

**SED DATA REQUEST #1 (12/19/2016)**  
**SCG RESPONSE (01/10/2017)**  
(Direct 2015 \$000)

Company Risk ID (Chapter)	Control/ Mitigation	Control			Mitigation										Delta (Mitigation Total vs Control Total) <sup>4</sup>	Notes (Non-GRC amounts <sup>5</sup> )
		Capital	O&M	Control Total	2019 O&M		2017 Capital		2018 Capital		2019 Capital		Mitigation Total (2019 O&M + 2019 Capital)			
					Low	High	Low	High	Low	High	Low	High	Low	High		
SCG-01: C1/M1	Training <sup>1</sup>	\$ -	\$ 141	\$ 141	\$ 139	\$ 154	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139	\$ 154	\$ 6	
SCG-01: C2/M2	Locate and Mark Activities <sup>1</sup>	-	21,879	21,879	23,289	25,740	-	-	-	-	-	-	23,289	25,740	2,636	
SCG-01: C3/M3	Public Awareness <sup>1</sup>	-	947	947	1,094	1,209	-	-	-	-	-	-	1,094	1,209	205	
SCG-01: M4	Prevention and Improvements	-	-	-	116	128	6,165	6,875	-	-	-	-	116	128	122	
SCG-01: M5	Analysis	-	-	-	-	-	2,700	3,300	3,870	4,730	-	-	-	-	-	
	<b>SCG-01 TOTAL</b>	<b>-</b>	<b>22,967</b>	<b>22,967</b>	<b>24,638</b>	<b>27,231</b>	<b>8,865</b>	<b>10,175</b>	<b>3,870</b>	<b>4,730</b>	<b>-</b>	<b>-</b>	<b>24,638</b>	<b>27,231</b>	<b>2,968</b>	
SCG-02: C1/M1	Policy, procedures, standards, and ESCMP <sup>1</sup>	-	5,299	5,299	4,712	5,758	-	-	-	-	-	-	4,712	5,758	(64)	
SCG-02: C2/M2	Employee skills training <sup>1</sup>	-	11,475	11,475	12,093	16,526	-	-	-	-	-	-	12,093	16,526	2,835	
SCG-02: C3/M3	Employee refresher training <sup>1</sup>	1,055	8,845	9,900	10,500	12,833	950	1,161	950	1,161	950	1,161	11,450	13,994	2,822	
SCG-02: C4/M4	Contractor management and traffic control <sup>2</sup>	3,065	8,411	11,476	8,290	10,132	2,758	3,371	2,758	3,371	2,758	3,371	11,048	13,503	800	
SCG-02: C5/M5	QA, job observations, field rides, and job monitoring <sup>1</sup>	58	6,265	6,323	6,000	7,332	52	64	52	64	52	64	6,052	7,396	401	
SCG-02: C6/M6	Safety communications and first responder liaison <sup>1</sup>	-	3,830	3,830	3,702	4,527	-	-	-	-	-	-	3,702	4,527	285	
SCG-02: C7/M7	Environmental services monitoring	-	900	900	978	1,195	-	-	-	-	-	-	978	1,195	187	
SCG-02: C8/M8	Safety, industrial hygiene, wellness, and emergency services/programs <sup>1</sup>	-	7,798	7,798	11,763	14,378	-	-	-	-	2,031	2,483	13,794	16,861	7,530	
SCG-02: C9/M9	PPE and safety equipment	-	2,582	2,582	4,092	5,001	1,364	1,667	900	1,100	-	-	4,092	5,001	1,965	
SCG-02: C10/M10	Gas facility and pipeline inspections <sup>1,2</sup>	-	54,468	54,468	77,717	91,356	-	-	-	-	-	-	77,717	91,356	30,069	
SCG-02: C11/M11	Safety-related field orders (leaks, appliance check and unusual use, etc.)	-	20,251	20,251	20,924	25,575	-	-	-	-	-	-	20,924	25,575	2,999	
	<b>SCG-02 TOTAL</b>	<b>4,178</b>	<b>130,124</b>	<b>134,302</b>	<b>160,771</b>	<b>194,613</b>	<b>5,124</b>	<b>6,263</b>	<b>4,660</b>	<b>5,696</b>	<b>5,791</b>	<b>7,079</b>	<b>166,562</b>	<b>201,692</b>	<b>49,825</b>	
SCG-03: C1/M1	Identify	-	46	46	106	556	-	2,500	-	2,500	-	2,500	106	3,056	1,535	
SCG-03: C2/M2	Protect	6,368	404	6,772	404	1,064	7,050	10,050	11,650	15,250	10,000	16,000	10,404	17,064	6,962	
SCG-03: C3/M3	Detect	-	-	-	-	150	4,000	6,000	1,450	3,450	4,000	5,450	4,000	5,600	4,800	
SCG-03: C4/M4	Respond	-	14	14	14	164	2,000	3,000	2,000	4,000	3,000	5,000	3,014	5,164	4,075	
SCG-03: C5/M5	Recover	-	-	-	-	-	-	2,000	-	2,000	-	2,000	-	2,000	1,000	
	<b>SCG-03 TOTAL</b>	<b>6,368</b>	<b>464</b>	<b>6,832</b>	<b>524</b>	<b>1,934</b>	<b>13,050</b>	<b>23,550</b>	<b>15,100</b>	<b>27,200</b>	<b>17,000</b>	<b>30,950</b>	<b>17,524</b>	<b>32,884</b>	<b>18,372</b>	
SCG-04: C1/M1	CFR 192 Subpart M - Maintenance <sup>1</sup>	12,885	7,670	20,555	7,688	8,497	12,975	14,341	12,975	14,341	12,975	14,341	20,663	22,838	1,196	
SCG-04: C2/M2	CFR 192 Subpart N - Qualifications of Pipeline Personnel <sup>1</sup>	-	396	396	398	444	-	-	-	-	-	-	398	444	25	
SCG-04: C3/M3	CFR 192 Subpart I - Requirements for Corrosion Control	504	325	829	517	1,139	787	981	787	981	1,347	1,821	1,864	2,960	1,583	
SCG-04: C4/M4	CFR 192 Subpart L - Operations <sup>1</sup>	8,005	3,701	11,706	18,124	20,032	4,760	5,261	4,760	5,261	4,760	5,261	22,884	25,293	12,383	
SCG-04: C5/M5	CFR Part 192 Subpart O - Gas Transmission Pipeline Integrity Management <sup>1</sup>	42,985	31,960	74,945	44,925	49,653	40,306	60,374	40,306	60,374	44,306	66,374	89,231	116,027	27,684	
SCG-04: C6/M6	PUC 957 & 958 - PSEP: High Pressure Testing and Replacement, Valve Automation and Replacement	389,715	60,944	450,659	13,500	110,000	96,000	160,000	68,250	113,750	201,000	335,000	214,500	445,000	(120,909)	C: 450,659 M: 245,000-397,000
	<b>SCG-04 TOTAL</b>	<b>454,094</b>	<b>104,996</b>	<b>559,090</b>	<b>85,152</b>	<b>189,765</b>	<b>154,828</b>	<b>240,957</b>	<b>127,078</b>	<b>194,707</b>	<b>264,388</b>	<b>422,797</b>	<b>349,540</b>	<b>612,562</b>	<b>(78,039)</b>	

Company Risk ID (Chapter)	Control/ Mitigation	Control			Mitigation										Delta (Mitigation Total vs Control Total) <sup>4</sup>	Notes (Non-GRC amounts <sup>5</sup> )
		Capital	O&M	Control Total	2019 O&M		2017 Capital		2018 Capital		2019 Capital		Mitigation Total (2019 O&M + 2019 Capital)			
					Low	High	Low	High	Low	High	Low	High	Low	High		
SCG-05: C1/M1	Physical Security Systems and Contract Security <sup>1</sup>	135	1,888	2,023	3,609	3,931	1,548	2,156	254	351	267	377	3,876	4,308	2,069	
SCG-05: C2/M2	Planning, Awareness, and Incident Management <sup>1</sup>	14	422	436	674	886	10	11	10	11	10	11	684	897	355	
	<b>SCG-05 TOTAL</b>	<b>149</b>	<b>2,310</b>	<b>2,459</b>	<b>4,283</b>	<b>4,817</b>	<b>1,558</b>	<b>2,167</b>	<b>264</b>	<b>362</b>	<b>277</b>	<b>388</b>	<b>4,560</b>	<b>5,205</b>	<b>2,424</b>	
SCG-06: C1/M1	Physical Security Systems and Contract Security <sup>1</sup>	4,522	1,674	6,196	3,470	3,714	3,605	4,386	4,006	4,883	3,749	4,579	7,219	8,293	1,560	
SCG-06: C2/M2	Operational Resiliency	432	-	432	-	-	600	1,000	5,500	7,500	6,200	9,200	6,200	9,200	7,268	
SCG-06: C3/M3	Planning, Awareness, and Incident Management <sup>1</sup>	-	505	505	663	842	-	-	-	-	-	-	663	842	248	
	<b>SCG-06 TOTAL</b>	<b>4,954</b>	<b>2,179</b>	<b>7,133</b>	<b>4,133</b>	<b>4,556</b>	<b>4,205</b>	<b>5,386</b>	<b>9,506</b>	<b>12,383</b>	<b>9,949</b>	<b>13,779</b>	<b>14,082</b>	<b>18,335</b>	<b>9,076</b>	
SCG-07: C1/M1	Workforce Planning	-	2,235	2,235	2,481	3,234	-	-	-	-	-	-	2,481	3,234	623	
SCG-07: C2/M2	Knowledge Transfer	-	466	466	941	1,214	-	-	-	-	-	-	941	1,214	612	
SCG-07: 3/M3	Training	-	1,898	1,898	2,591	3,224	-	-	-	-	-	-	2,591	3,224	1,010	
SCG-07: C4/M4	Training - Technical non-HR <sup>1,2</sup>	1,055	23,193	24,248	26,229	34,514	950	1,161	950	1,161	950	1,161	27,179	35,675	7,179	
SCG-07: C5/M5	Succession Planning	-	149	149	230	278	-	-	-	-	-	-	230	278	105	
	<b>SCG-07 TOTAL<sup>3</sup></b>	<b>-</b>	<b>4,748</b>	<b>4,748</b>	<b>6,243</b>	<b>7,950</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6,243</b>	<b>7,950</b>	<b>2,349</b>	
SCG-08: C1/M1	Administrative	-	649	649	613	900	-	-	-	-	-	-	613	900	108	
SCG-08: C2/M2	Training <sup>1</sup>	-	44	44	574	1,723	-	-	-	-	-	-	574	1,723	1,105	
SCG-08: C3/M3	Operational Compliance and Oversight <sup>1</sup>	3,850	5,572	9,422	9,711	11,912	4,475	5,220	5,173	6,034	5,872	6,848	15,583	18,760	7,750	
SCG-08: C4/M4	Information Management Systems <sup>1</sup>	12,855	5,442	18,297	5,362	6,553	37,233	45,507	25,628	31,324	18,262	22,320	23,624	28,873	7,952	
	<b>SCG-08 TOTAL</b>	<b>16,705</b>	<b>11,707</b>	<b>28,412</b>	<b>16,260</b>	<b>21,088</b>	<b>41,708</b>	<b>50,727</b>	<b>30,801</b>	<b>37,358</b>	<b>24,134</b>	<b>29,168</b>	<b>40,394</b>	<b>50,256</b>	<b>16,913</b>	
SCG-09: C1	Land Movement Satellite Monitoring	-	210	210	-	-	-	-	-	-	-	-	-	-	(210)	
SCG-09: M1	Gas Infrastructure Resilience & Vulnerability Report	-	-	-	200	400	-	-	-	-	-	-	200	400	300	
SCG-09: C2/M2	Geological Hazard Engineering Data Analysis and Flood Hazard Dashboard	-	20	20	800	2,000	-	-	-	-	-	-	800	2,000	1,380	
SCG-09: M3	Strain Gauge Installation Projects	-	-	-	50	100	400	700	400	700	400	700	450	800	625	
SCG-09: C3/M4	Storage Field Slope Stability & Erosion Control Projects	470	-	470	-	-	4,200	4,800	4,200	4,800	4,200	4,800	4,200	4,800	4,030	
	<b>SCG-09 TOTAL</b>	<b>470</b>	<b>230</b>	<b>700</b>	<b>1,050</b>	<b>2,500</b>	<b>4,600</b>	<b>5,500</b>	<b>4,600</b>	<b>5,500</b>	<b>4,600</b>	<b>5,500</b>	<b>5,650</b>	<b>8,000</b>	<b>6,125</b>	
SCG-10: C1/M1	Maintenance <sup>1</sup>	2,108	14,291	16,399	21,047	23,262	2,022	2,554	2,113	2,669	2,370	2,993	23,417	26,255	8,437	
SCG-10: C2/M2	Qualifications of Pipeline Personnel <sup>1</sup>	-	3,095	3,095	4,046	4,472	-	-	-	-	-	-	4,046	4,472	1,164	
SCG-10: C3/M3	Requirements for Corrosion Control	3,636	10,242	13,878	19,243	21,269	3,454	4,363	4,504	5,689	4,940	6,240	24,183	27,509	11,968	
SCG-10: C4/M4	Operations <sup>1</sup>	10	1,313	1,323	1,606	1,775	10	12	10	12	10	12	1,616	1,787	379	
SCG-10: C5/M5	Gas Distribution Pipeline Integrity Management <sup>1</sup>	60,093	14,530	74,623	33,391	41,083	95,170	124,320	95,170	124,320	166,600	219,600	199,991	260,683	155,714	
	<b>SCG-10 TOTAL</b>	<b>65,847</b>	<b>43,471</b>	<b>109,318</b>	<b>79,333</b>	<b>91,861</b>	<b>100,656</b>	<b>131,249</b>	<b>101,797</b>	<b>132,690</b>	<b>173,920</b>	<b>228,845</b>	<b>253,253</b>	<b>320,706</b>	<b>177,662</b>	
SCG-11: C1/M1	Maintenance work performed on gas storage wells	-	3,476	3,476	3,306	3,654	-	-	-	-	-	-	3,306	3,654	4	
SCG-11: C2/M2	Well abandonments, replacement materials and labor associated with each activity	43,584	-	43,584	-	-	39,045	43,155	39,045	43,155	39,045	43,155	39,045	43,155	(2,484)	
SCG-11: M3	SIMP - Well Assessments	-	-	-	8,100	11,700	57,600	83,200	52,200	75,400	49,500	71,500	57,600	83,200	70,400	

Company Risk ID (Chapter)	Control/ Mitigation	Control			Mitigation										Delta (Mitigation Total vs Control Total) <sup>4</sup>	Notes (Non-GRC amounts <sup>5</sup> )
		Capital	O&M	Control Total	2019 O&M		2017 Capital		2018 Capital		2019 Capital		Mitigation Total (2019 O&M + 2019 Capital)			
					Low	High	Low	High	Low	High	Low	High	Low	High		
SCG-11: M4	SIMP - New Integrity and Risk Management Regulations	-	-	-	13,500	19,500	4,950	7,150	1,350	1,950	1,350	1,950	14,850	21,450	18,150	
	<b>SCG-11 TOTAL</b>	<b>43,584</b>	<b>3,476</b>	<b>47,060</b>	<b>24,906</b>	<b>34,854</b>	<b>101,595</b>	<b>133,505</b>	<b>92,595</b>	<b>120,505</b>	<b>89,895</b>	<b>116,605</b>	<b>114,801</b>	<b>151,459</b>	<b>86,070</b>	

Notes:

- Control (C) and Mitigation (M).
- Numbers in risk chapter tables may differ due to rounding.
- The purpose of the Risk Assessment Mitigation Phase (RAMP) is not to request funding. Any funding requests will be made in the General Rate Case (GRC). The forecasts for mitigations are not for funding purposes, but are rather to provide a range for the future GRC filing. This range will be refined with supporting testimony in the GRC.

<sup>1</sup> Controls/Mitigations for which the mitigation spending overlaps or is duplicative of spending for other Controls/Mitigations.  
<sup>2</sup> Controls/Mitigations for which numbers in risk chapter tables may differ due to calculation errors.  
<sup>3</sup> Total cost for SCG-07 does not include technical training outside of HR.  
<sup>4</sup> Delta calculated as the average of Low and High for the Mitigation Total minus the Control Total.  
<sup>5</sup> Non-GRC Control (C) represents Baseline (2015) costs. Non-GRC Mitigation (M) represents Proposed costs for 2017-2019 Capital and 2019 O&M.

**Chapter Legend**

SCG-01	Catastrophic Damage Involving Third Party Dig-Ins
SCG-02	Employee, Contractor and Public Safety
SCG-03	Cyber Security
SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure
SCG-05	Workplace Violence
SCG-06	Physical Security of Critical Gas Infrastructure
SCG-07	Workforce Planning
SCG-08	Records Management
SCG-09	Climate Change Adaptation
SCG-10	Catastrophic Damage Involving Medium-Pressure Pipeline Failure
SCG-11	Catasrophic Event related to Storage Well Integrity