

Application: A.17-04-XXX

Exhibit No.: _____

Witness: Atkinson

PREPARED DIRECT TESTIMONY OF
LAURA ATKINSON
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY
CHAPTER 4



BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

April 28, 2017

TABLE OF CONTENTS

1

2 I. INTRODUCTION1

3 II. CIS REPLACEMENT PROJECT COSTS.....1

4 A. Cost Methodology1

5 B. Nominal Project Costs2

6 (i) *Nominal Capital Costs Forecast*3

7 (ii) *Nominal O&M Costs Forecast*4

8 (iii) *Contingency*5

9 C. Staffing Plan6

10 III. CIS REPLACEMENT BENEFIT COST ANALYSIS.....7

11 A. Benefit Cost Methodology.....7

12 B. Total Costs for CIS Replacement8

13 C. Total Benefits for CIS Replacement.....9

14 D. Benefit Cost Ratio.....11

15 IV. CONCLUSION.....12

16 V. STATEMENT OF QUALIFICATIONS13

17

18

1 **PREPARED DIRECT TESTIMONY OF**

2 **LAURA ATKINSON**

3 **CHAPTER 4**

4 **I. INTRODUCTION**

5 The purpose of my direct testimony is to discuss the costs and benefits of implementing
6 the SAP Customer Relationship and Billing (“CR&B”) system for San Diego Gas and Electric
7 Company (“SDG&E”) to replace the legacy Customer Information System (“CIS”) and related
8 subsystems. This chapter will include a discussion of (1) the methodologies used for cost
9 estimation and benefit capture; (2) forecasted expenditures for the project, both in anticipated
10 capital and operations and maintenance (“O&M”); (3) the anticipated cost savings; and (4) a
11 cost/benefit analysis.

12 **II. CIS REPLACEMENT PROJECT COSTS**

13 **A. Cost Methodology**

14 The approach SDG&E utilized to capture the costs and benefits associated with the
15 implementation of the SAP CR&B is based upon several data points. As discussed in Witness
16 Snyder’s direct testimony (Chapter 3), in 2015, SDG&E hired consulting firm Ernst & Young
17 (“EY”) to perform an assessment of SDG&E’s existing legacy CIS and related subsystems and
18 develop recommendations on whether to extend the life of or replace various components within
19 the legacy CIS and related subsystems. As part of this study, a high level cost and benefit model
20 was developed for the replacement of the legacy CIS and related subsystems.

21 Beginning in 2017, SDG&E engaged consulting firm HCL America, Inc. (“HCL”) to
22 assist SDG&E in conducting a more detailed technical assessment and evaluation of the processes
23 SDG&E has today (“As-Is”) and the forward-looking processes once the SAP CR&B system is in
24 place (“To-Be”). These As-Is and To-Be processes were then used to produce the cost analysis
25 and potential benefits associated with implementing SAP CR&B by Q1 2021. Thus, the

1 estimated cost and benefit analysis presented in this Application was developed using the
 2 expertise and recommendations of both EY and HCL, as well as inputs from internal SDG&E
 3 subject matter experts (“SMEs”).

4 **B. Nominal Project Costs**

5 The overall nominal¹ SAP CR&B implementation cost of \$253.6 million is depicted in
 6 Table LDA-1. This includes the capital costs associated with developing the system asset (SAP
 7 CR&B), along with the one-time operations and maintenance (“O&M”) costs associated with the
 8 project (*i.e.* training, organizational change management). The distinction between the capital and
 9 O&M categorization of costs is based on analyzing the activities and roles for staff during each
 10 phase of the project. In addition, all non-labor costs were assessed and categorized in accordance
 11 with plant accounting and generally accepted accounting principles (“GAAP”).

12 **Table LDA-1: Nominal Capital and O&M Cost Forecast²**

Overall* <i>(\$ in millions)</i>	2017	2018	2019	2020	2021	Total
Capital	\$3.2	\$20.3	\$40.6	\$70.0	\$26.0	\$160.0
O&M	0.7	7.1	7.1	19.9	13.1	47.8
Project Contingency	0.8	2.9	10.0	14.8	7.4	35.7
Subtotal	\$4.6	\$30.2	\$57.7	\$104.6	\$46.4	\$243.6
Contingency for Regulatory Changes						\$10.0
						<u>\$253.6</u>

13 *Sums may not equal due to rounding

14 At a high-level, the drivers behind CIS replacement costs are described below:

- 15 1. Software, hosting model and hardware;
- 16 2. Implementation and stabilization timeline and approach;
- 17 3. Systems Integrator(s) costs;
- 18 4. Number of customers and number of meters;

¹ All costs and benefits mentioned in Chapter 4 are “nominal,” meaning they are direct costs or benefits without loaders, escalations or any other adders.

² Total capital annual costs are derived from Table LDA-2; total O&M annual costs are derived from Table LDA-3; see workpaper “LDA-CIS Program Cost SDG&E” for more details on contingency.

5. Commodities (gas and electricity) and rate complexity;
6. Number and complexity of system interfaces;
7. Internal and external labor costs.

In addition, the scope of SDG&E’s proposed SAP CR&B implementation includes the replacement of 42 legacy CIS supporting subsystems³ and 462 RICEFW’s⁴ that contribute to the overall costs of the project.

(i) *Nominal Capital Costs Forecast*

The capital costs of \$160.0 million can be broken down into internal SDG&E labor and non-labor categories, where non-labor is comprised of System Integrators (“SIs”), third party contract labor (e.g., staff augmentation) and hardware/software costs. These costs are represented in Table LDA-2.

Table LDA-2: Breakdown of Nominal Capital Costs⁵

Capital Breakdown* (\$ in millions)	2017	2018	2019	2020	2021	Total
Labor						
SDG&E Labor	\$0.9	\$1.3	\$5.9	\$7.3	\$4.5	\$19.9
Non-Labor						
System Integrators	0.0	2.1	24.9	31.4	15.3	73.7
Third Party Contractors	2.3	1.3	7.8	9.7	6.2	27.4
Hardware/Software	0.0	15.5	2.0	21.5	0.0	39.0
	\$3.2	\$20.3	\$40.6	\$70.0	\$26.0	\$160.0

*Sums may not equal due to rounding

Resource costs include either internal SDG&E labor or external labor such as SI or other third-party contract labor such as staff augmentation resources. More staffing information will be discussed in the Staffing Plan section below. Also included within the capital expenditure

³ See direct testimony of Witness Linder (Chapter 6) and accompanying workpaper “DL-CIS Replacement Program - AS IS” for a listing of the subsystems.

⁴ RICEFW stands for Reports, Interfaces, Conversions, Enhancements, Forms and Workflow. See direct testimony of Witness Linder (Chapter 6) and accompanying workpaper “DL-Overall Fit-Gap Summary with RICEFW List” for detailed RICEFW listing.

⁵ See workpaper “LDA-CIS Program Cost SDG&E.”

1 forecast are the anticipated non-labor costs for the infrastructure needed to house and operate SAP
 2 CR&B, as well as the initial purchase and licensing costs for the software solutions that will be
 3 utilized. The majority of the hardware and software costs will be incurred during the design and
 4 build phases of the project to allow for the team to begin utilizing the software to configure the
 5 solution. SDG&E worked closely with vendor partners HCL and SAP to determine the various
 6 environments, hardware components, software licensing, and other software and cloud solutions
 7 needed for the SAP CR&B implementation. A detailed discussion of the proposed architecture
 8 can be found in Witness Linder’s direct testimony (Chapter 6).

9 (ii) *Nominal O&M Costs Forecast*

10 The one-time O&M costs of \$47.8 million shown in Table LDA-3 represent the costs
 11 associated with staff activities and deliverables performed during the implementation of SAP
 12 CR&B that cannot be capitalized. Non-labor costs were also assessed and categorized in
 13 accordance with plant accounting and GAAP.

14 **Table LDA-3: Breakdown of Nominal O&M Costs⁶**

O&M Breakdown*	2017	2018	2019	2020	2021	Total
<i>(\$ in millions)</i>						
Labor						
SDG&E Labor	\$0.2	\$0.9	\$1.0	\$2.3	\$1.3	\$5.8
Non-Labor						
System Integrators	0.0	1.8	2.0	3.0	0.6	7.4
Third Party Contractors	0.4	0.8	0.2	10.6	8.1	20.2
Hardware/Software	0.0	2.3	2.6	2.7	2.2	9.7
Facilities	0.0	1.3	1.3	1.3	0.9	4.7
	\$0.7	\$7.1	\$7.1	\$19.9	\$13.1	\$47.8

15 *Sums may not equal due to rounding

16 The SDG&E internal labor costs of \$5.8 million consist of activities such as training,
 17 communications, conversion execution, and overarching project management. Non-labor O&M
 18 costs of \$42.0 million include the costs of contractors and vendor services for CIS project
 19 activities that are not eligible for capitalization. These activities include: change management,

⁶ See workpaper “LDA-CIS Program Cost SDG&E.”

1 decommissioning, and conversion execution. Also included in the non-labor O&M costs are
2 ongoing software and hardware maintenance and support of \$9.7 million as well as a facilities
3 cost of \$4.7 million to outfit and maintain an office space necessary to accommodate the internal
4 and external resources necessary for the SAP CR&B implementation. O&M costs associated
5 with Customer Service Operations and Information business units, including costs incurred during
6 the transition and stabilization periods and costs related to organizational change management are
7 discussed in detail in the direct testimony of Witness Swartz (Chapter 5).

8 (iii) *Contingency*

9 Due to the overall complexity and the amount of time that will elapse over the course of
10 this project, SDG&E is forecasting the need for a contingency nominal amount of \$45.7 million,
11 which equates to a total contingency rate of 22%. This forecast is based upon HCL's
12 recommendation, taking into account recent similar electric and gas utility CIS implementations
13 and SDG&E's experience with authorized capital project implementations. The total contingency
14 amount is made up of two unique subcomponents: (1) Contingency for Regulatory Changes
15 ("CRC") and (2) Project Contingency ("PC").

16 Included in the capital costs is \$10 million to account for CRC. Over the course of the
17 project, there will be various regulatory factors that will directly impact, and therefore, increase
18 the complexity or scope of the SAP CR&B implementation. These regulatory factors will
19 potentially result in changes requiring rework to deliverables and business processes that were
20 already solutioned within the project.

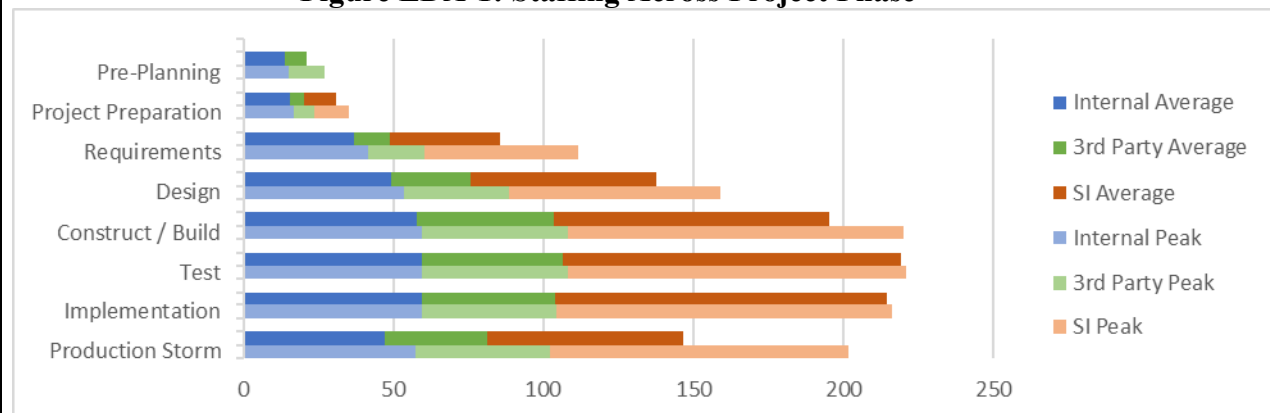
21 PC of \$35.7 million has also been included to assist in managing project risks and
22 uncertainty. With a large-scale transformational project of this duration, there are many variables
23 that cannot be predicted at the outset (*e.g.*, new required enhancements, further integrations with
24 other SDG&E legacy subsystems, and technology upgrades that directly impact the project).

1 These unknown variables will drive changes in the solution and delivery of the CIS replacement
2 program.

3 C. Staffing Plan

4 Having the right staffing model is critical to the success of the SAP CR&B
5 implementation. Not only is it important to have the right staffing levels during project
6 implementation, it is also crucial that the right staffing plan be in place as SDG&E transitions and
7 trains the operational staff on SAP CR&B and establishes a model for ongoing support and
8 maintenance. For internal SDG&E staff to be trained on the new business processes and systems,
9 it is necessary to provide backfill coverage during the transition period (pre-go-live training, go-
10 live) and the stabilization period (post-implementation and support activities). SDG&E's staffing
11 plan for each project phase is presented in Figure LDA-1 below.

12 **Figure LDA-1: Staffing Across Project Phase⁷**



13 Figure LDA-1 shows resourcing across three main categories: internal SDG&E labor, SI
14 and third-party resources. Throughout the project implementation, the level of SDG&E internal
15 staff stays relatively steady from phase to phase. There is an increase in internal staffing as the
16 project moves out of project preparation and into the requirements phase to accommodate for the
17 increase in deliverables associated with all the remaining project phases. However, in general,
18 internal resource staffing consistently stays at the same level at both its average and peak times
19

⁷ See workpaper “LDA – CIS Program Resources SDG&E.”

1 during each project phase. The majority of the staffing will be resourced through external sources
2 such as SI and other third-party staff augmentation.

3 The project intends to partner with an industry leading SI who specialize in implementing
4 SAP CR&B for utilities. The SI will bring expertise in program governance, best business
5 practices, organizational change readiness, and knowledge of how to design, configure and test
6 the solution to meet SDG&E's needs. The remaining resourcing needs for the project will be
7 satisfied through other third-party sources. Further discussion is provided in the direct testimony
8 of Witness Snyder (Chapter 3) and Witness Linder (Chapter 6) regarding the various project
9 phases and timeline; in the direct testimony of Witness Swartz (Chapter 5) on organizational
10 change management and the customer service staffing plan during the transition and stabilization
11 periods of the project; and in the direct testimony of Witness Linder (Chapter 6) on additional
12 details concerning the implementation resources (internal, SI, third-party), as well as the technical
13 resources required during the transition and ongoing support phases of the project.

14 **III. CIS REPLACEMENT BENEFIT COST ANALYSIS**

15 **A. Benefit Cost Methodology**

16 In 2015, EY conducted a detailed gap analysis of SDG&E's current Customer Services
17 portfolio of systems and applications and prepared a recommendation (including a high-level
18 costs/benefits analysis) for replacing these systems and applications. EY used this gap analysis as
19 a guide for identifying potential improvement opportunities. For the gaps identified, IT and
20 business unit managers in the affected functional areas performed a benefit analysis to identify the
21 likely financial impact from closing or mitigating their respective gaps. EY and SDG&E then
22 collaboratively formulated a recommendation, estimating the financial benefits that would be
23 obtained from replacing SDG&E's outdated legacy CIS and its supporting subsystems with a
24 new, consolidated CIS – one that can enable improved capabilities around customer experience
25 and engagement, business process integration and automation, data management, analytics, and

1 reporting. In the beginning of 2017, SDG&E selected SAP CR&B as the future-state technical
2 platform and solution.

3 SDG&E engaged HCL in January 2017 to assist in developing and refining the legacy CIS
4 business case. Included in the engagement was a thorough analysis of the benefit justification
5 logic and related assumptions used to estimate the financial impacts. Assumptions were tested,
6 documented, and updated, where necessary. Benefit estimates from 2015 were either refined or
7 refreshed with 2017 assumptions. In addition, new benefits were added where SAP CR&B
8 functionality facilitated an improvement that was not previously captured by EY. HCL also
9 analyzed the financial impacts to ensure that there were no overlaps within the identified benefits.
10 After incorporating the revised implementation and ongoing support costs provided by HCL,
11 SDG&E had a complete business case encompassing costs and benefits.

12 **B. Total Costs for CIS Replacement**

13 As with any software and hardware implementation, there is an asset life for the newly
14 implemented system. As discussed in Witness Snyder's direct testimony (Chapter 3), SAP
15 CR&B will be implemented in Q1 2021. Table LDA-4 shows the total nominal cost of ownership
16 as \$535.4 million for SAP CR&B through its 15-year asset life. This includes all O&M and
17 capital dollars necessary to put SAP CR&B into service and the ongoing support and maintenance
18 required to keep it running for 15 years.

Table LDA-4: Total Nominal Costs Over Asset Life (2017 – 2036)⁸

<i>(\$ in millions)</i>	Implementation	Ongoing	Total Cost of Ownership
Labor			
Capital	\$121.0	\$55.3	\$176.3
O&M	33.4	64.1	97.5
Hardware/Software	48.7	154.4	203.1
Other Direct Costs	4.7	0.3	5.0
Project Contingency	35.7	7.7	43.5
Subtotal	\$243.6	\$281.8	\$525.4
Contingency for Regulatory Changes	10.0		10.0
Total	\$253.6	\$281.8	\$535.4

C. Total Benefits for CIS Replacement

Once SAP CR&B is implemented, SDG&E is forecasting a nine-month stabilization period to resolve any business or technical issues related to the implementation. SAP CR&B benefits realization is forecasted to begin in 2022, after the system has been fully stabilized and operations return to a steady state. The benefits associated with this implementation would be recognized as part of SDG&E’s next available General Rate Case.

SDG&E forecasts a total benefit amount of \$575.1 million for the 15-year asset life of SAP CR&B. In total, 45 distinct benefits were identified across both the Customer Service and Information Technology departments.⁹ These benefits have been grouped into 7 categories and are depicted in Figure LDA-2.

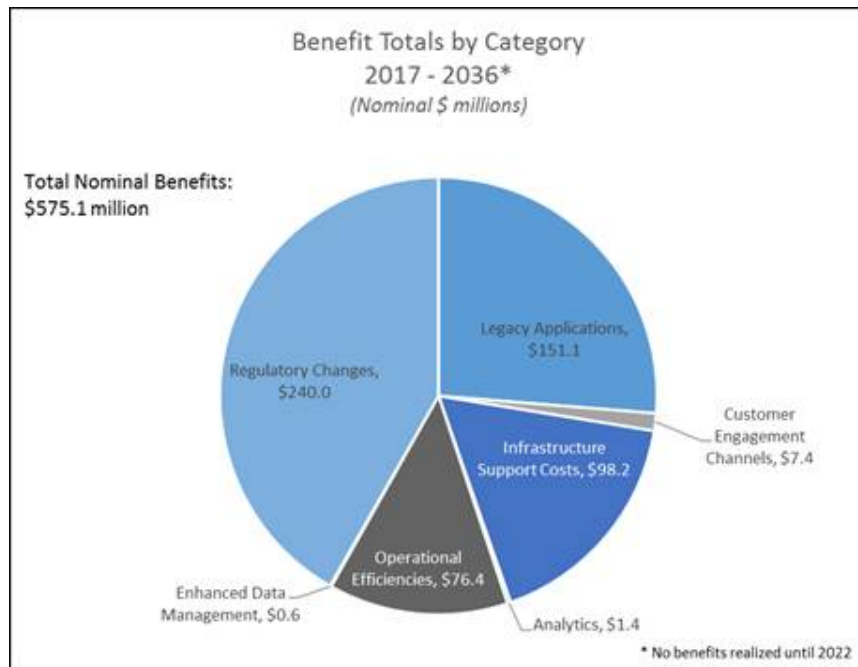
1. **Legacy Applications:** benefits resulting from the retirement of the legacy CIS and/or supporting subsystems;
2. **Customer Engagement Channels:** benefits resulting directly in improved customer engagement (*e.g.*, benefits impacting Customer Contact Center);

⁸ Total cost of ownership is defined as the total nominal costs (O&M and capital) for implementation and ongoing support for the entire 15-year asset life of SAP CR&B. Total implementation costs are derived from Table LDA-1. See workpaper “LDA-CIS Program Cost SDG&E” for more detail on ongoing costs.

⁹ See workpaper “LDA-CIS Program Benefits SDG&E.”

3. **Infrastructure Support Costs:** benefits resulting in cost reductions associated with no longer maintaining infrastructure supporting legacy applications, systems and/or processes;
4. **Analytics:** benefits resulting from improvement of data analytics (*e.g.*, consolidation of customer data, ease of data extraction or reporting);
5. **Operational Efficiencies:** benefits resulting from increases in productivity through efficiencies gained in business process improvement (*e.g.*, automation, labor reduction);
6. **Enhanced Data Management:** benefits resulting from improved data quality and efficiency in handling of data (*e.g.*, access to accurate and comprehensive data);
7. **Regulatory Changes:** consists of benefits attained by more quickly and cost effectively implementing regulatory changes.

Figure LDA-2: Total Benefits Over Asset Life (2017 – 2036)¹⁰



¹⁰ See workpaper “LDA-CIS Program Benefits SDG&E.” Benefits shown above include \$15 million for operational efficiencies related to cash flow acceleration and bad debt reduction. These benefits, identified as Benefit IDs 47.1, 94.1, 110.1 and 602.1, are not included in the Total Benefits figures presented in Table LDA-5.

1 In addition to the financial benefits, with SAP CR&B, SDG&E will be able to transform
2 its customer service business processes to be more proactive and better meet customer needs.
3 This includes significant customer service benefits in the following areas: (1) having a 360-degree
4 customer-centric model; (2) introducing new configuration capabilities; (3) improving data
5 analytics capabilities; and (4) receiving SAP CR&B product updates as the energy industry
6 evolves to take advantage of future product capabilities. As an example, in contrast to the
7 regulatory implementation challenges that SDG&E is currently experiencing with its legacy CIS
8 and supporting subsystems, a key benefit of SAP CR&B will be decreased costs and shorter
9 implementation timelines due to the new, user-friendly configuration capabilities. This benefit
10 alone makes up approximately 40% of the total benefits and highlights the criticality and urgency
11 of transitioning to SAP CR&B to reduce future costs related to regulatory implementations. The
12 benefits and transformational capabilities that SDG&E's Customer Service Operations and
13 Information business units will experience with SAP CR&B are discussed in more detail in the
14 direct testimony of Witness Swartz (Chapter 5).

15 **D. Benefit Cost Ratio**

16 The business case to replace the legacy CIS is urgent and the risk faced without a CIS
17 replacement in the near term is substantial – SDG&E simply cannot afford to wait any longer to
18 initiate the replacement of its legacy CIS and related subsystems.¹¹ Large scale CIS
19 implementations are foundational assets that organizations can leverage to build better business
20 capabilities and improve customer interaction and engagement. Table LDA-5 shows the total
21 costs and benefits that are identified throughout the 15-year asset life of SAP CR&B, resulting in
22 a benefit to cost ratio of 1.05. This positive benefit to cost ratio and the transformational

¹¹ See direct testimony of Witness Snyder (Chapter 3) for a detailed risk assessment as to why SDG&E's legacy CIS and related subsystems must be replaced in the near term.

1 capabilities outlined in the direct testimony of Witness Swartz (Chapter 5) further support the
2 business case to replace the legacy CIS and its related subsystems.

3 **Table LDA-5: Benefit to Cost Ratio¹²**

<i>(\$ in millions)</i>	<u>Direct Costs</u>	<u>Revenue Requirement</u>
Project Capital	\$160.0	
Project O&M	47.8	
Total Contingency	45.7	
On-going Support	281.8	
Total Costs	\$535.4	\$996.6
Total Benefits	\$560.3	\$1,289.6
Benefit to Cost Ratio	1.05	

4
5 **IV. CONCLUSION**

6 My direct testimony includes a discussion of the cost and benefit analysis performed for
7 the replacement of the legacy CIS and its related subsystems with the implementation of SAP
8 CR&B. Leveraging vendor partners EY and HCL, SDG&E conducted a thorough cost and
9 benefit analysis to determine the costs and benefits associated with the implementation and
10 maintenance of a new CIS system through its 15-year asset life. The analysis resulted in a
11 positive benefit cost ratio, further solidifying the business case to replace the legacy CIS and its
12 related subsystems. For the foregoing reasons, the Commission should expeditiously approve
13 SDG&E’s proposed nominal costs:

- 14 • Total cost of ownership of \$535.4 million, consisting of:
 - 15 a. Total implementation costs of \$253.6 million
 - 16 b. Total ongoing costs of \$281.8 million.

17 This concludes my prepared direct testimony.
18

¹² See workpaper “LDA-CIS Program Cost SDG&E.”

1 **V. STATEMENT OF QUALIFICATIONS**

2 My name is Laura Atkinson and my business address is 8330 Century Park Court, San
3 Diego, California 92123. I am presently the Director of the Customer Information System
4 Program at San Diego Gas and Electric Company (“SDG&E”). I have been with SDG&E since
5 July 2012, where I began as the IT Program Manager overseeing the Customer Services capital
6 project portfolio. Following this, I became the IT Program Manager for all projects run in San
7 Diego. In 2015, I became the Director of IT Portfolio Management & Quality Assurance, where I
8 had responsibility for the IT Project Portfolio for both SDG&E and Southern California Gas
9 Company, along with the Enterprise IT Quality Assurance Program. Prior to joining SDG&E, I
10 held various management and Director positions, including Manager of Utility Applications,
11 Manager of SAP & Enterprise Systems, Director of Application Services, Director of Customer
12 and Application Services, and Director of Operations.

13 I hold a Bachelor of Science in Computer Information Systems from DeVry Institute of
14 Technology and a Master’s in Business Administration from the University of San Diego. I also
15 hold a project management professional certification.

16 I have not previously testified before the California Public Utilities Commission.