PACIFIC GAS AND ELECTRIC COMPANY

CALIFORNIA GAS TRANSMISSION
GAS SYSTEM MAINTENANCE & TECHNICAL SUPPORT
SYSTEM INTEGRITY SECTION
Risk Management

Procedure for Risk Management

Procedure No. RMP-03
Rev. 0
Third Party Threat Algorithm

Prepared By: [redacted] Date: 11/13/01

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Approved By: [redacted] Manager, System Integrity Date: 11/13/01

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3					

Table of Contents

1.0 PURPOSE

The purpose of this procedure is to provide a guideline for determining the Third Party Threat Algorithm for the determination of Likelihood of Failure and Risk for California Gas Transmission's (CGT) Risk Management Program (RMP).

2.0 SCOPE

This guideline is applicable to all of CGT's gas transmission pipeline facilities and is to be used in conjunction with RMP Procedure 01. The algorithm provided in this procedure is Pipelines. It is not applicable to regulator, compressor, or storage station facilities

The RMP is responsible for managing risk within the scope of this procedure. The RMP shall establish and manage the risk of each pipeline facility by utilizing industry and regulatory accepted methodologies appropriate for PG&E's CGT facilities and shall be in conformance with this procedure. The Lead Risk Management Engineer shall be responsible for compliance with this procedure.

3.0 INTRODUCTION

The RMP is a process of calculating risk, developing risk mitigation plans to bring and maintain risk within an acceptable risk profile, and monitoring risk to accommodate changes in the factors which affect risk. (Procedure RMP-01 provides a guidelines for the Risk Management Process.) This procedure supports the calculation of risk, required by Procedure RMP-01, due to one of the basic threats imposed on gas pipelines, Third Party (TP).

As described in RMP-01, Risk is defined as the product of the Likelihood of Failure (LOF) and the Consequence of Failure (COF). A relative risk calculation methodology is used to establish risk for all pipeline segments within the scope of RMP-01. The method used to calculate risk is based on an index model and qualitative scoring approach. Likelihood Of Failure (LOF) is defined as the sum of the following threat categories: External Corrosion (EC), Third Party (TP), Ground Movement (GM) and Design/Materials (DM).

Each threat category is weighted in proportion to PG&E and industry failure experience. TP is weighted at 45%. The weightings on the threat categories will be reviewed and approved annually by the Consequence Steering Committee. For each threat category, the appropriate steering committee will identify the significant factors that influence the threat's likelihood of failure. For each factor, a percentage weighting will be established to identify the factor's relative significance in determining the threat's likelihood of failure within the threat algorithm. Points will be established based on criteria that the committee feels is significant to determining the threat's likelihood of failure due to each factor and the relative severity of failure (leak-before-break vs. rupture). (Negative points may be assigned where current assessments have been made to confirm pipeline integrity and/or mitigation efforts have eliminated or lowered susceptible to a threat.) Generally, the summation of the percentage weightings for all of the factors within each threat will be 100%. (There may be exceptions to permit the consideration of very

unusual conditions.) For the threat of TP, the scoring is based on direction from the TP Steering Committee.

4.0 TP Threat Algorithm

Third Party (TP) shall be calculated per the direction of the TP Steering Committee. The committee has determined that the factors in A through J of this section are significant for determining the Likelihood of Failure (LOF) of a gas pipeline due to *third party* damage. The TP contribution to LOF shall be the summation of assigned points times the assigned weighting of the following factors:

A) Potential Ground Breaking Frequency (13% Weighting): Points will be awarded as follows:

Criteria	Points	Contrib.
Dig-in Concern*	100	13
Class 3 and 4 Areas	100	13
Class 2 Area	50	6.5
Class 1 Area	10	1.3

* Dig-in concerns will be reported to the RMP by District/Division personnel every two years. They shall also be within a ¼ mile of a leak that has occurred within the last 10 years, unless some mitigation efforts have been documented.

B) Third Party Damage Prevention (10% Weighting): Points will be awarded as follows:

Criteria	Points	Contrib.
None	0	0
Standby	-100	-10
Aerial Patrol	-20	-2

C) Ground Cover Protection (15% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
More than 5.99'	10	1.5
> 2.99' to 5.99'	40	6
> 2' to 2.99'	80	12
> 0' to 2'	100	15
0'	60	9
Unknown*	40	6

* DEFAULT.

D) Pipe Diameter (7% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
Pipe Diameter <12"	100	7
Pipe Diameter ≥ 12"	0	0

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E) Wall Thickness (13% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
Less than 0.250 inches	100	13
0.250 to 0.500 inches	30	3.9
Greater than 0.500 inches	10	1.3

F) Line Marking (6% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
Line of Sight	10	0.5
Poor Condition	60	3.0
None*	100	5

*Default

G) MOP vs. Pipe Strength* (10% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
>80% (Default)	100	10
60% to 80%	80	8
40% to <60%	50	5
30% to <40%)	30	3
20% to <30%	10	1
Less than 20%	5	0.5

* Pipe Strength shall be determined to be equal to (SMYS)(2)(t)(Je)/(OD). 2

H) Third Party Leak* Rate (16% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
Pipe Segments with more than one leak** within the impact zone of that segment	150	27
Pipe Segment with one leak within its impact zone	100	18
Pipe Segment in proximity (Leak within the route impact zone and within one mile.)	50	9

* Includes both leaks and hits within the last twenty years.
** Only leaks or hits on the same route and within the impact zone are awarded points.

I) Public Education Program (9% Weighting): Points awarded as follows:

Criteria	Points	Contrib.
Field Contact*	-100	-9
Landowner Notification**	-70	-6.3
Trade Show***	-25	-2.25

* Field Contact is defined as direct contact within the last 12 months.
** Points for Landowner Notification will be awarded if a letter was sent to the landowner within the last 24 months. 2
*** Points are awarded to pipe segments within a 30 mile radius of a trade show when a trade show has been performed within the last

12 months. The lead CGT PSIP Engineer will keep a record of the trade shows and will establish the area credited for the trade show.