

# **San Diego Gas & Electric Company**

## **Volume – 1b**

### **TO5 – Cycle 1**

Testimony of SDG&E Witnesses (Bruce A. Folkmann, Jeff Stein, Alana Hammer, Raulin R. Farinas, William H. Speer, Christopher R. Penn)

**October 30, 2018**

**Docket No. ER19-\_\_\_\_\_**

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Exhibit No. SD-0001

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
  
BRUCE A. FOLKMANN  
  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1    **PREPARED DIRECT TESTIMONY OF**  
2    **BRUCE A. FOLKMANN**  
3    **ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

4 **I. INTRODUCTION AND QUALIFICATIONS**

5 Q. Please state your name, position and business address.

6 A. My name is Bruce A. Folkmann. I am Vice President, Chief Financial Officer,  
7 Controller, Chief Accounting Officer, and Treasurer for San Diego Gas & Electric  
8 Company (“SDG&E”) and Southern California Gas Company (“SoCalGas”),  
9 Sempra Energy’s California regulated utility businesses. My business address is  
10 8330 Century Park Court, San Diego CA, 92123.

11 Q. Please describe your current responsibilities.

12 A. I am responsible for overseeing the financial planning and budgeting, energy risk  
13 management, financial reporting, treasury management, and affiliate compliance  
14 for SDG&E and SoCalGas.

15 Q. Please describe your educational and professional background.

16 A. I graduated summa cum laude from the University of Houston Honors College,  
17 receiving degrees in Accounting and Finance. I am a Certified Public  
18 Accountant. I began my career with Arthur Anderson and a large multinational  
19 company. In 2005, I joined Sempra Energy and have held positions of increasing  
20 responsibility in Sempra Energy businesses since that time.

21 Q. Have you previously testified before this Commission?

22 A. No, I have not.

23 **II. PURPOSE OF TESTIMONY**

24 Q. What is the purpose of your testimony, and how is it organized?

1 A. The purpose of my testimony is to provide a general overview of the formula rate  
2 tariff, the TO5 Formula, that SDG&E is proposing in this proceeding. In Section  
3 III, I provide some background and contextual information about the TO5  
4 Formula. I then discuss the key drivers underlying the changes in SDG&E's Base  
5 Transmission Revenue Requirements ("BTRR"). Next, in Sections IV-VII, I  
6 provide additional detail on several of these key drivers, and I identify the  
7 SDG&E witnesses who also testify on those issues.

8 **III. OVERVIEW OF TO5 FORMULA FILING**

9 Q. Please briefly describe SDG&E's TO5 Formula filing.

10 A. SDG&E's filing proposes a new formula rate tariff mechanism, the TO5 Formula,  
11 as a successor to the TO4 Formula.<sup>1</sup> The TO5 Formula is comprised of Appendix  
12 VIII of SDG&E's TO Tariff, the Formula Rate Protocols, and the Formula Rate  
13 Spreadsheet. Most of the features of the TO5 Formula are consistent with the  
14 TO4 Formula. SDG&E witness Jeff Stein highlights the features that have  
15 changed.

16 Q. What is the term of the TO5 Formula?

17 A. The existing TO4 Formula expires by its own terms on December 31, 2018, and  
18 SDG&E is proposing an effective date of January 1, 2019 for the TO5 Formula in  
19 order to provide a seamless transition. The TO5 Formula will remain in effect  
20 without a specific termination date. But SDG&E and interested parties will have

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<sup>1</sup> The TO4 Formula was established through an "Offer of Settlement" among the settling parties that SDG&E filed on February 9, 2014 in Docket No. ER13-941. The Commission approved the settlement on May 27, 2014. *San Diego Gas & Electric Co.*, 147 FERC ¶ 61,150 (2014).

1 the right to terminate the TO5 Formula, to be exercised on an annual basis  
2 beginning in 2022, by providing SDG&E and each interested party notice no later  
3 than June 30 of any year.

4 Q. Please explain why SDG&E is proposing to continue its formulaic ratemaking  
5 approach under the TO5 Formula.

6 A. SDG&E has established its revenue requirements using a formulaic ratemaking  
7 approach for over a decade. I believe the TO4 Formula worked well over the past  
8 five years, and interested parties are familiar with SDG&E's approach, and how  
9 the various components of the revenue requirement are developed each year.  
10 Thus, continuing the formulaic approach in the TO5 Formula provides stability  
11 and consistency for SDG&E and its stakeholders. I am not aware of any  
12 stakeholder that has objected to SDG&E's formulaic approach.

13 Q. What is the BTRR that SDG&E is proposing in the first annual Cycle of the TO5  
14 Formula?

15 A. The TO5 Cycle 1 retail BTRR is approximately \$911 million and CAISO  
16 Wholesale customers BTRR is approximately \$907 million.

17 Q. How does that proposed TO5 Cycle 1 BTRR compare to what is currently in  
18 effect in Cycle 5 of the TO4 Formula?

19 A. The TO5 Cycle 1 retail BTRR represents an increase of approximately 10.6%  
20 compared to the TO4 Cycle 5 BTRR and CAISO Wholesale customers BTRR is  
21 an increase of approximately 10.9%.

22 Q. Please identify the key drivers of the change.

23 A. The key drivers are the following:

- 1           1.     Return on Equity (“ROE”);
- 2           2.     Federal income taxes; and
- 3           3.     Accumulated Deferred Income Tax (“ADIT”) error correction.

4           Additionally, SDG&E has prepared a new depreciation rate study in connection  
5           with the TO5 Formula, as discussed in the testimony of SDG&E witness Dane  
6           Watson. Although the depreciation rates do not impact the TO5 Formula until  
7           2021, due to the timing of the base period and true-up conventions used in the  
8           TO5 Formula,<sup>2</sup> it is also worth pointing out that this change will have an impact  
9           on the BTRR in future years.

#### 10   **IV.   SDG&E’S PROPOSED RATE OF RETURN ON EQUITY**

11   Q.     Please describe SDG&E’s proposed ROE for the TO5 Formula.

12   A.     SDG&E proposes a base ROE of 10.7 percent, as described in the testimony of  
13           SDG&E witness Dr. Roger Morin. Dr. Morin concludes that the proposed ROE is  
14           appropriate in light of market conditions, risk, and the need for SDG&E to attract  
15           investor capital. As discussed by Dr. Morin, the 10.7 percent base ROE is at the  
16           upper end of the results from the various methodologies he used, which reflects  
17           SDG&E’s much higher than average risk compared to other regulated utilities.  
18           SDG&E witness Don Widjaja describes the risks SDG&E faces in greater detail.  
19           Of particular significance is the risk related to catastrophic wildfires in California,

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<sup>2</sup>     As discussed further by Ms. Hammer, SDG&E’s TO5 Formula, like its TO4 Formula, uses historic information in the development of the Base Period and True-Up Adjustment. For rates effective in TO5 Cycle 1 (January 1, 2019 through December 31, 2019), the Base Period is the 12 months ended December 31, 2017, and the True-Up Adjustment is 2017 calendar year data, which is applicable to TO4 Cycle 4 (January 1, 2016 through December 31, 2016).



1 which may result in massive uninsured and unrecoverable losses for California  
2 investor-owned utilities in light of the California law of inverse condemnation.

3 I have asked Dr. Morin to apply a 50 basis-point adder to the ROE to  
4 compensate SDG&E for its membership in the California Independent System  
5 Operator Corporation (“CAISO”), which results in an ROE of 11.2 percent.

6 Q. Has SDG&E been awarded a 50 basis-point adder to its ROE for CAISO  
7 participation in the past?

8 A. Yes, most recently, when SDG&E filed its TO4 Formula in February 2013, it  
9 proposed an incentive 50 basis-point adder for continued CAISO participation,  
10 consistent with the approach it took under the previous TO3 Formula. The  
11 Commission accepted SDG&E’s continued use of the 50 basis-point adder.<sup>3</sup>  
12 Ultimately, the TO4 Formula proceedings settled, which the Commission  
13 approved.<sup>4</sup> As reflected in the TO4 Formula “Offer of Settlement,” SDG&E  
14 included the 50 basis-point adder for CAISO participation.<sup>5</sup>

15 Q. Why is the 50 basis-point adder for CAISO participation appropriate for inclusion  
16 in SDG&E’s ROE in this proceeding?

17 A. The 50 basis-point adder is appropriate for several reasons. First, the Commission  
18 granted this incentive adder in past SDG&E formula rate proceedings, and there  
19 have been no changed circumstances warranting elimination of the adder.  
20 SDG&E continues to be a Participating Transmission Owner (“PTO”) under the

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<sup>3</sup> *San Diego Gas & Electric Co.*, 143 FERC ¶ 61,246 at P 23 (2013).

<sup>4</sup> 147 FERC ¶ 61,150 (2014).

<sup>5</sup> *See* “Offer of Settlement,” § 1.10.

1 CAISO tariff, and the benefits the Commission ascribes to such participation, as  
2 set forth in Order No. 679, apply to the TO5 Formula, just as they did to the TO4  
3 Formula. Second, SDG&E's continued participation in the CAISO benefits  
4 consumers, and the incentive requested is at the same level as the Commission has  
5 approved for other California investor-owned utilities.

6 Q. What are the benefits arising from SDG&E's PTO status?

7 A. Since SDG&E's transmission assets are under the operational control of the  
8 CAISO, they are available for use by all market participants on a non-  
9 discriminatory, open-access, basis. The CAISO's open-access market protocols  
10 allow grid use to be optimized in accordance with market participants'  
11 commercial interests and actual physical power flows. In addition, SDG&E and  
12 other PTOs work with CAISO to plan major transmission facilities, in a  
13 coordinated fashion that provides economic benefits to all customers within  
14 CAISO. Further, SDG&E provides supply resources that help control commodity  
15 costs for all CAISO customers, assisting CAISO in providing a competitive  
16 energy market in California.

17 Q. Are you aware that the U.S. Court of Appeals for the Ninth Circuit has addressed  
18 the Commission's award of a 50 basis-point incentive adder to Pacific Gas &  
19 Electric Company ("PG&E") for its CAISO participation in *CPUC v. FERC*, 879  
20 F.3d 966 (9th Cir. 2018)?

21 A. Yes. I understand that the court granted the CPUC's petition for review of  
22 Commission's orders and remanded the case. I also understand that the  
23 Commission subsequently issued an "Order on Remand," in which it established a

1 schedule for parties to supplement the record and present arguments relating to  
2 whether California law requires PG&E to participate in CAISO.<sup>6</sup> Thus, my  
3 understanding is that the continued availability of the 50 basis-point adder for  
4 PG&E has not been definitively resolved. If it is ultimately determined that  
5 SDG&E is no longer permitted a 50 basis-point adder for CAISO participation,  
6 SDG&E will remove the proposed 50 basis-point adder from its TO5 Formula.

7 Q. How does SDG&E's proposed 11.2 percent ROE compare to the currently  
8 effective ROE in the TO4 Formula?

9 A. It represents an increase from the 10.05 percent ROE that was embodied in the  
10 TO4 Formula "Offer of Settlement."

11 **V. FEDERAL INCOME TAXES**

12 Q. Please describe the federal income tax changes that impact the TO5 Formula.

13 A. The Tax Cuts and Jobs Act, signed into law on December 22, 2017, made a  
14 number of changes to the federal tax system, including a reduction of the federal  
15 corporate income tax rate from a maximum 35 percent to a flat 21 percent rate,  
16 effective January 1, 2018. SDG&E witness Joel Dumas further discusses the tax  
17 law change. This reduction is reflected in the TO5 Formula, as discussed by  
18 SDG&E witness Alana Hammer. In addition, as SDG&E indicated in its May 14,  
19 2018 response to the "Order to Show Cause" issued by the Commission on March  
20 15, 2018,<sup>7</sup> SDG&E will reduce the BTRR in the TO5 Cycle 1 filing to reflect the  
21 benefit to ratepayers from the tax rate reduction for the period March 15, 2018

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<sup>6</sup> *Pacific Gas & Electric Co.*, 164 FERC ¶ 61,121 (2018).

<sup>7</sup> *AEP Appalachian Transmission Co., et al.*, 162 FERC ¶ 61,225 (2018).

1 through December 31, 2018. The impact of this tax reduction in TO5 Cycle 1 is  
2 an approximately \$54 million reduction in the BTRR, as compared to TO4 Cycle  
3 5. Lastly, Mr. Dumas discusses the proposed treatment of excess deferred taxes.

4 **VI. ADIT ERROR CORRECTION**

5 Q. Please describe the ADIT error correction that SDG&E proposes.

6 A. ADIT represents an adjustment to SDG&E's rate base in the computation of the  
7 BTRR. ADIT includes both Deferred Tax Assets and Deferred Tax Liabilities.  
8 During the course of the TO4 Formula, SDG&E incorrectly calculated the FERC  
9 Tax Net Operating Loss – a component of the Deferred Tax Asset – by using both  
10 FERC and CPUC-jurisdictional income and expense in the calculation; SDG&E  
11 should have just used FERC-jurisdictional income and expense in that calculation.  
12 This error had the effect of prematurely reducing, and ultimately eliminating,  
13 SDG&E's FERC Tax Net Operating Loss, which was then reflected in SDG&E's  
14 ADIT computation and revenue requirement. Mr. Dumas describes this error in  
15 greater detail, and Ms. Hammer addresses the ratemaking treatment of the error  
16 correction. The ultimate result of the ADIT error is that SDG&E under-collected  
17 its revenue requirement.

18 Q. What is the magnitude of the ADIT error?

19 A. For the base periods 2012-2016, the cumulative ratemaking impact of the error is  
20 approximately \$91 million.<sup>8</sup>

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<sup>8</sup> See Exhibit No. SD-0004, "ADIT Base Transmission Revenue Requirements Adjustment Summary (BK-1) for TO4 Cycles 2 to 5," which accompanies Ms. Hammer's testimony.

1 Q. Why does SDG&E believe it is entitled to correct the ADIT error in connection  
2 with filing its TO5 Formula?

3 A. SDG&E's TO4 Formula contains a provision for correcting errors such as these,  
4 and the True-Up process for the TO4 Formula continues into the first few cycles  
5 of the TO5 Formula, through the True-Up Adjustment and the Final True-Up  
6 Adjustment. This true-up approach is appropriate since, as noted above,  
7 SDG&E's formulaic convention uses historical information in the development of  
8 the Base Period and the True-Up Adjustment.

9 Q. What is the provision in the TO4 Formula that permits the correction of errors?

10 A. The currently-effective TO4 Formula Protocols (Attachment 1 to Appendix VIII  
11 of SDG&E's Transmission Owner tariff) contain a provision entitled  
12 "Adjustments to Reflect Correction of Errors" in Section C.5.a. In its entirety,  
13 that provision reads as follows:

14 a. In the event SDG&E or any Interested Party identifies an  
15 error in the TO4 Formula or the FERC Form 1 data or data based  
16 on SDG&E's books and records that is used as an input to the  
17 formula, or SDG&E is required by applicable law, a court, or  
18 regulatory body to correct an error, and such error affects the True-  
19 Up TRR calculated in an Informational Filing, SDG&E shall  
20 include in its next subsequent Informational Filing a brief  
21 description of the errors included in its prior Informational Filing  
22 that must be corrected. SDG&E's subsequent Informational Filing  
23 shall:

24 (i) Recalculate the True-Up TRR for all affected Prior  
25 Years;

26 (ii) Compare, on a monthly basis, the difference  
27 between the initial incorrect True-Up TRR and the revised  
28 correct True Up; and

29 (iii) Determine the cumulative amount of the difference  
30 in Section C.5.a.ii, including interest calculated pursuant to

1 the interest rate in 18 C.F.R. § 35.19a, through the date of  
2 implementation of the correction.

3 b. Absent an order requiring refunds outside of the True-Up  
4 process, the difference in Section C.5.a.(iii) shall be included as an  
5 additional component to SDG&E's True-Up Adjustment in its next  
6 Informational Filing or Final True-Up Adjustment, as applicable,  
7 as a one-time True-Up Adjustment in accordance with the TO4  
8 Formula.

9 In this instance, SDG&E identified the ADIT error in "Form 1 data or data based  
10 on SDG&E's books and records that is used as an input to the formula," as  
11 described by Mr. Dumas. SDG&E is including information about the ADIT error  
12 in this filing, has undertaken the appropriate calculations resulting in the  
13 cumulative amount of difference under Section C.5.a.iii, and is including that  
14 amount "as an additional component to SDG&E's True-Up Adjustment in its next  
15 Informational Filing or Final True-Up Adjustment."

16 Q. Are there any impacts of the error correction apart from the \$91 million that will  
17 be corrected through the True-Up Adjustment process?

18 A. Yes. The correction of the error means that there will be FERC Tax Net  
19 Operating Losses in 2017, which would otherwise have been prematurely  
20 eliminated if the error had not been corrected.

## 21 **VII. DEPRECIATION RATES**

22 Q. Please describe the changes to depreciation rates that SDG&E proposes?

23 A. SDG&E has prepared a new transmission depreciation rate study as part of the  
24 TO5 formula. SDG&E's existing depreciation rates were established in  
25 connection with the settlement of the TO4 Formula proceeding, and the TO4  
26 Formula included stated transmission depreciation rates for each account, upon

1 which annual depreciation expense was calculated. These are reflected in  
2 Attachment A to the TO4 Formula “Offer of Settlement,” and in the Statement AJ  
3 workpapers. The composite depreciation rate under the TO4 Formula was 2.52  
4 percent.

5 The new depreciation rate study, prepared by Mr. Watson for the TO5  
6 Formula, proposes a composite depreciation rate of 3.12 percent. Mr. Watson’s  
7 depreciation rate study also sets forth transmission depreciation rates for each  
8 account.

9 Q. Why has SDG&E’s depreciation expense increased in the TO5 Formula, as  
10 compared to the TO4 Formula?

11 A. The key driver in the change in depreciation expense is the inclusion of net  
12 salvage for the accounts related to SDG&E’s Sunrise Powerlink transmission  
13 line.<sup>9</sup> In the TO4 Formula settlement, the net salvage value for these accounts  
14 was set at zero percent. But going-forward, as Mr. Watson opines, there is no  
15 valid reason to use a zero percent net salvage value for such transmission assets.

16 Q. Does this complete your testimony?

17 A. Yes.

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<sup>9</sup> The Sunrise Powerlink is a 117-mile, 500 kilovolt transmission line that SDG&E placed into service in 2012. It connects the Imperial Valley Substation in Imperial County to the Sycamore Canyon Substation in San Diego County.

**VERIFICATION**

Bruce A. Folkmann hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief.

See 28 U.S.C. § 1746.

Executed this 30<sup>th</sup> day of October, 2018



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Exhibit No. SD-0002

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
JEFF STEIN  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1                                   **PREPARED DIRECT TESTIMONY OF**  
2   **JEFF STEIN**  
3                                   **ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

4   **I. INTRODUCTION**

5   Q.   Please state your name, position and business address.

6   A.   My name is Jeff Stein, and I am Manager of Transmission Revenue for San Diego  
7       Gas & Electric Company (“SDG&E”). My business address is 8315 Century  
8       Park Court Bldg. 2, San Diego, CA 92123.

9   Q.   Please describe your current responsibilities.

10  A.   My current responsibilities include providing analytical support to the company  
11       for FERC matters regarding electric revenue requirements, cost of service, rate  
12       design and California Independent System Operator (“CAISO”) matters.

13  Q.   Please describe your educational and professional background.

14  A.   I received a Bachelor of Science degree in Business Administration with an  
15       emphasis in Accounting from San Diego State University. I am a Certified Public  
16       Accountant in the state of California and I continue to maintain an active status  
17       license with practice rights by fulfilling the continuing professional education  
18       requirements.

19           Upon receiving my Bachelor’s degree, I was employed by an Accounting  
20       and Advisory services firm. After two years of public accounting, I joined  
21       Sempra Energy in 2006 and have held various positions of increasing  
22       responsibilities in Sempra Energy’s Internal Audit Department, SDG&E’s  
23       Business Controls Department, and SDG&E Plant Accounting.

24  Q.   Have you previously submitted testimony to this Commission?

1 A. No.

2 **II. PURPOSE OF TESTIMONY**

3 Q. What is the purpose of your testimony of your testimony, and how is it organized?

4 A. The purpose of my testimony is to provide an overview of the new Transmission  
5 Owner (“TO”) formula rate tariff that SDG&E is proposing in this proceeding –  
6 referred to as the TO5 Formula. The TO5 Formula is the successor to SDG&E’s  
7 TO4 Formula, which is due to expire by its own terms on December 31, 2018.  
8 My testimony explains several key features of the TO5 Formula. I have  
9 organized my testimony as follows:

10 I. Introduction

11 II. Purpose of Testimony

12 III. Description of TO5 Formula and Cycle Timelines

13 IV. Key Differences Between the TO5 Formula and the TO4 Formula

14 V. *Pro Forma* Cost Allocation Adjustments Made to Cycle 1 Recorded Base  
15 Period

16 VI. *Pro Forma* Cost Adjustments Made to Cycle 1 Recorded Base Period

17 VII. Final TO5 True-Up Period Adjustment

18 VIII. Refunds Under TO5 Formula

19 IX. Retail Rate Design

20 **III. DESCRIPTION OF TO5 FORMULA AND CYCLE TIMELINES**

21 **A. Description of Formula and Cycle Timelines**

22 Q. Please explain the timelines applicable under SDG&E’s TO5 Formula, including  
23 the annual cycles.

24 A. The time periods used in the TO5 Formula are virtually identical to what was in  
25 effect under SDG&E’s TO4 Formula, with the few exceptions explained below.

1 As with the TO4 Formula, the TO5 Formula is implemented through annual  
 2 filings, with components taking effect for an annual cycle. Each cycle will  
 3 include the following components:

- 4 • Rate Effective Period (“REP”)
- 5 • Base Period
- 6 • Forecast Period
- 7 • True-Up (“TU”) Adjustment
- 8 • Interest TU Adjustment

9 SDG&E will update the BTRR in each cycle per the following schedule:

10 **TO5 Cycle 1**

Rate Effective Period	January 1, 2019 – December 31, 2019
Base Period	12 Months ended December 31, 2017
Forecast Period	24 Months, January 2018 - December 2019
TU Adjustment	2017 calendar year applicable to TO4 Cycle 4
Interest TU Adjustment	January 1, 2017 – December 31, 2018

11 **TO5 Cycle 2**

Rate Effective Period	January 1, 2020 – December 31, 2020
Base Period	12 Months ended December 31, 2018
Forecast Period	24 Months, January 2019 - December 2020
TU Adjustment	2018 calendar year applicable to TO4 Cycle 5
Interest TU Adjustment	January 1, 2018 – December 31, 2019

12

1       **TO5 Cycle 3**

Rate Effective Period	January 1, 2021 – December 31, 2021
Base Period	12 Months ended December 31, 2019
Forecast Period	24 Months, January 2020 - December 2021
TU Adjustment	2019 calendar year applicable to TO5 Cycle 1
Interest TU Adjustment	January 1, 2019 – December 31, 2020

2       After Cycle 3, successive TO5 cycles will be consistent with Cycle 3 with regards  
3       to timing and the length of the Base Period, Forecast Period, TU Period, and Rate  
4       Effective Period.

5       **B.       Termination of TO5 Formula**

6       Q.       When will the TO5 Formula end?

7       A.       As Bruce Folkmann explains, SDG&E is not proposing a termination date for the  
8       TO5 Formula. The TO4 Formula was in effect through December 31, 2018,  
9       subject to a one-time termination right to be noticed by June 30, 2016. In the TO5  
10       Formula, SDG&E proposes that the formula shall become effective January 1,  
11       2019 and shall remain in effect indefinitely. However, SDG&E and interested  
12       parties shall each have a right to terminate the TO5 Formula, to be exercised on  
13       an annual basis beginning with the 2022 annual cycle, by providing SDG&E and  
14       each interested party notice no later than June 30 of any year. Following such  
15       notice, SDG&E shall file a successor rate pursuant to Section 205, which shall  
16       include a request for an effective date that is January 1 of the following year. All  
17       interested parties retain their rights to oppose this successor Section 205 filing.  
18       The TO5 Formula shall remain in effect until the Commission accepts such a  
19       successor rate mechanism.

1 **IV. KEY DIFFERENCES BETWEEN THE TO5 FORMULA AND THE TO4**  
2 **FORMULA**

3 Q. Please explain the key differences between the TO5 Formula and the TO4  
4 Formula.

5 A. In general, the proposed TO5 Formula continues most, but not all, aspects of the  
6 TO4 Formula, including the structure and organization. However, I note that  
7 because the TO4 Formula has worked well and parties are familiar with the  
8 formula process, SDG&E has attempted to limit changes to the TO5 Formula to  
9 the maximum extent practicable.

10 Q. Please describe the key differences.

11 A. The key differences are as follows:

12 **Change in Federal Corporate Income Tax Rate:** Consistent with the  
13 May 14, 2018 “Answer of San Diego Gas & Electric Company to Order to Show  
14 Cause” in Docket No. EL18-67 (“SDG&E Show Cause Answer”), SDG&E is  
15 proposing revisions to be reflected in its TO5 Formula to address the recent  
16 change in the federal corporate income tax rate. As noted in the SDG&E Show  
17 Cause Answer, SDG&E proposes to reflect the change from a 35% to a 21%  
18 corporate income tax rate in the TO5 Formula, for rates to take effect January 1,  
19 2019. The True-Up Adjustments for years prior to 2018 shall continue to reflect  
20 the previously-effective corporate tax rate. Additionally, consistent with the  
21 proposal in the SDG&E Show Cause Answer, SDG&E proposes to reduce the  
22 BTRR in the first annual Cycle of the TO5 Formula to immediately reflect the  
23 benefits to ratepayers from the federal corporate income tax reduction for the  
24 period March 15, 2018 through December 31, 2018.

1                   **Rate of Return on Equity:** SDG&E is proposing to change its ROE to  
2 reflect current market conditions and risks.

3                   **Change in Depreciation Rates:** SDG&E is requesting approval of new  
4 transmission depreciation rates to go into effect January 1, 2019, replacing its  
5 currently effective transmission depreciation rates. Due to the operation of the  
6 Formula, however, these rates are not included in the Cycle 1 Base Period BTRR.  
7 Rather, the impact will begin to appear in the 2019 base period for 2021 rates.

8                   **True Up Adjustment:** The TO4 Formula contained separate True-Up  
9 Adjustments for retail and Wholesale Customers. For purposes of the TO5  
10 Formula, SDG&E has simplified this process by deriving one True-Up  
11 Adjustment that will apply in the derivation of the BTRRs for retail and  
12 Wholesale Customers. The proposed methodology will now conform more  
13 closely to the definition of the True-Up Adjustment, which is the difference  
14 between actual costs and recorded revenues for the True-Up period. Under the  
15 current methodology, the wholesale true up adjustment calculates and uses a set  
16 of “proxy” recorded revenues since recorded wholesale revenues is non-existent.  
17 In addition, a single true up adjustment streamlines the annual Informational  
18 Filing and makes it more transparent by eliminating many levels of details that are  
19 calculated under the current process.

20                   **Statement AF – Specified Deferred Credits:** In the TO5 Formula  
21 SDG&E modifies the way ADIT is presented by showing the transmission related  
22 balances of ADIT accounts 190, 282 and 283 individually. Instead of simply  
23 showing the total ADIT, ADIT is now presented by its components, showing both



1 deferred tax assets (“DTAs”) recorded in account 190 and deferred tax liabilities  
2 (“DTLs”) recorded in accounts 282 and 283. ADIT will now also include ADIT  
3 associated with non-plant related items such as labor and ad valorem.

4 **FERC Form 1 References:** The TO5 Formula now shows a separate  
5 column for all FERC Form 1 references, in lieu of copying and including them in  
6 the workpapers.

7 **Annual Fixed Charge Rate (“AFCR”) to Derive Forecast Period**

8 **Capital Additions Revenue Requirements:** Under the TO5 Formula, SDG&E  
9 is proposing to change the way it derives the AFCR by using Net Plant (Gross  
10 Plant Less Accumulated Depreciation) in the denominator instead of Gross Plant  
11 to calculate the Forecast Period Capital Additions Revenue Requirements that is  
12 used in the derivation of the BTRR. This change will allow SDG&E to better  
13 match the revenues that will be collected in rates to cover the costs that are  
14 expected to be incurred during the rate effective period. Historically, SDG&E has  
15 experienced an under-collection totaling between \$20-30 million per year, which  
16 is ultimately recovered through the True-Up Adjustment. Switching from Gross  
17 Plant to Net Plant in the derivation of the AFCR merely impacts the timing of  
18 when revenues are collected (and not the level of revenues collected), mitigating  
19 the under-collection that has been experienced historically, and to reduce future  
20 True Up Adjustments.

21 **Addition of Other BTRR Adjustments Line:** The addition of Other  
22 BTRR Adjustments line shows any prior year omissions, FERC audit

1 adjustments, refunds related to the Tax Cuts and Jobs Act, and errors in  
2 Statements BK-1 and BK-2.

3 **Statement AQ –Federal Income Tax Deductions Other than Interest:**

4 A new line has been added (“Other Federal Income Tax Deductions”) to  
5 accommodate future tax deductions that are not currently present.

6 **Statement AR – Federal Tax Adjustments:** The Amortization of Excess  
7 Deferred Taxes is now shown by specific FERC accounts. In addition, SDG&E  
8 has included a line titled “Other Federal Tax Adjustments” to accommodate  
9 future tax adjustments that are not currently present.

10 **V. PRO FORMA COST ALLOCATION ADJUSTMENTS MADE TO CYCLE**  
11 **1 RECORDED BASE PERIOD**

12 Q. Has SDG&E made any *pro forma* cost allocation adjustments to its recorded  
13 Cycle 1 Base Period, 12-months ended December 31, 2017?

14 A. No.

15 **VI. PRO FORMA COST ADJUSTMENTS MADE TO CYCLE 1 RECORDED**  
16 **BASE PERIOD**

17 Q. Has SDG&E made any *pro forma* cost adjustments to recorded Base Period costs  
18 as part of its Cycle 1 filing?

19 A. No.

20 **VII. FINAL TO5 TRUE UP PERIOD ADJUSTMENT**

21 Q. Will the TO5 Formula require a Final TU Adjustment?

22 A. The TO5 Formula will only require a Final TU Adjustment if the TO5 Formula  
23 terminates. SDG&E is not proposing a termination date of the TO5 Formula, but  
24 following such termination a Final TU Adjustment would likely be required.

1 **VIII. REFUNDS UNDER THE TO5 FORMULA**

2 Q. How will refunds under the TO5 Formula be implemented?

3 A. Refunds under TO5 will be implemented in the following manner for retail and  
4 CAISO wholesales refunds. CAISO wholesale refunds will be effectuated  
5 pursuant to the CAISO tariff. Retail refunds will be effectuated pursuant to the  
6 True-Up mechanism of the TO5 Formula.

7 **IX. RETAIL RATE DESIGN**

8 Q. Is SDG&E changing its retail rate design in TO5 Cycle 1?

9 A. No. It is using the same transmission retail rate design that it used in TO4 Cycle 5.

10 Q. Does this complete your testimony?

11 A. Yes.

**VERIFICATION**

Jeff Stein hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief. See 28 U.S.C. § 1746.

Executed this 30<sup>th</sup> day of October, 2018

A handwritten signature in blue ink, appearing to be "Jeff Stein", is written over a horizontal line. The signature is stylized and cursive.

Exhibit No. SD-0003

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
ALANA HAMMER  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1   **PREPARED DIRECT TESTIMONY OF**  
2   **ALANA HAMMER**  
3   **ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

4   **I.     INTRODUCTION**

5   Q.    Please state your name, position, and business address.

6   A.    My name is Alana Hammer and my position is Senior Accountant II in San Diego  
7           Gas and Electric Company's ("SDG&E") Transmission Revenue department. My  
8           business address is 8315 Century Park Court Bldg. 2, San Diego, California,  
9           92123.

10 Q.    Please describe your current responsibilities.

11 A.    My responsibilities include assisting in developing and analyzing Transmission  
12           revenue requirements.

13 Q.    Please describe your educational and professional background.

14 A.    I received a Bachelor of Accountancy and Master's in Taxation from the  
15           University of San Diego in California. I have been employed by SDG&E since  
16           August 2009 and held positions in SDG&E's Affiliate Billing and Costing  
17           department, SDG&E's OpEx 20/20 Asset Management & Smart Grid department,  
18           and Sempra Energy's Corporate Tax department. I joined the Transmission  
19           Revenue department in March 2015.

20 Q.    Have you previously submitted testimony to this Commission?

21 A.    No.

22   **II.    PURPOSE OF TESTIMONY**

23 Q.    What is the purpose of your testimony?



1 A. The purpose of my testimony is to describe the structure and derivation of the  
2 total Retail and Wholesale Base Transmission Revenue Requirements (“BTRR”)  
3 under SDG&E’s proposed Fifth Transmission Owner Formula (“TO5 Formula”),  
4 which is set forth in the proposed Formula Rate Spreadsheet and Protocols,  
5 accompanying SDG&E’s rate filing in this proceeding, as discussed in the  
6 testimony of SDG&E witness Jeff Stein.

7 Q. How is your testimony organized?

8 A. I have organized my testimony as follows:

- 9 I. Introduction
- 10 II. Purpose of Testimony
- 11 III. Overview of SDG&E’s Proposed TO5 Formula Rate
- 12 IV. Cost Statement BK-1: Total Retail Base Transmission Revenue  
13 Requirement
- 14 V. Prior Year Cost of Service
- 15 VI. Cost Statements Used to Derive the Prior Year Cost of Service
- 16 VII. True-Up and Interest True-Up
- 17 VIII. Forecast Period Capital Additions Revenue Requirement
- 18 IX. Forecast Period Incentive Capital Additions Revenue Requirement
- 19 X. Incentive Transmission Forecast Construction Work in Process Projects  
20 Revenue Requirement
- 21 XI. Franchise Fees and Uncollectibles
- 22 XII. Other BTRR Adjustments

1 XIII. Cost Statement BK-2: Total Wholesale Base Transmission Revenue

2 Requirement

3 Q. Are you sponsoring any SDG&E cost statements to the TO5 filing?

4 A. Yes, I am sponsoring the following cost statements:

- 5 ▪ Statement BK-1 – Derivation of End Use Prior Year Revenue Requirements
- 6 ▪ Statement BK-2 – Derivation of California Independent System Operator  
7 (“CAISO” or “ISO”) High Voltage (“HV”) and Low Voltage (“LV”)  
8 Transmission Facility Revenue Requirements
- 9 ▪ Statement AD – Cost of Plant
- 10 ▪ Statement AE – Accumulated Depreciation and Amortization
- 11 ▪ Statement AF – Deferred Credits
- 12 ▪ Statement AG – Specified Plant Account (Other than Plant in Service) and  
13 Deferred Debits
- 14 ▪ Statement AH – Operation and Maintenance Expenses
- 15 ▪ Statement AI – Wages and Salaries
- 16 ▪ Statement AJ – Depreciation and Amortization Expense
- 17 ▪ Statement AK – Taxes Other Than Income Taxes
- 18 ▪ Statement AL – Working Capital
- 19 ▪ Statement AM – Construction Work in Progress (“CWIP”)
- 20 ▪ Statement AQ – Federal Income Tax Deductions, Other Than Interest
- 21 ▪ Statement AR – Federal Tax Adjustments
- 22 ▪ Statement AU – Revenue Credits
- 23 ▪ Statement AV – Cost of Capital and Fair Rate of Return

1           ▪ Statement Miscellaneous

2           These cost statements appear in Volume 2 to SDG&E's TO5 filing. I discuss  
3           each of these cost statements in further detail below.

4   **III. OVERVIEW OF SDG&E'S PROPOSED TO5 FORMULA RATE**

5   Q.   Please provide a high-level overview of SDG&E's proposed TO5 Formula.

6   A.   SDG&E's proposed TO5 Formula utilizes figures from its most recently filed  
7           annual FERC Form 1 to populate cost statements AD through Miscellaneous and  
8           utilizes a forecast of plant additions to derive a total Retail BTRR and a total  
9           Wholesale BTRR. First, SDG&E computes the total Retail BTRR in cost  
10          statement BK-1 as discussed in Section IV below. Then, the total Wholesale  
11          BTRR leverages the total Retail BTRR as a starting point for its derivation in cost  
12          statement BK-2, which is further discussed in Section XIII below.

13   Q.   How is this information updated?

14   A.   The timeline for the TO5 annual update process is discussed in the testimony of  
15          Jeff Stein.

16   Q.   What is the rate effective period?

17   A.   The rate effective period is the timeframe in which the filed rates will be in effect.  
18          For example, TO5 Cycle 1 will be filed in 2018 for a rate effective period of  
19          January 1, 2019 through December 31, 2019.

20   Q.   Why does the TO5 Formula utilize prior year data for its inputs?

21   A.   Under TO5, SDG&E is proposing to continue the approach used in TO4 of using  
22          calendar year historic data as the inputs for the formula rate spreadsheet, which  
23          derives the BTRRs. The annually filed FERC Form 1 contains prior year recorded

1 cost data and provides a reasonable forecast of expected costs for the rate  
2 effective period. For instance, the TO5 Cycle 1 filing made in 2018 will utilize  
3 2017 FERC Form 1 recorded data, also referred to as a base period.

4 Once each rate effective period ends, SDG&E will perform a true-up  
5 calculation to compare actual revenues to actual costs to ensure that the company  
6 receives no more and no less than the actual cost of service incurred to operate  
7 and maintain its transmission system. For additional information on the true-up  
8 mechanism please see the testimony of Raulin Farinas.

9 Q. Has SDG&E made changes to its Formula Rate Spreadsheet for TO5?

10 A. Yes. SDG&E has made non-substantive presentation updates to the TO5 Formula  
11 Rate Spreadsheet, as well as, the following substantive changes:

- 12 ■ Added a component called “other BTRR adjustments” to the derivation of the  
13 total Retail BTRR and total Wholesale BTRR to account for unexpected  
14 adjustments due to errors, FERC audits, etc. The other BTRR adjustments  
15 component is further explained in Section XI of my testimony.
- 16 ■ Removed Valley Rainbow project cost amortization expense from Statement  
17 AJ, from the derivation of the end of prior year revenues (“prior year cost of  
18 service”) on page one of Statement BK-1, and from the derivation of the  
19 Transmission and Incentive Transmission Annual Fixed Charge Rate  
20 (“AFCR”) on pages four and five of Statement BK-1. This project has now  
21 been fully recovered, as discussed further below.
- 22 ■ Updated the derivation of the AFCR on pages four and five of Statement BK-  
23 1 to use net Transmission plant for the devisor instead of gross Transmission

1 plant and added an adjustment for the depreciation expense associated with  
2 the weighted forecast plant additions. These updates are discussed in Section  
3 VIII of my testimony and further explained in the testimony of SDG&E  
4 witness Christopher Penn.

- 5 ■ Removed Transmission-related amortization of investment tax credits and  
6 Transmission-related amortization of excess deferred tax liabilities from the  
7 derivation of the prior year cost of service on page one of Statement BK-1  
8 because both items are already accounted for in the derivation of the tax  
9 components of the cost of capital rate.
- 10 ■ Included labor-related Accumulated Deferred Income Tax (“ADIT”) balances  
11 as further explained in Section VI; Part C.
- 12 ■ Updated the derivation of the true-up and interest true-up as discussed in  
13 Section VII of my testimony and further explained in the testimony of  
14 SDG&E witness Raulin Farinas.

15 **IV. COST STATEMENT BK-1: TOTAL RETAIL BASE TRANSMISSION**  
16 **REVENUE REQUIREMENT (“BTRR”)**

17 Q. Provide an overview of Statement BK-1.

18 A. Statement BK-1 calculates and summarizes the components that derive the total  
19 Retail BTRR and consists of six pages:

20 **Page 1** – Calculates prior year cost of service revenues for both Transmission and  
21 Incentive projects, which will be further explained in Section V.

22 **Page 2** – Computes Transmission and Incentive rate base used in the derivation of  
23 prior year cost of service revenues on page one and further explained in Section

24 V.

1       **Page 3** – Determines Transmission and Incentive net plant used in the rate base  
2       computations on page two by summing plant-in-service and accumulated  
3       depreciation.

4       **Page 4** – Derives the AFCR, which is applied to weighted forecast plant additions  
5       to derive the forecast period capital additions revenue requirement and is further  
6       explained in Section VIII.

7       **Page 5** – Derives an Incentive AFCR to be applied to Incentive projects if  
8       applicable. This derivation is further discussed in Section IX.

9       **Page 6** – Summarizes pages one through five of the BK-1 and the true-up to  
10      calculate the total Retail BTRR.

11    Q.    Please summarize the total Retail BTRR components in Statement BK-1.

12    A.    Page six of Statement BK-1 summarizes the following nine components that  
13      comprise the total Retail BTRR:

- 14      ▪     Prior year cost of service;
- 15      ▪     Incentive prior year cost of service;
- 16      ▪     True-up adjustment;
- 17      ▪     Interest true-up adjustment;
- 18      ▪     Forecast period capital additions revenue requirement;
- 19      ▪     Forecast period Incentive capital additions revenue requirement;
- 20      ▪     Incentive Transmission forecast CWIP revenue requirement;
- 21      ▪     Franchise fees and uncollectibles; and
- 22      ▪     Other BTRR adjustments.

1 Components 2, 6, and 7 above are separately stated Incentive components  
2 included in the total Retail BTRR and total Wholesale BTRR, should the  
3 Commission authorize Incentive treatment for future Transmission projects under  
4 Order No. 679.

5 I discuss each of these nine components below, although as noted in those  
6 discussions, other SDG&E witnesses will provide more detail for certain  
7 components in their testimonies.

8 **V. PRIOR YEAR COST OF SERVICE**

9 **A. Transmission Prior Year Cost of Service**

10 Q. Please describe the derivation of the prior year cost of service on page one of  
11 Statement BK-1.

12 A. The prior year cost of service (also referred to as “base period revenues”) is the  
13 sum of Transmission-related expenses, return and associated income taxes,  
14 miscellaneous expense or revenue adjustments, and total Incentive Transmission-  
15 related return and associated income taxes.

16 Q. What is included in the Transmission-related expenses component of the prior  
17 year cost of service?

18 A. The Transmission-related expenses component includes annual base period  
19 expenses for the following:

- 20     ▪ Transmission-related operations and maintenance (“O&M”) and  
21         administrative and general (“A&G”) expenses from Statement AH,  
22         including an adjustment for Transmission-related CPUC intervenor  
23         funding expenses (Section VI.E).

- 1           ▪       Transmission-related depreciation and amortization expense from  
2                       Statement AJ (Section VI.G).
- 3           ▪       Transmission plant abandoned project cost amortization expenses from  
4                       Statement AJ (Section VI.G).
- 5           ▪       Transmission-related property tax expense from Statement AK (Section  
6                       VI.H).
- 7           ▪       Transmission-related payroll tax expense from Statement AK (Section  
8                       VI.H).
- 9   Q.       How is the return and associated income tax component derived?
- 10   A.       The return and associated income tax component of the prior year cost of service  
11           is the product of the cost of capital rate (Section VI.N) and Transmission rate  
12           base.
- 13   Q.       How is Transmission rate base derived?
- 14   A.       Transmission rate base is calculated on page two of Statement BK-1 and is the  
15           sum of:
- 16           ▪       Net Transmission plant as described below;
- 17           ▪       *Plus*, Transmission plant held for future use (“PHFU”) from Statement  
18                       AG (Section VI.D);
- 19           ▪       *Plus*, plant abandoned project costs from Statement Miscellaneous  
20                       (Section VI.O);
- 21           ▪       *Less*, Transmission-related accumulated deferred income taxes (“ADIT”)  
22                       from Statement AF (Section VI.C);
- 23           ▪       *Less*, plant abandoned project ADIT from Statement AF (Section VI.C);



- 1           ▪       *Plus*, working capital from Statement AL (Section VI.I);
- 2           ▪       *Plus*, other regulatory assets/liabilities from Statement Miscellaneous
- 3                       (Section VI.O).

4    Q.     How is the net Transmission plant component of Transmission rate base derived?

5    A.     Net Transmission plant is calculated on page three of Statement BK-1 and is the

6           difference between gross Transmission plant and Transmission-related

7           depreciation reserve. Gross Transmission plant includes Transmission plant and

8           the Transmission-related portions of Electric Miscellaneous Intangible plant

9           (“Intangibles”), General plant, and Common plant as derived in Statement AD

10          (Section VI.A). Transmission-related depreciation reserve includes the

11          depreciation related to each of the same components listed in gross Transmission

12          plant and is derived in Statement AE (Section VI.B).

13   Q.     Please describe the adjustments included in the prior year cost of service on

14          Statement BK-1; Page 1; Lines 21 through 24.

15   A.     Statement BK-1 adjusts the cost of service for certain items that are not included

16          in the expense or return and income tax components. Each of the items listed

17          below are described in more detail in Section VI of this testimony and include:

- 18          ▪       Total federal income tax deductions, other than interest (Section VI.K),
- 19          ▪       Transmission-related revenue credits (Section VI.M),
- 20          ▪       Transmission-related regulatory debits/credits (Section VI.O), and
- 21          ▪       Gains and losses from sale of plant held for future use (Section VI.M).

1           **B.       Incentive Transmission Prior Year Cost of Service**

2    Q.     What types of revenues are included for Incentive Transmission prior year cost of  
3           service?

4    A.     Statement BK-1 derives a prior year cost of service for three types of incentives,  
5           which make-up the total Incentive Transmission prior year cost of service. The  
6           types of FERC approved Incentive projects include: higher return on equity  
7           (“ROE”) projects, recovery of costs associated with plant abandoned projects, and  
8           a return on costs associated with CWIP projects. SDG&E will not recognize any  
9           Incentive projects in the TO5 Formula until the FERC authorizes them under  
10          Order No. 679.

11   Q.     How is the prior year cost of service for Incentive ROE projects derived?

12   A.     For any Commission-approved Incentive ROE projects, SDG&E would derive the  
13          cost of service on page one of Statement BK-1 by adding the related depreciation  
14          expense from Statement AJ (Section VI.G) and the related return and associated  
15          income taxes. The Incentive ROE return and associated income taxes is derived  
16          by multiplying the Incentive ROE project rate base by the Incentive cost of capital  
17          rate (Section VI.N). The Incentive ROE rate base is calculated on page two of  
18          Statement BK-1 and includes Incentive plant from Statement AD (Section V; Part  
19          A), less accumulated depreciation from Statement AE (Section VI.B) less  
20          associated ADIT from Statement AF (Section VI.C).

21   Q.     How is the prior year cost of service for Incentive plant abandoned projects  
22          derived?

1 A. For any Commission-approved Incentive recovery of plant abandoned project  
2 costs, SDG&E would derive the cost of service on page one of Statement BK-1  
3 by adding the related Incentive depreciation expenses from Statement AJ (Section  
4 VI.G) and the related return and income taxes. The return and income taxes are  
5 derived by multiplying the related rate base by the Transmission cost of capital  
6 rate (Section VI.N). The rate base for Incentive plant abandoned projects is the  
7 project cost from Statement Miscellaneous (Section VI.O) less related ADIT  
8 (Section VI.C).

9 Q. How is the prior year cost of service for Incentive CWIP derived?

10 A. If the Commission were to approve an Incentive CWIP project, SDG&E would  
11 derive the cost of service on page one of Statement BK-1 by multiplying the  
12 allowable Incentive CWIP from Statement AM (Part VI.J) by the Transmission  
13 cost of capital rate (Section V.N).

14 **VI. COST STATEMENTS USED TO DERIVE PRIOR YEAR COST OF**  
15 **SERVICE**

16 Q. Please identify the cost statements included in SDG&E's proposed TO5 Formula.

17 A. SDG&E's proposed TO5 Formula includes 15 cost statements that are used in the  
18 derivation of the BTRR in Statement BK-1:

- 19     ▪ Statement AD – Cost of Plant
- 20     ▪ Statement AE – Accumulated Depreciation and Amortization
- 21     ▪ Statement AF – Deferred Credits
- 22     ▪ Statement AG – Specified Plant Account (Other than Plant in Service) and  
23         Deferred Debits
- 24     ▪ Statement AH – Operation and Maintenance Expenses

- 1       ▪ Statement AI – Wages and Salaries
- 2       ▪ Statement AJ – Depreciation and Amortization Expense
- 3       ▪ Statement AK – Taxes Other Than Income Taxes
- 4       ▪ Statement AL – Working Capital
- 5       ▪ Statement AM – Construction Work in Progress (CWIP)
- 6       ▪ Statement AQ – Federal Income Tax Deductions, Other Than Interest
- 7       ▪ Statement AR – Federal Tax Adjustments
- 8       ▪ Statement AU – Revenue Credits
- 9       ▪ Statement AV – Cost of Capital and Fair Rate of Return
- 10      ▪ Statement Miscellaneous

11       In the remainder of this Section, I will describe each of the above listed cost  
12       statements.

13       **A.     Statement AD – Cost of Plant**

14      Q.     Please describe the purpose of Statement AD.

15      A.     Statement AD reports Transmission plant and other Electric plant balances used  
16       in the derivation of Transmission and Incentive Transmission rate base and in the  
17       derivation of allocation factors used to allocate other costs to Transmission. The  
18       allocation factors include the Transmission Plant Allocation Factor (described  
19       below) and the Transmission Property Insurance and Tax Allocation Factor (also  
20       described below).

21      Q.     Please describe the components of gross Transmission plant included in  
22       Transmission rate base.

- 1 A. Gross Transmission plant included in rate base is the sum of Transmission plant,  
2 Transmission portion of Intangible plant, Transmission portion of General plant,  
3 and Transmission portion of Common plant. These same values are also the  
4 numerator in the Transmission Plant Allocation Factor described above.
- 5 Q. Does SDG&E include a component for Incentive Transmission plant in  
6 Transmission rate base?
- 7 A. SDG&E does not include Incentive Transmission plant in its gross Transmission  
8 plant, however, SDG&E does include Incentive Transmission plant in the  
9 derivation of a separate Incentive Transmission plant rate base on page three of  
10 Statement BK-1.
- 11 Q. Please explain the derivation of the Transmission Plant Allocation Factor in  
12 Statement AD.
- 13 A. The Transmission Plant Allocation Factor is used to allocate plant materials and  
14 operating supplies (“M&S”) and prepayments to Transmission in Statement AL,  
15 which is discussed below. The derivation of the factor will remain unchanged for  
16 the TO5 Formula. The factor is the ratio of the sum of SDG&E’s total investment  
17 in Transmission, Incentive Transmission, Transmission-related General,  
18 Transmission-related Common, and Transmission-related Intangible plant to  
19 SDG&E’s total plant-in-service.
- 20 Q. Please explain the derivation of total Electric plant amounts utilized in Statement  
21 AD.
- 22 A. The methodology to derive total Electric plant in the TO5 Formula will continue  
23 to be the same as the methodology used in the TO4 Formula.

1 The following plant categories will utilize a 13-month average, which will include  
2 the prior year December balance plus the 12-month base period:

- 3     ▪ Steam
- 4     ▪ Nuclear
- 5     ▪ Hydraulic
- 6     ▪ Other
- 7     ▪ Transmission
- 8     ▪ Incentive Transmission

9 The following plant categories will utilize a 2-point average, which will average  
10 the December prior year and December base period balances:

- 11     ▪ Distribution
- 12     ▪ Intangibles
- 13     ▪ General
- 14     ▪ Common

15 Q. Common plant supports both Electric and Gas functions. Does SDG&E account  
16 for this in Statement AD?

17 A. Yes. SDG&E's TO5 Formula will continue to use a Common Plant Allocation  
18 Factor to allocate Common plant, as recorded in FERC Accounts 303 and 389  
19 through 398, to Electric and Gas. Total company labor is used to generate the  
20 Common Plant Allocation Factor. Electric is calculated using total Electric labor  
21 divided by the sum of total Electric and total Gas labor, while the Gas is  
22 calculated using total Gas labor divided by the sum of total Electric and total Gas

1 labor. The Common plant balances reported in Statement AD represent the  
2 Common plant allocated to Electric.

3 Q. Does General plant also require an allocation between Electric and Gas?

4 A. No. The General plant facilities recorded in FERC Accounts 389 through 399  
5 only support Electric operations and does not support Gas operations. Some  
6 examples of General plant include:

- 7     ▪ Structures and Improvements (FERC Account 390): operating and  
8         maintenance sites and leasehold improvements that are used by employees to  
9         support Electric only functions.
- 10    ▪ Tools Shop and Garage Equipment (FERC Account 394): various equipment  
11         used to service Electric customers only.
- 12    ▪ Communication Equipment (FERC Account 397): communication equipment  
13         to support Electric substation functions and Electric operating and  
14         maintenance locations.

15 Q. Please explain how the Transmission portion of Intangibles, General, and  
16 Common plant is derived.

17 A. It is commonly accepted by the FERC to allocate these costs to the Transmission  
18 function using the Transmission Wages and Salaries Allocation Factor (“Labor  
19 Ratio”). A labor ratio is a reasonable approach for these costs because Electric  
20 employees use these facilities to support various Electric services. An explanation  
21 of the Labor Ratio is explained in Section VI.F below, with respect to Statement  
22 AI.

1 Q. Please explain the cause of the difference in per book and ratemaking balances for  
2 Steam Production, Other Production, Distribution, and Transmission.

3 A. A jurisdictional difference in the definition of “Transmission plant” requires  
4 SDG&E to adjust its per books plant balances to calculate plant balances for  
5 ratemaking purposes.

6 Q. Please elaborate.

7 A. In 1998, the Commission established guidelines on facilities that qualify as  
8 Transmission in Order No. 888 via a Seven-Element Adjustment Factor (“Seven-  
9 Factor Test”). Under these tests, SDG&E identifies plant that requires the  
10 company to transfer portions of Transmission plant to Steam, Other, or  
11 Distribution and vice versa to adjust its book plant balances to conform to the  
12 Commission’s definition of Transmission plant for ratemaking purposes. The  
13 Commission approved SDG&E’s delineation between Transmission and  
14 Distribution facilities in Docket No. EL96-48.

15 **B. Statement AE – Accumulated Depreciation and Amortization**

16 Q. Please describe the purpose of Statement AE.

17 A. The accumulated depreciation calculated in Statement AE reduces rate base by  
18 decreasing the gross plant calculated in Statement AD to arrive at net plant.

19 Q. Please explain the components of accumulated depreciation and the derivation of  
20 each.

21 A. Accumulated depreciation is also adjusted for the Seven-Factor Test and is the  
22 sum of the depreciation reserve for the following: Transmission plant,



1 Transmission portion of Intangible plant, Transmission portion of General plant,  
2 and Transmission portion of Common plant.

3 Each component uses the same averaging and allocation methods described in  
4 Section VI.A above.

5 Q. Does Statement AE include a component for Incentive Transmission plant?

6 A. Yes. Statement AE includes a component for Incentive Transmission plant, but it  
7 is not included in the total Transmission accumulated depreciation described  
8 above. Incentive Transmission accumulated depreciation is reported on its own  
9 line in Statement AE because it is included in the derivation of a separate  
10 Incentive ROE rate base on page three of Statement BK-1.

11 **C. Statement AF – Deferred Credits**

12 Q. Please describe the purpose of Statement AF.

13 A. Statement AF reports ADIT balances, which are included in rate base. Upon  
14 Commission approval of Incentive projects or abandoned plant recovery, SDG&E  
15 will also report the applicable amount of ADIT in Statement AF, to adjust  
16 Incentive or Transmission rate base on page two of Statement BK-1.

17 Q. What is ADIT?

18 A. ADIT arises when there is a temporary difference in treatment of an expense for  
19 books versus tax. Such a difference will result in taxable income, or deductions,  
20 over time and eventually equalize. ADIT is further discussed in the testimony of  
21 SDG&E witness Joel Dumas.

22 Q. How does SDG&E propose to determine the ADIT adjustment to rate base?

1 A. Statement AF of the TO5 Formula includes property and labor related ADIT.

2 SDG&E has updated the cost statement presentation to include ADIT year-end

3 balances by FERC with a short description of the costs included in each.

4 **D. Statement AG – Specified Plant Account (Other than Plant in Service)**  
5 **and Deferred Debits**

6 Q. Please describe the purpose of Statement AG.

7 A. The only item included in Statement AG is Transmission PHFU, which is

8 included in rate base. PHFU is comprised of land and land rights held to meet

9 future service requirements or plant facilities not currently in service, but that are  
10 ready for use.

11 Q. Explain the derivation of PHFU.

12 A. SDG&E proposes to continue the use of a 13-month average to derive PHFU,

13 which will include the prior year December balance plus the 12-month base

14 period.

15 **E. Statement AH – Operations and Maintenance Expenses**

16 Q. Please describe the purpose of Statement AH.

17 A. Statement AH calculates the Transmission portion of O&M expenses and A&G

18 expenses included in the revenue requirement. The Transmission Property

19 Insurance and Tax Allocation Factor that is applied to property-related items is

20 also derived in Statement AH.

21 Q. How are O&M expenses derived?

22 A. Expenses incurred to operate and maintain Transmission facilities are charged to

23 FERC Accounts 560 through 573 and are directly assigned to Transmission.

24 These FERC Accounts are analyzed to confirm expenses are just, reasonable, and

1 appropriately charged to Transmission. The total expenses are then adjusted for  
2 certain exclusions and the total adjusted O&M balances are included in the  
3 revenue requirement with no further allocations.

4 Q. How are A&G expenses derived?

5 A. Total A&G expenses are recorded in FERC Accounts 920 through 935 and are  
6 not directly assigned to Transmission because they are incurred to support the  
7 operations of the entire company. These FERC Accounts are analyzed to confirm  
8 expenses are appropriate and the total expenses are then adjusted for certain items  
9 to be excluded. The A&G balance for Property Insurance (FERC Account 924) is  
10 allocated to Transmission via the Transmission Property Insurance and Tax  
11 Allocation Factor and the remaining adjusted A&G balances are allocated to  
12 Transmission via the Labor Ratio.

13 Q. Please explain the Transmission Property Insurance and Tax Allocation Factor.

14 A. The Transmission Property Insurance and Tax Allocation Factor uses the same  
15 inputs from Statement AD as the Transmission Plant Allocation Factor discussed  
16 above, but excludes Intangible and Nuclear plant from the calculation. The factor  
17 is a ratio of the sum of Transmission plant, Transmission portion of General plant,  
18 Transmission portion of Common plant, divided by the sum of total Electric plant  
19 for Steam, Hydraulic, Other, Distribution, Transmission, Incentive Transmission,  
20 General, and Common.

21 Q. Please elaborate on the reasoning behind the O&M and A&G exclusions.

22 A. Adjustments to O&M and A&G balances are performed to prevent double  
23 recovery on items recoverable under other SDG&E rate mechanisms and include:

1 Energy Resource Recovery Account (“ERRA”), Transmission Revenue Balancing  
2 Account (“TRBAA”), Transmission Access Charge Balancing Account  
3 (“TACBAA”), CPUC reimbursement fees, and CPUC energy efficiency  
4 programs.

5 A&G FERC Account 927 for franchise fees is also excluded to prevent double  
6 recovery because the proposed formula recovers franchise fee expense as a  
7 component of the Total BTRR. See Section XI of my testimony for additional  
8 information on franchise fees.

9 SDG&E will also continue to exclude expenses associated with balance sheet  
10 write-offs of abandoned project expenses recorded in FERC Account 930.2.

11 **F. Statement AI – Wages and Salaries**

12 Q. Please describe the purpose of Statement AI.

13 A. Statement AI computes the Labor Ratio, which is used to allocate various plant  
14 items (Statements AD, AE, and AJ), non-property related A&G (Statement AH),  
15 and payroll tax expense (Statement AK) to Transmission.

16 Q. How is the Labor Ratio computed?

17 A. The Labor Ratio approach is commonly accepted by FERC and is the ratio of total  
18 Transmission direct labor divided by the sum of total Electric direct labor,  
19 excluding A&G wages and salaries.

20 **G. Statement AJ – Depreciation and Amortization Expense**

21 Q. Please describe the purpose of Statement AJ.

22 A. The depreciation and amortization expense (“depreciation expense”) calculated in  
23 Statement AJ is included in the expense portion of the revenue requirement.

1 Depreciation expense represents the portion of a tangible, capital asset that has  
2 been used up during the base period and is expensed over the asset's expected  
3 useful life.

4 Q. Explain the components of depreciation expense and the derivation of each.

5 A. Depreciation expense is adjusted for the Seven-Factor Test as described in  
6 Section VI.A above and is the sum of the annual depreciation expense for the  
7 following: Transmission plant, Transmission portion of Intangible plant,  
8 Transmission portion of General plant, and Transmission portion of Common  
9 plant.

10 Each of the components is a 12-month sum of the base period expense and  
11 allocated using the methods described in Section VI.A above. SDG&E witness  
12 Dane Watson computes the depreciation rates to be used in SDG&E's TO5  
13 Formula.

14 Q. Why was the line item for Valley Rainbow Project Cost Amortization Expense  
15 removed from Statement AJ?

16 A. The Valley Rainbow project has been fully recovered. As referenced on page five  
17 of SDG&E's TO3 Offer of Settlement, SDG&E was authorized to recover  
18 abandoned costs associated with Valley Rainbow over a ten-year period, which  
19 expired in 2013.

20 Q. Does Statement AJ include depreciation expense for Incentive Transmission  
21 projects or abandoned plant?

22 A. Yes, Statement AJ also includes depreciation expense components for Incentive  
23 ROE projects, Incentive plant abandoned projects, and Transmission abandoned

1 plant projects. As previously noted, these components are only activated if such  
2 projects are approved by the Commission. These expenses are included in the  
3 prior year cost of service derivation on page one of Statement BK-1.

4 **H. Statement AK – Taxes Other Than Income Taxes**

5 Q. Please describe the purpose of Statement AK.

6 A. Taxes other than income taxes includes property and payroll taxes and generally  
7 represent an increase to the revenue requirement.

8 Q. Describe how property taxes are derived.

9 A. Transmission-related property taxes start with total Electric property taxes and  
10 excludes other taxes (such as business license taxes), Citizens<sup>1</sup> property taxes, and  
11 property taxes associated with the San Onofre Nuclear Generating Station  
12 (“SONGS”) to arrive at total adjusted Electric property tax expense. Since  
13 property taxes are directly correlated with gross plant, the Transmission Property  
14 Insurance and Tax Allocation Factor is applied to the total adjusted Electric  
15 property tax expense to derive the total Transmission-related property tax expense  
16 included in the revenue requirement.

17 Q. Describe how payroll taxes are derived.

18 A. Transmission-related payroll taxes start with total Electric payroll taxes and  
19 excludes Citizens payroll taxes. Since payroll taxes are directly correlated with

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<sup>1</sup> Citizens Sunrise Transmission, LLC (“Citizens”), a wholly-owned subsidiary of Citizens Energy Corporation, has leased 50% of the transfer capability of a 30-mile segment (“Border-East Line”) of the Sunrise Powerlink Transmission Project (“Sunrise”). SDG&E operates and maintains the Border-East Line and charges Citizens for its share pursuant to the Appendix X Formula rate mechanism of SDG&E’s Transmission Owner (“TO”) Tariff. To prevent double-recovery, SDG&E excludes Citizens-related expenses for items including, but not limited to, property and payroll taxes in its TO filing.

1 labor, the Labor Ratio is applied to the total adjusted Electric payroll taxes to  
2 derive the total Transmission-related payroll tax expense included in the revenue  
3 requirement.

4 **I. Statement AL – Working Capital**

5 Q. Please describe the purpose of Statement AL.

6 A. The working capital computed in Statement AL is a component that increases rate  
7 base. Working capital is comprised of the following three items: M&S,  
8 prepayments, and cash working capital.

9 Q. Please explain the derivation of M&S and prepayments utilized in Statement AL.

10 A. The pre-allocated M&S and prepayment amounts in Statement AL will continue  
11 to use a 13-month average balance, which will include the prior year December  
12 balance plus the 12-month base period. These balances are then allocated to  
13 Transmission using the Transmission Plant Allocation Factor because these  
14 components are closely correlated to changes in gross plant.

15 Q. How is cash working capital calculated?

16 A. SDG&E's proposed formula reflects a continuation of the one-eighth O&M rule  
17 that was utilized in the TO4 Formula and has traditionally been supported by the  
18 Commission as a methodology to derive working cash. Statement AL carries over  
19 the Transmission O&M and Transmission-related A&G balances from Statement  
20 AH, adds back Transmission CPUC intervenor funding expense, and multiplies  
21 the total by 12.5% (one-eighth translated to a percentage) to arrive at cash  
22 working capital.

23 Q. Please describe the cash working capital adjustment derived in Statement AL.

1 A. Since cash working capital includes an addition for Transmission CPUC  
2 intervenor funding expense, which is an expense incurred on behalf of Retail  
3 customers, Statement AL also calculates the revenue requirement associated with  
4 this expense to be excluded in the derivation of the Wholesale BTRR. The  
5 calculation for this adjustment starts with the CPUC intervenor funding expense  
6 for Transmission and applies the 12.5% to pick-up one-eighth of the balance to  
7 get the total cash working capital. To compute the revenue requirement  
8 component, the cash working capital is then multiplied by the cost of capital rate  
9 from Statement AV. The resulting revenue requirement adjustment is carried  
10 forward to the Wholesale BTRR summary in BK-2.

11 **J. Statement AM – Construction Work in Progress (“CWIP”)**

12 Q. Please describe the purpose of Statement AM.

13 A. If authorized by the Commission, Incentive Transmission CWIP will be reported  
14 in Statement AM, which is included in Incentive CWIP-specific rate base.

15 Q. If the Commission authorizes an Incentive Transmission CWIP project, how will  
16 the balance in Statement AM be calculated?

17 A. Consistent with the approach in the TO4 Formula, the balance in Statement AM  
18 will be derived using a 13-month average, which includes the prior year  
19 December balance plus the 12-month base period.

20 **K. Statement AQ – Federal Income Tax Deductions, Other Than Interest**

21 Q. Please describe the South Georgia income tax adjustment.

22 A. In 1998, Transmission regulatory proceedings transitioned from CPUC to FERC  
23 jurisdiction. At the time, CPUC ratemaking would immediately flow through the



1 full tax benefit to ratepayers, while FERC ratemaking requires tax benefits to be  
2 passed along ratably over the useful life of the asset (“normalization”). To resolve  
3 this jurisdictional timing difference, the Commission required investor owned  
4 utilities to perform an adjustment to the Retail revenue requirement, known as the  
5 South Georgia income tax adjustment. The adjustment amortizes the difference  
6 between flow-through and normalized tax benefits to recapture past benefits  
7 flowed-through that the utility otherwise would not have recovered.

8 Q. Please describe the purpose of Statement AQ.

9 A. The South Georgia income tax adjustment is included as an increase to the Retail  
10 revenue requirement on Statement BK-1. Note that the adjustment is then backed  
11 out of the Wholesale revenue requirement on Statement BK-2 because the  
12 adjustment is for benefits flowed-through to Retail customers.

13 Q. When does SDG&E anticipate the South Georgia income tax adjustment to be  
14 fully amortized?

15 A. The South Georgia income tax adjustment was originally scheduled to be fully  
16 amortized by the year 2017. However, in June 2007, the average book life for  
17 Transmission property increased from 41 years to 54 years. As a result, the  
18 amortization was extended an extra 13 years to account for the change in useful  
19 life.

20 Q. Why is there a new line item in Statement AQ for “other federal income tax  
21 deductions”?

22 A. SDG&E has added a line item for other federal income tax deductions to account  
23 for additional adjustments that may arise due to regulatory or tax reform changes.

1           **L.       Statement AR – Federal Tax Adjustments**

2    Q.     Please describe the purpose and components of Statement AR.

3    A.     Federal tax adjustments are calculated in Statement AR. The total reduces the tax  
4           rates included as a part of the cost of capital rate, as calculated in Statement AV,  
5           which reduces the revenue requirement.

6           The federal income tax adjustments included in Statement AR are amortized over  
7           time through rates because they are subject to the normalization rules discussed in  
8           Section VI.K above. The items amortized in Statement AR include an adjustment  
9           for investment tax credits (“ITC”) and excess deferred tax liabilities.

10   Q.    Please explain the amortization of ITC.

11   A.    The federal investment tax credit is a tax credit claimed on a corporate tax return  
12          for eligible solar, wind, fuel cell, and microturbine projects placed in service  
13          during the tax year.

14   Q.    Please explain the amortization of excess deferred tax liabilities.

15   A.    Excess deferred tax liabilities reflect adjustments to income tax expense that  
16          result from changes in statutory income tax rates. SDG&E witness Joel Dumas  
17          further discusses excess deferred tax liabilities and the impacts of recent tax  
18          reform.

19   Q.    Why is there a new line item in Statement AR for “other federal tax adjustments”?

20   A.    SDG&E has added a line item for other federal tax adjustments to account for  
21          additional adjustments that may arise from regulatory or tax reform changes.

22           **M.       Statement AU – Revenue Credits**

23   Q.    What are revenue credits?

- 1 A. Revenue credits represent the sum of revenues received from use of the  
2 transmission system from sources that are not from the sale of power and are not  
3 collected or refunded through other Tariff Filings. Per the Uniform System of  
4 Accounts, these revenues are recorded in the following FERC Accounts:
- 5 ▪ 451 – Miscellaneous Service Revenues
  - 6 ▪ 453 – Sales of Water and Water Power
  - 7 ▪ 454 – Rent from Electric Property
  - 8 ▪ 455 – Interdepartmental Rents
  - 9 ▪ 456 – Other Electric Revenues
  - 10 ▪ 411.6 and 411.7 – Gains/Losses from Disposition of Utility Plant
- 11 Q. Please describe the purpose of Statement AU.
- 12 A. Since the revenue credits calculated in Statement AU represent payments from  
13 other sources, the TO5 Formula directly reduces the total revenue requirement in  
14 Statement BK-1 to prevent double recovery. Note that FERC Accounts 451  
15 through 456 are included in “Transmission Related Revenue Credits” and FERC  
16 Accounts 411.6 and 411.7 are included in “(Gains)/Losses from Sale of Plant  
17 Held for Future Use”.
- 18 Q. Why are revenue credits for Wholesale transactions not included in Statement  
19 AU?
- 20 A. Revenues from Wholesale transactions, such as wheeling revenues, that are  
21 booked to FERC 456, are not included in the TO5 Formula because these  
22 revenues are credited back to End-Use customers through SDG&E’s TRBAA  
23 mechanism.

1           **N.     Statement AV – Cost of Capital and Fair Rate of Return**

2    Q.     Please describe the purpose of Statement AV.

3    A.     Statement AV utilizes components of SDG&E’s capital structure and fair rate of  
4           return to derive a cost of capital rate, which is applied to Transmission rate base to  
5           compute total return and associated income taxes on page one of Statement BK-1.  
6           The cost of capital rate is the sum of the total weighted cost of capital rate, federal  
7           income tax expense rate, and state income tax expense rate. The federal and state  
8           income tax expense rates provide recovery of SDG&E’s income tax expense  
9           associated with the Transmission revenue requirement. SDG&E proposes to  
10          continue the TO4 Formula methodology to calculate the cost of capital rate in the  
11          TO5 Formula.

12                 Statement AV also derives an Incentive cost of capital rate, which is  
13                 applied to a FERC-approved Incentive Transmission rate base for ROE projects in  
14                 Statement BK-1. The Incentive cost of capital rate includes the same three  
15                 components previously listed.

16   Q.     Describe the calculation to derive total weighted cost of capital.

17   A.     The calculation of total weighted cost of capital follows a four-step process:

- 18           ▪     Calculation of the capital structure, which consists of long-term debt,  
19                 preferred equity, and common equity using values from the FERC Form 1.  
20           ▪     Calculation of the capital structure ratio by dividing each component by  
21                 the total capital structure (long-term debt, plus preferred equity, plus  
22                 common equity).

- 1           ▪       Derivation of each component’s weighted cost of capital by multiplying  
2                   each capital structure component by its respective cost of capital.
- 3           ▪       Summing the weighted cost of capital for all components to determine the  
4                   total weighted cost of capital.

5       Both Transmission and Incentive total weighted cost of capital is calculated in a  
6       similar manner with the only difference being the common equity cost of capital  
7       rate.

8   Q.    How is the cost of capital for each component in the capital structure derived?

9   A.    Long-term debt cost of capital is long-term debt interest divided by total long-  
10       term debt. Long-term debt interest is the sum of FERC Accounts 427, 428, and  
11       428.1 minus FERC Accounts 429 and 429.1. Total long-term debt is the sum of  
12       FERC Accounts 221, 222, 224, and 225 minus FERC Account 226.

13       Preferred equity cost of capital is preferred stock dividends declared from FERC  
14       Account 437 divided by preferred stock from FERC Account 204.

15               Common equity cost of capital is the ROE of 11.2%, which will remain  
16       constant for the duration of the TO5 Formula. SDG&E witness Dr. Roger Morin’s  
17       testimony provides additional detail to support the ROE.

18   Q.    Does SDG&E intend to include the equity allowance for funds used during  
19       construction (“AFUDC”) component of Transmission depreciation expense in the  
20       development of its TO5 Formula federal and state income tax components?

21   A.    Yes. Equity AFUDC is a ratemaking concept that requires equity AFUDC costs to  
22       be recognized as income in the financial statements and accumulate in CWIP  
23       during plant construction. Taxable income is computed by adding book

1 depreciation back to pre-tax book income and deducting tax depreciation but does  
2 not allow a similar deduction for equity AFUDC. As a result, equity AFUDC is  
3 subject to federal and state income taxes. Including equity AFUDC in the federal  
4 and state income tax expense rate calculation provides equity investors a fair  
5 after-tax return during the construction of plant until construction is complete and  
6 the costs are reclassified from CWIP to plant-in-service.

7 Q. How does the Incentive total cost of capital rate in Statement AV differ from the  
8 Transmission cost of capital rate?

9 A. The total weighted cost of capital for Incentive projects is calculated using the  
10 same four-step process and same inputs described above. The weighted cost of  
11 capital for common equity, however, utilizes an Incentive return on common  
12 equity to be approved by FERC should an Incentive ROE project be approved.

13 The federal and state income tax expense rate calculation also differs in  
14 that it does not include an adjustment for amortization of ITC or excess deferred  
15 tax liabilities, utilizes a FERC approved Incentive equity AFUDC component of  
16 Transmission depreciation expense, and utilizes a FERC approved Incentive ROE  
17 project Transmission rate base.

18 **O. Statement Miscellaneous**

19 Q. Please describe the purpose of Statement Miscellaneous.

20 A. Statement Miscellaneous includes unique items that are not included in cost  
21 statements AD through AV and require Commission approval. Other regulatory  
22 assets/liabilities, Transmission-related regulatory debits/credits, Transmission

1 plant abandoned project costs, and Incentive Transmission abandoned project  
2 costs are included in Statement Miscellaneous.

3 **VII. TRUE-UP AND INTEREST TRUE-UP ADJUSTMENTS**

4 Q. Please describe the purpose of the true-up and interest true-up.

5 A. The true-up compares recorded revenues to actual expenses to ensure SDG&E  
6 recovers no more and no less than its allowed cost of service at the authorized  
7 return on equity. The interest true-up accounts for the inherent timing lag in the  
8 formula by calculating interest on the over or under-collection resulting from the  
9 prior year true-up. The true-up and interest true-up are calculated in their  
10 respective workpapers and each amount is reflected on page six of Statement BK-  
11 1. SDG&E witness Raulin Farinas explains the derivation of the true-up and  
12 interest true-up in his testimony.

13 **VIII. FORECAST PERIOD CAPITAL ADDITIONS REVENUE**  
14 **REQUIREMENT**

15 Q. Please describe the purpose of the forecast period capital additions revenue  
16 requirement.

17 A. The forecast period capital additions revenue requirement is a mechanism that  
18 ensures rates will more closely resemble the true cost of service by estimating the  
19 various O&M expenses SDG&E incurs once plant is placed in service. The  
20 calculation is shown on page four of Statement BK-1 and the result is included as  
21 a component in the total BTRR calculation on page six of Statement BK-1.  
22 SDG&E witness Christopher Penn describes the AFCR and how the forecast  
23 period capital additions revenue requirement is calculated.

1 **IX. FORECAST PERIOD INCENTIVE CAPITAL ADDITIONS REVENUE**  
2 **REQUIREMENT**

3 Q. Please describe the purpose of the forecast period Incentive capital additions  
4 revenue requirement (“forecast ROE revenue requirement”).

5 A. The forecast ROE revenue requirement is a mechanism that ensures rates will  
6 more closely resemble the true cost of service by estimating the various O&M  
7 expenses SDG&E incurs for Incentive ROE projects once the plant is placed in  
8 service. The calculation is shown on page five of Statement BK-1 and the result is  
9 included as a component in the total BTRR calculation on page six of Statement  
10 BK-1.

11 Q. Please describe the derivation of the forecast ROE revenue requirement.

12 A. The forecast ROE revenue requirement calculates an Incentive AFCR using the  
13 same inputs that the forecast plant additions revenue requirement utilizes (as  
14 explained in the Christopher Penn’s testimony). However, the Incentive AFCR  
15 calculation layers on the revenue requirement for Incentive ROE projects (as  
16 calculated in Statement BK-1; Page 1) in the numerator and the total net Incentive  
17 Transmission plant for ROE projects (as calculated in Statement BK-1; Page 3) in  
18 the denominator.

19 The resulting Incentive AFCR is then multiplied by the Incentive weighted  
20 forecast plant additions to derive the revenue requirement for Incentive ROE  
21 forecast plant additions.



1 **X. INCENTIVE TRANSMISSION FORECAST CWIP PROJECTS REVENUE**  
2 **REQUIREMENT**

3 Q. Please describe the purpose of the Incentive Transmission forecast CWIP projects  
4 revenue requirement (“forecast CWIP revenue requirement”).

5 A. The forecast CWIP revenue requirement is a mechanism that ensures rates will  
6 more closely resemble the true cost of service by estimating the various O&M  
7 expenses SDG&E incurs for Incentive CWIP projects once the plant is placed in  
8 service. The calculation is shown on page five of Statement BK-1 and the result is  
9 a component in the total BTRR calculation on page six of Statement BK-1.

10 Q. Please describe the derivation of the forecast CWIP revenue requirement.

11 A. The forecast CWIP revenue requirement is computed by applying the cost of  
12 capital rate, as derived in Statement AV, to the Incentive weighted forecast  
13 Transmission CWIP.

14 **XI. FRANCHISE FEES AND UNCOLLECTIBLES**

15 Q. What are franchise fees and uncollectibles (“FF&U”)?

16 A. Franchise fees are “rents” SDG&E makes to municipal entities for the right to use  
17 roadways and public rights-of-way for its infrastructure. Uncollectible expenses  
18 represent billed revenue that SDG&E cannot collect from its Retail customers.  
19 Both rates represent the authorized rates from SDG&E’s most recently approved  
20 General Rate Case as approved by the CPUC. If these rates change during the  
21 TO5 Formula, SDG&E will update them accordingly.

22 Q. Please describe the derivation of FF&U expenses to be included in the revenue  
23 requirement.

1 A. FF&U expenses are derived on page six of Statement BK-1 for Retail customers  
2 and Statement BK-2 for Wholesale customers. Each multiplies the BTRR for each  
3 by the applicable rate. Note that uncollectible expenses are not included in the  
4 total Wholesale BTRR because uncollectible expenses are for Retail uncollectible  
5 expenses.

6 **XII. OTHER BTRR ADJUSTMENTS**

7 Q. Why are other BTRR adjustments included in the total BTRR?

8 A. The other BTRR adjustment component of the total BTRR is necessary to adjust  
9 the BTRR for unforeseen events including, but not limited to, error adjustments,  
10 tax rate changes, and FERC audit adjustments applicable to prior base period  
11 filings.

12 Q. Does SDG&E expect to report other BTRR adjustments in TO5 Cycle 1?

13 A. Yes. In TO5 Cycle 1, SDG&E included two other BTRR adjustments. First,  
14 SDG&E reported an ADIT error adjustment due to a misallocation of the net  
15 operating loss (a deferred tax asset) that offsets the deferred tax liabilities in  
16 Statement AF. The error adjustment is explained in Joel Dumas' testimony and  
17 the ratemaking aspect is described in my testimony below. Second, SDG&E  
18 included an out-of-cycle BTRR adjustment to account for the reduction of the  
19 federal income tax rate from 35% to 21% for tax year 2018. SDG&E included this  
20 adjustment in its answer to the FERC Show Cause Order dated March 15, 2018 in  
21 docket number EL18-62-000 resulting from the Tax Cut and Jobs Act ("TCJA")  
22 passed by Congress. The TCJA is further explained in Joel Dumas' testimony and  
23 the ratemaking aspect is described in my testimony below.

1 Q. Please describe the derivation of ratemaking adjustment for the ADIT error  
2 correction.

3 A. The misallocation of the net operating loss and the restatement of FERC Form 1  
4 ADIT balances for base periods 2012 through 2016 are discussed in Joel Dumas'  
5 testimony. The revised ADIT balances were utilized for ratemaking purposes in  
6 TO5 Cycle 1 as follows:

- 7       ▪ First, SDG&E recalculated the True-Up TRR for all affected years.
- 8       ▪ Then, SDG&E compared the revised True-Up TRR to the originally filed  
9       True-Up TRR to determine the difference on a monthly basis.
- 10      ▪ Next, SDG&E derived the interest component on the cumulative amount  
11      of the difference associated with the error through the date of correction  
12      implementation.
- 13      ▪ Lastly, SDG&E derived the FF&U on the cumulative amount of the  
14      difference and interest using the rates effective for the affected years.

15 For reference, Exhibit No. SD-0004 includes a summary of the differences,  
16 interest, and FF&U for each affected Cycle and then summed to reflect the total  
17 adjustment amount included in TO5 Cycle 1.

18 Q. Please describe the ratemaking adjustment for the TCJA federal tax rate change.

19 A. In November 2017, SDG&E utilized a 35% tax rate to derive the BTRR in its  
20 TO4 Cycle 5 Filing, which developed rates for the 2018 rate effective period.  
21 Subsequently, Congress passed the TCJA, which reduced the federal income tax  
22 rate from 35% to 21% starting with tax year 2018. Under the normal operation of  
23 the formula, the refund associated with the change in tax rate would be captured

1 in the TO5 Cycle 2 true-up for base period 2018. However, in accordance with its  
2 response to the FERC Show Cause Order,<sup>2</sup> SDG&E has included an out-of-cycle  
3 BTRR adjustment in its TO5 Cycle 1 Filing to expedite the refund of the  
4 difference in BTRR caused by the federal tax rate change.

5 Q. Please describe how the TCJA adjustment was derived.

6 A. For ratemaking purposes, SDG&E derived the TCJA adjustment as follows:

- 7       ▪ First, SDG&E recalculated the TO4 Cycle 5 BTRR using a 21% federal  
8 income tax rate.
- 9       ▪ Second, SDG&E compared the original BTRR to the revised BTRR<sup>3</sup> to  
10 determine the refund associated with the tax rate change. In accordance  
11 with the FERC Show Cause Order, which requires refunds from March 15  
12 through December 31 of 2018, SDG&E carved out 9.5 months, or  
13 approximately 79%, of the annual difference.
- 14       ▪ Next, SDG&E derived the interest on the cumulative amount of the  
15 difference associated with the out-of-cycle adjustment through the date of  
16 implementation.
- 17       ▪ Lastly, SDG&E derived the FF&U on the cumulative amount of the  
18 difference and interest using the rates effective for TO4 Cycle 5.

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<sup>2</sup> On March 15, 2018, SDG&E filed its answer to the FERC Show Cause Order pertaining to the Tax Cut and Jobs Act in docket number EL18-62-000.

<sup>3</sup> In its derivation of the TCJA adjustment, SDG&E used the erroneous ADIT balances that were filed in the TO4 Cycle 5 filing to isolate the refund stemming from the tax rate change.

1 For reference, Exhibit No. SD-0005 includes a summary of the difference,  
2 interest, and FF&U included in TO5 Cycle 1 adjustment for the Federal income  
3 tax rate change.

4 **XIII. COST STATEMENT BK-2: TOTAL WHOLESALE BASE**  
5 **TRANSMISSION REVENUE REQUIREMENT**

6 Q. Please describe the purpose of the Wholesale BTRR.

7 A. The Wholesale BTRR allocates the revenue requirement between high voltage  
8 and low voltage customers, which SDG&E provides to the CAISO for the  
9 derivation of the Transmission access charge (“TAC”) rate. The TAC determines  
10 cost shifts between participating Transmission owners (“PTOs”), who use  
11 transmission lines to export energy to, or withdraw energy from, other PTOs.

12 Q. How does SDG&E’s TO5 Formula derive the Wholesale BTRR?

13 A. The derivation of the Wholesale BTRR occurs in Statement BK-2 and starts with  
14 the Retail BTRR, which excludes FF&U and other BTRR adjustments, as  
15 computed on page six of the BK-1. The Retail BTRR includes three components  
16 directly attributable to SDG&E’s Retail customers and are as follows:

- 17 ▪ South Georgia income tax adjustment;
- 18 ▪ Transmission-related CPUC intervenor funding expense plus the  
19 associated working capital; and
- 20 ▪ Uncollectible expenses.

21 The first section of the BK-2 removes the expenses associated with the South  
22 Georgia income tax adjustment and items associated with the Transmission-  
23 related CPUC intervenor funding expense. Because the starting point for the

1 Wholesale BTRR does not include FF&U, the BK-2 only layers on franchise fee  
2 expense and does not perform a similar derivation for uncollectible expenses.

3 Q. Are there any other differences between the Wholesale BTRR calculation and the  
4 Retail BTRR calculation?

5 A. Yes. The Wholesale BTRR does not include the other BTRR adjustments as  
6 calculated for the Retail BTRR. SDG&E calculates a Wholesale version of the  
7 adjustment to exclude uncollectible expenses and allocate the adjustment to high  
8 voltage (“HV”) and low voltage (“LV”).

9 Q. Describe how SDG&E allocates the Wholesale BTRR between HV and LV.

10 A. In Statement BK-2, SDG&E splits the Wholesale BTRR into the two components  
11 listed below and then allocates each component using a ratio.

- 12       ▪ Transmission forecast plant additions revenues, including Incentive plant,  
13             from page six of Statement BK-1; and
- 14       ▪ All remaining revenues.

15 Q. What allocation method is used for forecast plant addition revenues?

16 A. The revenues for forecast plant additions are allocated via the ratio derived in the  
17 Summary of HV/LV splits. For additional information on the derivation of the  
18 forecast plant additions, incentive forecast plant additions, and the resulting  
19 HV/LV ratio please see Christopher Penn’s testimony.

20 Q. What allocation method is used for the remaining revenues?

21 A. All remaining revenues, that are not associated with forecast plant additions, are  
22 allocated using ratios derived in SDG&E’s annual HV/LV Plant Allocation Study.

1 Q. How does the HV/LV Plant Allocation Study compute the HV/LV ratio applied to  
2 remaining revenues?

3 A. This study categorizes Transmission plant from Statement AD into one of the  
4 following three groups and then allocates each group into HV or LV:

- 5       ▪ Directly Assigned – includes assets identifiable as either HV, LV, or a  
6             combination of both. The ISO defines HV as having an operating voltage  
7             of 200kV and above, while voltages below 200kV are defined as LV.
- 8       ▪ Transmission Towers and Land – includes Transmission line assets such  
9             as towers and land that are a mixture of voltages. If identifiable as either  
10            HV or LV, these assets are directly assigned, otherwise, they are allocated  
11            as one-third LV and two-thirds HV.
- 12       ▪ Non-Unitized – includes all other plant not included in the two categories  
13             above. Since this plant cannot be identified or assigned to a voltage they  
14             are allocated using the ratio explained below.

15       Once plant is categorized into the above three categories, the HV/LV ratios are  
16       computed by summing the total HV and LV results for the first two categories and  
17       taking each of those as a percentage of the total.

18 Q. Does this conclude your testimony?

19 A. Yes.

**VERIFICATION**

Alana Hammer hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of her knowledge and belief. See 28 U.S.C. § 1746.

Executed this 30 day of October, 2018



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**EXHIBIT NO. SD-0004**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**ALANA HAMMER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

**San Diego Gas & Electric Company**  
**ADIT Base Transmission Revenue Requirements Adjustment Summary (BK-I)**  
**For TO4 Cycles 2 to 5**  
**(\$1,000)**

Line No.	Description	Cycle 2 <sup>1,2</sup>		Cycle 3 <sup>3</sup>		Cycle 4 <sup>4</sup>		Cycle 5 <sup>5</sup>		Total Difference	Line No.	
		Revised	As Filed	Difference	Revised	As Filed	Difference	Revised	As Filed			Difference
1	ADIT	\$ (289,007)	\$ (393,258)	\$ 104,251	\$ (411,667)	\$ (514,923)	\$ 103,256	\$ (503,877)	\$ (905,037)	\$ 311,353	1	
2	Transmission Rate Base	2,934,860	2,830,609	104,251	2,999,037	2,895,781	103,256	3,448,726	3,244,395	311,353	2	
3	Cost of Capital Rate	11.3310%	11.3334%		11.4800%	11.4829%		11.7370%	11.5050%		3	
4	Return and Associated Income Taxes	110,850	106,935	3,915	344,290	332,520	11,770	404,778	373,268	35,543	4	
5	Interest			820			2,148			3,788	5	
6	Total BTRR Adjustment Excluding FF&U			4,735			13,918			39,331	6	
7	Transmission Related Municipal Franchise Fees			49			143			404	7	
8	Subtotal BTRR Adjustment Including Franchise Fees			4,784			14,061			39,735	8	
9	Transmission Related Uncollectibles			8			24			68	9	
10	<b>Total Retail BTRR Adjustment</b>			<b>\$ 4,792</b>			<b>\$ 14,085</b>			<b>\$ 39,803</b>	<b>\$ 91,313</b>	10

<sup>1</sup> The TO4 Rate Effective Period is from September 1, 2013 through December 31, 2018. The amounts reflected in this column trues up the 4-month period September - December 2013.  
<sup>2</sup> Information and related workpapers are included within tab labeled 'ADIT Adj. - TO4 Cycle 2'.  
<sup>3</sup> Information and related workpapers are included within tab labeled 'ADIT Adj. - TO4 Cycle 3'.  
<sup>4</sup> Information and related workpapers are included within tab labeled 'ADIT Adj. - TO4 Cycle 4'.  
<sup>5</sup> Information and related workpapers are included within tab labeled 'ADIT Adj. - TO4 Cycle 5'.

**EXHIBIT NO. SD-0005**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**ALANA HAMMER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

**San Diego Gas & Electric Company**  
**TO5 Cycle 1 Annual Informational Filing**  
**Summary of BTRR Adjustments**  
**Dollars in (\$1,000s)**

Line No.	Description	Amounts	Reference	Line No.
1	<b><u>BTRR Adjustment - ADIT Error Correction:</u></b>			1
2	ADIT Error Correction - Return and Associated Income Taxes	\$ 79,410	Page 2; Total Column; Line 4.	2
3	Interest	<u>10,820</u>	Page 2; Total Column; Line 5.	3
4	<b>Total BTRR Adjustment Excluding FF&amp;U</b>	<b>\$ 90,230</b>	<b>Line 2 + Line 3</b>	4
5	Transmission Related Municipal Franchise Fees	<u>927</u>	Page 2; Total Column; Line 7.	5
6	<b>Subtotal BTRR Adjustment Including Franchise Fees</b>	<b>\$ 91,157</b>	<b>Line 4 + Line 5</b>	6
7	Transmission Related Uncollectibles	<u>156</u>	Page 2; Total Column; Line 9.	7
8	<b>Total BTRR Adjustment</b>	<b><u>\$ 91,313</u></b>	<b>Line 6 + Line 7</b>	8
9	<b><u>BTRR Adjustment - Tax Cuts and Jobs Act:</u></b>			9
10	TO4 Cycle 5 - Revised BTRR	\$ 747,343	Page 125; Line 27; Col. A	10
11	TO4 Cycle 5 - Original BTRR	<u>813,492</u>	Page 125; Line 27; Col. B	11
12	Difference	\$ (66,149)	Line 10 Minus Line 11	12
13	Allocation Ratio for the Refund Period (3-15-2018 thru 12-31-2018)	<u>79%</u>	9.5 Months / 12 Months	13
14	<b>Total Refund Before Interest</b>	<b>\$ (52,368)</b>	<b>Line 12 * Line 13</b>	14
15	Interest	<u>(1,014)</u>	Page 141; Line 16	15
16	<b>Total BTRR Adjustment Excluding FF&amp;U</b>	<b>\$ (53,382)</b>	<b>Line 14 + Line 15</b>	16
17	Franchise Fees	<u>(549)</u>	Page 119; Line 8	17
18	<b>Subtotal BTRR Adjustment Including Franchise Fees</b>	<b>\$ (53,931)</b>	<b>Line 16 + Line 17</b>	18
19	Transmission Related Uncollectibles	<u>(93)</u>	Page 119; Line 12	19
20	<b>Total BTRR Adjustment</b>	<b><u>\$ (54,024)</u></b>	<b>Line 18 + Line 19</b>	20
21	<b>Total - BTRR Adjustment (WHOLESALE)</b>	<b><u>\$ 37,226</u></b>	<b>Line 6 + Line 18</b>	21
22	<b>Total - BTRR Adjustment (RETAIL)</b>	<b><u>\$ 37,289</u></b>	<b>Line 8 + Line 20</b>	22

Exhibit No. SD-0006

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
RAULIN R. FARINAS  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1 2002 in various roles, including Revenue Requirement Specialist, Senior  
2 Accountant, Staff Accountant, and Rate Analyst.

3 My professional experience also includes almost two decades in academia,  
4 having been employed by National University (2001 – Present) and by Webster  
5 University (2010 – 2014) on a part-time basis as a Certified Core Adjunct Faculty  
6 Member and as an Adjunct Associate Professor, respectively. In these roles, I  
7 have taught courses in financial accounting and managerial accounting at each of  
8 the universities' Schools of Business Administration.

9 Q. Have you previously submitted testimony to this Commission?

10 A. Yes.

11 **II. PURPOSE OF TESTIMONY**

12 Q. What is the purpose of your testimony and how is it organized?

13 A. My testimony has two purposes. First, in Section III, I explain the purpose and  
14 derivation of the True-Up Adjustment and its applicability in the derivation of the  
15 both the Retail and Wholesale Base Transmission Revenue Requirements  
16 (“BTRR”). Second, in Section IV, I discuss the need and derivation of the  
17 Interest True-Up Adjustment component of SDG&E’s BTRR under the proposed  
18 Fifth Transmission Owner Formula (“TO5 Formula”) rate mechanism. I have  
19 organized my testimony as follows:

20 I. Introduction

21 II. Purpose of Testimony

22 III. The True-Up Adjustment Component of the BTRR

23 IV. The Purpose and Calculation of the Interest True-Up Adjustment.



1 **III. THE TRUE-UP ADJUSTMENT COMPONENT OF THE BTRR**

2 **A. Purpose of the True-Up Adjustment Component of the BTRR**

3 Q. Please explain the purpose of the True-Up Adjustment component of SDG&E's  
4 BTRR.

5 A. The True-Up Adjustment ("True-Up") ensures that during the term of the TO5  
6 Formula, SDG&E only recovers the actual costs of owning and operating its  
7 transmission facilities as defined by the True-Up Cost of Service ("TU-COS"). If  
8 the True-Up produces an over-collection, the amount over-collected will be  
9 deducted in the derivation of the BTRR, whereas if the True-Up produces an  
10 under-collection, the amount under-collected will be added in the derivation of the  
11 BTRR. The True-Up serves the same purpose as it did in SDG&E's TO4  
12 Formula.

13 **B. Proposed Changes to the True-Up Adjustment Component of the**  
14 **BTRR**

15 Q. Are there any proposed changes to the True-Up Adjustment component of the  
16 BTRR under the TO5 Formula?

17 A. Yes. Although, as I noted above, the True-Up Adjustment serves the same  
18 purpose in the TO5 Formula as it did in the TO4 Formula, there are two changes  
19 that SDG&E proposes to implement. First, SDG&E proposes to make  
20 simplifying assumptions to eliminate many detailed calculations that currently  
21 exist under the TO4 Formula's True-Up Adjustment. Second, whereas the TO4  
22 Formula involved two separate True-Up calculations – one for the Retail BTRR  
23 and a separate one for the Wholesale BTRR – SDG&E proposes to derive only

1 one True-Up to calculate both its Retail and Wholesale BTRRs. These proposed  
2 changes to the True-Up Adjustment are described in more detail below.

3 **C. Simplification of the True-Up Adjustment**

4 Q. Please explain the simplification of the True-Up Adjustment under the TO5  
5 Formula.

6 A. To simplify the True-Up Adjustment calculation, SDG&E made the following  
7 changes: (1) revised the visual presentation from a horizontal view to a vertical  
8 view; (2) simplified the attribution of the Monthly True-Up Cost of Service and  
9 the Prior True-Up Adjustment by dividing the respective amounts by twelve; and  
10 (3) changed the interest calculation from quarterly compounding to monthly  
11 compounding.

12 A. Please describe each of the changes.

13 A. First, the most significant change to the True-Up Adjustment calculation is to  
14 show the months in the True-Up Period vertically rather than horizontally. The  
15 key goal in redesigning the True-Up Adjustment calculation was to prove that the  
16 proposed streamlined structure shown vertically, by itself, wouldn't affect the  
17 calculation. This was accomplished by mirroring the exact data inputs and  
18 functions under a simplified vertical view. The results are an updated model,  
19 presented vertically, which ties to within \$1 of the True-Up filed in TO4 Cycle 5,  
20 before any non-formatting changes are made. From this matching version, each  
21 additional proposed change can be isolated and evaluated for impact. For  
22 purposes of the TO5 Formula, the result of the True-Up Adjustment calculation  
23 using the two formats is the same, an under-collection totaling \$30,688,597.

1           Second, SDG&E is proposing a spreading method, using a divisor of 12 to  
2           simplify the calculation of the Monthly True-Up Cost of Service values over the  
3           true-up period. By simply spreading the True-Up Cost of Service evenly each  
4           month, it will eliminate over 50 pages of rate class specific cost allocations  
5           currently performed under the TO4 Formula. A similar spreading is also applied  
6           to amortize the Prior True-Up Adjustment to eliminate the need for complex  
7           amortization schedules present under the TO4 Formula. The overall impact of the  
8           simplified spreading approach is an increase of approximately \$410,000 from  
9           interest, representing a 0.0005% increase based on the TO4 Cycle 5 BTRR of  
10          \$823.3 million.

11           In its TO5 Formula, SDG&E also added a category called “Other BTRR  
12          Adjustments” that will be included in future filings to deal primarily with the  
13          following items: (a) error adjustments, and (b) out-of-cycle recovery or refunds  
14          filings ordered by the Commission.

15           Lastly, SDG&E is proposing to move from quarterly compounding to  
16          monthly compounding of interest. Quarterly compounding of interest applies  
17          different rules to each month depending on its position within the quarter,  
18          whereas monthly compounding accrues interest on a principal amount that  
19          changes monthly. This simplification will only result in an increase of  
20          approximately \$3,000, representing a 0.000004% increase based on the TO4  
21          Cycle 5 BTRR of \$823.3 million.

22          Q. Can you please summarize impact of the proposed changes?

1 A. The collective impact of the proposed changes I just described is an increase of  
2 approximately \$414,000 or 0.0005% when compared to the total TO4 Cycle 5  
3 BTRR of \$823.3 million. Significantly, the overall simplification of the True-Up  
4 Adjustment is estimated to reduce the “Volume 3” book that was submitted in  
5 prior filings from over 200 pages to three pages. These proposed changes do not  
6 eliminate any data but rather use simplifying assumptions. By reducing  
7 complexity and a significant amount of pages of material, I believe these  
8 proposed changes make it easier for stakeholders to review and understand the  
9 True-Up Adjustments.

10 **D. One True-Up Adjustment to Derive the Retail and Wholesale BTRRs**

11 Q. Why is SDG&E proposing to derive a single True-Up Adjustment amount to  
12 calculate both its Retail and Wholesale BTRRs under the proposed TO5 Formula?

13 A. SDG&E is always looking for ways to improve its Formula by making it more  
14 understandable and transparent in the way the Retail and Wholesale BTRRs are  
15 derived. Using one True-Up Adjustment accomplishes this objective. In  
16 technical conferences SDG&E has convened with stakeholders, it became  
17 apparent that having two separate True-Up Adjustments caused unnecessary  
18 confusion and complexity.

19 For purposes of the TO5 Formula, SDG&E has simplified the True-Up  
20 Adjustment process by deriving one True-Up Adjustment to derive the Retail and  
21 Wholesale BTRRs. In addition, the proposed methodology will now conform  
22 more closely to the definition of the True-Up Adjustment, which is the difference  
23 between actual costs and recorded revenues for the true-up period.

1 Q. Can you please explain the current process used to derive the current Wholesale  
2 True-Up.

3 A. Yes. Under the current True-Up process, the Wholesale True-Up Adjustment  
4 calculates and uses a set of “proxy” recorded revenues since a set of recorded  
5 wholesale revenues does not exist. The process to derive the “proxy” recorded  
6 revenues for wholesale customers has become very cumbersome because it goes  
7 through inordinate level of details that are unnecessary, causing confusion during  
8 the technical conferences. As a result, the proposed True-Up Adjustment process  
9 will streamline SDG&E’s Informational Filings and make it more transparent for  
10 stakeholders to understand during the review process.

11 Q. Can you illustrate the complexity of the TO4 Formula Wholesale True-Up  
12 Adjustment?

13 A. Yes. For illustration purposes, I will refer to SDG&E’s TO4 Cycle 5 Annual  
14 Informational Filing in Docket No. ER18-358-000, which was filed on November  
15 30, 2017. The entire Volume 3 of the filing constitutes the derivation of the True-  
16 Up Adjustment component of the Retail and Wholesale BTRRs. I will list the  
17 various steps by sections listed in Volume 3.

18 I. Section 3, Part I – Derivation of CAISO 12-Month Wholesale True-Up  
19 Adjustment

20 a. Section 3.1.1 – Derivation of CAISO Wholesale True-Up  
21 Adjustment.

22 b. Section 3.1.2 – Amortization of TO3 Final Wholesale Interest  
23 True-Up Adjustment.

- 1                   c. Section 3.1.3 - Amortization of TO4 Cycle Wholesale True-Up  
2                   Adjustment.
- 3                   d. Section 3.1.4 – Amortization of TO4 Cycle 3 Wholesale Interest  
4                   True-Up Adjustment.
- 5           II. Section 3, Part II – Derivation of Monthly CAISO Wholesale True-Up  
6           Revenues
- 7                   a. Section 3.2.1 – Derivation of CAISO Wholesale Cost of Service  
8                   in Effect for the 12-Month True-Up Period from January 2016  
9                   through December 2016 based on SDG&E’s TO4 Cycle 3 FERC  
10                  Approved Wholesale BTRR.
- 11                  b. Section 3.2.2 – Proof of Revenues that the CAISO Wholesale  
12                  Transmission Rates Derived in Section 3.2.1 will generate the  
13                  FERC Approved Wholesale BTRR from Section 3.2.1.
- 14                  c. Section 3.2.3 – Derivation of CAISO Wholesale Revenues  
15                  During the 12-Month January 2016 – December 2016 True-Up  
16                  Period based on the Wholesale Transmission Rates Derived  
17                  from Section 3.2.2.
- 18           III. Section 3, Part III – Derivation of Monthly CAISO True-Up Cost of  
19           Service Revenues
- 20                   a. Section 3.3.1 – Derivation of CAISO Wholesale True-Up Cost  
21                   of Service for the 12-Month Period January 2016 through  
22                   December 2016.

1                   b. Section 3.3.2 – Derivation of CAISO Wholesale True-Up Cost  
2                   of Service Rates for the True-Up Period January 2016 through  
3                   December 2016.

4                   c. Section 3.3.3 – Derivation of CAISO Wholesale Monthly Cost  
5                   of Service Applicable for the 12-Month True-Up Period.

6                   In this instance, there are 127 total pages to derive the True-Up Adjustment  
7                   component of SDG&E’s Wholesale BTRR, compared to the one page under the  
8                   proposed methodology. SDG&E believes that the additional levels of detail  
9                   provided under its current approach can be eliminated without losing accuracy.  
10                  As illustrated in Section C above, the revised streamlined process outlined by  
11                  SDG&E has a de-minimis effect in relation to the total TO4 Cycle 5 BTRR.

12                  **E. Derivation of the True-Up Adjustment Under the Proposed TO5**  
13                  **Formula**

14                  Q. Please describe the True-Up Adjustment calculation under the proposed TO5  
15                  Formula?

16                  A. The True-Up Adjustment will be calculated for each Annual Informational Filing  
17                  for the previous calendar year that the Formula was in effect, whether it was for  
18                  the entire year or part of the year, by taking the differences between the Monthly  
19                  True-Up Cost of Service (“MTUCOS”), as derived from the TUCOS, and the  
20                  Monthly True-Up Revenues (“MTUR”) during the True-Up Period (“TUP”). The  
21                  process is outlined below and is reflected in the “True-Up” tab section of the TO5  
22                  Formula Rate Spreadsheet:

- 1 a. Calculate SDG&E's actual costs to own and operate its transmission system  
2 during the TUP, as measured by the TUCOS including Franchise Fees and  
3 Uncollectible ("FF&U").
- 4 b. Attribute the TUCOS to each month of the TUP.
- 5 c. Determine SDG&E's MTUR for the TUP.
- 6 d. Attribute the Prior True-Up Adjustment ("Prior True-Up") embedded in  
7 rates to each month of the TUP. The Prior True-Up is the sum of the True-  
8 Up and the Interest True-Up Adjustment ("Interest True-Up").
- 9 e. Attribute the Prior Other BTRR Adjustments to each month of the TUP.
- 10 f. Derive the Adjusted Monthly True-Up Revenues ("AMTUR") by excluding  
11 the Prior True-Up and Prior Other True-Up from the MTUR.
- 12 g. Derive the Monthly Over-Collection or Under Collection by taking the  
13 difference between the MTUCOS and AMTUR.
- 14 h. Determine the True-Up Over-Collection or Under-Collection through the  
15 end of the TUP by accumulating the monthly differences, including interest  
16 accrued on a monthly basis, using the interest rate specified in 18 C.F.R §  
17 35.19 and posted on the FERC website.
- 18 Q. What is the TUCOS for the TO5 Cycle 1 filing that your testimony accompanies?
- 19 A. The TUCOS is equal to \$746.430 million as reflected in the True-Up Tab; column  
20 e; lines 1-4. The TUCOS represents the actual costs incurred by SDG&E during  
21 the TUP and is the maximum amount that SDG&E can collect to own and operate  
22 its transmission facilities during the TUP. The MTUCOS are attributed by simply  
23 dividing the TUCOS by twelve as shown in column 2, lines 14 thru 25.



1 Q. What is the total of the MTUR for the TO5 Cycle 1 filing?

2 A. The total of the MTUR for the instant formula rate filing is equal to \$761.225  
3 million as reflected in column 3, line 26. The MTUR is the actual recorded retail  
4 base transmission revenues booked during the TUP.

5 Q. Why is it necessary to adjust the MTUR by the Prior True-Up Adjustment amount  
6 embedded in the rates?

7 A. The Prior True-Up Adjustment shown in column 4 gets excluded to avoid truing-  
8 up the True-Up component of BTRR that is currently embedded in the MTUR.  
9 Failure to adjust for the Prior True-Up Adjustment will calculate an incorrect  
10 True-Up Adjustment that will result in an incorrect BTRR.

11 Q. Can you please elaborate further on why this adjustment takes place?

12 A. Yes. The TO5 Formula estimates the BTRR that SDG&E expects to incur during  
13 the rate effective period to set the transmission rates at a level that approximates  
14 the actual costs to operate and maintain its transmission system. The BTRR  
15 estimate includes a Prior Year Revenue Requirements (“PYRR”) component and  
16 a Forecast Period Capital Additions Revenue Requirements (“FPCARR”) component  
17 to derive the BTRR that SDG&E expects to incur during the Rate  
18 Effective Period.

19 If the sum of the PYRR and the FPCARR forecast equals the TUCOS  
20 amount ultimately incurred during the Rate Effective Period, and if SDG&E’s  
21 forecast sales are accurate, then SDG&E’s retail transmission rates will generate  
22 retail transmission revenues during the Rate Effective Period that are exactly  
23 equal to SDG&E’s TUCOS, causing the True-Up amount to equal zero.

1           However, since the likelihood of this occurring is remote, a True-Up will be  
2           necessary.

3                       Therefore, as explained above, failure to remove the Prior True-Up  
4           component from the MTUR will cause a mismatch to properly derive the True-Up  
5           component of BTRR.

6    Q.    Does the exclusion of the “Prior Other BTRR Adjustments” from the Monthly  
7           True-Up Revenues follow the same premise as to why the “Prior True-Up  
8           Adjustment” gets excluded from the monthly true-up revenues?

9    A.    Yes it does.

10   Q.    What is the total True-Up Adjustment component of SDG&E’s Retail BTRR in  
11           the TO5 Cycle 1 filing?

12   A.    As reflected in the True Up Tab of Volume 2, Page 000146, the True-Up  
13           component of the TO5 Cycle 1 Retail BTRR is an Under-Collection totaling  
14           \$24.652 million, including interest, as reflected in column 11, line 25. This  
15           amount will be added in the derivation of the TO5 Cycle 1 BTRR as shown in  
16           BK1, page 6, line 7.

17   Q.    Did SDG&E also quantify the TO5 Cycle 1 True-Up under its previous TO4  
18           True-Up methodology to verify that there would not be a material difference  
19           between the two approaches?

20   A.    Yes. Under the TO4 Formula method, the True-Up amount derived was an  
21           under-collection totaling approximately \$24.260 million, compared to the \$24.652  
22           million under-collection under the new method, a difference of approximately  
23           \$0.392 million, or a 2% difference.

1 Q. Had SDG&E calculated a separate Wholesale True-Up amount, what would it  
2 have been and how does it compare to the Retail True-Up Under Collection of  
3 \$24.652 million as indicated above?

4 A. The derived Wholesale True-Up would be an Under-Collection totaling \$19.443  
5 million, compared to the Retail True-Up of \$24.652 million, a difference of  
6 \$5.209 million, and representing 0.006% of the proposed Wholesale BTRR of  
7 \$906.943 million.

8 Q. Why is it necessary to include a True-Up to derive the Total BTRR if SDG&E is  
9 filing simply to renew its existing formulaic approach under TO5 Cycle 1?

10 A. SDG&E's existing TO4 Formula ends on December 31, 2018, but under the TO4  
11 Formula Rate Protocols, SDG&E is required to calculate a Final True-Up through  
12 the duration of the TO4 Formula. In its last informational filing (TO4 Cycle 5), in  
13 Docket No. ER18-358-000, SDG&E calculated a True-Up for the 2016 Rate  
14 Effective Period. Therefore, even though the TO4 Formula expires on December  
15 31, 2018, there are two additional years remaining to be trued-up under the TO4  
16 Formula, 2017 and 2018. As a result, the True-Up for the 2017 Rate Effective  
17 Period is included in the TO5 Cycle 1 Filing, while the True-Up for the 2018 Rate  
18 Effective Period will be included in the TO5 Cycle 2 Filing.

19 **IV. THE PURPOSE AND CALCULATION OF THE INTEREST TRUE-UP**  
20 **ADJUSTMENT**

21 Q. Will the TO5 Formula also include an Interest True-Up component to derive the  
22 Total BTRR as it did under the existing TO4 Formula?

23 A. Yes. SDG&E will continue to include the Interest True-Up to derive its Total  
24 BTRR under the TO5 Formula. The purpose of the Interest True-Up is to

1           compensate customers or shareholders by accruing interest on the prior cycle's  
2           True-Up amount from the end of the True-Up Period until the amount is fully  
3           refunded or collected in rates.

4    Q.    Is SDG&E proposing to change the way the Interest True-Up Adjustment will be  
5           derived in the TO5 Formula Rate?

6    A.    Yes. SDG&E is also proposing simplifying assumptions to the Interest True-Up  
7           Adjustment including: (a) using a straight-line amortization; and (b) using an  
8           average interest rate based on the prior 12 months FERC interest rates to amortize  
9           the True-Up Adjustment balance down to zero.

10   Q.    Please describe the change in amortization of the Prior True-Up Adjustment  
11           through a straight-line process.

12   A.    The amortization of the open true-up balance down to \$0, coupled with the  
13           calculation of decreasing interest expense and changing monthly interest rates,  
14           make the mathematical calculation of an exact interest rate difficult. However,  
15           using a simplified average interest rate and a straight-line amortization schedule  
16           can be calculated to reflect an exact \$0 balance by the end of the year while  
17           capturing the correct amount of interest. The total difference attributed to this  
18           change is approximately \$50,000, a 0.00005% change on the \$910.865 million  
19           BTRR. The column structure is changed to reflect a simplified amortization  
20           schedule where ending balance is beginning balance less principal paid.

21   Q.    Please explain the calculation of the Interest True-Up component of the BTRR  
22           under the TO5 Formula.

1 A. As shown in the TO5 Formula Excel spreadsheet, the Interest True-Up amount  
2 totaling \$1.882 million is based on the accrued interest from the prior cycle's  
3 True-Up amount of \$30.689 million as of December 31, 2016, per the TO4 Cycle  
4 5 Annual Informational Filing in Docket No. ER18-358-000. The tab labeled  
5 "Interest TU BP" shows the derivation of the interest accrued from January 1,  
6 2017 through December 31, 2017 totaling \$1.209 million, while the second tab  
7 labeled "Interest TU CY" continues to accrue interest on the unamortized True-  
8 Up balance from January 1, 2018 until the True-Up is fully amortized at the end  
9 of December 31, 2018, and totals \$0.673 million.

10 Q. Why does the Interest True-Up Adjustment produce a more accurate True-Up  
11 Adjustment calculation?

12 A. Absent the Interest True-Up, shareholders would not receive the interest owed  
13 them on the \$30.689 million under-collection. That is because the \$30.689  
14 million under-collection as of December 31, 2016 in TO4 Cycle 5 will not be  
15 collected in rates until twenty-four months later, when the rates go into effect for  
16 the period January 1, 2018 through December 31, 2018. The Interest True-Up  
17 provides assurance that the shareholders will be made whole, and not lose interest,  
18 or time value of money, on the \$30.689 million under collection.

19 The same process occurs when the True-Up is an over-collection, so that  
20 ratepayers are also made whole for the True-Up from the end of the prior true-up  
21 period until the True-Up is fully refunded in rates in the next rate effective period.

22 Q. Does this complete your testimony?

23 A. Yes.

**VERIFICATION**

Raulin R. Farinas hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief.

See 28 U.S.C. § 1746.

Executed this 30th day of October, 2018

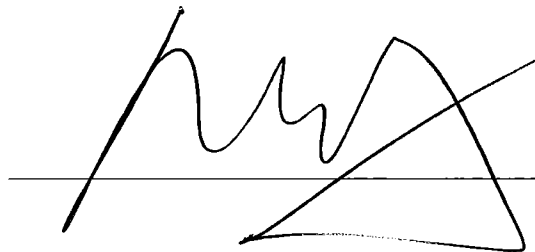
A handwritten signature in black ink is written over a horizontal line. The signature is stylized and appears to be 'Raulin R. Farinas'. The line extends across the width of the signature.

Exhibit No. SD-0007

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
WILLIAM H. SPEER  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1 Electric System Planning, which is a position that I held for five years. In 2017, I  
2 moved into my current position.

3 Q. Have you previously testified before this Commission?

4 A. Yes.

5 **II. PURPOSE OF TESTIMONY**

6 Q. What is the purpose of your testimony and how is it organized?

7 A. The purpose of my testimony is to sponsor the Forecast of Capital Additions  
8 (“Forecast”) and related exhibits. I will describe transmission capital additions,  
9 processes involved in developing the Forecast and describe the California  
10 Independent System Operator (“CAISO”) process which establishes the need for  
11 many of the projects included in the Forecast Period. I note that the processes and  
12 procedures SDG&E intends to use over the course of the TO5 Formula to develop  
13 Forecasts are identical to those used over the course of the TO4 Formula. I have  
14 organized my testimony as follows:

15 I. Introduction

16 II. Purpose of Testimony

17 III. Overview

18 IV. Types of Transmission Projects

19 V. CAISO Approval Process

20 VI. High Voltage/Low Voltage Percentages

21 VII. Sycamore to Penasquitos 230 kV Line

22 VIII. Cleveland National Forest Powerline Replacement Project

23 IX. SONGS Synchronous Condenser Project

1 **III. OVERVIEW**

2 Q. How do you determine what projects are included in the Forecast Period?

3 A. Transmission projects with estimated in-service dates that fall within the Forecast  
4 Period are included in the transmission forecast.

5 Q. What months are included in the Forecast Period?

6 A. The Forecast Period of TO5 Cycle 1 consists of 24 months, which runs from  
7 January 1, 2018 through December 31, 2019. Any projects estimated to go into  
8 service during these months are considered plant additions which are used and  
9 useful to customers during the TO5 Cycle 1 Rate Effective Period of January  
10 2019 through December 2019. For TO5 Cycle 2 and subsequent annual cycles,  
11 the Forecast Period will also consist of 24 months beginning in January of year 1  
12 and ending in December of year 2.

13 Q. What process do you follow to develop the list of projects included in the Forecast  
14 Period?

15 A. The process of identifying which transmission projects to include in the Forecast  
16 Period involves reviewing various sources of information (*e.g.*, various regulatory  
17 reports, prior transmission cycle filings) to develop a preliminary list of potential  
18 projects. Using the preliminary list as the basis for additions, meetings are held  
19 with the Transmission Planning, Transmission Engineering & Design, and Major  
20 Project groups at SDG&E to establish and validate a final estimated project in-  
21 service date for the projects.

22 Q. How are the projects organized in this Forecast?

1 A. Projects of a similar nature are grouped under specific categories. Exhibit No.  
2 SD-0009, Forecast of Capital Additions, shows the various categories of projects  
3 included in TO5 Cycle 1 as Blanket Projects, Transmission Line Projects,  
4 Substation Projects, and Network Upgrades to Accommodate Generator  
5 Interconnections & Energy Storage Projects. A brief description of categories and  
6 examples of work performed under each is provided in the Section IV of this  
7 testimony.

8 Q. What exhibits are included to support the Forecast?

9 A. I have included the following exhibits:

10 Exhibit No. SD-0008 – Summary of Forecast of Capital Additions

11 This exhibit lists the same project names, project types, approval categories,  
12 voltage levels, in service dates, and estimated costs in a single page; it is a  
13 condensed version of Exhibit No. SD-0009.

14 Exhibit No. SD-0009 - Forecast of Capital Additions

15 This exhibit lists all projects included in the Forecast identifying in service date,  
16 estimated cost and what percentage of the project is estimated to be high and low  
17 voltage.

18 Exhibit No. SD-0010 - CAISO Approval Exhibit

19 This exhibit identifies whether a project was approved by the CAISO and  
20 references the CAISO Transmission Plan where approval was granted.

21 Exhibit No. SD-0011 - CPUC Licensing Exhibit

22 This exhibit identifies the status or anticipated status of a project's California  
23 Public Utilities Commission ("CPUC") licensing requirements.

1                    Exhibit No. SD-0012 - Large Project Report

2                    This exhibit lists and summarizes details for any project, excluding Blanket  
3                    Projects, whose cost exceeds \$5 million. It lists project name, project cost,  
4                    weighted project cost, in service date, whether or not the project was approved by  
5                    the CAISO, the CPUC licensing status and what benefit this project provides to  
6                    customers.

7                    Q.     Are all projects included in the Forecast Period approved by the CAISO?

8                    A.     No. Many, but not all projects included in the Forecast Period are approved by  
9                    the CAISO. Some projects are required either to meet the North American  
10                    Electric Reliability Corporation (“NERC”) reliability criteria or for other  
11                    operational reasons. Some examples of non-CAISO approved projects include  
12                    transmission compliance work performed under a blanket project, transmission  
13                    line work to replace aging infrastructure, substation enhancements, and wood-to-  
14                    steel pole replacements in high fire risk areas.

15                    Q.     How does SDG&E develop cost estimates for the projects included in the  
16                    Forecast Period?

17                    A.     The general process involves gathering project costs to-date, plus estimated future  
18                    monthly cash flows from the project manager. SDG&E then calculates an  
19                    Allowance for Funds Used during Construction (“AFUDC”) on the monthly cash  
20                    flows up and until the project is placed in service.

21                    **IV.    TYPES OF TRANSMISSION PROJECTS**

22                    Q.     You previously mentioned that projects fall into various categories. Please  
23                    describe Blanket Projects. Please explain each of these categories.

1 A. Blanket Projects are created to cover capital projects that do not fall within a  
2 specific category. Typically, the projects covered by blanket budgets are small in  
3 nature and fall within a specific type of work, or category. Blanket budgets differ  
4 from project-specific budgets in that there is a general scope of work that covers  
5 the types of work captured under the Blanket Projects. In some cases, Blanket  
6 Projects are established to cover a multi-year program. The significant or higher  
7 cost Blanket Projects in TO5 Cycle 1 include:

- 8 • Electric Transmission Line Reliability
  - 9 ○ Work includes restoration of degraded transmission facilities, a wood
  - 10 pole restoration program, repairs of the system in the event of a
  - 11 disaster, and installation of aerial markers on transmission lines in
  - 12 accordance with Federal Aviation Administration requirements.
- 13 • Transmission Infrastructure Improvements
  - 14 ○ Work includes proactive reliability improvements and replacement of
  - 15 aging and obsolete substation equipment such as transformers,
  - 16 transformer bushings, oil circuit breakers, disconnects, capacitors,
  - 17 transmission line relaying, and seismic hardening as identified by
  - 18 SDG&E internal review teams.
- 19 • Substation Security
  - 20 ○ Involves installation or replacement of substation security systems to
  - 21 comply with NERC guidelines to protect critical infrastructure
  - 22 facilities and to reduce or deter vandalism that could result in system
  - 23 outages or personal injury.

1 Q. Please describe Transmission Line Projects.

2 A. Transmission Line Projects include a wide range of projects needed for improved  
3 system reliability consistent with NERC reliability and operating criteria,  
4 including, but not limited to, those approved and required by the CAISO. The  
5 scope of work can range from a new transmission line to reconducted  
6 transmission circuits to replacement of aging underground cable. Included in the  
7 Transmission Line Projects category within the Forecast are also Wood-to-Steel  
8 Pole Replacement Projects. Wood-to-Steel Pole Replacement Projects involve  
9 replacing wood poles with steel poles and are needed to improve the reliability of  
10 transmission lines in high fire risk and wind prone areas. These projects may also  
11 include replacing the existing conductor where necessary.

12 Q. Please describe Substation Projects.

13 A. In addition to projects identified via transmission planning and approved by the  
14 CAISO that are required for load growth and compliance with planning and  
15 operating criteria (*e.g.*, addition of a transformer bank), substation projects may  
16 include substation rebuilds to address reliability concerns, installation of  
17 additional reactive capacity, purchase of emergency equipment to reduce the  
18 duration of outages and facilitate repairs and replacement of overstressed circuit  
19 breakers.

20 Q. Please describe Network Upgrades to Accommodate Generator Interconnections  
21 & Energy Storage Projects.

22 A. These projects involve network upgrades needed to ensure the transmission  
23 system will perform in accordance with NERC, Western Electricity Coordinating

1 Council (“WECC”), and CAISO reliability criteria once generators interconnect  
2 to the transmission system. The majority of recent activity in this category  
3 involves network upgrades required to accommodate renewable generation as  
4 entities strive to meet California Renewables Portfolio Standard (“RPS”) goals.

5 **V. CAISO APPROVAL PROCESS**

6 Q. Which projects included in the TO5 Cycle 1 Forecast are approved by the  
7 CAISO?

8 A. I identify the CAISO-approved projects in Exhibit No. SD-0010, column 4.  
9 Column 5 of the exhibit references the CAISO Board-approved transmission  
10 expansion plan and the page number where approval is listed.

11 Q. Please describe the CAISO’s Transmission Planning Process as it relates to  
12 SDG&E projects, excluding Network Upgrades to Accommodate Generator  
13 Interconnections.

14 Q. SDG&E is a Participating Transmission Owner (“PTO”) of the CAISO and is  
15 governed by the CAISO’s FERC tariff and Business Practice Manuals (“BPM”).  
16 The BPMs describe the CAISO’s annual Transmission Planning Process (“TPP”),  
17 which is how projects necessary to meet NERC, WECC, and CAISO transmission  
18 reliability criteria are identified, proposed, and approved. This process runs for  
19 approximately 15 months (from January to March of the following year) and is an  
20 open stakeholder process involving all CAISO PTOs and other entities such as the  
21 CPUC, California Energy Commission and independent generation and  
22 transmission developers.



1                   Projects that are not required to meet reliability criteria but have economic  
2                   or public policy benefits may also be identified by the CAISO or PTOs, with the  
3                   difference being that these projects, if approved by the CAISO, may be subject to  
4                   a competitive bidding process among independent transmission developers.

5    Q.    Please briefly describe the CAISO's TPP as it relates to SDG&E to Network  
6           Upgrades to Accommodate Generator Interconnections & Energy Storage  
7           Projects.

8    A.    Generator interconnections to SDG&E-owned transmission facilities are governed  
9           by the CAISO's FERC approved tariff and guided by the CAISO's Generation  
10          Interconnection BPM. The BPM aids in understanding and applying the tariff.  
11          Please refer to the applicable tariff provisions governing generator  
12          interconnections that are contained in Appendix Y (the Generation  
13          Interconnection Process) and Appendix DD (the Generation Interconnection and  
14          Deliverability Transmission Allocation Procedures).

15   **VI.   HIGH VOLTAGE/LOW VOLTAGE PERCENTAGES**

16   Q.    How does SDG&E determine the percentage of a project to be classified as either  
17          High Voltage ("HV") or Low Voltage ("LV")?

18   A.    The distinction between High and Low Voltage occurs at 200kV. Voltages in  
19          excess of 200kV are considered High Voltage, while voltages at 200kV or below  
20          are considered Low Voltage. The transmission voltage levels in the SDG&E  
21          system are generally 69kV, 138kV, 230kV and 500kV. Therefore, any 69kV and  
22          138kV work is considered Low Voltage work and any 230kV and 500kV work is

1 considered High Voltage. Some projects include both voltages, in which case an  
2 analysis is performed to determine the appropriate percentage breakdown.

3 **VII. SYCAMORE TO PENASQUITOS 230 kV LINE**

4 Q. Please describe the Sycamore to Penasquitos Project.

5 A. This project (commonly referred to as SX-PQ) includes installing a new 230kV  
6 transmission line between the Sycamore Canyon and Penasquitos substations.  
7 The CPUC-approved route consists of 11.5 miles of underground and 3.1 miles of  
8 overhead alignment. The project was approved as part of CAISO's 2012-2013  
9 Transmission Plan and was placed in-service on August 29, 2018. CPUC  
10 approval was received in October 2016. The project will allow more efficient  
11 delivery of imported energy to the San Diego coastal area and reliably and  
12 economically meet forecasted increases in demand in the San Diego region.

13 **VIII. CLEVELAND NATIONAL FOREST POWERLINE REPLACEMENT**  
14 **PROJECT**

15 Q. Please describe the Cleveland National Forest Powerline Replacement Project

16 A. This project establishes a Master Special Use Permit for operations and  
17 maintenance of SDG&E assets within the Cleveland National Forest and includes  
18 fire and weather hardening five existing 69kV transmission lines and seven  
19 existing distribution lines via steel pole replacement or undergrounding. The  
20 project also includes removing from service 19 miles of 69kV transmission line  
21 and restoring 16 miles of access roads. The CPUC and Forest Service approvals  
22 were received on June 2016 and September 2016, respectively. The project will  
23 increase the reliability of the transmission grid located within the High Fire Threat

1 District (“HFTD”) of the Cleveland National Forest with an expected in-service  
2 date of the last line in December 2020.

3 **IX. SONGS SYNCHRONOUS CONDENSER PROJECT**

4 Q. Please describe the San Onofre Nuclear Generating Station (“SONGS”)  
5 Synchronous Condenser Project

6 A. The SONGS Synchronous Condenser Project includes installation of one 225  
7 MVar synchronous condenser in the existing SONGS switchyard with a layout  
8 and enclosure size enabling installation of a second unit in the future if necessary.  
9 The project also includes relocation of one 230 kV bus deadend structure,  
10 relocation of existing underground utilities, grading and installation of multiple  
11 retaining walls. The project was approved as part of CAISO’s 2013-14  
12 Transmission Plan and was placed in-service on October 16, 2018. CPUC  
13 approval was not required. The project will mitigate voltage stability concerns in  
14 response to the loss of generation at SONGS and South Bay Power Plants; along  
15 with the planned closure of Encina Power Plant and an increase in renewable  
16 generation.

17 Q. Does this complete your testimony?

18 A. Yes.

**VERIFICATION**

William H. Speer hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief.

See 28 U.S.C. § 1746.

Executed this 30th day of October, 2018

William H. Speer

**EXHIBIT NO. SD-0008**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**WILLIAM H. SPEER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

SAN DIEGO GAS & ELECTRIC									
TOS - CYCLE 1 SUMMARY OF FORECAST OF TRANSMISSION CAPITAL ADDITIONS (FORECAST PERIOD JANUARY 2018 - DECEMBER 2019)									
\$ IN THOUSANDS (000 \$)									
PROJECT NAME	PROJECT TYPE	APPROVAL CATEGORY	VOLTAGE LEVEL	IN-SERVICE DATE	JAN '18-DEC '19 FORECASTED				
Miguel Sub Hydro & Water Quality Enhancement	Substation	Utility	500/230KV	2018-01	3,622				
Safe Creek Substation	Substation	CAISO/CPUC	69KV	2018-02	2,282				
TL664 Wood to Steel	Transmission Line	Utility	69KV	2018-03	2,310				
Engina Carlsbad Energy Center Project	Network Upgrades/Energy Storage	CAISO/CPUC	230/138KV	2018-03	2,073				
Vine 69/12KV Substation	Substation	CAISO/CPUC	69KV	2018-03, 2018-05	17,768				
Q124 Silver Ridge Mount Signal	Network Upgrades/Energy Storage	CAISO/CPUC	230KV	2018-04	39				
TL697 Pendleton South Wood to Steel	Transmission Line	Utility	69KV	2018-05	4,327				
TL690A Pendleton South Reconnector Wood to Steel	Transmission Line	Utility	69KV	2018-05	4,434				
SCADA Expansion Transmission	Substation	Utility	138KV	2018-05	3,069				
South Bay Substation Relocation	Substation	CAISO/CPUC	230/138/69KV	2018-06	2,804				
Mission Bank 71 Addition	Substation	CAISO/CPUC	230/69KV	2018-07	8,655				
Cleveland National Forest (CNF)	Transmission Line	CAISO/CPUC	69KV	2018-07, 2018-11, 2018-12, 2019-02	229,442				
SX-PQ 230KV Line	Transmission Line	CAISO/CPUC	230KV	2018-08	224,832				
Q1061 Vista Energy Storage	Network Upgrades/Energy Storage	CAISO/CPUC	69KV	2018-08	1,100				
TL13855 Wood to Steel	Transmission Line	Utility	69KV	2018-09	2,319				
Pt Loma Substation Rebuild	Substation	Utility	69KV	2018-09	6,040				
Los Coches Substation Rebuild	Substation	CAISO/CPUC	138/69KV	2018-09	15,828				
Camp Pendleton Voltage Support	Substation	CAISO/CPUC	69KV	2018-09	4,273				
Warmers Substation 69KV Control & Protection Replacement	Substation	Utility	69KV	2018-09	3,412				
SONGS Synchronous Condensers	Substation	CAISO/CPUC	230KV	2018-10	114,003				
TL676 Mission-Mesa Heights Reconnector	Transmission Line	CAISO/CPUC	69KV	2018-12	18,111				
TL663 Mission-Kearny Reconnector	Transmission Line	CAISO/CPUC	69KV	2018-12	18,143				
TL637 Rose Canyon Tap Removal	Transmission Line	CAISO/CPUC	69KV	2018-12	3,524				
Overstressed Breaker Replacements	Substation	Utility	138/69KV	2018-12	3,942				
Kearny Substation Rebuild	Substation	Utility	69KV	2018-12	23,339				
Rancho Santa Fe Substation Fire Hardening	Substation	Utility	69KV	2018-12	1,888				
Descanso Substation 69KV Control & Protection Replacement	Substation	Utility	69KV	2018-12	3,529				
TL6906 Mesa Rim Loop-in	Transmission Line	CAISO/CPUC	69KV	2019-02	1,953				
TL600 Reliability Pole Replacements	Transmission Line	CAISO/CPUC	69KV	2019-03	8,661				
Cameron Substation - Add 69KV Bus Tie	Substation	Utility	69KV	2019-03	2,614				
Miguel to Bay Boulevard	Transmission Line	CAISO/CPUC	230KV	2019-05	8,353				
TL633 Bernardo-Rancho Carmel 69KV Line Upgrade	Transmission Line	CAISO/CPUC	69KV	2019-06	28,378				
Santa Ysabel Substation 69KV Rebuild	Substation	Utility	69KV	2019-06	8,310				
TL6912 San Luis Rey to Camp Pendleton	Transmission Line	CAISO/CPUC	69KV	2019-07	6,161				
Ocean Ranch 69/12KV Substation	Substation	CAISO/CPUC	69KV	2019-09	17,743				
Suncrest 230KV 300MVAR Dynamic Reactive Power Support	Substation	CAISO/CPUC	230KV	2019-10	2,527				
TL649 Wood to Steel	Transmission Line	CAISO/CPUC	69KV	2019-11	16,240				
TL674A Reconfiguration at Del Mar TL666D R15	Transmission Line	CAISO/CPUC	69KV	2019-12	12,578				
TL23001_23004 Mission to San Luis Rey Wood to Steel	Transmission Line	Utility	230KV	2019-12	11,850				
Poway Substation 69KV Rebuild	Substation	Utility	69KV	2019-12	18,277				
Substation Auxiliary Power System (GenCell)	Substation	Utility	Auxiliary	2019-12	2,268				
Substation DC Reliability Upgrade	Substation	Utility	Auxiliary	2019-12	9,370				
Avocado Substation Rebuild	Substation	Utility	69KV	2019-12	4,244				
Mission Substation 139KV & 69KV Rebuild	Substation	Utility	138/69KV	2019-12	825				
Electric Transmission Line Reliability Projects	Blanket	Utility	N/A	Ongoing/Multiple ISDs	53,612				
Transmission Substation Reliability Projects	Blanket	Utility	N/A	Ongoing/Multiple ISDs	5,575				
Renewal of Electric Transmission Line Easements	Blanket	Utility	N/A	Ongoing/Multiple ISDs	20,440				
Electric Transmission Infrastructure Improvements	Blanket	Utility	N/A	Ongoing/Multiple ISDs	14,836				
Electric Transmission System Automation	Blanket	Utility	N/A	Ongoing/Multiple ISDs	4,636				
Emergency & Spare Equipment	Blanket	Utility	N/A	Ongoing/Multiple ISDs	3,071				
Fiber Optic for Relay Protection & Telecommunication	Blanket	Utility	N/A	Ongoing/Multiple ISDs	19,195				
Synchronized Phasor Measurement (Synchrophasors)	Blanket	Utility	N/A	Ongoing/Multiple ISDs	10,739				
Automated Fault Location	Blanket	Utility	N/A	Ongoing/Multiple ISDs	659				
Aerial Marking for Safety	Blanket	Utility	N/A	Ongoing/Multiple ISDs	10,540				
Various Substations Security Upgrades (CAST)	Blanket	Utility	N/A	Ongoing/Multiple ISDs	10,658				
MWD-Coast Trolley Extension Project	Blanket	Utility	N/A	Ongoing/Multiple ISDs	645				
Substation Security Installations	Blanket	Utility	N/A	Ongoing/Multiple ISDs	4,397				
Condition-Based Maintenance	Blanket	Utility	N/A	Ongoing/Multiple ISDs	2,839				
					\$ 1,047,322				

**EXHIBIT NO. SD-0009**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**WILLIAM H. SPEER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

**SAN DIEGO GAS & ELECTRIC COMPANY**  
**FORECAST OF TRANSMISSION CAPITAL ADDITIONS - T05 CYCLE 1**  
**\$ In Thousands (000's)**

Line No.	Project Name	Voltage	Budget Code	In-Service Dates	2018 Plant Additions						Line No.
					Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
<b>BLANKET BUDGET PROJECTS</b>											
1	Electric Transmission Line Reliability Projects		100	Ongoing/Multiple ISDs	556	648	9,202	618	1,395	1,793	1
2	Transmission Substation Reliability Projects		103	Ongoing/Multiple ISDs					1,705	20	2
3	Renewal of Electric Transmission Line Easements		104	Ongoing/Multiple ISDs					4,948	941	3
4	Electric Transmission Infrastructure Improvements		1145	Ongoing/Multiple ISDs							4
5	Electric Transmission System Automation		3171	Ongoing/Multiple ISDs	513	21		1,430			5
6	Emergency & Spare Equipment		6254	Ongoing/Multiple ISDs					6		6
7	Fiber Optic for Relay Protection & Telecommunication		7144	Ongoing/Multiple ISDs		79					7
8	Synchronized Phasor Measurement (Synchrophasors)		10138	Ongoing/Multiple ISDs				3,930			8
9	Automated Fault Location		12129	Ongoing/Multiple ISDs							9
10	Aerial Marking for Safety		12159	Ongoing/Multiple ISDs		(1)	324		92	94	10
11	Various Substations Security Upgrades (CAST)		15125	Ongoing/Multiple ISDs			(753)				11
12	Mid-Coast Trolley Extension Project		15258	Ongoing/Multiple ISDs							12
13	Substation Security Installations		16126	Ongoing/Multiple ISDs					2,827		13
14	Condition-Based Maintenance		9144/13139	Ongoing/Multiple ISDs			1,460		255		14
15											15
16											16
<b>TRANSMISSION LINE PROJECTS</b>											
17	TL664 Wood to Steel	69KV	11133	Mar-18			2,310				17
18	TL697 Pendleton South Wood to Steel	69KV	10147	May-18					4,327		18
19	TL690A Pendleton South Reconductor Wood to Steel	69KV	16132	May-18					4,434		19
20	Cleveland National Forest (CNF)	69KV	8165	Jul-18, Nov-18, Dec-18, Feb-19, Aug-19							20
21	SX-PQ 230KV Line	230KV	13128	Aug-18							21
22	TL13835 Wood to Steel	69KV	14138	Sep-18							22
23	CAISO/CPUC TL676 Mission-Mesa Heights Reconductor	69KV	9153	Dec-18							23
24	CAISO/CPUC TL663 Mission-Kearny Reconductor	69KV	11126	Dec-18							24
25	CAISO/CPUC TL617 Rose Canyon Tap Removal	69KV	17159	Dec-18							25
26	CAISO/CPUC TL600 Reliability Pole Replacements	69KV	12156	Feb-19							26
27	CAISO/CPUC TL6906 Mesa Rim Loop-in	69KV	17130	Mar-19							27
28	CAISO/CPUC Miquel to Bay Boulevard	230KV	16157	Mar-19							28
29	CAISO/CPUC TL633 Bernardo-Rancho Carmel 69KV Line Upgrade	69KV	12139	Jun-19							29
30	CAISO/CPUC TL6912 San Luis Rey to Camp Pendleton	69KV	10149	Jul-19							30
31	CAISO/CPUC TL649 Wood to Steel	69KV	9137	Nov-19							31
32	CAISO/CPUC TL674A Reconfiguration at Del Mar TL666D RFS	69KV	13130	Dec-19							32
33	CAISO/CPUC TL23001_23004 Mission to San Luis Rey Wood to Steel	230KV	16150	Dec-19							33
34											34
35											35
<b>SUBSTATION PROJECTS</b>											
36	Miquel Sub Hydro & Water Quality Enhancement	500/230KV	15130	Jan-18	3,622						36
37	Salt Creek Substation	69KV	2258	Feb-18		2,282					37
38	Vine 69/12KV Substation	69KV	13243	Mar-18, May-18			2,294		15,474		38
39	SCADA Expansion Transmission	138KV	12132	May-18					3,089		39
40	South Bay Substation Relocation	230/138/69KV	6132	Jun-18						2,804	40
41	Mission Bank 71 Addition	230/69KV	15132	Jul-18							41
42	PT Loma Substation Rebuild	69KV	1269	Sep-18							42
43	Los Cochinos Substation Rebuild	138/69KV	10135	Sep-18							43
44	Camp Pendleton Voltage Support	69KV	16128	Sep-18							44
45											45





**SAN DIEGO GAS & ELECTRIC COMPANY  
FORECAST OF TRANSMISSION CAPITAL ADDITIONS- TO5 CYCLE 1  
\$ In Thousands (000's)**

Line No.	Project Name	Budget Code	2019 Plant Additions					Total Plant Additions	High Voltage 200KV+	Low Voltage	Line No.
			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19				
<b>BLANKET BUDGET PROJECTS</b>											
1	Electric Transmission Line Reliability Projects	100			6,100			6,100	42.29%	57.71%	1
2	Transmission Substation Reliability Projects	103			800			800	42.29%	57.71%	2
3	Renewal of Electric Transmission Line Easements	104			510			510	42.29%	57.71%	3
4	Electric Transmission Infrastructure Improvements	1145						4,080	42.29%	57.71%	4
5	Electric Transmission System Automation	3171						2,000	42.29%	57.71%	5
6	Emergency & Spare Equipment	6254						\$ 3,071	42.29%	57.71%	6
7	Fiber Optic for Relay Protection & Telecommunication	7144						9,250	42.29%	57.71%	7
8	Synchronized Phasor Measurement (Synchrophasors)	10138			1,196			1,196	42.29%	57.71%	8
9	Automated Fault Location	12129						460	42.29%	57.71%	9
10	Aerial Marking for Safety	12159						1,500	42.29%	57.71%	10
11	Various Substations Security Upgrades (CAST)	15125			1,800			1,800	42.29%	57.71%	11
12	Mid-Coast Trolley Extension Project	15258						\$ 645	42.29%	57.71%	12
13	Substation Security Installations	16126			400			200	42.29%	57.71%	13
14	Condition-Based Maintenance	9144/13139	79		79			80	42.29%	57.71%	14
15								\$ 2,839	42.29%	57.71%	15
16								\$ 161,842	42.29%	57.71%	16
17											17
<b>TRANSMISSION LINE PROJECTS</b>											
18	TL664 Wood to Steel	11133						\$ 2,310	0.00%	100.00%	18
19	TL697 Pendleton South Wood to Steel	10147						\$ 4,327	0.00%	100.00%	19
20	TL690A Pendleton South Reconductor Wood to Steel	16132						\$ 4,434	0.00%	100.00%	20
21	Cleveland National Forest (CNF)	8165		37,231				\$ 229,442	0.00%	100.00%	21
22	SX-PQ 230KV Line	13128						\$ 224,832	100.00%	0.00%	22
23	TL13835 Wood to Steel	14138						\$ 2,319	0.00%	100.00%	23
24	TL676 Mission-Mesa Heights Reconductor	9153						\$ 18,111	0.00%	100.00%	24
25	TL663 Mission-Kearny Reconductor	11126						\$ 18,143	0.00%	100.00%	25
26	TL617 Rose Canyon Tap Removal	17159						\$ 3,524	0.00%	100.00%	26
27	TL600 Reliability Pole Replacements	12156						\$ 1,953	0.00%	100.00%	27
28	TL6906 Mesa Rim Loop-in	17130						\$ 8,681	0.00%	100.00%	28
29	Miguel to Bay Boulevard	16157						\$ 8,353	100.00%	0.00%	29
30	TL633 Bernardo-Rancho Carmel 69KV Line Upgrade	12139						\$ 28,378	0.00%	100.00%	30
31	TL6912 San Luis Rey to Camp Pendleton	10149	6,161					\$ 6,161	0.00%	100.00%	31
32	TL649 Wood to Steel	9137					16,240	\$ 16,240	0.00%	100.00%	32
33	TL674A Reconfiguration at Del Mar TL666D RFS	13130						12,578	0.00%	100.00%	33
34	TL23001_23004 Mission to San Luis Rey Wood to Steel	16150						11,850	100.00%	0.00%	34
35								\$ 601,636			35
36											36
<b>SUBSTATION PROJECTS</b>											
37	Miguel Sub Hydro & Water Quality Enhancement	15130						\$ 3,622	100.00%	0.00%	37
38	Salt Creek Substation	2258						\$ 2,262	0.00%	100.00%	38
39	Vine 69/12KV Substation	13243						\$ 17,768	0.00%	100.00%	39
40	SCADA Expansion Transmission	12132						\$ 3,089	0.00%	100.00%	40
41	South Bay Substation Relocation	6132						\$ 2,804	42.00%	58.00%	41
42	Mission Bank 71 Addition	15132						\$ 8,635	59.00%	41.00%	42
43	PT Loma Substation Rebuild	1269						\$ 6,040	0.00%	100.00%	43
44	Los Cochas Substation Rebuild	10135						\$ 15,828	0.00%	100.00%	44
45	Camp Pendleton Voltage Support	16128						\$ 4,273	0.00%	100.00%	45

**SAN DIEGO GAS & ELECTRIC COMPANY**  
**FORECAST OF TRANSMISSION CAPITAL ADDITIONS- TO5 CYCLE 1**  
**\$ In Thousands (000's)**

Line No.	Project Name	Voltage	Budget Code	In-Service Dates	2018 Plant Additions						Line No.
					Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
46	Warner's Substation 69kV Control & Protection Replacement	69kV	16130	Sep-18							46
47	SONGS Synchronous Condensers	230kV	13132	Oct-18							47
48	Overstressed Breaker Replacements	138/69kV	9170	Dec-18							48
49	Kearny Substation Rebuild	69kV	13242	Dec-18							49
50	Rancho Santa Fe Substation Fire Hardening	69kV	15246	Dec-18							50
51	Descanso Substation 69kV Control & Protection Replacement	69kV	16131	Dec-18							51
52	Cameron Substation - Add 69kV Bus Tie	69kV	18125	Mar-19							52
53	Santa Ysabel Substation 69kV Rebuild	69kV	18129	Jun-19							53
54	CAISO/CPUC Ocean Ranch 69/12kV Substation	69kV	5253	Sep-19							54
55	CAISO/CPUC Suncrest 230kV 300MVAR Dynamic Reactive Power Support	230kV	14126	Oct-19							55
56	Utility Poway Substation 69kV Rebuild	69kV	14143	Dec-19							56
57	Substation Auxiliary Power System (GenCell)	Auxiliary	16133	Dec-19							57
58	Substation DC Reliability Upgrade	Auxiliary	16138	Dec-19							58
59	Avocado Substation Rebuild	69kV	17153	Dec-19							59
60	Mission Substation 139kV & 69kV Rebuild	138/69kV	18128	Dec-19							60
61											61
62	<b>NETWORK UPGRADES TO ACCOMMODATE GENERATOR INTERCONNECTIONS &amp; ENERGY STORAGE PROJECTS</b>										62
63	CAISO/CPUC Encina Carlsbad Energy Center Project	230/138kV	16134	Mar-18			2,073				63
64	CAISO/CPUC Q124 Silver Ridge Mount Signal	230kV	17154	Apr-18				39			64
65	CAISO/CPUC Q1061 Vista Energy Storage	69kV	16137	Aug-18							65
66											66
67											67
68											68
69											69
70											70
71											71
72											72
73											73
74											74
75											75
76											76
77											77
78											78
79											79
80											80
81											81
82											82

<b>Grand Total:</b>	\$ 4,691	\$ 3,029	\$ 16,910	\$ 6,017	\$ 38,552	\$ 5,652
<b>High Voltage:</b>	4,074	316	5,426	2,567	4,748	2,382
<b>Low Voltage:</b>	617	2,713	11,484	3,450	33,804	3,270
<b>Total:</b>	\$ 4,691	\$ 3,029	\$ 16,910	\$ 6,017	\$ 38,552	\$ 5,652

<b>Weighted</b>						
<b>High Voltage:</b>	\$ 4,074	\$ 316	\$ 5,426	\$ 2,567	\$ 4,748	\$ 2,382
<b>Low Voltage:</b>	\$ 617	\$ 2,713	\$ 11,484	\$ 3,450	\$ 33,804	\$ 3,270
<b>Total:</b>	\$ 4,691	\$ 3,029	\$ 16,910	\$ 6,017	\$ 38,552	\$ 5,652

<b>Weighting Factors</b>	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
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<b>Grand Total:</b>	\$ 3,622	\$ 2,282	\$ 6,677	\$ 39	\$ 27,324	\$ 2,804
<b>High Voltage:</b>	3,622	-	1,099	39	-	1,178
<b>Low Voltage:</b>	-	2,282	5,578	-	27,324	1,626
<b>Total:</b>	\$ 3,622	\$ 2,282	\$ 6,677	\$ 39	\$ 27,324	\$ 2,804

*HV/LV calculation to determine the allocation to be used for blanket budget projects:*



**SAN DIEGO GAS & ELECTRIC COMPANY  
FORECAST OF TRANSMISSION CAPITAL ADDITIONS- TO5 CYCLE 1  
\$ In Thousands (000's)**

Line No.	Project Name	Budget Code	2019 Plant Additions					Total Plant Additions	High Voltage 200KV+	Low Voltage	Line No.						
			Jul-19	Aug-19	Sep-19	Oct-19	Nov-19					Dec-19					
46	Warners Substation 69KV Control & Protection Replacement	16130						\$ 3,412	0.00%	100.00%	46						
47	CAISO/CPUC SONGS Synchronous Condensers	13132						\$ 114,003	100.00%	0.00%	47						
48	Utility Overstressed Breaker Replacements	9170						\$ 3,942	0.00%	100.00%	48						
49	Utility Kearny Substation Rebuild	13242						\$ 23,339	0.00%	100.00%	49						
50	Utility Rancho Santa Fe Substation Fire Hardening	15246						\$ 1,888	0.00%	100.00%	50						
51	Utility Descanso Substation 69KV Control & Protection Replacement	16131						\$ 3,529	0.00%	100.00%	51						
52	Utility Cameron Substation - Add 69KV Bus Tie	18125						\$ 2,614	0.00%	100.00%	52						
53	Utility Santa Ysabel Substation 69KV Rebuild	18129						\$ 8,310	0.00%	100.00%	53						
54	CAISO/CPUC Ocean Ranch 69/12kV Substation	5253			17,743			\$ 17,743	0.00%	100.00%	54						
55	CAISO/CPUC Suncrest 230kV 300MVA Dynamic Reactive Power Support	14126				2,527		\$ 2,527	100.00%	0.00%	55						
56	Utility Poway Substation 69KV Rebuild	14143					18,277	\$ 18,277	0.00%	100.00%	56						
57	Utility Substation Auxiliary Power System (GenCell)	16133					2,268	\$ 2,268	0.00%	100.00%	57						
58	Utility Substation DC Reliability Upgrade	16138					9,370	\$ 9,370	20.00%	80.00%	58						
59	Utility Avocado Substation Rebuild	17153					4,244	\$ 4,244	0.00%	100.00%	59						
60	Utility Mission Substation 139KV & 69KV Rebuild	18128					825	\$ 825	0.00%	100.00%	60						
61								\$ 280,632			61						
62	<b>NETWORK UPGRADES TO ACCOMMODATE GENERATOR INTERCONNECTIONS &amp; ENERGY STORAGE PROJECTS</b>																
63	CAISO/CPUC Encina Carlsbad Energy Center Project	16134						\$ 2,073	53.00%	47.00%	63						
64	CAISO/CPUC Q124 Silver Ridge Mount Signal	17154						\$ 39	100.00%	0.00%	64						
65	CAISO/CPUC Q1061 Vista Energy Storage	16137						\$ 1,100	0.00%	100.00%	65						
66								\$ 3,212			66						
67								\$ 6,240	\$ 37,310	\$ 28,628	\$ 2,606	\$ 16,319	\$ 105,633	\$ 1,047,322	Gross	67	
68								33	33	4,603	2,560	33	33,271	\$ 442,912	High Voltage	68	
69								6,207	37,277	24,029	46	16,286	72,362	\$ 604,410	Low Voltage	69	
70								\$ 6,240	\$ 37,310	\$ 28,628	\$ 2,606	\$ 16,319	\$ 105,633	Total	100.00%	70	
71															Weighted	71	
72								\$ 17	\$ 14	\$ 1,534	\$ 640	\$ 6	\$ 2,772	\$ 401,814	High Voltage	72	
73								\$ 3,104	\$ 15,532	\$ 8,008	\$ 12	\$ 2,714	\$ 6,030	\$ 452,759	Low Voltage	73	
74								\$ 3,121	\$ 15,546	\$ 9,542	\$ 652	\$ 2,720	\$ 8,802	\$ 854,573	Total	100.00%	74
75																	75
76								\$ 3,120	\$ 15,546	\$ 9,543	\$ 652	\$ 2,720	\$ 8,802				76
77								50.000%	41.667%	33.333%	25.000%	16.667%	8.333%				77
78																	78
79								\$ 6,161	\$ 37,231	\$ 17,743	\$ 2,527	\$ 16,240	\$ 59,412	\$ 885,480	Gross	79	
80								-	-	-	2,527	-	13,724	\$ 374,472	High Voltage	80	
81								6,161	37,231	17,743	-	16,240	45,688	\$ 511,008	Low Voltage	81	
82								\$ 6,161	\$ 37,231	\$ 17,743	\$ 2,527	\$ 16,240	\$ 59,412	\$ 885,480	Total	100.00%	82

**HV/LV calculation to determine the allocation to be used for blanket budget projects:**

**EXHIBIT NO. SD-0010**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**WILLIAM H. SPEER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

SAN DIEGO GAS & ELECTRIC COMPANY  
FORECAST OF TRANSMISSION CAPITAL ADDITIONS - T05 CYCLE 1

Line No.	Project Name	Voltage	Budget Code	ISO Approval Status	Reference / Comments	Line No.
<b>BLANKET BUDGET PROJECTS</b>						
1	Electric Transmission Line Reliability Projects		100	N/A	See Note (1) below	1
2	Transmission Substation Reliability Projects		103	N/A	See Note (1) below	2
3	Renewal of Electric Transmission Line Easements		104	N/A	See Note (1) below	3
4	Electric Transmission Infrastructure Improvements		1145	N/A	See Note (1) below	4
5	Electric Transmission System Automation		3171	N/A	See Note (1) below	5
6	Emergency & Spare Equipment		6254	N/A	See Note (1) below	6
7	Fiber Optic for Relay Protection & Telecommunication		7144	N/A	See Note (1) below	7
8	Synchronized Phasor Measurement (Synchrophasors)		10138	N/A	See Note (1) below	8
9	Automated Fault Location		12129	N/A	See Note (1) below	9
10	Aerial Marking for Safety		12159	N/A	See Note (1) below	10
11	Various Substations Security Upgrades (CAST)		15125	N/A	See Note (1) below	11
12	Mt-Coast Trolley Extension Project		15258	N/A	See Note (1) below	12
13	Substation Security Installations		16126	N/A	See Note (1) below	13
14	Condition-Based Maintenance		9144/13139	N/A	See Note (1) below	14
15						15
16, 17	<b>TRANSMISSION LINE PROJECTS</b>					16, 17
18	TL664 Wood to Steel	69kV	11133	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	18
19	TL697 Pendleton South Wood to Steel	69kV	10147	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	19
20	TL690A Pendleton South Reconnector Wood to Steel	69kV	16132	Yes	2013 - 2014 Transmission Plan	20
21	Cleveland National Forest (CNF)	69kV	8165	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	21
22	SX-PQ 230kV Line	230kV	13128	Yes	2014 - 2015 Transmission Plan	22
23	TL13835 Wood to Steel	69kV	14138	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	23
24	TL676 Mission-Mesa Heights Reconnector	69kV	9153	Yes	2012 - 2013 Transmission Plan	24
25	TL663 Mission-Kearny Reconnector	69kV	11126	Yes	2010 - 2011 Transmission Plan	25
26	TL617 Rose Canyon Tap Removal	69kV	17159	Yes	2013 - 2014 Transmission Plan	26
27	TL600 Reliability Pole Replacements	69kV	12156	Yes	2015 - 2016 Transmission Plan	27
28	TL6906 Mesa Rim Loop-in	69kV	17130	Yes	2013 - 2014 Transmission Plan	28
29	Miquel to Bay Boulevard	230kV	16157	Yes	2013 - 2014 Transmission Plan	29
30	TL633 Bernardo-Rancho Carmel 69kV Line Upgrade	69kV	12139	Yes	March 23rd, 2012	30
31	TL6912 San Luis Rey to Camp Pendleton	69kV	10149	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	31
32	TL648 Wood to Steel	69kV	9137	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	32
33	TL674A Reconfiguration at Del Mar TL686D RFS	69kV	13130	Yes	March 20th, 2013	33
34	TL2001/2300A Mission to San Luis Rey Wood to Steel	230kV	16150	N/A	Wood to Steel Pole Replacement - to enhance reliability during fires	34
35, 36	<b>SUBSTATION PROJECTS</b>					35, 36
37	Miquel Sub Hydro & Water Quality Enhancement	500/230kV	15130	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure and SDG&E Reliability Criteria)	37
38	Salt Creek Substation	69kV	2258	Yes	2014 - 2015 Transmission Plan	38
39	Vine 69/12kV Substation	69kV	13243	Yes	2014 - 2015 Transmission Plan	39
40	SCADA Expansion Transmission	138kV	12132	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	40
41	South Bay Substation Relocation	230/138/69kV	6132	Yes	2013 - 2014 Transmission Plan	41
42	Mission Bank 71 Addition	230/69kV	15132	Yes	2013 - 2014 Transmission Plan	42
43	Pl Loma Substation Rebuild	69kV	1269	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	43
44	Los Coches Substation Rebuild	138/69kV	10135	Yes	2011 - 2012 Transmission Plan	44
45	Camp Pendleton Voltage Support	69kV	16128	Yes	2015 - 2016 Transmission Plan	45
46	Warners Substation 69kV Control & Protection Replacement	69kV	16130	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	46
47	SONGS Synchronous Condensers	230kV	13132	Yes	2013 - 2014 Transmission Plan	47
48	Overstressed Breaker Replacements	138/69kV	9170	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	48
49	Kearny Substation Rebuild	69kV	13242	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	49
50	Rancho Santa Fe Substation Fire Hardening	69kV	15246	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	50
51	Descanso Substation 69kV Control & Protection Replacement	69kV	16131	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	51
52	Cameron Substation - Add 69kV Bus Tie	69kV	18125	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	52
53	Sartia Yeabel Substation 69kV Rebuild	69kV	18129	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	53
54	Ocean Ranch 69/12kV Substation	69kV	5253	Yes	July 16th, 2014	54
55	Suncrest 230kV 300MVA/Dynamic Reactive Power Support	230kV	14126	Yes	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	55
56	Poway Substation 69kV Rebuild	69kV	14143	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	56
57	Substation Auxiliary Power System (GenCell)	Auxiliary	16133	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	57
58	Substation DC Reliability Upgrade	Auxiliary	16138	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by SDG&E Reliability Criteria)	58
59	Avocado Substation Rebuild	69kV	17153	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	59
60	Mission Substation 139kV & 69kV Rebuild	138/69kV	18128	N/A	No ISO Transmission Reliability Upgrades Needed (Driven by Aging Infrastructure)	60
61, 62	<b>NETWORK UPGRADES TO ACCOMMODATE GENERATOR INTERCONNECTIONS &amp; ENERGY STORAGE PROJECTS</b>					61, 62
63	Encha Carlsbad Energy Center Project	230/138kV	16134	Yes	Approved through ISO/LGIA process and/or CAISO-approved policy driven project	63
64	Q124 Silver Ridge Mount Signal	230kV	17154	Yes	Approved through ISO/LGIA process and/or CAISO-approved policy driven project	64
65	Q1061 Vista Energy Storage	69kV	16137	Yes	Approved through ISO/LGIA process and/or CAISO-approved policy driven project	65

**Notes**  
(1) Blanket Budgets are capital projects that are necessary to maintain SDG&E's existing system and, therefore, do not generally require ISO approval.

**EXHIBIT NO. SD-0011**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**WILLIAM H. SPEER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**



**SAN DIEGO GAS & ELECTRIC COMPANY**  
**FORECAST OF TRANSMISSION CAPITAL ADDITIONS - TO5 CYCLE 1**

Line No.	1 Project Name	2 Voltage	3 Budget Code	4 CPUC Authorization CPCN, PTC, Exempt or N/A See Note (1)	5 Filing Status See Note (2)	6 Comments	Line No.
1	<b>BLANKET BUDGET PROJECTS</b>						1
2	Electric Transmission Line Reliability Projects		100	See Note (3)	See Note (3)	Assessed on specific project basis	2
3	Transmission Substation Reliability Projects		103	See Note (3)	See Note (3)	Assessed on specific project basis	3
4	Renewal of Electric Transmission Line Easements		104	See Note (3)	See Note (3)	Assessed on specific project basis	4
5	Electric Transmission Infrastructure Improvements		1145	See Note (3)	See Note (3)	Assessed on specific project basis	5
6	Electric Transmission System Automation		3171	See Note (3)	See Note (3)	Assessed on specific project basis	6
7	Emergency & Spare Equipment		6254	See Note (3)	See Note (3)	Assessed on specific project basis	7
8	Fiber Optic for Relay Protection & Telecommunication		7144	See Note (3)	See Note (3)	Assessed on specific project basis	8
9	Synchronized Phasor Measurement (Synchrophasors)		10138	See Note (3)	See Note (3)	Assessed on specific project basis	9
10	Automated Fault Location		12129	See Note (3)	See Note (3)	Assessed on specific project basis	10
11	Aerial Marking for Safety		12159	See Note (3)	See Note (3)	Assessed on specific project basis	11
12	Various Substations Security Upgrades (CAST)		15125	See Note (3)	See Note (3)	Assessed on specific project basis	12
13	Mid-Coast Trolley Extension Project		15258	See Note (3)	See Note (3)	Assessed on specific project basis	13
14	Substation Security Installations		16126	See Note (3)	See Note (3)	Assessed on specific project basis	14
15	Condition-Based Maintenance		9144/13139	See Note (3)	See Note (3)	Assessed on specific project basis	15
16,17	<b>TRANSMISSION LINE PROJECTS</b>						16,17
18	TL664 Wood to Steel	69kV	11133	Exempt	Effective		18
19	TL697 Pendleton South Wood to Steel	69kV	10147	Exempt	Effective		19
20	TL690A Pendleton South Reconductor Wood to Steel	69kV	16132	Exempt	Effective		20
21	Cleveland National Forest (CNF)	69kV	8165	PTC	Effective	A.12-10-009	21
22	SX-PQ 230kV Line	230kV	13128	CPCN	Effective		22
23	TL13835 Wood to Steel	69kV	14138	Exempt	Effective		23
24	TL676 Mission-Mesa Heights Reconductor	69kV	9153	N/A	Pending	Advice Letter	24
25	TL663 Mission-Kearny Reconductor	69kV	11126	N/A	Pending	Advice Letter	25
26	TL617 Rose Canyon Tap Removal	69kV	17159	Exempt	Effective		26
27	TL600 Reliability Pole Replacements	69kV	12156	N/A	N/A		27
28	TL6906 Mesa Rim Loop-in	69kV	17130	Exempt	Effective		28
29	Miguel to Bay Boulevard	230kV	16157	Exempt	Effective		29
30	TL633 Bernardo-Rancho Carmel 69kV Line Upgrade	69kV	12139	N/A	Effective	Advice Letter	30
31	TL6912 San Luis Rey to Camp Pendleton	69kV	10149	Exempt	Effective		31
32	TL649 Wood to Steel	69kV	9137	PTC	Pending	A.15-08-006	32
33	TL674A Reconfiguration at Del Mar TL666D RFS	69kV	13130	PTC	Pending		33
34	TL23001 23004 Mission to San Luis Rey Wood to Steel	230kV	16150	Exempt	Effective		34
35,36	<b>SUBSTATION PROJECTS</b>						35,36
37	Miguel Sub Hydro & Water Quality Enhancement	500/230kV	15130	Exempt	Effective		37
38	Salt Creek Substation	69kV	2258	PTC	Effective	A.13-09-014; Approved by D.16-05-005	38
39	Vine 69/12kV Substation	69kV	13243	PTC	Effective	A.14-05-021; Approved by D.16-05-008	39
40	SCADA Expansion Transmission	138kV	12132	Exempt	Effective		40
41	South Bay Substation Relocation	230/138/69kV	6132	PTC	Effective	A.10-06-007; Approved by D.13-10-025	41
42	Mission Bank 71 Addition	230/69kV	15132	Exempt	Effective		42
43	Pt Loma Substation Rebuild	69kV	1269	Exempt	Effective		43
44	Los Coches Substation Rebuild	138/69kV	10135	Exempt	Effective		44
45	Camp Pendleton Voltage Support	69kV	16128	Exempt	Effective		45
46	Warners Substation 69kV Control & Protection Replacement	69kV	16130	Exempt	Effective		46
47	SONGS Synchronous Condensers	230kV	13132	Exempt	Effective		47
48	Overstressed Breaker Replacements	138/69kV	9170	Exempt	Effective		48
49	Kearny Substation Rebuild	69kV	13242	Exempt	Effective		49
50	Rancho Santa Fe Substation Fire Hardening	69kV	15246	Exempt	Effective		50
51	Descanso Substation 69kV Control & Protection Replacement	69kV	16131	Exempt	Effective		51
52	Cameron Substation - Add 69kV Bus Tie	69kV	18125	Exempt	Effective		52
53	Santa Ysabel Substation 69kV Rebuild	69kV	18129	Exempt	Effective		53
54	Ocean Ranch 69/12kV Substation	69kV	5253	PTC	Effective		54
55	Suncrest 230kV 300MVAr Dynamic Reactive Power Support	230kV	14126	CPCN	Pending		55
56	Poway Substation 69kV Rebuild	69kV	14143	Exempt	Effective		56
57	Substation Auxiliary Power System (GenCell)	Auxiliary	16133	Exempt	Effective		57
58	Substation DC Reliability Upgrade	Auxiliary	16138	Exempt	Effective		58
59	Avocado Substation Rebuild	69kV	17153	Exempt	Effective		59
60	Mission Substation 139kV & 69kV Rebuild	138/69kV	18128	Exempt	Effective		60
61,62	<b>NETWORK UPGRADES TO ACCOMMODATE GENERATOR INTERCONNECTIONS &amp; ENERGY STORAGE PROJECTS</b>						61,62
63	Encina Carlsbad Energy Center Project	230/138kV	16134	Exempt	Effective		63
64	Q124 Silver Ridge Mount Signal	230kV	17154	Exempt	Effective		64
65	Q1061 Vista Energy Storage	69kV	16137	Exempt	Effective		65

**Notes**

- (1) The term "Exempt" means the project is exempt from a Permit to Construct (PTC) or CPCN  
(2) CPUC Approval Status is categorized as Effective, Pending or Forecast. Each category is defined as follows:  
Effective - GO 131-D Approval Obtained  
Pending - under CPUC Review  
Forecast - subject to Internal Determination  
N/A - Not Applicable or Available  
(3) Due to the numerous small transmission projects and the varying CPUC licensing requirements included in each blanket budget, no single determination will apply. Instead, each project within a blanket budget will be assessed individually and applicable licensing requirements will be followed.

**EXHIBIT NO. SD-0012**  
**TO THE PREPARED DIRECT TESTIMONY OF**  
**WILLIAM H. SPEER**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**OCTOBER 30, 2018**

**SDG&E's TO5 Cycle 1 Transmission Plant Additions  
For 24-Month Forecast Period: January 2018 through December 2019  
Reflects Costs and Benefits Related with Large Transmission Plant Additions**

**A. Summary**

The following is a list of large transmission plant additions (\$5 million and above, excluding Blankets) that will be placed into service during SDG&E's TO5 Cycle 1 Forecast Period (January 2018 through December 2019). Shown for each project are the in-service month, approval status, total cost, cost weighted for the number of months the project will be in service during the TO5 Cycle 1 rate-effective period (January 2019 through December 2019), and an explanation of the benefits of the project for SDG&E's retail and ISO wholesale customers.

Cost Totals (\$000s): Project Costs      Weighted Costs  
\$822,082                                      \$694,923

**B. Projects**  
(\$000s)

**Transmission Line Projects**

**1. Cleveland National Forest (CNF)**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
8165	\$229,442	\$197,977	Jul 2018 Nov 2018 Dec 2018 Feb 2019 Aug 2019	N/A	PTC	This project will improve the reliability of all electric facilities in fire-prone and/or wind-prone areas of Cleveland National Forest and adjacent lands by replacing existing wood poles with equivalent steel poles. The fire-hardening work will involve using stronger conductors, slightly longer insulators, and utilize improved vertical and horizontal spacing. The new structures will reduce outage potential, improve contamination resistance, reduce estimated facility maintenance, maximize equipment life span potential, and provide for superior avian protection. These project costs represent work scheduled for completion in 2018 and 2019 TO5 Cycle 1 forecast scope period. However, the overall CNF project is expected to proceed through the end of 2020.

**2. SX-PQ 230kV Line**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
13128	\$224,832	\$224,832	Aug 2018	Yes	CPCN	This project improves reliability by allowing more efficient delivery of imported energy to the San Diego coastal area and will reliably and economically meet forecasted increases in demand in the San Diego region.

**3. TL676 Mission-Mesa Heights Reconnector**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
9153	\$18,111	\$18,111	Dec 2018	Yes	Advice Letter	This project improves the existing 69 kV system within the Mission/Kearny/Mesa Heights load center, mitigates North American Reliability Corporation (NERC) reliability criteria, and reduces overall outage potential.

**4. TL663 Mission-Kearny Reconnector**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
11126	\$18,143	\$18,143	Dec 2018	Yes	Advice Letter	This project, as initiated by Transmission Planning as a capacity-driven project, is to improve the 69kV transmission local area system within the Mission/Kearny/Mesa Heights load center and mitigate NERC Category B reliability criteria. The scope of work involves overhead and underground work. The overhead work entails re-conductoring the overhead line to provide a new minimum continuous rating of 204MVA from existing 97MVA (with a 9-hour emergency rating of 129MVA). This requires a complete re-conductor of overhead line from 1-1033.5 ACSR/AW and 2-336.4.

**5. TL6906 Mesa Rim Loop-in**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
17130	\$8,681	\$7,234	Mar 2019	Yes	Exempt	This project will improve reliability by adding third and fourth power lines to the Mesa Rim Substation. Currently there are only two 69kV power lines serving the substation (TL677 Miramar - Mesa Rim and TL675 Mesa Rim- Peñasquitos). The substation must be put out of service to perform repairs or maintenance on the underground facilities. During maintenance of overhead facilities, Mesa Rim Substation is radialized meaning that it is served by only one power line. This project will create two new power lines TL6906 (Peñasquitos-Mesa Rim) and TL6978 (Miramar - Mesa Rim) allowing more flexibility for maintenance activities and improving the reliability of the substation. In addition, the existing wood cable poles have been identified by SDG&E's compliance program to be replaced due to deterioration. They will be replaced with new steel cable poles.

**6. Miguel to Bay Boulevard**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
16157	\$8,353	\$5,569	May 2019	Yes	Exempt	Mitigate NERC thermal violations, reinforce the southern 230kV loop and increase operational flexibility of the system. The project will add a second 230kV line (TL23020) between Miguel and Bay Blvd Substations via building out vacant side of existing double circuit structures that currently have TL23042 on one side. This will include installing cross arms, insulators and associated hardware on approximately 55 existing structures, and approximately 10 miles of new bundled 900 ACSS/AW conductor overhead.

**7. TL633 Bernardo-Rancho Carmel 69kV Line Upgrade**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
12139	\$28,378	\$16,554	Jun 2019	Yes	Advice Letter	This CAISO-approved reliability project is necessary to meet the load growth of the surrounding communities and accommodate additional load associated with the expansion of Artesian 230kV substation. Additionally, SDG&E is working with the City of San Diego to convert the overhead line to underground.

**8. TL6912 San Luis Rey to Camp Pendleton**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
10149	\$6,161	\$3,081	Jul 2019	N/A	Exempt	This project is a wood-to-steel pole replacement enhancing reliability by removing existing wood poles and replacing them with new steel poles in fire-prone/wind-prone areas. This project will entail replacing approximately 75 wood/steel poles and approximately 6 miles of new conductor.

**9. TL649 Wood to Steel**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
9137	\$16,240	\$2,707	Nov 2019	N/A	PTC	This project is a wood-to-steel pole replacement enhancing reliability by removing existing wood poles and replacing them with new steel poles in fire-prone/wind-prone areas. This project will entail removing approximately 132 wood poles, installing approximately 117 new steel poles, and replacing approximately 7 miles of new conductor.

**10. TL674A Reconfiguration at Del Mar TL666D RFS**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
13130	\$12,578	\$1,048	Dec 2019	Yes	PTC	This project will mitigate NERC reliability violations and improve outage restoration and maintenance in environmentally sensitive areas. The project will remove from service TL666 after looping in TL674.

**11. TL23001\_23004 Mission to San Luis Rey Wood to Steel**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
16150	\$11,850	\$988	Dec 2019	N/A	Exempt	This project is a wood-to-steel pole replacement enhancing reliability and reducing risk by removing existing wood poles and replacing them with new steel poles in fire and wind prone areas. This project will replace approximately twenty-three wood pole H-frame structures with steel H-frame structures.

**Substation Projects**

**12. Vine 69/12kV Substation**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
13243	\$17,768	\$17,768	Mar 2018 May 2018	Yes	PTC	This project will improve reliability and help accommodate future load growth in the downtown San Diego and surrounding areas by adding system capacity to: (1) allow congested downtown substation to be offloaded and (2) reduce outage potential at the airport and downtown businesses and residents.

**13. Mission Bank 71 Addition**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
15132	\$8,635	\$8,635	Jul 2018	Yes	Exempt	This project will remove from service the existing Mission class 50 banks (Bank 51 and 52) and add a 2nd class 70 bank (Bank 71). The project will mitigate the Cat C (T-1-1) thermal overload on the Mission 138/69kV yard as identified by the CAISO. In addition, it will remove from service aging infrastructure and add load-tap capability allowing Grid Operations to control voltage.

**14. Pt Loma Substation Rebuild**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
1269	\$6,040	\$6,040	Sep 2018	N/A	Exempt	This project will improve the reliability of the San Diego transmission system by replacing aging and obsolete equipment. The rebuild will involve replacing aging breakers, building a new and larger control shelter (which will allow for placement inside of new monitoring equipment and increase security of the shelter), and rebuilding the 69kV bus and 69kV steel rack. It will also create the ability to increase the capacity of the substation.

**15. Los Coches Substation Rebuild**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
10135	\$15,828	\$15,828	Sep 2018	Yes	Exempt	This project will provide increased reliability through seismic upgrades, operational flexibility, and future capacity and will mitigate reliability and loading issues. This project was reviewed and approved by the CAISO.

**16. SONGS Synchronous Condensers**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
13132	\$114,003	\$114,003	Oct 2018	Yes	Exempt	This project will aid reliability and help mitigate voltage stability concerns identified by the CAISO in response to the loss of generation at SONGS, South Bay, and Encina power plants. The project involves installation of one +225 MVAr Synchronous Condensers connected to the existing 230kV switchyard at the SONGS Substation.

**17. Kearny Substation Rebuild**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
13242	\$23,339	\$23,339	Dec 2018	N/A	Exempt	This project will relocate the existing substation to a larger location to accommodate expansion. This project will improve reliability and help accommodate future load growth. The capacity of the substation will be expanded to serve the new nearby Kaiser Hospital. The project will replace aging infrastructure, including failing 69kV and 12kV insulator glass, aging 12kV metalclad switchgear, non-standard bus tie arrangement, six transmission breakers, eight distribution breakers, and four 12kV capacitors.

**18. Santa Ysabel Substation 69kV Rebuild**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
18129	\$8,310	\$4,848	Jun 2019	N/A	Exempt	The project will improve reliability and help future capacity requirements by adding a 69kV bus tie and bank breaker. The project will also replace aging infrastructure and rebuild structures to current seismic standards.

**19. Ocean Ranch 69/12kV Substation**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
5253	\$17,743	\$5,914	Sep 2019	Yes	PTC	The project will support existing and future customer-driven load growth and improve reliability in the Oceanside and North Vista service territory. The project will install a new 69/12kV substation in the North Vista/Oceanside area.



**20. Poway Substation 69kV Rebuild**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
14143	\$18,277	\$1,523	Dec 2019	N/A	Exempt	This project will improve reliability by rebuilding the existing 69kV bus in the substation to allow for an ultimate 120 MVAR capability and building a new control shelter to allow for new controls and protection (including SCADA) and increased security.

**21. Substation DC Reliability Upgrade**

Budget Code	Cost of Project	Weighted Cost	In Service Date	ISO Approved	CPUC Approved	How Project Benefits Customers
16138	\$9,370	\$781	Dec 2019	N/A	Exempt	This project installs new assets in existing substation control shelters to support increased control power requirements. Driven by aging infrastructure replacements of telecom hardware and relays. Scope includes installation of new control panels, upgrades to 125V DC systems for control power, new air conditioning in control rooms to support additional heat generated from this equipment, and DC-DC power converters.

Exhibit No. SD-0013

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company        )       Docket No. ER19-\_\_-000**

**PREPARED DIRECT TESTIMONY OF  
  
CHRISTOPHER R. PENN  
  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**October 30, 2018**

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1 Q. Have you previously submitted testimony to this Commission?

2 A. No.

3 **II. PURPOSE OF TESTIMONY**

4 Q. What is the purpose of your testimony and how is it organized?

5 A. The purpose of my testimony is to explain how the Forecast Period Capital  
6 Addition Revenue Requirements (“FC”) is derived in the context of SDG&E’s  
7 TO5 Formula. The FC is a component of the Base Transmission Revenue  
8 Requirements (“BTRR”) within the TO5 Formula, and its purpose is to provide  
9 for recovery of the costs related to forecasted plant additions reflected in the  
10 Forecast Period. For Cycle 1 of the TO5 Formula, the Forecast Period is the 24-  
11 month period from January 2018 through December 2019. The calculation of the  
12 FC is shown on page four of Statement BK-1 of the TO5 Formula Rate  
13 Spreadsheet. The FC equals the Annual Fixed Charge Rate (“AFCR”) multiplied  
14 by the Net Weighted Forecast Plant Additions (“NWFPA”). The primary  
15 component of the NWFPA is the Forecast of Capital Additions (“Forecast”) that I  
16 receive from SDG&E witness William H. Speer, who describes the process of  
17 developing the Forecast. In my testimony, I discuss the calculations of the AF CR  
18 and NWFPA.<sup>1</sup>

19 I have organized my testimony as follows:

20 I. Introduction

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<sup>1</sup> SDG&E does not have any Incentive projects currently. If Incentive projects did exist, the calculation methodology for deriving a Forecast Period Incentive Capital Addition Revenue Requirements component would be the same as for the FC using the FERC authorized Incentive Return on Equity. The calculation for Incentive projects is made on page five of Statement BK-1.

1 II. Purpose of Testimony

2 III. Calculation of the AFCR

3 IV. Calculation of the NWFPA

4 V. Differences in the Development of the FC Between the TO5 Formula and  
5 TO4 Formula

6 **III. CALCULATION OF THE AFCR**

7 Q. What does the AFCR represent and how is it calculated?

8 A. The AFCR represents the annual fixed charges that are expected to be incurred  
9 during the rate effective period associated with an incremental dollar of Net  
10 Transmission Plant. The AFCR is calculated by dividing the Prior Year Revenue  
11 Requirements (“PYRR”), excluding 50% of Transmission O&M and  
12 Transmission Related A&G costs, CPUC Intervenor Funding Expense –  
13 Transmission, Federal Income Tax Deductions Other than Interest, and Gains &  
14 Losses from Sale of Plant Held for Future Use, by Net Transmission Plant.

15 **IV. CALCULATION OF THE NWFPA**

16 Q. How is the NWFPA calculated and what information is it based upon?

17 A. The NWFPA is calculated as the Weighted Forecast Plant Additions (“WFPA”)  
18 net of Weighted Forecast Plant Additions Depreciation Expense (“WFPA Depr”).  
19 The Composite Depreciation Rate (“CDR”) for electric transmission, as presented  
20 in the Volume 2 workpapers of Statement AJ – Depreciation and Amortization  
21 Expense, is used to derive the WFPA Depr by taking the product of the WFPA  
22 and CDR.

23 As noted above, Mr. Speer provides the Forecast that I use in calculating  
24 the WFPA. Mr. Speer’s testimony shows all individual transmission projects,

1 their costs, and in-service dates, for each month. Gross project costs are applied a  
2 retirement rate using information derived from the FERC Form 1 to reflect  
3 possible retirements to the Forecast. The forecast costs are then weighted in the  
4 same manner as they were under SDG&E's TO4 Formula. That is, projects that  
5 are placed in-service within the 12 months following the Base Period are  
6 weighted 100%, while projects that are placed in-service within the Rate Effective  
7 Period are prorated (*e.g.*, January 2019 – 12/12, February 2019 – 11/12, *etc.*).  
8 The same general process applies to developing the WFPA associated with  
9 General, Common, and Electric Miscellaneous Intangible project plant additions  
10 and is consistent with the TO4 Formula.

11 **V. DIFFERENCES IN THE DEVELOPMENT OF THE FC BETWEEN THE**  
12 **TO5 FORMULA AND TO4 FORMULA**

13 Q. Please explain the differences between the development of the FC between the  
14 TO5 Formula and the TO4 Formula.

15 A. The differences are as follows:

16 **AFCR:** Under the TO5 Formula, SDG&E is proposing that the AFCR be  
17 calculated using Net Transmission Plant in the denominator, instead of Gross  
18 Transmission Plant. Historically, the True-Up Adjustment component of  
19 SDG&E's BTRR has been an under-collection for each annual information filing.  
20 Under the TO4 Formula, where gross plant is utilized in the denominator to derive  
21 the AFCR, the denominator will increase as gross plant continues to grow each  
22 year, causing the AFCR to continue to diminish over time. As a result, the FC  
23 will continue to decrease and remain insufficient to cover the increased  
24 incremental costs during the rate effective period, further compounding future

1 under-collections. Switching from gross plant to net plant in the denominator to  
2 derive the AFCR will help minimize, but not eliminate, future True-Up  
3 Adjustments and allow the company to better match the timing of when revenues  
4 are collected in rates to cover the costs that are expected to be incurred during the  
5 rate effective period.

6 **NWFPA:** SDG&E is proposing that the CDR be applied to the WFPA to  
7 carve out depreciation expense associated with total forecast period plant  
8 additions. Capital assets begin to depreciate upon being placed in-service, and the  
9 application of the electric transmission CDR to estimate the WFPA Depr to  
10 reduce the WFPA and derive the NWFPA is an appropriate methodology.

11 Q. Does this complete your testimony?

12 A. Yes.

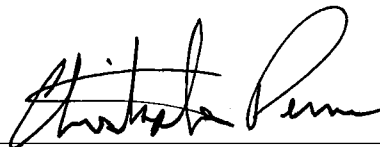


**VERIFICATION**

Christopher R. Penn hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief.

See 28 U.S.C. § 1746.

Executed this 30<sup>th</sup> day of October, 2018



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