2021 RISK ASSESSMENT MITIGATION PHASE

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Workshop: SoCalGas Medium Pressure, High Pressure, and Storage Incident Risks





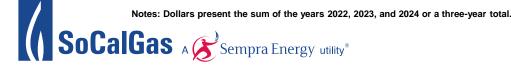
Agenda

Descriptions	Start	End
Introduction	9:00	9:15
Overview SoCalGas Risks with High-Cost Mitigations	9:15	9:30
Risk: Incident Related to the Medium Pressure System		
LoRE, CoRE, Risk Score for Risk	9:30	9:45
DIMP Program: VIPP Mitigation RSE and Discussion	9:45	10:15
 Overview High-Cost Mitigations: Safety Related Field Orders 		
Risk: Incident Related to the High-Pressure System		
LoRE, CoRE, Risk Score for Risk	10:15	10:30
TIMP Program: TIMP-HCA Mitigation RSE and Discussion	10:30	11:00
Risk: Incident Related to the Storage System		
LoRE, CoRE, Risk Score for Risk	11:00	11:15
SIMP Program: SIMP Mitigation RSE and Discussion	11:15	11:30
Overview High-Cost Mitigations: Well Abandonment and Replacement	11:30	11:45
Wrap-Up / Next Steps	11:45	12:00



CONTROLS & MITIGATIONS Summary of High-Cost Mitigations

Risk Risk ID		ID	Control/Mitigation Name	Total Cost (\$M)	
SCG	MP	C21-T1	Distribution Integrity Management Program (DIMP) – Distribution Risk Evaluation and Monitoring System (DREAMS): Vintage Integrity Plastic Plan (VIPP)	\$ 65	
SCG	HP	C21-T2	TIMP: Integrity Assessments & Remediation (Non-HCA)	\$ 42	:8
SCG	STOR	C01	SIMP: Integrity Demonstration, Verification, and Monitoring Practices	\$ 30	9
SCG	MP	C32	Safety Related Field Orders	\$ 29	9
SCG	MP	C21-T2	DIMP – DREAMS: Bare Steel Replacement Program (BSRP)	\$ 28	2
SCG	HP	C22-T3.4	PSEP: Hydrotesting (Phase 2A, GRC base, non-HCA)	\$ 27	0
SCG	HP	C21-T1	TIMP: Integrity Assessments & Remediation (HCA)	\$ 24	·7
SCG	HP	C23-T2	Ventura Compressor Station Modernization	\$ 17	9
SCG	HP	M01-T1	Gas Transmission Safety Rule - MAOP Reconfirmation (HCA)	\$ 17	<u>'1</u>
SCG	STOR	C02	Well Abandonment and Replacement	\$ 12	:7
SCG	HP	C22-T3.2	PSEP: Pipeline Replacement (Phase 2A, GRC base, non-HCA)	\$ 9)4
SCG	MP	C22	DIMP: Gas Infrastructure Protection Program (GIPP)	\$ 8	<u> 5</u>
SCG	MP	C20	DIMP – DREAMS: Distribution Riser Inspection Program (DRIP)	\$ 7	'4
SCG	MP	C23	DIMP – DREAMS: Sewer Lateral Inspection Project (SLIP)	\$ 7	'4
SCG	MP	C19	Main Replacements- Leakage, Abnormal Op. Conditions, CP Related	\$ 72	'2
SCG	HP	M01-T2	Gas Transmission Safety Rule - MAOP Reconfirmation (Non-HCA)	\$ 7	0
SCG	HP	C22-T2.4	PSEP: Pipeline Replacement (Phase 1B, GRC base, non-HCA)	\$ 6	9
SCG	MP	C30	Meter Set Assembly (MSA) Inspection Program	\$ 6	7
SCG	MP	C08/C17	Leak Survey and Main & Service Leak Repair	\$ 6	7
SCG	HP	C10	Compressor Stations – Capital	\$ 6	 i1



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INCIDENT RELATED TO THE MEDIUM PRESSURE SYSTEM (EXCLUDING DIG-IN)



Incident Related to the Medium Pressure Gas System (Excluding Dig-in)

Risk Description & Scope

The risk of damage, caused by a medium pressure system (maximum allowable operating pressure (MAOP) at or lower than 60 psig) failure event, which results in serious consequences such as injuries, fatalities, or outages and includes consequences beyond the customer meter

Risk Quantification

LoRE	CoRE	Risk Score		
544.99	5.63	3,071		

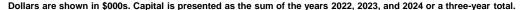
Summary of Risk Plan

- SoCalGas's Risk Plan includes:
 - 32 existing activities
 - 19 mitigations (C1 C19) holistically pertaining to the medium pressure system
 - o 4 mitigations (C20 C23) specific to the Distribution Integrity Management Program
 - o 1 mitigation (C24) specific to the Control Center Modernization, and
 - o 8 mitigations (C25-C32) pertaining to Customer Service Fields
 - No planned new mitigations
- o Nine of the mitigations are in the top 20 highest cost mitigations

CONTROLS & MITIGATIONS

Summary of High-Cost Controls & Mitigations						
	2020 Capital	2022-2024 Capital	2020 O&M	2024 O&M		
C21-T1 DIMP: DREAMS - Vintage Integrity Plastic Plan (VIPP)	\$106,945	\$501,070 - \$606-560	\$4,095	\$45,515 - \$55,100		
C32: Safety Related Field Orders	\$4,878	\$16,965 - \$20,540	\$61,126	\$90,198 - \$109,187		
C21-T2 DIMP: DREAMS - Bare Steel Replacement Program (BSRP)	\$73,630	\$214,745 - \$259,955	\$3,055	\$19,505 - \$23,615		
C22: DIMP: Gas Infrastructure Protection Project (GIPP)- Medium Pressure and High pressure	\$13,575	\$49,145 - 62,800	\$2,110	\$10,430 - \$13,325		
C20: DIMP: Distribution Riser Inspection Project (DRIP)	N/A	N/A	\$19,820	\$22,260 - \$28,445		
C23: DIMP: Sewer Lateral Inspection Project (SLIP)	N/A	N/A	\$15,970	\$22,260 - \$28,445		
C19: Main Replacements (Leakage, AOC, CP)	\$23,000	\$63,000 - \$83,320	N/A	N/A		
C30: Meter Set Assembly (MSA) Inspection Program	N/A	N/A	\$24,650	\$21,065 - \$25,499		







QUANT: MP RISK

QUANT: DIMP VIPP MITIGATION

DISCUSSION: DIMP



INCIDENT RELATED TO THE HIGH-PRESSURE SYSTEM (EXCLUDING DIG-IN)



Incident Related to the High-Pressure System (Excluding Dig-in)

Risk Description & Scope

The Incidents Related to the High Pressure System risk is the risk of damage caused by a high pressure pipeline (maximum allowable operating pressure greater than 60 psig) failure event that results in significant consequences including injuries, fatalities and/or damages to the infrastructure.

Risk Quantification

LoRE	CoRE	Risk Score
8.64	382	3,301

Summary of Risk Plan

- SoCalGas's Risk Plan includes:
 - 23 existing activities 40 including tranches pertaining to HCA vs Non-HCA
 - 1 incremental/new activity
 - o Development of a Facilities Integrity Management Program.
- Nine of the mitigations are in the top 20 highest cost mitigations

CONTROLS & MITIGATIONS

Summary of High-Cost Controls & Mitigations				
	2020 Capital	2022-2024 Capital	2020 O&M	2024 O&M
C21-T2: Integrity Assessments & Remediation – NON-HCA	\$42,387	\$262,520 - \$335,442	\$57,844	\$33,579 - \$42,906
C22-T3.4: Pipeline Safety Enhancement Plan (PSEP) - Hydrotesting (Phase 2A, GRC base): Non-HCA	\$8,210	\$74,845 - 90,601	\$20,709	\$181,374 - 219,558
C21-T1: Integrity Assessments & Remediation - HCA	\$34,008	\$158,154 - \$202,086	\$45,410	\$20,581 - \$26,297
C23-T2: Ventura Compressor Station Modernization Projects	\$3,231	\$169,728 - \$205,459	N/A	N/A
M1-T1: Gas Transmission Safety Rule - MAOP Reconfirmation: HCA	N/A	\$43,843 - \$140,296	N/A	\$28,755 - \$92,016
C22-T3.2: PSEP - Pipeline Replacement (Phase 2A, GRC base): Non-HCA	\$4,645	\$88,982 - 107,715	N/A	N/A
M1-T2: Gas Transmission Safety Rule - MAOP Reconfirmation: Non-HCA	N/A	\$17,908 - \$57,304	N/A	\$11,745 - 37,584
C22-T2.4: PSEP - Pipeline Replacement (Phase 1B, GRC base): Non-HCA	\$34,155	\$65,785 - \$79,634	N/A	N/A



Dollars are shown in \$000s. Capital is presented as the sum of the years 2022, 2023, and 2024 or a three-year total.



QUANT: HP RISK

QUANT: TIMP HCA MITIGATION

DISCUSSION: TIMP



INCIDENT RELATED TO THE STORAGE SYSTEM (EXCLUDING DIG-IN)



Incident Related to the Storage System (Excluding Dig-In)

Risk Description & Scope

The risk of damage to the storage system, including wellheads, reservoirs, and surface assets (compressors, laterals, oi/brine systems, etc.) which results in consequences such as injuries, fatalities or outages. Includes equipment at SoCalGas's four Storage Fields: Aliso Canyon, Honor Rancho, La Goleta, and Playa del Rey.

Risk Quantification

LoRE	CoRE	Risk Score
0.29	9,306	2,721

Summary of Risk Plan

- SoCalGas's Risk Plan includes:
 - o 7 existing activities
 - 1 planned new activity
- Two of mitigations are in the top 20 highest cost mitigations



CONTROLS & MITIGATIONS

Summary of High-Cost Controls & Mitigations						
2020 2022-2024 2020 2024 O&M 2024 O&M						
C1: Integrity Demonstration, Verification, and Monitoring Practices	\$66,676	\$263,720 - \$319,240	\$13,413	\$14,834 - \$17,957		
C2: Well Abandonments	\$14,926	\$120,625 – 146,020	\$0	\$0		

Notes:

Dollars are shown in \$000s. Capital is presented as the sum of the years 2022, 2023, and 2024 or a three-year total.



QUANT: STORAGE RISK

QUANT: SIMP MITIGATION

DISCUSSION: SIMP



WRAP UP

