Application No: A.16-09-005
Exhibit No.:
Witness: R. Phillips

Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 G) to Recover Costs Recorded in the Pipeline Safety and Reliability Memorandum Accounts, the Safety Enhancement Expense Balancing Accounts, and the Safety Enhancement Capital Cost Balancing Accounts	Application 16-09-005 (Filed September 2, 2016)

REBUTTAL TESTIMONY OF

RICK PHILLIPS

ON BEHALF OF

SOUTHERN CALIFORNIA GAS COMPANY

AND

SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

October 20, 2017

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I. PURPOSE AND OVERVIEW OF TESTIMONY

The purpose of my testimony is to respond to the October 8, 2017 Amended Direct Testimony of Catherine E. Yap on behalf of The Utility Reform Network (TURN) and the Southern California Generation Coalition (SCGC). Specifically, my testimony responds to TURN and SCGC's argument that certain decisions by SoCalGas and SDG&E to proceed with projects were unreasonable because the projects later were delayed and required construction contractor demobilization and subsequent mobilization. Additionally, I will address the proposal by TURN and SCGC that all costs sought for recovery for Line 45-120X01 be disallowed on the basis that SoCalGas and SDG&E should have coordinated project design efforts with two adjacent projects.

Table 1 provides a summary of the specific proposed disallowances addressed in my testimony:

Table 1
TURN/SCGC Proposed Disallowances Addressed in this Chapter

Project Number	TURN/SCGC Proposed Disallowance
Line 1005	$270,518
Line 2001 West B Sec 1,2,3	$298,093
Line 2003	$100,409
Line 36-1032 Sec 1,2,3	$33,720
Line 38-539	$1,597,006
Palmdale Valves	$135,486
Line 45-120XO1	$857,395
Total	**$3,157,141**

My testimony will demonstrate how SoCalGas and SDG&E met the reasonable manager standard in all relevant aspects for the Pipeline Safety and Enhancement Plan (PSEP) projects presented for review in this Application. Specifically, "the reasonableness of a particular

management action depends on what the utility knew or should have known at the time that the managerial decision was made, not how the decision holds up in light of future developments."[1] To demonstrate that this standard was satisfied, I will describe how, in an undertaking as large as PSEP, it is more efficient to keep the large investment in trained personnel working steadily. I will also describe in general terms how every project decision involves some level of risk and it is more effective from an overall programmatic cost standpoint to take these risks as opposed to idling until every unknown is clarified. Further, I will discuss why it is in fact prudent to schedule PSEP projects year-round and describe the steps that are taken as part of the project execution process to minimize the potential for weather and system-related delays. I will describe the steps undertaken by SoCalGas and SDG&E to minimize material-related issues that potentially may delay construction schedules. Finally, I will address each specific disallowance noted in Table 1 to demonstrate that the subject actions were reasonable.

In proposing the disallowances listed in Table 1, TURN and SCGC appear to suggest that SoCalGas and SDG&E should be penalized for every decision that ultimately resulted in the demobilization of the construction site. My testimony will explain the rationale, on both a policy and project-specific basis, behind the decisions and how they demonstrate adherence to the reasonable manager standard.

II. SOCALGAS AND SDG&E PRUDENTLY SEQUENCE PSEP CONSTRUCTION PROJECTS TO MAINTAIN STEADY UTILIZATION OF TRAINED PERSONNEL FOR THE BENEFIT OF CUSTOMERS.

TURN and SCGC propose disallowances on various projects[2] on the premise that SoCalGas and SDG&E should not have initiated construction when there was any doubt that

[1] Amended Assigned Commissioner and Administrative Law Judge's Scoping Memo and Ruling dated April 24, 2017 at 5, n. 5 (citing D.02-08-064 at 5-6, and D.88-02-036).
[2] The response to each project-specific proposed disallowance is discussed later in my testimony.

issues could potentially arise that might cause either a delay in the construction schedule or a demobilization of the construction crew and resulting suspension of construction activities.

PSEP is an undertaking unprecedented in its size and complexity. At any given time, 15-30 PSEP projects are in construction, each of which present unique attributes and challenges. Many different project components must come together to keep the symphony that is construction progressing without having to demobilize. SoCalGas and SDG&E orchestrate and maneuver these components to strategically schedule construction projects to keep company and contractor workforce fully productive, thereby maximizing the cost effectiveness of the PSEP workforce. Construction start dates are tentatively slated months in advance to maintain a steady flow of work to the construction teams. All of the various functional groups that support execution of a project are consulted prior to these dates being proposed. The expected construction completion dates of projects are monitored closely so that new projects can start up soon afterwards.

The thoughtful sequencing of projects is an important component of effective management of overall PSEP costs. Gaps of time between the completion of construction on one project and the start of construction on another could result in dedicated PSEP personnel tracking their time to an overhead category, since there would be no project to appropriately track their time to.

Of additional concern are the repercussions of having a gap between projects on the construction contractor workforce. Specialized contractor resources, such as welding and coating inspectors, that have completed the SoCalGas and SDG&E Operator Qualification process and training on SoCalGas and SDG&E safety requirements and procedures can, and will, leave SoCalGas and SDG&E jobs to find steadier work if there is a lull in construction activity.

To bring a new welding inspector on board would necessitate a total of nine days to complete the above-referenced training before they are authorized to work on PSEP projects. Further, inspector resources typically come from out of state so daily costs may accrue, regardless of whether there is work for them or not. Welders tend to reside more locally than inspectors, and they can typically obtain other work in the area. In order to mitigate the described risk of losing necessary skilled and experienced contractor resources, it is reasonable to sequence construction schedules to optimize the resources available to PSEP.

In addition to the impact of contractor resources leaving PSEP if there a lull in construction work, there are efficiencies gained over time when all project team members (welders, inspectors, foremen, etc.) work together over multiple projects. Having PSEP-experienced welders and inspectors also increases efficiency as they are already well-versed in SoCalGas and SDG&E standards. Companies vary to some extent in their requirements, work methods, nomenclature, and work processes. When new personnel are added, efficiencies may be reduced as new personnel take the time necessary to become familiar with company-specific work methods.

III. SOCALGAS AND SDG&E BALANCE COUNTERVAILING RISKS TO LOWER OVERALL PSEP COSTS.

A theme underlying TURN and SCGC's proposed disallowances appears to be that the only prudent course of action is to resolve all known risks prior to initiating construction. While TURN and SCGC's approach could be implemented for a single, one-off project, it would be impractical and unreasonable to implement for a large undertaking like PSEP that involves simultaneous execution of many projects by hundreds of trained company and contractor personnel. Under these circumstances, it is most efficient to keep personnel as fully productive as practicable.

The project execution process requires orchestral coordination to align the many items needed before beginning construction: excavation permits; traffic control permits; environmental permits; specialty permits (*e.g.*, Caltrans); temporary land rights for laydown yards; occasional permanent easements for when the footprint of the new pipeline or valve alignment is different than the existing; material deliveries (particularly specialty materials and equipment); availability of the system to take an outage on the pipeline system to test or replace; and availability of local operations personnel to provide standby services, to disconnect the various taps off a pipeline, and to perform a tie-in.

Much effort is expended by the various groups and individuals responsible for obtaining required items in time for when they are needed during construction (*e.g.*, permit team, land team, materials and logistics team, purchasing and expediting team, shop inspection specialists, outreach team, local operations personnel, etc.) In the vast majority of instances, all these various components come together in time to support the construction schedule. However, in their testimony, TURN and SCGC focus on the few instances where one of these items was delayed and the construction team was demobilized.

SoCalGas and SDG&E's execution and management teams balance competing risks when authorizing a project team to mobilize for construction. It is generally more efficient to initiate construction before all items (*i.e.*, materials, permits, land rights, etc.) are in hand. These decisions are based on the information available at the time and the experience of management.

In focusing on the few times when this approach resulted in demobilization, TURN and SCGC engage in an after-the-fact, hindsight review of "how the decision holds up in light of

future developments"[3] that is explicitly antithetical to the reasonable manager standard. TURN and SCGC do not discuss all the times SoCalGas and SDG&E balanced risks and initiated construction that did not result in a stoppage. In the vast majority of instances, a risk does not come to fruition that would cause a project to demobilize. Where such measured risks are taken successfully, there is no change order to memorialize the occurrence.[4]

Employing a strategy to completely avoid demobilization risk such that no construction project is scheduled until all known variables are resolved would reduce efficiencies and increase costs, as described in Section II, which far outweighs the risk that construction crews may occasionally demobilize. Any program/construction management professionals tasked with implementing a program of comparable size and complexity as PSEP – i.e., with the need to keep 15-30 construction teams moving from one unique project to another, within an integrated energy distribution and transmission system, with minimal gaps between construction finish and start, despite running into unanticipated conditions during construction that could cause a work stoppage – would be challenged to perform better than PSEP. In approving SoCalGas and SDG&E's PSEP, the Commission articulated that SoCalGas and SDG&E are not expected to make the optimal decision every time, stating "[t]his is not a 'perfection' standard: it is a standard of care that demonstrates all actions were well planned, properly supervised and all necessary records are retained."[5] The projects submitted in this Application satisfy this standard.

I firmly believe that any other reasonable manager dealing with the complexities and uniqueness of PSEP also would have had at least as many limited instances of demobilizations as PSEP.

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[3] Amended Assigned Commissioner and Administrative Law Judge's Scoping Memo and Ruling dated April 24, 2017 at 5 n. 5, citing D.02-08-064 at 5 and 6, and D.88-02-036.

[4] Moreover, it would be neither time- nor resource-efficient to memorialize all such instances.

[5] D.14-06-007 at 36.

IV. START-UP ISSUES ARE INHERENT IN NEW, LARGE PROGRAMS; THE REASONABLE MANAGER STANDARD IS MET.

SoCalGas and SDG&E continually strive to learn and make changes to minimize instances of work stoppage and gaps between construction projects. As the PSEP Organization evolved, SoCalGas and SDG&E incorporated learnings from experiences into the overall program management. Some examples of improvements instituted include supply chain improvements, permit acquisition improvements, and enhanced construction readiness reviews.

A. Supply Chain Improvements

TURN and SCGC propose several disallowances on the basis that project delays caused by material issues evidence a lack of reasonableness. I disagree. Supply chain and other production-related issues during the initial ramp-up of an effort the size and scope of PSEP are not unusual. An example evidencing this endemic issue has been in the news recently: Tesla missed its production goal for its new Model 3 car due to supply chain and production issues.[6] SoCalGas and SDG&E, while acting diligently, also experienced supply chain issues as they ramped up their supply of materials to support the construction of hundreds of projects. These issues are briefly explained below, along with the steps taken to improve the responsiveness of the Supply Chain system that have resulted in improved material delivery performance.

In 2014 and early 2015, when the projects presented in this Application were constructed, the PSEP Organization encountered challenges in setting up the supply chain. Because of the magnitude of the ramp-up for PSEP work, when implementation of PSEP kicked off, SoCalGas and SDG&E established a separate material acceptance/delivery yard for PSEP material. The volume of material required for PSEP projects created a significant strain on the supply chain, both within the PSEP Organization and among the individual suppliers. Newly-hired engineers

[6] Wall Street Journal, October 3, 2017.

and designers familiarized themselves with SoCalGas and SDG&E's material specifications while planning PSEP projects. Once a material request was received by Supply Management, newly-hired buyers familiarized themselves with these specifications to provide the correct material information on purchase orders. Newly-hired manufacturing plant inspection personnel familiarized themselves with SoCalGas and SDG&E's inspection process and inspection documentation requirements to confirm manufacturers produced and provided material that aligned with the specifications and that the documentation met company requirements. At the newly-established material receiving and storage yard, newly-hired personnel familiarized themselves with SoCalGas and SDG&E's policies and requirements for receiving the material so that it was properly categorized, recorded into a tracking system, and safely stored in the yard. It was not unexpected that it took some time for the entire procurement, material delivery, and storage operations to be set up and run smoothly. All personnel worked diligently, often for extended hours, when required, to support having materials delivered to the construction projects when needed. Some suppliers, particularly those of specialty items such as vaults and modified valves, experienced difficulty meeting delivery commitments due to the higher-than-normal volume of orders.

Even with the above challenges, it is incontrovertible that the majority of the time, materials needed on any given pipeline or valve project were delivered on time for the projects in this Application. In any event, progress has been made as the PSEP has matured. For illustrative purposes, improvements instituted during the 2014 and early 2015 time period include:

- Lead time expectations matrix and project review – In late 2014, SoCalGas and SDG&E prepared a material expectations matrix to detail the time required to order, receive, quality-check and make-ready all materials, especially long-lead time items.

The lead times were based on actual PSEP receiving experience and forecasted Required on Site (ROS) dates. This matrix was used to screen schedules for future projects to confirm ample time was built into the preconstruction phases of the projects.

- Added expeditors – Expeditors were added to the Supply Management team in December 2014. The role of the expeditors was to communicate with vendors daily as to material delivery status versus ROS dates. These expeditors were utilized for all PSEP projects headed to construction to reduce the risk that materials would not be received when needed. If a project required materials that were not needed at the start of construction, but would be needed to complete projects (*e.g.*, tie-in materials), the expeditors monitored the items closely.
- Added additional Material Test Report (MTR) approvers – During the initial ordering of pipe and fittings, a limited number of employees were available to review and approve pipe and fitting specifications. Additional employees were selected and trained to approve these documents in late 2014. This facilitated placing Purchase Orders faster and avoided materials being sold to others before being approved for SoCalGas and SDG&E usage.
- Bulk purchases – SoCalGas and SDG&E shifted their ordering process for certain common materials from project-specific purchases to bulk purchasing. Through project-specific purchases, individual project teams submit their material needs to the material procurement team for projects that have progressed far enough in their design. Project-specific purchasing for a program that involves hundreds of projects places the burden of a large amount of work on the material procurement team,

engineering approval team, factory inspectors, etc., to execute and/or review individual teams' requests. The PSEP Organization initiated an effort to purchase large amounts of common material that most projects eventually would need. Common materials include pipe and fittings of various sizes, grades and wall thicknesses, and valves of various sizes and ANSI classifications. This system of purchasing standard materials in bulk is referred to as a "bulk buy." By implementing a bulk buy process for PSEP, the PSEP Organization lessened the workload imposed on the teams mentioned above, freeing up the teams to spend more time expediting material purchases and delivery.

These and other changes reduced materials-related demobilization risk. In February 2015, SoCalGas and SDG&E instituted a process for tracking demobilizations on a monthly basis. As a result, I can report that no material-related demobilizations have occurred since January 2015.

SoCalGas and SDG&E diligently worked through the PSEP start-up challenges and improved upon existing supply chain operations. The projects presented for review in this Application were executed at least two-to-three years ago, when PSEP was a nascent program, still ramping up.

B. Strengthened Construction Readiness Review

SoCalGas and SDG&E strengthened the management review process for approving mobilization for construction. Greater rigor was placed on the review of the status of materials, permits, land rights acquisition, and other issues that could present a demobilization risk. As a result, the risks of each project were carefully considered before the projects were authorized to begin construction.

Not only is it contrary to the reasonable manager standard, it is unreasonable to expect that there will be no instances of work stoppages for the mulititude of separate PSEP projects. Overall program costs would be higher if SoCalGas and SDG&E were expected to have zero work stoppages. This expectation would drive an overly risk-adverse nature that would debilitate progress on projects.

V. SOCALGAS AND SDG&E'S PRUDENT IMPLEMENTATION APPROACH MAXIMIZES THE ADVANTAGES OF WORKING YEAR-ROUND.

TURN and SCGC argue it was unreasonable for PSEP to start construction on two projects[7] when it was known that construction would extend into the winter months. Similar to refraining from construction until all unknown variables and potential risks are mitigated, restricting PSEP projects from proceeding with construction during the winter months would drive up costs and delay the completion of PSEP. SoCalGas and SDG&E have always factored weather and system capacity requirements into their construction schedules; while delays can and do occur, the cost of not having a year-round construction calendar would result in higher costs to customers than the cost of occasional weather-related demobilizations. For example, as described in Section II of my testimony, PSEP company personnel are not "seasonal" in nature and the objective is to keep them working steadily throughout the year. As previously discussed in Section II, idling contractor personnel, in this case during the winter months, would likely result in the loss of skilled and experienced PSEP contractors as those contractors would move on to more steady work assignments, which in turn would result in additional costs and inefficiencies to hire new contractors. It is also important to note that SoCalGas and SDG&E's negotiated construction contractor rates are based on contractors working at a high load factor throughout the year, amortizing their fixed costs over more billable work. Reducing work during

[7] Line 38-539 and Line 2001 West B, Sections 10,11 and 14.

the winter months would result in less competitive pricing from construction contractors which, in turn, would drive up costs for customers.

A. Line 2001 West B Sections 10, 11, and 14

TURN and SCGC propose a $298,093 disallowance for Line 2001 West B Sections 10, 11, and 14 for delays caused by mobilizing the project during the winter season. However, TURN and SCGC misinterpret SoCalGas and SDG&E's workpaper in stating "Gas Control refused to authorize the removal of Line 2001 from service in this time frame."[8] This quote statement in Witness Yap's testimony cites to page WP-III-A127 of the workpapers submitted in support of the Application. The actual wording in the workpaper is: "Due to gas transmission system capacity constraints, the hydrotest was postponed and demobilized on 11/27/14."[9] To say that Gas Control had not approved PSEP to proceed with its hydrotest is an unsupported extrapolation.

As part of the normal project planning process, SoCalGas and SDG&E work with the Gas Control department to plan the dates and duration for taking a pipeline out of service. PSEP had previously received the necessary authorization from Gas Control to take the necessary segment of Line 2001 out of service on October 27, 2014. When weather forecasts indicated an unseasonably cold weather front was approaching, Gas Control rescinded its authorization to remove the line from service in order to reduce the risk of a system problem during the upcoming expected cold front.

All projects, whenever planned to commence construction, carry a risk that circumstances may require a change in plans. In this particular instance, an unancitipated early cold snap led to the demobilization.

[8] TURN/SCGC Amended Direct Testimony (Yap) at 24.
[9] Workpapers Supporting A.16-09-005 at WP-III-A127.

As described earlier in my testimony, it is not prudent to plan jobs only in the Spring and Fall seasons because that would result in higher overall program costs and longer duration to complete critical safety work that was ordered to be commenced "as soon as practicable."[10]

SoCalGas and SDG&E believe the demobilization of Line 2001 West was a reasonable and prudent decision based on the information known and circumstances existing at the time; TURN/SCGC's proposed disallowance of $298,093 therefore should be rejected.

VI. SOCALGAS AND SDG&E PRUDENTLY MANAGED PROJECT COSTS; TURN AND SCGC'S DISALLOWANCE RECOMMENDATIONS BASED ON AN IMPLIED PERFECTION STANDARD ARE NOT REASONABLE.

A. Line 1005

TURN and SGCG propose a $270,518 disallowance for Line 1005 for delays resulting from the unavailability of barred reducing tees that were under quarantine.[11] In support of this recommendation, TURN and SCGC argue SoCalGas and SDG&E should not have started construction on this project because certain fittings were under quarantine at the time of construction mobilization.

Based on the information SoCalGas and SDG&E management had at the time—which is the vantage point required by the reasonable manager standard—the previously-purchased fittings were to have been made available for use well in advance of the date in October when this fitting was required under the construction sequence. What was known at the time was that the material had been in quarantine for almost four weeks, and that the material would not be needed for another four-to-five weeks after construction began. The issue that caused the quarantine was unusual in nature, and it took longer than expected for the engineering department to release the material for use.

[10] D.11-06-017 at 29 (Conclusion of Law No. 5) and 31 (Ordering Paragraph No 5).
[11] TURN/SCGC Amended Direct Testimony (Yap) at 8-10.

Moreover, TURN and SCGC erroneously assume these tees were the sole cause of the demobilization, stating, "The construction contractor for Line 1005 was unable to proceed in early October because of the missing barred reducing tees."[12] The footnote referenced in the testimony of Witness Yap includes project documentation setting forth three reasons for the October 6 demobilization—"missing permits, materials, and Edison plans."[13] The permit delay was identified on pages WP-III-A14-A15 of the workpapers submitted in submitted of the Application and additional information was provided in responses to data requests TURN-SCGC 2.1.3 and TURN-SCGC 14.4. The Edison transformer relocation was identified on page WP-III-A15 of the workpapers submitted in support of the Application and additional information was provided in response to data request TURN-SCGC 2.5. If SoCalGas and SDG&E had not encountered an unanticipated permitting delay or if the relocation of the Edison transformer could have been avoided, even though the barred tee had not yet been released from quarantine, a demobilization would not have occurred. In other words, the demobilization resulted from the confluence of all three unanticipated delays.

SoCalGas and SDG&E made prudent decisions based on information available to them and circumstances existing at the time decisions were required to be made, and thus TURN and SCGC's proposed disallowance of $246,968 is unwarranted.

B. Line 2003

TURN and SCGC propose a disallowance of $100,409 attributed to a project delay due to a pipeline being marked incorrectly on the construction survey map.[14] TURNand SCGC further suggest recovery for the cost of the delay should be pursued from the engineering firm that

[12] TURN/SCGC Amended Direct Testimony (Yap) at 9.
[13] *See* TURN/SCGC Amended Direct Testimony (Yap), Attachment B: *Applicants' Response to TURN-SCGC-02—excerpts* at 11 (Request for Information No. 002).
[14] TURN/SCGC Amended Direct Testimony (Yap) at 26.

created the map.[15] This is a short-sighted recommendation that seeks, contrary to the reasonable manager standard, to hold SoCalGas and SDG&E, and their contractors, to a perfection standard. This is not consistent with the Commission's reasonable manager standard.

Thousands of surveys in the execution of PSEP have been marked correctly. A single mismarked pipeline does not rise to the level of requiring a disallowance.

From a programmatic standpoint, shifting contractual liability to small firms to pick up large construction costs could severely limit the firms that would agree to such terms. Certainly such a practice would limit the number of small and Diverse Business Enterprise (DBE) firms (which tend to be small anyway). In this case, a $13,800 job for the firm could carry a $100,409 liability, if SoCalGas and SDG&E were to pursue TURN and SCGC's recommendation. Under such circumstances, firms would be less willing to take on such risks, which undoubtedly would be reflected in contractors' rates, which would likely increase overall PSEP implementation costs for customers to a far greater extent than the $100,409 proposed to be disallowed by TURN and SCGC for this project.

The drawing error that resulted in the demobilization is not cause for a disallowance. Requiring SoCalGas and SDG&E's contractors to take on large construction-related liabilities would lead to increased costs and lower participation by small firms.

SoCalGas and SDG&E made prudent decisions with the information and circumstances known at the time, and thus recommend that the Commission reject TURN and SCGC's proposed disallowance of $100,409.

[15] TURN/SCGC Amended Direct Testimony (Yap) at 26.

C. Line 36-1032 Sections 1, 2, and 3

TURN and SCGC propose a disallowance of $33,720 resulting from a delay in the receipt of material for the Line 36-1032 Section 1,2, and 3 project. Consistent with the previous discussion regarding delays in my testimony, this disallowance is not warranted, because SoCalGas and SDG&E acted prudently and reasonably based on the information available at the time decisions were required to be made.

For this particular project, the vault manufacturer provided a date of delivery that would have met the schedule and not resulted in a demobilization. At that time, SoCalGas and SDG&E mobilized construction for the projects since there was no reason to believe the vault would not be received in time to prevent a demobilization. In fact, SoCalGas and SDG&E had procured vaults from this manufacturer many times in the past and, based on prior experience, had no reason to expect late delivery. Nevertheless, the vault manufacturer did not meet the delivery date, which in turn caused a remobilization after all other work on the project was completed. As I explain in Section IV above, and in part due to this occurrence, SoCalGas and SDG&E instituted many processes to reduce the chances of demobilizations during construction.

TURN and SCGC err in their calculation of $33,720 as the cost of remobilization for the vault delay. TURN and SCGC calculated the disallowance by summing the costs of item numbers 1, 2, 3, 4, 5 and 8 of the contractor's change order, as referenced in Section 4.10 of TURN and SCGC's testimony.[16] However, only item numbers 1-4 are related to the delay. These four items equate to $11,277, including TURN and SCGC's indirect cost factor percentage. Item 5 was related to restoring driveways damaged during construction and this scope of work would have had to be completed regardless of the delay. Item 8 was related to the

[16] TURN/SCGC Amended Direct Testimony (Yap), at 30, n. 155.

rental of equipment to install the vault, a cost that similarly would have been incurred regardless of the delay. For these reasons and the reasons set forth in Sections II and III of my testimony above, no disallowance should be assessed for this project.

D. Line 38-539

TURN and SCGC propose a disallowance of $1,597,006 for Line 38-539 on the basis that weather and material delays resulted in unreasonable costs.[17] Of this amount, $363,688 was due to weather delays and $1,102,019 was attributable to material delays.[18]

i. Weather Delays

TURN and SCGC assert that SoCalGas and SDG&E should not have started this project knowing that the probability of delays due to Tule fog was high. As explained in Section III of my testimony above, the benefits of scheduling projects on a year-round basis far outweigh the infrequent weather delays that could necessitate a demobilization. SoCalGas and SDG&E balance countervailing risks when deciding to approve the commencement of PSEP construction projects. Based on information known at the time the decision was made to commence construction on this project, the construction schedule for this project was reasonable.

In contrast, the outcome of TURN and SCGC's approach of not starting projects during certain times of the year would certainly lead to higher overall program costs and a longer time before PSEP projects are completed. Of the four PSEP projects that were in construction in the San Joaquin Valley during the November through February timeframe, only Line 38-539 has experienced a demobilization due to Tule fog.

[17] TURN/SCGC Amended Direct Testimony (Yap) at 37.
[18] These figures do not include the indirect charges applied by TURN and SCGC.

SoCalGas and SDG&E's scheduling decision were reasonable based on the information known and circumstances that existed at the time. As such, TURN and SCGC's proposed disallowance of $363,688 should not be adopted.

ii. Material Delays

TURN and SCGC propose disallowances related to material issues that resulted in two demobilizations. SoCalGas and SDG&E acted reasonably with the information they had at the time decisions were made. At the time of the first demobilization on December 20, 2014, the project team did not have the needed material onsite, but was informed the material *should* be available by January 4, 2015. The project team considered the daily stand-by cost for labor and equipment, amounting to approximately $55,000 per day, with the daily stand-by charge of approximately $26,000 per day for the equipment only. During partial demobilizations, equipment remains on the site and daily rental charges continue to accrue, but craft labor is idled and not paid. The project team determined that the least-cost approach would be to partially demobilize since they were unsure the needed materials would arrive by the anticipated January 4th date.

In late December the project and construction teams received information that led them to believe that sufficient material would arrive to provide enough work for the contractor to begin again. The project team then notified the contractor to have its workforce arrive for work on January 6. On January 6, the material was not at the jobsite, and different estimated arrival dates from the material vendors were provided for each of the materials. At this point, the project team had to determine whether the material team's projected arrival dates might again be delayed. The team considered all of the following: the daily costs of having labor and equipment paid while on standby; the knowledge that there was not another project to shift the construction contractor personnel to; and the uncertainty of when material would arrive.

Ultimately, the decision was made to perform a complete demobilization, because having the contractor idle its workforce would result in cessation of labor charges, and enable the contractor to remove its equipment, ceasing daily rental charges.

SoCalGas and SDG&E made prudent decisions based on the information known and circumstances existing at the time, and thus TURN and SCGC's proposed disallowance of $1,102,019 for material delays should not be adopted.

E. Line 235 West, Line 44-654 and the Palmdale Valves Bundle

TURN and SCGC propose a disallowance of $135,846 for the Line 44-654 and Palmdale Valve bundle projects stemming from stand-by time incurred by the construction contractor due to material delays. For the reasons stated in Sections III, IV and V of my testimony, SoCalGas and SDG&E oppose this disallowance recommendation. It is not uncommon for programs as large and complex as PSEP to have early supply chain issues during program start-up. Similarly, it is not unreasonable to encounter supply chain issues (and a disallowance is particularly inappropriate when, as described in Section V, steps have been taken to improve the supply chain process). Considering the number of PSEP projects and the amount of material procured, the few instances of material-related demobilizations are not unexpected; they are both expected and reasonable.

SoCalGas and SDG&E made prudent decisions based on the information known and circumstances existing at the time, and thus TURN and SCGC's proposed disallowance of $135,486 should not be adopted.

F. Line 45-120XO1

TURN and SCGC propose that the entire $857,395 cost of the Line 45-120XO1 project be disallowed because the line was subsequently abandoned as part of a later project. TURN and SCGC's argument is seemingly founded on the premise that SoCalGas and SDG&E should have

coordinated the design of all three projects simultaneously, which theoretically may have avoided the abandonment of this short (57-foot) section of pipe.

This faulty analysis ignores the directive of the Commision to begin PSEP work as soon as practicable,[19] and also glosses over the fact that one of the three pipelines was a Phase 1B pipeline when the PSEP team began its work on the Phase 1A projects.

i. Lines 45-120XO1 and 45-120 Projects – Design Timeline

When SoCalGas and SDG&E started ramping up to begin the detailed design to test or replace pipelines in 2012 and 2013, they took the approach of parceling out work to different teams that were forming to start work in parallel on the 199 pipelines listed in the 2011 PSEP filing.[20] Pipelines 45-120XO1 and 45-120 were part of that initial list. Line 85 South was identified in the filing as a Phase 1B project.

Line 45-120XO1 is a small project constituting only a 57-foot replacement. This smaller project was planned and constructed by the Operating District as a way to implement PSEP immediately, while the PSEP Organization was being staffed and processes developed to coordinate and manage the simultaneous execution of numerous individual projects. The Operating District took on this project in late 2012, shortly after the Commission authorized SoCalGas and SDG&E to immediately commence implementation of PSEP pending a Commission decision approving the proposed PSEP.

Line 45-120, a 4.3-mile project, was assigned to a PSEP design team in February 2013. While it was known that the two pipelines, 45-120XO1 and 45-120, would need to interconnect, the norm is for one pipe to butt up against the other pipe, so it was not contemplated that a large portion of Line 45-120XO1 ultimately would be removed and abandoned when Line 45-120 tied

[19] D.11-06-017 at 29 (Conclusion of Law No. 5) and 31 (Ordering Paragraph No. 5).
[20] R.11-02-019; Workpapers Supporting A.16-09-005 at WP-IX-1.

into it in the future. This level of detail is not known until Stage 3 or 4 of the Seven Stage Construction Process referenced in the Application. Line 45-120 did not get to Stage 3/4 until November 2013, after Line 45-120XO1 had already ended construction in October 2013.

A key activity during the detailed design phase that is not known earlier in the design process is the identification of substructures under the pavement. The location of substructures must be known so that the new pipe is designed to avoid conflict and so that the tie-in location has sufficient working space for a safe tie-in. After detailed design of Line 45-120, the location for tying-in to the recently built Line 45-120XO1 was selected based on safety and cost considerations. The selected tie-in location provided a safe amount of working space for welders and other construction personnel to weld the new tie-in piping to the recently-installed crossover line. While SoCalGas and SDG&E recognized that the tie-in location would cause abandonment of 46 feet of the recently-installed portion of Line 45-120XO1, this location was chosen because there were other substructures in the immediate vicinity that would have made it more difficult, more costly, and less safe to perform the tie-in operation at the end of Line 45-120XO1. PSEP has a strong safety based culture and works to enhance designs to ensure personnel safety during installation and tie-in operations. The design was also selected as the best design to route a branch of the new pipeline into Newhall Station.

It is not reasonable to expect SoCalGas and SDG&E would have anticipated the second project to abandon such a large portion of the first. Nevertheless, this is what ultimately resulted based on decisions made for safety, constructability, and cost reasons. If the only goal was to minimize the abandonment of pipe of the first project, the second project could have achieved this but simultaneously would have increased the safety risk, at a higher cost, due to slower construction to work around nearby substructures and a less direct routing into Newhall Station.

ii. Line 85 South Project - Design Timeline

Line 85 South was included in the SoCalGas and SDG&E PSEP filing as a Phase 1B project. SoCalGas and SDG&E did not know additional Phase 1A, Category 4 pipe associated with Line 85 South would be identified as a result of a class location/high consequence area review and update, at the time Line 45-120XO1 was designed and constructed. TURN and SCGC mischaracterize SoCalGas and SDG&E as having knowledge that Line 85 South would include PSEP footage in the proximity of Line 45-120XO1.[21] As stated in workpapers,[22] the Line 85 South project was not initiated until August 2014.

TURN and SCGC assert that SoCalGas and SDG&E should have coordinated the designs of the three projects, and if they had, they would have recognized the need to abandon part of Line 45-120XO1 before it was replaced.[23] The notion of coordinating all designs before beginning work on projects is precisely the reason Line 85 South was discovered to have a small Phase 1A segment. In mid-2014, as a result of periodic reviews of changes to class locations and high consequence areas, PSEP became aware of two new high consequence areas impacting Line 225. Prior to that time, Line 225 was neither a Phase 1A nor Phase 1B project. PSEP Management assigned this new Line 225 project to one of its project managers and, being aware that Line 85 South parallels Line 225 in the area of the two high consequence areas, PSEP management assigned the Line 85 South Phase 1B project to the same project manager in the event there might be synergies between the two projects. When the project manager began his review, he discovered the Line 85 South Category 4 pipe in Newhall Station. Prior to this point in time, PSEP Management, based on its knowledge of the system, had no reason to expect any

[21] TURN/SCGC Amended Direct Testimony (Yap) at 38-39.
[22] Workpapers supporting A. 16-09-005 at WP-III-A359.
[23] TURN/SCGC Amended Direct Testimony (Yap) at 38-39.

Category 4 pipe associated with Line 85 South at Newhall Station. This understanding was based on PSEP Management being aware of a replacement project in the early 1990s whereby a multi-mile section of Line 85 was replaced northwestward from Newhall Station. This is the type of activity TURN and SCGC suggest SoCalGas and SDG&E should have performed.

The Line 85 project team developed a prudent design to remove the Category 4 pipe at Newhall Station, which improved safety during construction and for future operations by moving a valve out of the heavily-traveled roadway and into Newhall Station.

If the goal had been to avoid abandoning any of the recently-installed Line 45-120XO1 crossover, an alternative design could have been made such that no Line 45-120XO1 piping was removed. This would have led to higher construction costs due to a greater amount of construction work in the street and future safety risks for operations personnel and the public when servicing or operating the valve.

iii. SoCalGas and SDG&E's Actions Were Reasonable

The actions taken by SoCalGas and SDG&E in the execution of this project were reasonable based on the information known at the time and existing circumstances. A retrospective critique does not warrant disallowances. For the reasons stated above, SoCalGas and SDG&E acted prudently in the planning and execution of the Line 45-120XO1, Line 45-120 Section 1, and Line 85 South projects, and the costs associated with the Line 45-120XO1 project should not be disallowed.

VII. CONCLUSION

The Commission's standard for assessing the reasonableness of the project costs presented for recovery in this Application is not dependent on a achieving the optimal outcome every single time, but rather examines whether the decisions made were reasonable given the information available at the time. There is no doubt that there is risk involved in assessing each

option when designing, scheduling, and executing a project. In my rebuttal testimony, I have discussed the overarching factors (*e.g.*, project sequencing, balancing countervailing risks, the advantages of working year-round, etc.) that enable SoCalGas and SDG&E to maximize the cost-effectiveness of safety investments for the benefit of customers. Moreover, taking into consideration the totality of the optimal decisions made every day in executing PSEP, it is abundantly clear that the costs submitted for recovery in the Application were incurred reasonably and prudently.

This concludes my prepared Rebuttal Testimony.