

SHRIMP/DIMP Update

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SIF Chief Operating Officer
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SIF

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- ▣ Independent of APGA
- ▣ Assist small operators to operate safe gas distribution systems
- ▣ “Small operators” include —
 - Natural gas utilities
 - Master meter, and
 - Propane piping systems
- ▣ For 10 years funded through a cooperative agreement with PHMSA
- ▣ Is now self-sufficient

DIMP Rule

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- ▣ Initial DIMP plan by August 11, 2011
- ▣ Minimum re-evaluation every 5 years
- ▣ State agencies have performed at least one inspection:
 - Form 22 for initial plan review
 - Form 24 for operators' implementation of plan requirements

SHRIMP 3

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- ▣ New Excavation Threat Assessments
- ▣ The Excavation Threat Assessments have been rewritten:
 - Fixed Blasting Risk Ranking
 - Allows segmenting by geography or excavators
 - Risk ranking compares segment statistics with overall statistics
- ▣ Users will need to repeat the Excavation Threat Assessments from their beginning.

Comparison of segments with overall

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- We have compared your reported damages and tickets against the entire system. ([EXC-GeoComp](#))

This is a placeholder to show what will appear.

Your Choice (weight: 0) --

Comparisons

| Item | This Section | Entire System | Section Percent |
|---------------------------|--------------|---------------|-----------------|
| Damages per mile of main | 0.01 | 0.10 | 7.9% |
| Damages per 1000 services | 0.21 | 3.09 | 6.9% |
| Tickets per mile of main | 0.63 | 1.20 | 52.7% |
| Tickets per 1000 services | 16.82 | 31.95 | 52.6% |
| Damages per 1000 tickets | 25.52 | 179.63 | 14.2% |
| | 0.000 | 0.000 | 0 |

Comparison of segments with overall

6

Interview: Excavation (SHRIMP 3)->Damages By Geographic Area

Section: Mock Town Company ->Geo_01

Description: Entire System ->New subdivision construction on NW side

Always consider the question in the context of the highlighted interview and section above.

This question refers to the section/segment **Geo_01 - New subdivision construction on NW side**.

We have compared your reported damages and tickets against the entire system. (EXC-GeoComp)

| Item | This Section | Entire System | Section Percent |
|---------------------------|--------------|---------------|-----------------|
| Damages per mile of main | 3.55 | 0.10 | 3653.5% |
| Damages per 1000 services | 82.00 | 3.09 | 2651.2% |
| Tickets per mile of main | 15.75 | 1.20 | 1308.9% |
| Tickets per 1000 services | 630.00 | 31.95 | 1972.0% |
| Damages per 1000 tickets | 225.86 | 179.63 | 125.7% |

Comparison of segments with overall

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Interview: Excavation (SHRIMP 3)->Damages By Geographic Area
Section: Mock Town Company ->Geo_01
Description: Entire System ->New subdivision construction on NW side

Always consider the question in the context of the highlighted interview and section above.

This question refers to the section/segment **Geo_01 - New subdivision construction on NW side**.

We have compared your reported damages and tickets against the entire system. (EXC-GeoComp)

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Summary of Changes

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- New Natural Forces Threat Assessments:
- The Natural Forces Threat Assessments have been rewritten:
 - Pick list of natural forces sub threats
 - Forces user to identify areas subject to natural forces
- Users will need to repeat the Natural Forces Threat Assessments from their beginning.

Summary of Changes

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Are there areas of the system that are subject to any of the following? (Check all that apply) (NF102)

Guidance

Below is a list Natural Forces that are known have the potential to cause damages. If your system has any areas subject to these Natural Forces, you should select the appropriate box, even if you have not experienced problems. Shrimp will create a separate interview for each item checked where you will be required to identify the affected section(s).

If your system does not have any areas subject to these Natural Forces, you should check "None of These".

- None of These
- Earth movement (Specifics in Next Question)
- Lightning
- Flooding
- Scouring or washouts due to flowing water
- Falling chunks of snow or ice
- High winds or hurricanes or tornadoes
- Other natural causes not listed above.

Summary of Changes

10

You have indicated that there are areas of the system that are subject to Earth Movement. Please choose any of the following? (Check all that apply) (NF102c)

Guidance

Below is a list Natural Forces due to Earth Movement that are known have the potential to cause damages. If your system has any areas subject to these, you should select the appropriate box, even if you have not experienced problems. Shrimp will create a separate interview for each item checked where you will be required to identify the affected section(s).

If your system does not have any areas subject to these, you should check "None of These".

- None of These
- Subsidence
- Frost heave
- Earthquakes
- Landslides or mudslide

Summary of Changes

Guidance

Based on your previous responses, these additional interviews have been created. You should complete each one by using the Begin, Continue Review links before continuing with the current interview.

- Earth Movement due to Frost heave

This interview will be used to determine if Natural Forces damage caused by Earth Movement due to Frost heave is a threat that requires additional actions on portions of your distribution system piping.

Frost heave

Frost heave

Completed
[Continue Review Refs](#)

- Earth Movement due to Landslides or Mudslides

This interview will be used to determine if Natural Forces damage caused by Earth Movement due to Landslides/mudslide is a threat that requires additional actions on portions of your distribution system piping.

Landslides or Mudslides

Landslides or mudslide

Completed
[Restart Review Refs](#)

- Scouring or washouts due to flowing water

This interview will be used to determine if Natural Forces damage caused by Scouring/washouts due to flowing water is a threat that requires additional actions on portions of your distribution system piping.

Scouring or washouts

Scouring or washouts due to flowing water

Completed
[Restart Review Refs](#)

Summary of Changes

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What areas are subject to Landslides or mudslide? (NFAREA101a)

Guidance

Each row should describe one portion of your system that is subject to Landslides or mudslide. Use as many rows as necessary. In each row please create a unique name for this portion of your system, enter the miles of mains and number of services that are within this portion of your system and enter a brief description of the area. To remove an area, set the Mains and Services to zero(0).

| Area Name | Mains | Services | Description |
|----------------|-------|----------|------------------------|
| River crossing | 1.000 | 0 | River crossing at 1 st |
| | 0.000 | 0 | |
| | 0.000 | 0 | |
| | 0.000 | 0 | |

Summary of Changes

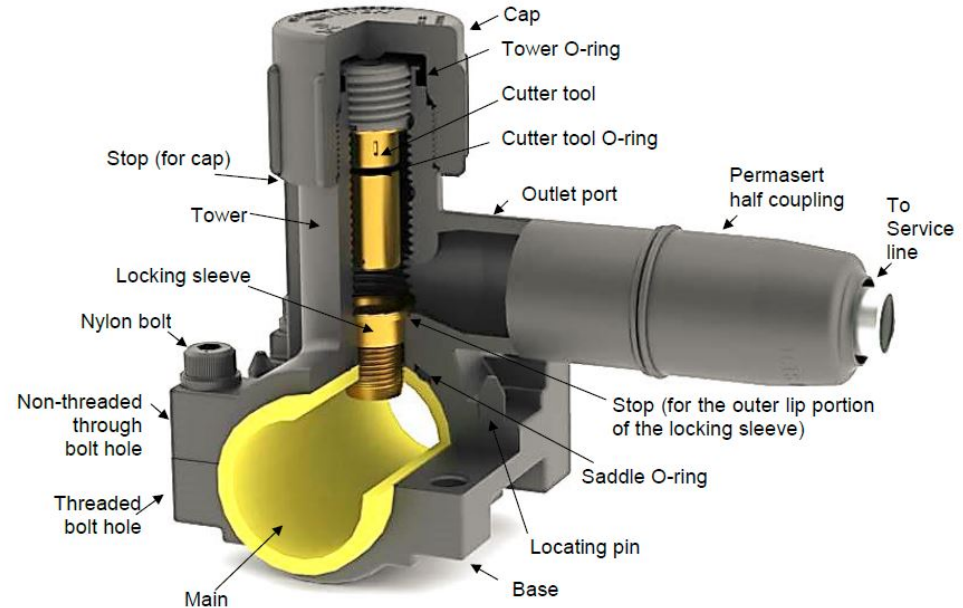
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- New Materials, Welds and Joints Subthreat
- A new subthreat under Materials, Welds and Joints has been added to address potential risks from PermaLock tapping tees. Links have been provided to NTSB accident reports and related materials and to Honeywell's revised installation procedures.
- Materials, Welds and Joints Threats have been marked incomplete as a reminder to address the new subthreat

Summary of Changes

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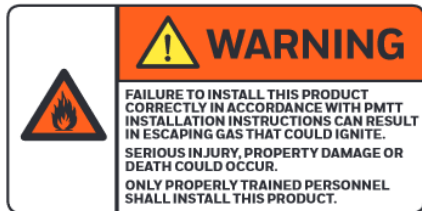
- NTSB Accident Investigation found issues with installation procedures and nylon bolts
- Recommended to PHMSA that operators address issue in DIMP



Perfection Permalock® Tapping Tee (PMTT) - Installation Instructions

1 1/4 IPS to 4 IPS (PE) Main

For Use On Polyethylene Gas Systems Only



Tools Required for Assembly

Depth Tube (included)
5/16" T-Handle and/or Hex Socket Wrench
(wrench handle should be no longer than 12")

Installation Instructions

1. Assembly Preparation. Remove Permalock Tapping Tee (PMTT) and Depth Tube from the box (check PMTT Tower for Tower and Saddle

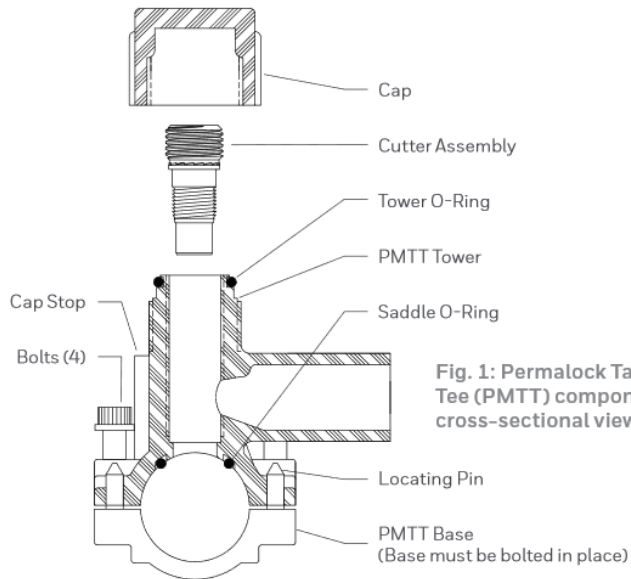


Fig. 1: Permalock Tapping Tee (PMTT) components cross-sectional view

3. Assemble onto (PE) Main. Bolt the PMTT onto the (PE) Main first by hand-threading. Then using a 5/16" hex socket wrench, tighten the

Summary of Changes

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- All sections are now listed in the risk ranking section. Those sections that were considered to "not be a threat" in prior versions of SHRIMP will now appear in the risk ranking with low probability scores
- The consequence questions will now be asked for all sections.
- Any affected interviews will be marked incomplete as a reminder to answer the additional consequence questions.

Summary of Changes

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- A new consequence question asking about at-risk facilities (schools, hospitals, nursing homes, etc.) has been added
- Segments with these facilities will get a higher consequence score
- Users are encouraged to subsection those areas with these facilities
- Any affected interviews have been marked incomplete as a reminder to answer the new consequence question.

Changes to written plan

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- All answers to threat assessment interview questions that result in an increase in risk score are listed as actual threats, potential threats and increases in potential consequences
- Chapter 8 PERIODIC EVALUATION AND IMPROVEMENT has been revised to define an increase of risk beyond an acceptable level as any threat-specific performance measure that shows a statistically significant trend toward higher risk.
- The user may write a different definition of unacceptable increase in risk that will be substituted for the SHRMP default.

Actual and Potential Threats

External Corrosion On Cast, Wrought, Ductile Iron Mains And Services (8" Or Smaller)

The threat of External corrosion on cast, wrought, ductile iron mains and services (8" or smaller) was assessed to determine if it warranted further consideration for additional action beyond code compliance or current system practice.

The following were threat indicators:

- Responses indicating an actual threat:
 - Fractures have occurred on the cast/ductile iron pipes other than those related to excavation activities.
 - Confirmed corrosion leaks have occurred on this section.
 - Exposed pipe inspections indicate a corrosion problem.
 - Exposed pipe inspections indicate that graphitization is occurring.
- Responses indicating a potential threat:
 - Cast/ductile iron mains have steel laterals connected with no electrical isolation.
- Responses indicating higher potential consequences:
 - The pipe is predominately located within business districts.
 - A failure of this section could result in moderate disruption of service.

Defining Unacceptable Increase in Risk

Chapter 8. PERIODIC EVALUATION AND IMPROVEMENT

Mock Town Company will conduct a complete re-evaluation of this Plan at least every 2 years. Trends in each of the performance measures listed in [Chapter 7, MEASURE PERFORMANCE, MONITOR RESULTS AND EVALUATE EFFECTIVENESS](#) will be reviewed during the re-evaluation. If any performance measure indicates that any of the additional action taken is not effective in reducing the risk it is intended to address, Mock Town Company will consider implementing additional actions to address that risk.

Re-evaluation of the Plan will also occur when changes occur on the system that may significantly change the risk of failure, including but not limited to:

- Completion of any additional actions listed in [Chapter 6, ADDITIONAL/ACCELERATED MEASURES TO ADDRESS RISKS](#) of this Plan,
- A review of performance measures indicates an increase of risk beyond an acceptable level for any threat-specific performance measure. An increase of risk beyond acceptable level means that the Mann-Kendall test determines there is a statistically significant trend in the direction of higher risk, in which case consideration will be given to modifying the Additional/Accelerated Actions for that specific threat.
- A review of performance measures concludes that a change of approach is warranted.

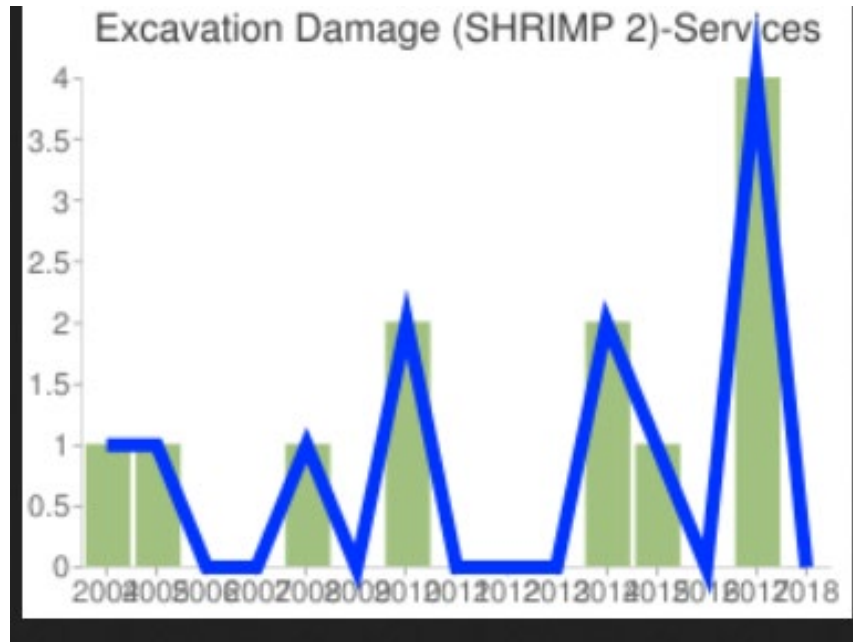
[Section 11.5, "PLAN CHANGE LOG"](#) provides a log of the plan changes detailing differences between this Plan (Version 5.2.1) and the previous Plan (Version 5.1.1).

[Section 11.5.6, "ANALYSIS OF RISK BASED PERFORMANCE MEASURES"](#) presents data to help measure the effectiveness of the Additional/Accelerated Actions.

A detailed description of the procedures for periodic evaluations and program improvements is found in [Section 11.4, "DESCRIPTION OF THE PROCESS FOLLOWED TO DEVELOP THIS PLAN"](#)

Defining Unacceptable Increase in Risk

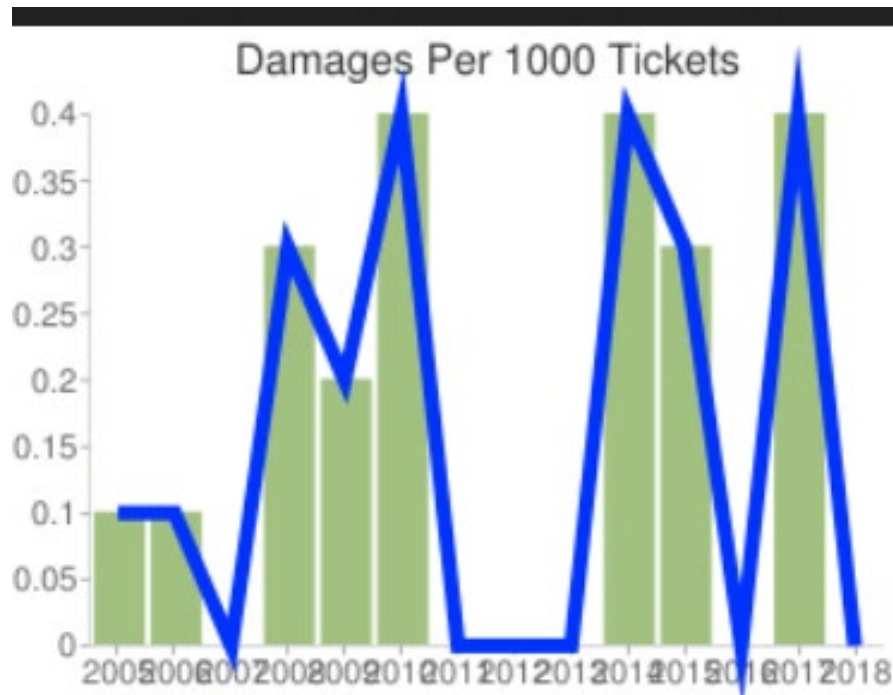
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- Is this an unacceptable increase in risk?
- Operator was given an NOPV for not considering these results as showing a “significant increase in the number of excavation damages from 2015 to 2018”

Defining Unacceptable Increase in Risk

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- Mann-Kendall test finds that this is not a statistically-significant upward trend
- Damages/1000 tickets average = 0.181
- National Average (2017) = 2.78

Gas 101 Videos

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- ❑ Short educational videos aimed at educating elected officials who oversee a gas utility
- ❑ <http://apgasif.org/gas-operations-safety-orientation-videos/>
- ❑ Available now:
 - ▣ Natural Gas Basics
 - ▣ Distribution Accident Root Causes
 - ▣ How Pipeline Safety Regulations are Developed
- ❑ More are under development

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