.1. FIRE HYDRANT INSPECTION (SEMI-ANNUAL)

[ ] 8.1.1. All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used.

SIGN-OFF EST

[ ] 8.1.2. Verify fire hydrant is clear of any obstructions.

[ ] 8.1.3. Inspect for the following deterioration:

- Cracks
- Erosion
- Salt buildup
- Damage
- Corrosion
- Loose or missing parts
- Structural deterioration.

[ ] 8.1.4. Remove hydrant caps.

[ ] 8.1.4.1. Clean nozzles and caps

[ ] 8.1.4.2. Inspect threads for damage.

[ ] 8.1.4.3. Lubricate threads with spray lubricant.

[ ] 8.1.5. Replace and tighten all caps hand tight.

[ ] 8.1.6. Inspect 2 ½" gate valve.

[ ] 8.1.6.1. Open and close valve.

[ ] 8.1.7. Record semi-annual fire hydrant inspection on Attachment 2.

WARNING

Chemical Hazard Exists

This warning applies to section [ ] 8.2

Personnel shall be familiar with the chemical manufacturer's Material Safety Data Sheet for chemicals used during the performance of this work

[ ] 8.2. FIRE HYDRANT AND ISOLATION VALVE INSPECTION (ANNUAL)

[ ] 8.2.1. All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used.

SIGN-OFF EST

[ ] 8.2.2. Lubricate hydrant with oil via screw/bolt port at top of operating nut.

[ ] 8.2.3. Verify isolation valve is in full open position.

NOTE

This note applies to section [ ] 8.2.4

Opening or closing isolation valve should take ~19 to 22 turns. To close and open, the valve should equal the same number of turns (±½).

[ ] 8.2.4. Close isolation valve and record number of turns on Attachment 3.

[ ] 8.2.5. Open hydrant.

[ ] 8.2.6. Remove cap and open hydrant gate valve to ensure flow is isolated at isolation valve.

[ ] 8.2.7. Close hydrant gate valve.

[ ] 8.2.8. Open isolation valve and record number of turns Attachment 3.

[ ] 8.2.9. **IF** appropriate, to avoid washout of surrounding ground and/or water pressure to nearby structures,
THEN attach deflection device/diffuser (no nozzle) to hydrant port being used. (Port may have to be opposite the gate valve if barrier post location prevents attachment of deflection device/diffuser.

[ ] 8.2.10. Open hydrant gate valve, and allow to flow until all debris is cleared, or for at least one minute.

[ ] 8.2.11. **IF** attached
THEN remove deflection device/diffuser.

[ ] 8.2.12. Close hydrant gate valve.

[ ] 8.2.13. Check for leaks at hydrant.

[ ] 8.2.14. Close hydrant.

[ ] 8.2.15. Ensure hydrant drains internally as following:

- Open hydrant gate valve
- With other port capped, place hand over port completely to determine in suction is present (this is an indication that water is draining properly from the hydrant barrel)

[ ] 8.2.16. Close hydrant gate valve and install cap hand tight.

[ ] 8.2.17. **IF** hydrant, isolation,
OR gate valve fails inspection,
THEN notify CMR
AND initiate an Action Request (AR)
AND impairment tag.

SIGN-OFF EST

[ ] 8.2.18. Reset Water Pumphouse Fire Alarm Panel (FAP).

[ ] 8.2.19. Record annual hydrant and isolation valve inspection on Attachments 2 and 3.

[ ] 8.3. PIV INSPECTION (MONTHLY)

[ ] 8.3.1. Inspect for the following deterioration:

- Cracks
- Erosion
- Salt buildup
- Damage
- Corrosion
- Loose or missing parts
- Structural deterioration.

[ ] 8.3.2. Verify valve is locked open

[ ] 8.3.3. Record Monthly PIV inspection on Attachment 4.

WARNING

Chemical Hazard Exists

This warning applies to section [ ] 8.4

Personnel shall be familiar with the chemical manufacturer's Material Safety Data Sheet for chemicals used during the performance of this work

[ ] 8.4. PIV INSPECTION (ANNUAL)

[ ] 8.4.1. All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used.

SIGN-OFF EST

[ ] 8.4.2. Unlock operating handle.

[ ] 8.4.3. Lubricate indicator post with oil via screw post at top of post.

NOTE

This note applies to section [ ] 8.4.4

Opening or closing PIVs should take the same number of turns (±½). Ten inch valves will take ~ 31 to 34 turns. Six inch valves will take ~ 19 to 22 turns.

[ ] 8.4.4. Close valve and record number of turns on Attachment 4.

[ ] 8.4.5. Verify window indicator shows CLOSED and is legible.

[ ] 8.4.6. Open valve and record number of turns Attachment 4.

[ ] 8.4.7. Verify window indicator shows OPEN and is legible.

[ ] 8.4.8. Place operating handle in locking position and install lock.

[ ] 8.4.9. Clean indicator windows, if needed.

[ ] 8.4.10. **IF** PIV fails inspection,
THEN notify CMR
AND initiate an AR
AND initiate impairment tag.

SIGN-OFF EST

[ ] 8.4.11. Record annual PIV inspection on Attachment 4.

[ ] 8.5. TASK VERIFICATION

None required

[ ] 8.6. RESTORATION TO OPERATIONAL STATUS

[ ] 8.6.1. Notify CMR inspections are completed.

[ ] 8.6.2. FSM or designee perform the following:

- Review completed form for completeness
- Print name, sign, and date form
- Make additional comments on form (as required)
- Retain form for filing in accordance with RCRA and ES Records Inventory and Disposition Schedule (RIDS)

ATTACHMENT 1 – SIGN-OFF SHEET

PREREQUISITES

Section	Action	Initials
[ ] 7.1.3	Notify Central Monitoring Room (CMR) of fire hydrant and isolation valve inspection (Annual only) or PIV inspection (as required)	**EST**____

PERFORMANCE

Section	Action	Initials
[ ] 8.1.1	FIRE HYDRANT INSPECTION (SEMI-ANNUAL) ONLY All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used. N/A_____	**EST**____
[ ] 8.2.1	FIRE HYDRANT AND ISOLATION VALVE INSPECTION (ANNUAL) ONLY All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used. N/A_____	**EST**____
[ ] 8.2.17	FIRE HYDRANT AND ISOLATION VALVE INSPECTION (ANNUAL) ONLY N/A_____ Notified CMR YES_____ Initiated an AR YES_____ Initiated impairment tag. YES_____	**EST**____
[ ] 8.4.1	PIV INSPECTION ANNUAL ONLY All personnel involved in the performance of this work discuss hazards, precautions and mitigating actions to be taken for the chemical being used. N/A_____	**EST**____
[ ] 8.4.10	PIV INSPECTION ANNUAL ONLY N/A_____ Notified CMR YES_____ Initiated an AR YES_____ Initiated impairment tag. YES_____	**EST**____

Comments:

_____
_____
_____
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_____
_____

PERSONNEL DATA

PRINTED NAME	SIGNATURE	INITIALS	DATE	TIME

ATTACHMENT 2 – FIRE HYDRANT CHECKLIST

FIRE HYDRANT INSPECTIONS

Semiannual [ ] Annual [ ] Date_____

√ OK O Repairs Required

AR Written: [ ] Yes [ ] No

(check or complete appropriate information)

RCRA Deterioration Inspection [ ] Yes [ ] No (Record any deficiencies and corrective actions in comments)

No.	Time	Condition	Corrective Action
01			
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			

Comments:

_____

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_____

_____

RCRA Form

ATTACHMENT 3 – ISOLATION VALVE CHECKLIST

ISOLATION VALVE INSPECTIONS

[ ] ANNUAL Date_____

__√__ OK O Repairs Required

AR Written: [ ] Yes [ ] No

(check or complete appropriate information)

RCRA Deterioration Inspection [ ] Yes [ ] No (Record any deficiencies and corrective actions in comments)

No.	Time	Condition	Turns to Close	Turns to Open	Corrective Action
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

Comments:

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_____

ATTACHMENT 4 – PIV CHECKLIST

PIV (in size)	PIV INSPECTIONS [ ] MONTHLY [ ] ANNUAL Date _____ __√__ OK __O__ Repairs Required AR Written: [ ] Yes [ ] No (check or complete appropriate information) RCRA Deterioration Inspection [ ] Yes [ ] No (Record any deficiencies and corrective actions in comments)			
01 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		20 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
02 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		21 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
03 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		22 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
04 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		23 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
05 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		24 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
06 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		25 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
07 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		26 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
08 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		27 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
09 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		28 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
10 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		29 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
11 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		30 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
12 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		31 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
13 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		32 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
14 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		33 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
15 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		34 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
16 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		35 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
17 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		36 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
18 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		37 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time
19 (6)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time		38 (10)	Locked: Y N Turns: [ ] Closed [ ] Open Condition Time

Comments:

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