

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company for Authority, Among Other Things, to Increase Rates and Charges for Electric and Gas Service Effective on January 1, 2020.

Application No. 18-12-009
(Filed: December 13, 2018)

(U 39 M)

(NOT CONSOLIDATED)

Application of Pacific Gas and Electric Company (U 39 M) to Submit Its 2020 Risk Assessment and Mitigation Phase Report.

Application No. 20-06-012
(Filed June 30, 2020)

**PACIFIC GAS AND ELECTRIC COMPANY'S (U39M)
2020 RISK SPENDING ACCOUNTABILITY REPORT**

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**PACIFIC GAS AND ELECTRIC COMPANY’S (U39M)
2020 RISK SPENDING ACCOUNTABILITY REPORT**

Pacific Gas and Electric Company (PG&E) submits its 2020 Risk Spending Accountability Report in Compliance with the *Phase Two Decision Adopting Risk Spending Accountability Report Requirements And Safety Performance Metrics For Investor-Owned Utilities And Adopting A Safety Model Approach For Small And Multi-Jurisdictional Utilities*, Decision (D.) 19-04-020 (“Decision”). This 2020 Report covers spend authorized in the Test Year 2020 General Rate Case (“GRC”) cycle for activities that address safety, reliability, and/or maintenance, consistent with Public Utilities Code Section 591. This report is timely filed in accordance with Table 5 of the Decision.

Pursuant to the Decision, PG&E is incorporating new requirements in this annual Risk Spending Accountability Report (“RSAR”).¹ The Decision requires the list of programs that are related to safety, reliability, or maintenance “be separated into risk mitigation programs identified in the risk assessment and mitigation phase (RAMP).”² PG&E’s first RAMP, filed in 2017, is the foundation for PG&E’s 2020 GRC for the years 2020-2022.

¹ Decision, Ordering Paragraph (OP) 9.

² D.19-04-020, Attachment 2, p. 1.

PACIFIC GAS AND ELECTRIC COMPANY

ATTACHMENT A

PACIFIC GAS AND ELECTRIC COMPANY'S (U39M)

2020 RISK SPENDING ACCOUNTABILITY REPORT

PACIFIC GAS AND ELECTRIC COMPANY

2020 RISK SPENDING ACCOUNTABILITY REPORT
IN COMPLIANCE WITH CALIFORNIA PUBLIC UTILITIES COMMISSION
DECISION 19-04-020

MARCH 31, 2021



PACIFIC GAS AND ELECTRIC COMPANY
 2020 RISK SPENDING ACCOUNTABILITY REPORT
 IN COMPLIANCE WITH CALIFORNIA PUBLIC UTILITIES COMMISSION
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SECTION 1

INTRODUCTION AND OVERVIEW

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 1
INTRODUCTION AND OVERVIEW

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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **SECTION 1**
3 **INTRODUCTION AND OVERVIEW**

4 **A. Introduction**

5 Pacific Gas and Electric Company (PG&E or the Company) submits its 2020
6 Risk Spending Accountability Report (RSAR) in compliance with the *Phase Two*
7 *Decision Adopting Risk Spending Accountability Report Requirements and*
8 *Safety Performance Metrics for Investor-Owned Utilities and Adopting a Safety*
9 *Model Approach for Small and Multi-Jurisdictional Utilities*, Decision (D.)
10 19-04-020 (the Decision).

11 This report is organized as follows:

12 The Introduction and Overview section of this report (Section 1) provides an
13 overview of PG&E's 2020 General Rate Case (GRC) imputed adopted costs and
14 recorded costs for Gas Distribution, Electric Distribution, Energy Supply,
15 Customer Care, Shared Services/Information Technology (IT), Corporate
16 Services, and Human Resources for 2020.

17 Sections 2 through 6 contain detailed comparisons of PG&E's 2020 imputed
18 adopted and recorded costs by line of business (LOB).¹ Specifically, Sections 2
19 through 6 contain:

- 20 1) PG&E's imputed adopted and recorded costs/units for 2020, by Major Work
21 Category (MWC) and/or Maintenance Activity Type (MAT) Code for Gas
22 Distribution, Electric Distribution, Energy Supply, Customer Care, and
23 Shared Services/IT.
- 24 2) Variance explanations for:
- 25 a) Imputed adopted versus recorded costs/units for 2020 by MWC and/or
26 MAT for safety, reliability, and maintenance work subject to the following
27 thresholds.²
- 28 • Expense: A variance of at least \$10 million, or a percentage variance of
29 at least 20 percent subject to a minimum variance of \$5 million;

1 Corporate Services do not have costs that meet the variance explanation requirements.

2 D.19-04-020, Table 4, p. 43.

- 1 • Capital: A variance of at least \$20 million, or a percentage variance of
- 2 at least 20 percent subject to a minimum variance of \$10 million; and
- 3 • Units: A variance of at least 20 percent of work units performed.³

4 Section 7 discusses the cost recovery of expenditures that flow through
5 balancing or memorandum accounts.

6 The Decision requires the list of programs that are related to safety,
7 reliability, or maintenance to “be separated into risk mitigation programs
8 identified in the risk assessment and mitigation phase (RAMP).”⁴ This is a new
9 requirement for PG&E’s 2020 RSAR. PG&E’s 2017 RAMP supported PG&E’s
10 2020 GRC. The data provided in this RSAR is organized by RAMP Risk, RAMP
11 mitigation, and Non-RAMP spending on safety, reliability and maintenance
12 programs. The RAMP risks and mitigations included in this report are those
13 presented in PG&E’s 2020 GRC, which updated the analysis in the 2017 RAMP.

14 A few clarifying notes for reviewers on PG&E’s RAMP presentation.
15 Programs that are labeled as “SRM Total (Non-RAMP)” represent programs that
16 have no RAMP risk mitigations. Spending for new RAMP risk mitigation
17 activities not identified in PG&E’s 2020 GRC that are safety, reliability, and
18 maintenance activities are included in the “Post 2020 GRC Mitigations” category.

19 In its review letter⁵ Energy Division requested “PG&E provide in its next
20 RSAR for 2020 the most recent risk spend efficiencies in accordance with the
21 method adopted in D.18-12-014, Phase Two Decision Adopting Safety Model
22 Assessment Proceeding Settlement Agreement With Modifications, or other
23 measure of prioritization, and descriptions of how changes in priority occurred
24 that led to shifting funds between programs.” PG&E did not prioritize funding of
25 2020 activities with the use of RSEs. PG&E’s 2020 enterprise budget planning
26 process required each LOB or department to prepare a bottoms up risk-informed
27 process incorporating the general and risk-related forecast assumptions
28 included used in PG&E’s then-pending 2020 GRC, which included updates to its
29 risk planning and forecast assumptions related to its 2017 Risk Assessment and

3 D.19-04-020, p. 54, Ordering Paragraph (OP) 11.

4 D.19-04-020, Attachment 2, p. 1, p. 36.

5 November 13, 2020 (revised December 15, 2020) letter from Energy Division Director, Edward Randolph, to PG&E’s Vice President of Regulatory Affairs, Robert Kenney, p. 11.

1 Mitigation Phase, and 2019 Gas Transmission and Storage Rate Case (GT&S).
2 These bottoms-up forecasts reflect the investment and resource plans created
3 by each LOB with input from its planning team, asset and risk managers,
4 engineers and other subject matter experts. The 2020 budget plans were further
5 updated in November 2019 to reflect the outcome of the 2019 GT&S; in
6 February 2020 to reflect the December 2019 multi-party settlement reached in
7 the 2020 GRC; and to reflect the 2020 Wildfire Mitigation Plan cost estimates
8 filed in February 2020. PG&E is in the process of updating its enterprise
9 planning process which will be detailed in PG&E's upcoming 2023 GRC.

10 **B. 2020 Expense and Capital Comparison of Imputed Adopted and**
11 **Recorded Costs Summary**

12 This report provides a summary of PG&E's 2020 actual expense and capital
13 expenditures⁶ compared to imputed adopted costs derived from PG&E's 2020
14 GRC decision.⁷ This report includes expenditures of the core lines of business
15 (LOB) (Electric Distribution, Gas Distribution and Energy Supply) and support
16 organizations (Customer Care, Shared Services, IT, and Corporate Services).
17 PG&E's 2020 GRC is for the years 2020 through 2022.

18 This report complies with D.19-04-020 OP 8 and Energy Division's
19 guidance.⁸ While this report presents certain LOB expenditures, it is not
20 representative of total Company expenditures. Specifically, this report does not
21 include expenditures on companywide items, including liability insurance
22 premiums that were significantly higher than amounts adopted in the 2020 GRC,
23 and does not include emergency response and restoration costs that are
24 recorded in the Catastrophic Event Memorandum Account. Costs that are
25 recorded in non-GRC memorandum accounts included in this report are those
26 that are recorded in the Fire Risk Mitigation Memorandum Account (FRMMA)

6 Data is as of January 15, 2021.

7 D.20-12-005.

8 November 13, 2020 (revised December 15, 2020) letter from Energy Division Director, Edward Randolph, to PG&E's Vice President of Regulatory Affairs, Robert Kenney.

1 and the Wildfire Mitigation Plan Memorandum Account (WMPMA) because
2 these costs and activities align with costs and activities in PG&E's 2020 GRC.⁹

3 **1. Expense**

4 PG&E's 2020 LOB expense spending exceeded imputed adopted
5 values by \$1,331.9 million. The increase was primarily attributable to
6 additional wildfire risk mitigation work which included: enhanced inspections
7 and associated repairs, enhanced vegetation management, and Public
8 Safety Power Shutoff (PSPS) event activities within Electric Distribution.
9 These increases were partially offset by lower levels of spending in Energy
10 Supply, Customer Care, Shared Services, and IT. Energy Supply had the
11 greatest reduction in spending relative to imputed adopted values. The
12 decrease in spending is primarily due to the GRC adopted costs of the
13 Long-Term Service Agreements (LTSA) at Colusa Generating Station (CGS)
14 and Gateway Generating Station (GGS) being levelized over the 3-year
15 GRC period (2020-2022). The actual expenditures for the outages will be
16 recorded in 2021 and 2022, when the outages occur. Spending reductions
17 for Customer Care were primarily due to the movement of the Field Meter
18 Operations (FMO) in 2018 from Customer Care to Electric Operations and
19 Gas Operations (FMO transfer). Spending reductions for Shared Services
20 and IT were primarily achieved through operational efficiencies which
21 reduced spending without impacting public or employee safety and
22 reliability. Spending reductions for Corporate Real Estate Strategy and
23 Service (CRESS) were primarily attributable to a reduction in building
24 maintenance activities.

25 **2. Capital**

26 In 2020, PG&E's capital spending exceeded imputed adopted values by
27 \$834.6 million. The increase was primarily attributable to additional
28 spending in Electric Distribution related to pole replacements and equipment
29 replacements associated with enhanced wildfire inspections, partially offset
30 by lower spending in Customer Care and Corporate Services.

⁹ While the Commission approved PG&E's Wildfire Mitigation Balancing Account (WMBA) in D.20-12-005, due to the timing of the decision, much of the wildfire costs were initially booked to FRMMA/WMPMA in 2020.

1 **C. Summary Tables**

2 PG&E’s methodology to derive its imputed adopted costs from the 2020
 3 GRC Decision is described in Appendix A: 2020 GRC Imputed Regulatory
 4 Values Methodology. The tables below summarize PG&E’s 2020 spending by
 5 expense and capital by LOB.

**TABLE 1-1
 2020 IMPUTED ADOPTED VS. ACTUAL EXPENSE BY LOB
 (MILLIONS OF DOLLARS)**

LOB	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A
Gas Distribution	369.1	420.2	51.2	13.9%
Electric Distribution	966.9	2,244.3	1,277.4	132.1%
Energy Supply	595.9	581.3	(14.5)	-2.4%
Customer Care	277.5	272.5	(5.0)	-1.8%
Shared Services/IT	544.7	536.7	(8.0)	-1.5%
Corporate Services	168.0	196.3	28.3	16.8%
Human Resources	78.2	80.7	2.6	3.3%
Total	3,000.2	4,332.1	1,331.9	44.4%

TABLE 1-2
2020 IMPUTED ADOPTED VS. ACTUAL CAPITAL BY LOB
(MILLIONS OF DOLLARS)

Line No.	LOB	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A
1	Gas Distribution	1,013.5	996.7	(16.8)	-1.7%
2	Electric Distribution	2,217.7	2,924.0	706.4	31.9%
3	Energy Supply	275.0	280.5	5.5	2.0%
4	Customer Care	138.7	135.3	(3.4)	-2.4%
5	Shared Services/IT	435.0	585.6	150.6	34.6%
6	Corporate Services	8.3	1.3	(7.0)	-84.1%
7	Human Resources	2.4	1.7	(0.7)	-28.6%
8	Total	4,090.6	4,925.2	834.6	20.4%

D. 2020 Imputed vs. Recorded Comparison by LOB

The significant drivers of the differences between 2020 imputed adopted and recorded costs for each LOB are summarized below.

IT costs attributable to the LOBs at issue in this report are presented in a decentralized fashion, meaning LOB-specific IT program costs are included with the costs of the LOBs that initiated the programs.

1. Gas Distribution

Expense: Gas Distribution's total recorded expenses in 2020 exceeded imputed adopted values by \$51.2 million or 13.9 percent. For safety, reliability, and maintenance work, 2020 recorded expenses exceeded imputed values by \$44.6 million, or 14.6 percent.¹⁰ The increases were primarily attributable to: (1) higher unit costs for leak repair and leak survey as well as an increase in the amount of leak-related work performed in 2020, and (2) additional standby costs for gas leak and emergency response resulting from an accounting change.

Capital: Gas Distribution's total 2020 recorded capital expenditures were below imputed adopted values by \$16.8 million, or 1.7 percent. For

¹⁰ MWC Operational Management (OM) is included as a maintenance activity in accordance with Energy Division's February 12, 2019 letter to PG&E. Gas Distribution does not consider MWC OM as safety, reliability, and maintenance work.

1 safety, reliability, and maintenance work, 2020 recorded capital
2 expenditures were below imputed adopted values by \$66.7 million, or
3 8 percent. The decreases were primarily attributable to: (1) pipeline
4 replacement project delays and high pressure regulator construction delays
5 resulting in less work being completed, and (2) less capital meter protection
6 work materializing than expected.

7 **2. Electric Distribution**

8 Expense: Electric Distribution's total recorded expenses in 2020
9 exceeded imputed adopted values by \$1,277.4 million or 132.1 percent. For
10 safety, reliability and maintenance work, 2020 recorded expenses exceeded
11 imputed adopted values by \$1,248.6 million or 136.3 percent. The
12 increases were primarily attributable to: (1) wildfire mitigation work not
13 forecast in the 2020 GRC which included Wildfire Safety Inspection Program
14 enhanced inspections and associated repairs, (2) higher costs for routine
15 and enhanced vegetation management driven by Senate Bill 247 tree
16 trimmer pay increase requirements, (3) tree mortality work not forecast in
17 the 2020 GRC and included to the Vegetation Management Balancing
18 Account per D.20-12-005, and (4) costs for executing PSPS events not
19 forecast in the 2020 GRC. Other increase drivers include costs associated
20 with responding to routine emergencies, and the 2018 FMO transfer.

21 Capital: Electric Distribution's total recorded capital expenditures in
22 2020 exceeded imputed adopted values by \$706.4 million or 31.9 percent.
23 For safety, reliability and maintenance work, 2020 recorded capital
24 expenditures exceeded imputed adopted values by \$591.7 million or
25 36.7 percent. The increase drivers were primarily attributable to:
26 (1) equipment replacements identified through enhanced inspections in High
27 Fire Threat District (HFTD); (2) an increased number of pole replacements
28 with higher unit costs; (3) an increased number of sectionalizing devices
29 installed to reduce PSPS impacts; and (4) increased costs for routine and
30 substation emergency work. There were also increased expenditures for
31 substation equipment replacement, which included costs to pursue the next
32 phase of switchgear projects at several substations and continuation of
33 costs for key substation transformer replacement work, technology to
34 support wildfire mitigation work not forecast in the 2020 GRC, and costs

1 associated with the 2018 FMO transfer. The increases were partially offset
2 by reductions in overhead conductor replacement in the non-HFTD areas
3 due to work deferral associated with COVID-19, shifting of resources to
4 support wildfire mitigation work, and lower expenditures in underground
5 cable replacement work due to limited resource availability.

6 **3. Energy Supply**

7 This section includes costs associated with Energy Policy and
8 Procurement, Nuclear Generation, and Power Generation other than power
9 purchase agreement and fuel costs.

10 **a. Energy Policy and Procurement**

11 The Energy Policy and Procurement Department does not have
12 safety, reliability, or maintenance related work. Therefore, no additional
13 information is provided for this department.

14 **b. Nuclear Generation**

15 Expense: Nuclear Generation's total recorded expenses in 2020
16 were below imputed adopted values by \$14.9 million or 4.1 percent. For
17 safety, reliability and maintenance work, 2020 recorded expenses were
18 below imputed adopted values by \$22.3 million or 7.1 percent. The
19 decrease in spending is spread across several MWCs but is primarily
20 driven by the GRC imputed adopted costs of the second refueling
21 outage being levelized over the 3-year GRC period (2020-2022). The
22 GRC imputed adopted levelized amount is approximately \$15 million
23 annually. The actual costs for this outage will be recorded in 2022 when
24 the outage is scheduled.

25 Capital: Nuclear Generation's total 2020 recorded capital
26 expenditures exceeded imputed adopted values by \$13.5 million or
27 30.8 percent. For safety, reliability and maintenance work, 2020
28 recorded capital expenditures exceeded imputed adopted by
29 \$10.9 million or 28.3 percent. The primary drivers for the increases are:
30 (1) rescheduling of the Diablo Canyon north access road project from
31 2018 to 2020 due to permitting delays; (2) implementation of an
32 unplanned reactor coolant pump seals project that was not included in
33 PG&E's forecast; and (3) a one-time accounting adjustment for

1 Allowance for Funds Used During Construction rate modification. This
2 increase is partially offset by cancellation of projects not required to be
3 performed prior to plant shutdown.

4 **c. Power Generation**

5 Expense: Power Generation's total expenses in 2020 were below
6 imputed adopted by \$3.5 million or 1.7 percent. For safety, reliability
7 and maintenance work, 2020 recorded expenses exceeded imputed
8 adopted values by \$0.7 million or 0.4 percent. The increase drivers are
9 primarily attributable to: (1) an increase in spending on mitigations to
10 address the Hydro System Safety risk; (2) emergent costs related to
11 achieving full compliance for all risks at Level 3 per PG&E's compliance
12 maturity model; (3) an emergent hydro system-wide powerhouse safety
13 mitigation program to mitigate safety risks resulting from dropped
14 objects from heights (e.g., tools from scaffolding) that was not included
15 in PG&E's forecast; (4) costs related to accelerating guidance document
16 completion to meet Level 3 compliance deadline; and (5) emergent
17 physical security and cybersecurity costs at our Federal Energy
18 Regulatory Commission (FERC)-regulated facilities to meet new FERC
19 regulations. These increased costs were offset, in part, due to the GRC
20 adopted costs of the LTSAs at CGS and GGS being levelized over a
21 3-year GRC period (2020-2022). The actual costs for the outages will
22 be recorded in 2021 and 2022, when the outages occur.

23 Capital: Power Generation's total 2020 recorded capital
24 expenditures were below the imputed adopted values by \$7.2 million or
25 3.2 percent. For safety, reliability and maintenance work, 2020 recorded
26 capital expenditures were below the imputed adopted values by
27 \$1.2 million or 0.6 percent.

28 **4. Customer Care**

29 Expense: Customer Care's total recorded expenses in 2020 were below
30 imputed adopted values by \$5.0 million or 1.8 percent. For safety, reliability,
31 and maintenance work, 2020 recorded expenses were below imputed
32 adopted values by \$0.3 million or 0.4 percent. The decrease in total
33 spending is primarily attributable to the 2018 FMO transfer.

1 Capital: Customer Care’s total 2020 recorded capital expenditures were
2 below imputed adopted values by \$3.4 million or 2.4 percent. For safety,
3 reliability, and maintenance work, 2020 recorded capital expenditures were
4 below imputed adopted values by \$15.1 million or 11.5 percent. The
5 decrease in spending is primarily attributable to the 2018 FMO transfer.¹¹

6 **5. Shared Services/IT**

7 Expense: Shared Services and IT’s total recorded expenses in 2020
8 were below imputed adopted values by \$8 million or 1.5 percent. The
9 decrease was primarily attributable to operational efficiencies in Sourcing’s
10 procurement process which did not impact safety, reliability or maintenance.
11 The underspend above is partially offset by overspend in IT and Security on
12 various technology solutions that improved or maintained safety, reliability or
13 maintenance, e.g., cybersecurity services, discounted network vendor
14 service agreements and support for IT operation centers.

15 Capital: Shared Services and IT’s total 2020 recorded capital
16 expenditures exceeded imputed adopted by \$150.6 million or 34.6 percent.
17 The increase was primarily attributable to an increase in specialized vehicle
18 and construction equipment investments in Transportation Services (Fleet)
19 as part of a rent-to-buy initiative that focuses on long-term savings by
20 reducing reliance on high-cost rentals. CRESS investments in wildfire
21 emergency generation enhancements were recorded in the
22 FRMMA/WMPMA. In addition to the increase discussed above, IT
23 exceeded imputed adopted by delivering various technology solutions that
24 served to either improve or maintain safety, reliability or maintenance,
25 e.g., continued investments in asset lifecycle programs for Cybersecurity,
26 data centers and mobility.

27 **a. Corporate Real Estate**

28 Expense: For safety, reliability, and maintenance work, 2020
29 recorded expenses were below imputed adopted values by \$3.3 million
30 or 26.8 percent. This decrease is primarily associated with a reduction

¹¹ The FMO team was included in the Customer Care exhibit in the 2020 GRC because the decision to transfer these operations to Electric Operations and Gas Operations was made after PG&E finalized its 2020 GRC forecast.

1 in planned building maintenance activities that do not directly affect
2 building safety.

3 Capital: For safety, reliability, and maintenance work, 2020
4 recorded capital expenditures for safety, reliability, and maintenance
5 work exceeded imputed adopted values by \$34.4 million or
6 20.2 percent. The increase is primarily attributable to investments
7 related to emergency generation enhancements for wildfire mitigation
8 recorded in the FRMMA/WMPMA.

9 **b. Corporate Services**

10 The Corporate Services total expenses do not include any safety,
11 reliability, or maintenance work as defined in D.19-04-020.¹² Therefore,
12 no additional information is provided for this organization. Marketing
13 and Communications recorded an incremental spending of \$11.5 million
14 to the FRMMA/WMPMA for costs associated with PSPS event
15 communications.

16 **6. Human Resources**

17 Expense: Human Resources total recorded expenses in 2020 were
18 above imputed adopted values by \$2.6 million or 3 percent. The majority of
19 the increase is due to Electric and Gas Curriculum Development and
20 Training Delivery. The spending increase is offset by an underspend in IT
21 projects. For safety, reliability, and maintenance work within PG&E
22 Academy, 2020 recorded expenses were above imputed adopted values by
23 \$4.6 million or 13 percent. The majority of the increase is due to Electric
24 and Gas Curriculum Development and Training Delivery.¹³

25 Capital: Human Resources total 2020 recorded capital expenditures
26 were below imputed adopted values by \$0.7 million or 29 percent. The
27 majority of the underspend is related to IT projects.

¹² D.19-04-020, Attachment 2, p. 3.

¹³ PG&E Academy spend does include related dollars in WMBA.

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 2
GAS DISTRIBUTION
IMPUTED ADOPTED VS. RECORDED COMPARISON

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 2
GAS DISTRIBUTION
IMPUTED ADOPTED VS. RECORDED COMPARISON

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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **SECTION 2**
3 **GAS DISTRIBUTION**
4 **IMPUTED ADOPTED VS. RECORDED COMPARISON**

5 **A. Introduction**

6 This section includes the following information for the Gas Distribution line of
7 business (LOB): a comparison of the total 2020 imputed adopted spend to the
8 actual spend, Major Work Category (MWC) descriptions, and for those programs
9 that are related to safety, reliability, or maintenance the 2020 imputed adopted
10 spend vs. actual spend comparison details, Maintenance Activity Type (MAT)
11 descriptions, and variance explanations. In addition, per Decision
12 (D.) 19-04-020, the MWC and MAT descriptions include how each program
13 relates to safety, reliability, or maintenance.

1 B. Comparison Summary Tables

**TABLE 2-1
GAS DISTRIBUTION 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (a) (B)	2020 Cost Difference (B-A)
1	Support	AB	17,277.6	20,255.2	2,977.6
2	Provide Field Service	DD	43,572.3	50,202.6	6,630.3
3	Leak Survey	DE	24,328.6	35,141.6	10,813.0
4	Locate and Mark	DF	43,952.5	31,765.4	(12,187.1)
5	Cathodic Protection	DG	20,170.6	23,954.3	3,783.7
6	Develop & Provide Training	DN	4,795.6	883.2	(3,912.4)
7	Meter Protection Program	EX	8,221.8	11,485.2	3,263.4
8	Operate Gas Distribution System	FG	8,987.4	8,767.4	(220.0)
9	Gas Preventive Maintenance	FH	22,475.4	31,790.4	9,315.0
10	Gas Corrective Maintenance	FI/LW ^(a)	60,251.4	82,305.1	22,053.7
11	Gas Mapping	GF	4,268.9	3,393.9	(874.9)
12	Gas Distribution Planning & Operations Engineering	GG	6,264.5	7,846.3	1,581.8
13	Natural Gas Fueling Facilities Operation and Maintenance (O&M)	GM	3,774.2	3,997.2	222.9
14	Gas Research and Development (R&D)	GZ	3,403.1	3,289.6	(113.4)
15	Gas Meter Maintenance	HY	1,828.4	2,181.9	353.4
16	Gas Distribution Integrity Management Program	JQ	41,542.9	44,092.2	2,549.3
17	Information Technology	JV	12,553.3	10,503.7	(2,049.6)
18	Gas Expense Work at the Request of Others (WRO)	LK	5,946.3	7,393.8	1,447.5
19	Operational Management	OM	17,023.5	14,363.0	(2,660.6)
20	Operational Support	OS	18,442.2	26,631.2	8,189.0
21	Total ^(b)		369,080.6	420,243.3	51,162.6

(a) In 2020, approximately \$109.8 under MWC LW will be realigned to MWC FI. The corrections will be captured as part of 2021 recorded data.

(b) In addition to the MWCs listed above, in 2020, approximately \$.03 was recorded in MWC BC, and approximately \$.04 was recorded in MWC JU.

**TABLE 2-2
GAS DISTRIBUTION 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Tools and Equipment	05	3,335.1	4,530.6	1,195.4
2	Gas Pipeline Replacement Program	14	453,378.1	420,459.8	(32,918.2)
3	Miscellaneous Capital	21	0.0	15,917.6	15,917.6
4	Gas Meter Protection	27	21,603.0	1,818.5	(19,784.5)
5	Gas Distribution Customer Connects	29	86,156.3	132,015.0	45,858.7
6	Build IT Applications & Infrastructure	2F	11,636.1	10,078.7	(1,557.3)
7	Gas Distribution Replace/Convert Customer HPRs	2K	58,998.1	47,049.5	(11,948.6)
8	NGV - Station Infrastructure	31	4,064.7	4,698.2	633.5
9	Gas Distribution Capacity	47	38,894.4	35,393.5	(3,500.9)
10	Gas Distribution Control Operations Assets	4A	29,703.7	27,814.7	(1,889.1)
11	Gas Distribution Reliability	50/3P	228,487.4	230,193.4	1,706.0
12	Gas Capital WRO	51	74,418.6	62,898.5	(11,520.1)
13	Gas Distribution Emergency Response	52	880.7	1,599.2	718.5
14	Install New Gas Meters	74	1,940.6	2,268.5	327.9
15	Manage Buildings	78	0.0	0.4	0.4
16	Total		1,013,496.8	996,736.1	(16,760.7)

1 **C. MWC Descriptions – Expense**

- 2 **MWC AB – Support** – Encompasses miscellaneous gas distribution costs
3 not aligned with other MWCs or MAT, including, but not limited to:
4 (1) Miscellaneous expenses such as industry association dues and
5 miscellaneous contract spend; and (2) Collection point for zero sum allocation

1 type work such as Standard Cost Variance,¹ Blanket Purchase Orders and
2 Working Stock.

3 This MWC does not relate directly to safety and/or reliability and/or
4 maintenance.

5 **MWC DD – Provide Field Service** – Includes customer generated requests
6 for service that require site visit by field technician, as well as immediate
7 response standby costs. Service requests include investigating reports of
8 possible gas leaks, carbon monoxide monitoring, customer requests for
9 stop/starts of gas service, appliance pilot relights, appliance adjustment and
10 safety checks.

11 This MWC relates to safety and/or reliability and/or maintenance as it
12 includes customer generated requests for service that require site visit by field
13 technician to address issues such as possible gas leaks or safety checks.

14 **MWC DE –Leak Survey** – Includes periodic or routine leak surveys
15 performed by PG&E on its distribution system that are necessary to comply with
16 pipeline safety regulations. MWC DE also includes special leak surveys
17 conducted by PG&E on its gas distribution system that are outside of the routine
18 leak survey schedule for either operating reasons or to assess the integrity of
19 the pipe.

20 This MWC relates to safety and/or reliability and/or maintenance as it
21 includes periodic or routine leak surveys performed by PG&E on its distribution
22 system that are necessary to comply with pipeline safety regulations.

¹ Standard Cost Variance (SCV) represents the difference between actual costs incurred and the amount charged out by employees at a predetermined rate (i.e., standard cost). Costs charged out are calculated using productive hours multiplied by a planned standard hourly rate. When results match initial estimates, SCV should be minimal. That said, while initial estimates do factor in external factors (e.g., extreme weather) based on historical data, actual results inevitably vary resulting in a SCV. The following is a simplified example of the standard cost calculation and how SCVs occur. Based on the historic pattern of Team A's productivity and anticipated workload, it is projected that Team A will have a monthly cost of \$100,000 for 10 employees and will perform 1,000 hours of work in a month. The resulting standard rate for Team A is \$100 per hour (\$100,000/1,000 hours). If Team A completes 1,000 hours of work in the month according to plan, Team A will have a zero SCV. However, if Team A does not complete all the planned work, e.g., due to unanticipated bad weather, and only completes 950 hours of work, Team A will have an unfavorable SCV of \$5,000 (50 hours × \$100 per hour).

1 **MWC DF – Locate and Mark** – Includes the work necessary to comply with
2 federal pipeline safety regulations and state law that requires PG&E to belong to
3 and share the costs of operating the regional “one-call” notification systems.
4 Builders, contractors, and others planning to excavate use these systems to
5 notify underground facility owners, like PG&E, of their intent to excavate. PG&E
6 then provides the excavators with information about the location of its
7 underground facilities by visiting the work site and placing color-coded surface
8 markings to show the location of pipes and wires. Excavation activities that are
9 within specified distances of high priority facilities require field meets or standby.

10 This MWC relates to safety and/or reliability and/or maintenance as it
11 includes the work necessary to comply with federal pipeline safety regulations
12 and state law that requires PG&E to belong to, respond to notifications, and
13 share the costs of operating the regional “one-call” notification systems.

14 **MWC DG –Cathodic Protection (CP)** – Includes work related to mitigating
15 the effects of corrosion on metallic gas distribution pipelines. Corrosion of gas
16 piping systems can cause leaks and other potential safety hazards. In the case
17 of steel gas lines, the pipe is coated or wrapped before installation, followed by
18 the application of CP through the use of either an impressed system or galvanic
19 anodes as required by federal pipeline safety regulations. The CP system
20 requires continual monitoring on regular intervals to ensure that adequate levels
21 of current are maintained. Maintenance tasks include monitoring CP levels on
22 metallic pipe by taking required pipe to soil reads and reading rectifiers to verify
23 correct operation. If the CP system is found to read below protected levels,
24 corrective action is taken by troubleshooting the CP systems to identify the
25 location of the problem (e.g., electrically shorted meters, underground electrical
26 contacts with other metallic structures, electrical interference, malfunctioning
27 impressed current system, or depleted galvanic anodes). Appropriate corrective
28 action is subsequently performed to restore the CP system to satisfactory
29 protection levels.

30 This MWC relates to safety and/or reliability and/or maintenance as it
31 includes work related to mitigating the effects of corrosion on metallic gas
32 distribution pipelines. Corrosion of gas piping systems can cause leaks and
33 other potential safety hazards.

1 **MWC DN – Develop and Provide Training** – The Gas Training Curriculum
2 Development program creates new and enables significant revisions to existing
3 training materials ensuring that the Gas Operations workforce is competent,
4 safe, and qualified. The Training Curriculum program does not include the
5 general maintenance or delivery of training materials.

6 This MWC does not relate directly to safety and/or reliability and/or
7 maintenance.

8 **MWC EX –Meter Protection Program (MPP)** – Includes efforts to ensure
9 that gas meter locations that do not conform to current PG&E standards and/or
10 federal pipeline safety regulations are addressed. The program focuses on
11 two types of non-conforming meter locations: those with inadequate protection
12 from potential damage by vehicles; and those with inaccessible service or
13 shutoff valves. The work to correct these non-conforming facilities generally
14 involves one of three work activities: installing barrier posts, installing a new
15 valve or relocating the meter set.

16 This MWC relates to safety and/or reliability and/or maintenance as it
17 includes efforts to ensure that gas meter locations that do not conform to current
18 PG&E standards and/or federal pipeline safety regulations are addressed. The
19 MPP focuses on two types of non-conforming meter locations: those with
20 inadequate protection from potential damage by vehicles; and those with
21 inaccessible service or shutoff valves.

22 **MWC FG – Operate Gas Distribution System** – Includes a broad range of
23 operations which include monitoring system pressures and flows, checking
24 odorant intensity levels for leak detection, operating valves, regulator stations,
25 and changing pressure recorder charts. Additionally, this program includes
26 occasional manual operations to provide necessary capacity during peak
27 demand periods in the morning (e.g., using a Compressed Natural Gas (CNG)
28 or Liquefied Natural Gas (LNG) natural gas tanker to inject gas, manually
29 opening separation valves to redirect gas, or manually bypassing regulator
30 station equipment to flow more gas).

31 This MWC relates to safety and/or reliability and/or maintenance as it
32 includes a broad range of operations to keep the system safe, such as
33 monitoring the system pressures and flows, checking odorant intensity levels for

1 leak detection; operating valves and regulator stations, and changing pressure
2 recorder charts.

3 **MWC FH – Gas Preventive Maintenance** – Includes work to comply with
4 pipeline safety regulations that require PG&E to conduct periodic inspection and
5 maintenance on its gas distribution system. Preventive maintenance work
6 includes regulator station maintenance, maintenance on mains and services,
7 distribution valve replacement, service valve replacement, atmospheric
8 corrosion inspections, and overall gas maintenance support.

9 This MWC relates to safety and/or reliability and/or maintenance as it
10 includes work to comply with pipeline safety regulations that require PG&E to
11 conduct periodic inspection and maintenance on its gas distribution system.

12 **MWC FI – Gas Corrective Maintenance** – Includes work to repair or
13 replace damaged or failed gas facilities. In many cases, the need for such
14 restoration is identified during the preventive maintenance activities described in
15 MWC FH. Corrective maintenance includes leak repair, dig-in repair, CP
16 restoration, regulator station repair, and distribution valve repair. Below ground
17 Grade 3 leak repairs are recorded under MWC LW – Leak Abatement.

18 This MWC relates to safety and/or reliability and/or maintenance as it
19 includes work to repair or replace damaged or failed gas facilities.

20 **MWC GF – Gas Mapping** – Encompasses tracking the size, material type,
21 location, configuration, and other essential information needed to
22 identify thousands of miles of underground gas main and millions of gas
23 services. Gas Mapping updates and maintains the gas distribution system maps
24 and records.

25 This MWC relates to safety and/or reliability and/or maintenance as it
26 involves tracking the size, material type, location, configuration, and other
27 essential information needed to identify gas main and services.

28 **MWC GG – Gas Distribution Planning and Operations Engineering** –
29 Includes local gas planning engineers modeling the gas distribution system to
30 ensure a safe, reliable, and cost-effective supply of natural gas to customers and
31 to ensure that the system can accommodate future load growth. By simulating
32 changes in load demand, engineers use modeling to identify potential
33 constraints in the system to support service reliability.

1 This MWC relates to safety and/or reliability and/or maintenance as it
2 includes local gas planning engineers modeling the gas distribution system to
3 ensure a safe, reliable, and cost effective supply of natural gas to customers and
4 to ensure that the system can accommodate future load growth.

5 **MWC GM – Natural Gas Fueling Facilities Operation and Maintenance**
6 **(O&M)** – Includes the work required to maintain and operate existing
7 compressed natural gas (CNG) fueling facilities. PG&E operates Natural Gas
8 Vehicles (NGV) and has over 5,000 third-party customers vehicles that use the
9 natural gas fueling facilities. PG&E’s network of natural gas fueling stations also
10 serves as a back up to customer owned CNG fueling stations that are not
11 available due to breakdowns or maintenance.

12 This MWC relates to safety and/or reliability and/or maintenance as it
13 includes the work required to maintain and operate existing compressed natural
14 gas fueling facilities.

15 **MWC GZ – Gas Research and Development (R&D)** – Includes work in
16 targeted areas of gas distribution. The objectives of gas distribution research,
17 development and demonstration are to explore new opportunities, concepts, and
18 technologies to continue to provide safe and reliable service to customers at a
19 lower cost, where possible.

20 This MWC does not relate directly to safety and/or reliability and/or
21 maintenance.

22 **MWC HY – Gas Meter Maintenance** – The meter set is defined as the
23 facilities between the shut-off valve (i.e., service valve and inlet valve) and
24 service tee or meter outlet valve.

25 Maintenance includes:

- 26 • Corrective Maintenance work performed on meter sets greater than
27 1,000 CFH (Cubic Feet per Hour) and less than or equal to 1,000 CFH.
28 Outlet Valve greater than or equal to 2 inches in diameter and less than
29 2 inches in diameter.
- 30 • Preventive Maintenance work performed on meter sets greater than
31 1,000 CFH. Preventive maintenance work includes: Differential Pressure
32 Tests, Regulator A Inspections, Pressure Verification, Electronic Corrector
33 Maintenance, Turbine Spin Test, Delta A Turbine and Ultra-Sonic Diagnostic
34 Testing.

1 This MWC relates to safety and/or reliability and/or maintenance as it
2 includes corrective and preventative maintenance work performed on meter
3 sets.

4 **MWC JQ – Gas Distribution Integrity Management Program (DIMP) –**

5 This program is mandated by Federal regulations and includes efforts to
6 enhance gas distribution system safety by identifying risks to the gas distribution
7 system and addressing those risks. The types of work in this MWC include
8 development and improvements in the following areas: DIMP Program,
9 preventative maintenance, DIMP leak surveys, operator qualifications, training,
10 and programs including the Cross Bore Inspection Program, and Plastics
11 Program.

12 This MWC relates to safety and/or reliability and/or maintenance as it
13 includes efforts to enhance gas distribution system safety by identifying risks to
14 the gas distribution system and addressing those risks.

15 **MWC JV –Information Technology (IT) –** Includes costs for ongoing
16 maintenance, operations and repair for PG&E’s IT applications, systems, and
17 infrastructure.

18 This MWC was not presented in the 2020 GRC as related directly to safety
19 and/or reliability and/or maintenance. However, certain projects within this MWC
20 provide support for safety and/or reliability and/or maintenance projects.

21 **MWC LK – Gas Expense Work Requested by Others (WRO) – Gas**
22 **Maintenance** – Encompasses work required by tariff, third-party requests, and
23 franchise compliance, including:

- 24 • Gas main relocations and rearrangement of gas facilities initiated by
25 customers due to overbuilds (billable to the customer);
- 26 • Raise gas valve frame and covers to grade;
- 27 • Gas service cutout at property line;
- 28 • Provide temporary gas service that is not expected to last more than 1 year
29 (Rule 13) (applicant pays for installation and removal costs); and
- 30 • Complete additional work above normal level of mark and locate activities as
31 needed for third-party work. Work will normally be done at applicant’s
32 expense unless done to comply with city or county franchise agreements.

33 This MWC does not relate directly to safety and/or reliability and/or
34 maintenance.

1 **MWC OM – Operational Management** – Includes labor and
2 employee-related costs to provide supervision and management support.
3 MWC OM also includes costs incurred by the administrative staff working for the
4 Supervisors/Managers.

5 This MWC is included as a maintenance activity in accordance with Energy
6 Division’s February 12, 2019 letter to PG&E. Gas Distribution does not consider
7 MWC OM as related directly to safety and/or reliability and/or maintenance work.

8 **MWC OS – Operational Support** – Includes labor and employee-related
9 costs to provide services and support that are unrelated to supervision and
10 management. Examples include Business Finance and Sourcing departments
11 that support the LOBs.

12 This MWC does not relate directly to safety and/or reliability and/or
13 maintenance.

14 **D. MWC Descriptions – Capital**

15 **MWC 05 – Tools and Equipment** – Includes the costs of miscellaneous
16 tools and equipment. Regular expenditures are necessary to replace damaged,
17 worn out, or obsolete tools and to ensure specialized tools are available to
18 perform testing and other functions.

19 This MWC does not relate directly to safety and/or reliability and/or
20 maintenance.

21 **MWC 14 – Gas Pipeline Replacement Program (GPRP)** – Primarily
22 encompasses three gas distribution asset replacement programs: (1) the
23 GPRP; (2) Copper Service Replacement Program (CSRP); and (3) Plastic
24 Replacement Program. The GPRP targets cast iron and pre-1940 steel gas
25 mains. PG&E uses age, materials, seismic factors, and gas leaks to identify and
26 prioritize gas mains for replacement. In addition to gas main replacement, the
27 program includes related service replacement and meter relocation work. CSRP
28 was added to MWC 14 in 2006 because copper services were determined to
29 have a similar relative risk to GPRP pipe. Subsequently, plastic was added into
30 MWC 14 in 2012 because of increase in the relative risk of vintage plastic
31 material such as Aldyl-A.

32 This MWC relates to safety and/or reliability and/or maintenance as it
33 includes gas distribution pipe replacement and service replacement programs
34 for safety and reliability reasons.

1 **MWC 21 – Miscellaneous Capital** – This MWC is typically used for
2 planning purposes and accounting adjustments. For 2020, it includes Picarro
3 units purchased and miscellaneous cancelled orders.

4 This MWC does not relate directly to safety and/or reliability and/or
5 maintenance.

6 **MWC 27 – Gas Meter Protection** – Includes efforts to ensure that gas
7 meter locations that do not conform to current PG&E standards and/or federal
8 pipeline safety regulations are addressed. The program focuses on two types of
9 non-conforming meter locations: those with inadequate protection from potential
10 damage by vehicles; and those with inaccessible service or shutoff valves. The
11 work to correct these non-conforming facilities generally involves one of
12 three work activities: installing barrier posts, installing a new valve or relocating
13 the meter set.

14 This MWC relates to safety and/or reliability and/or maintenance as it
15 includes efforts to ensure that gas meter locations that do not conform to current
16 PG&E standards and/or federal pipeline safety regulations are addressed. The
17 program focuses on two types of non-conforming meter locations: those with
18 inadequate protection from potential damage by vehicles; and those with
19 inaccessible service or shutoff valves.

20 **MWC 29 – Gas Distribution Customer Connections** – Includes building
21 new gas distribution systems to provide service to new customers and the costs
22 of regulators purchased for emergency response, regulator change outs, and
23 system upgrades.

24 This MWC does not relate directly to safety and/or reliability and/or
25 maintenance.

26 **MWC 31 – NGV Station Infrastructure** – Includes keeping PG&E’s natural
27 gas fueling infrastructure safe and in compliance for PG&E’s fleet and
28 customers. This work includes: (1) CP and underground corrosion protection;
29 (2) Upgrading stations to better serve the vehicles being produced in the market
30 today; (3) Increasing the reliability of stations; (4) Security monitoring as required
31 at some public access stations; and (5) Remote monitoring of stations.

32 This MWC relates to safety and/or reliability and/or maintenance as it
33 includes capital work to keep PG&E’s natural gas fueling infrastructure safe.

1 **MWC 47 – Gas Distribution Capacity** – Includes capacity additions to
2 meet load growth by reinforcing the existing gas systems.

3 This MWC relates to safety and/or reliability and/or maintenance as it
4 includes capacity additions to meet load growth.

5 **MWC 50 – Gas Distribution Reliability** – Includes installation or
6 replacement of gas facilities to: improve system safety and reliability, replace
7 aging facilities, and maintain compliance with pipeline safety regulations.
8 Facilities replaced include mains, services, regulator stations, CP equipment,
9 electronic chart recorders and remote CP monitoring equipment. Below ground
10 Grade 3 leak repairs are recorded under MWC 3P – Leak Abatement.

11 This MWC relates to safety and/or reliability and/or maintenance as it
12 includes installation or replacement of gas facilities to improve system safety
13 and reliability, replace aging facilities, and maintain compliance with pipeline
14 safety regulations.

15 **MWC 51 – Gas Work at the Request of Others** – Includes relocating gas
16 distribution and service facilities at the request of a governmental agency or
17 other third parties (e.g., customers and developers). This work could be due to
18 road widening, street improvements, sewer improvements and other similar
19 work.

20 This MWC does not relate directly to safety and/or reliability and/or
21 maintenance.

22 **MWC 52 – Gas Distribution Emergency Response** – Includes work and
23 materials required to replace damaged or failed facilities including replacement
24 of mains and services due to gas dig-ins and external forces such as landslides
25 and earthquakes.

26 This MWC relates to safety and/or reliability and/or maintenance as it
27 includes work and materials required to replace damaged or failed facilities.

28 **MWC 74 – Install New Gas Meters** – Includes regulator replacement labor
29 to remove and install new regulators and meters and regulators for new
30 business connections and labor to install. The meter set is defined as the
31 facilities between the shut-off valve (i.e., service valve and inlet valve) and
32 service tee or meter outlet valve. Maintenance includes: (1) Compliance –
33 Scheduled Meter Change Outs (SMC) less than or equal 1,000 CFH;
34 (2) Compliance – Periodic Meter Change outs, every 10 years (PMC) greater

1 than 1,000 CFH; (3) Corrective Maintenance work with replacement of meter
2 performed on meter sets less than or equal to 1,000 CFH and greater than
3 1,000 CFH; Meter outlet valve greater than or equal to 2" diameter; (4) Meter
4 removal (retire) less than or equal to 1,000 CFH and greater than 1,000 CFH;
5 (5) New Business less than 400 CFH and 400 - 1,000 CFH; (6) Capital projects
6 (i.e., ECAT Replacement); and (7) SmartMeter™ gas module replacements.

7 This MWC relates to safety and/or reliability and/or maintenance as it
8 includes regulator replacement labor to remove and install new regulators and
9 meters.

10 **MWC 78 – Manage Buildings** – Includes capital buildings projects
11 (i.e., facility upgrades/improvements as well as new construction) for Gas
12 Operations.

13 This MWC does not relate directly to safety and/or reliability and/or
14 maintenance.

15 **MWC 2F – Build IT Applications and Infrastructure** – Includes the costs
16 to design, develop and enhance applications, systems, and infrastructure
17 technology solutions.

18 This MWC was not presented in the 2020 GRC as related directly to safety
19 and/or reliability and/or maintenance. However, certain projects within this MWC
20 provide support for safety and/or reliability and/or maintenance projects.

21 **MWC 2K – Gas Distribution Replace/Convert Customer High Pressure**
22 **Regulators (HPR)** – Includes the replacement of gas customer HPRs or the
23 reconstruction of gas distribution systems to eliminate the need for HPRs.

24 This MWC relates to safety and/or reliability and/or maintenance as it
25 includes the replacement of gas customer HPR or the reconstruction of gas
26 distribution systems to eliminate the need for HPRs.

27 **MWC 4A – Gas Distribution Control Operations Assets** – Includes costs
28 associated with the installation of Supervisory Control and Data Acquisition
29 (SCADA) devices, electronic pressure recorders (ERX), and associated field
30 equipment. MWC 4A captures costs associated with the development of
31 software tools to support the collection, retention, and presentation of data
32 related to the Control Center. Capital outlays support telecommunication radio
33 system assets to monitor and control the gas distribution network.

1 This MWC relates to safety and/or reliability and/or maintenance as it
2 includes costs to support the collection, retention, and presentation of data
3 related to the Control Center as well as support costs for telecommunication
4 radio system assets to monitor and control the gas distribution network.

1 E. Comparison by MAT for Safety, Reliability, and Maintenance Work Tables

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
1	DD	Provide Field Service	DDA	Field Service, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	0.0	308.8	308.8	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
2	DD	Provide Field Service	DDD	Pilot Relight	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	12,515.6	9,875.7	(2,639.9)	-21.1%	177,773	117,770	(60,003)	-34%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a reduction in customer demand resulting from COVID-19.
3	DD	Provide Field Service	DDE	Appliance Adjustments	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	959.2	800.7	(158.5)	-16.5%	12,947	8,218	(4,729)	-37%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a reduction in customer demand resulting from COVID-19.
4	DD	Provide Field Service	DDF	Gas Fumigation	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	2,949.4	3,086.7	137.3	4.7%	37,538	28,539	(8,999)	-24%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a reduction in customer demand resulting from COVID-19.
5	DD	Provide Field Service	DDG	Gas Leaks and Emergencies	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	17,582.6	29,424.5	11,841.9	67.4%	166,790	146,944	(19,846)	-12%	YES	YES	NO	Program expenses exceeded imputed regulatory values because of an accounting change that began recording immediate response (IR) standby time to orders directly under this MAT. In the past, these charges were allocated as unbilled overhead applied across multiple MATs.	Below variance threshold.
6	DD	Provide Field Service	DDK	Gas Start	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	5,203.0	3,794.3	(1,408.8)	-27.1%	55,581	34,317	(21,264)	-38%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a reduction in customer demand resulting from COVID-19.
7	DD	Provide Field Service	DDL	Gas Stop	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	4,362.4	2,912.0	(1,450.5)	-33.2%	97,018	47,718	(49,300)	-51%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a reduction in customer demand resulting from COVID-19.
8	DE	Leak Survey	DEA	Leak Survey	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	7,712.8	10,695.5	2,982.8	38.7%	543,301	572,955	29,654	5%	NO	NO	NO	Below variance threshold.	Below variance threshold.
9	DE	Leak Survey	DEB	Special Leak Survey	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	5,743.2	1,992.4	(3,750.8)	-65.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
10	DE	Leak Survey	DEC	Leak Downgrade, No Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	2,025.2	3,123.6	1,098.4	54.2%	6,951	9,280	2,329	34%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to the increase in Leak Survey plan from the leak survey units carried forward from 2019 to 2020. See variance explanation for MAT DEF.
11	DE	Leak Survey	DED	Leak Rerechecks	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	1,545.6	2,243.3	697.7	45.1%	21,430	43,604	22,174	103%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to: 1) a delay in SAP generating post repair rerechecks, 2) new rerechecks generated by the Can't Get In (CGI) program, 3) an increase in leak downgrade units generating additional rerechecks, 4) updated leak grading procedure that defined leak grading criteria, and 5) new controls that placed more rigorous reviews on Grade 0 leak rerechecks that required a second read.
12	DE	Leak Survey	DEE	Customer Calls	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	542.5	617.3	74.9	13.8%	3,624	3,298	(326)	-9%	NO	NO	NO	Below variance threshold.	Below variance threshold.
13	DE	Leak Survey	DEF	Picarro Leak Survey	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	6,048.0	13,143.7	7,095.6	117.3%	663,997	1,096,569	432,572	65%	NO	YES	YES	Program expenses exceeded imputed regulatory values due to anticipated efficiencies included in the 2020 GRC that did not materialize. In addition, contractor costs increased due to labor increases that were not previously forecast.	Actual units were higher than imputed units because over 240,000 compliance leak survey units were carried over from 2019 to 2020. In addition, more units were completed via Picarro technology based on the compliance leak survey plan.
14	DE	Leak Survey	DEG	Picarro Special Leak Survey	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	1.5	4.8	3.3	213.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
15	DE	Leak Survey	DEH	Gas Capacity Upgrades	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	N/A	0.0	2,568.6	2,568.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
16	DE	Leak Survey	DE#	Leak Survey Support	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	709.8	752.4	42.5	6.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
17	DF	Locate and Mark	DFA	Locate and Mark	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	41,281.2	28,943.6	(12,337.6)	-29.9%	722,584	592,990	(129,594)	-18%	YES	YES	NO	Program expenses exceeded imputed regulatory values due to an increase in staffing levels (locators and Qualified Electrical Workers) mandated by the Locate and Mark OI. Contractors were onboarded to comply with OI mandates while internal locators were hired and trained.	Below variance threshold.
18	DF	Locate and Mark	DFB	Locate and Mark, Standby	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,755.1	163.4	(1,591.7)	-90.7%	3,919	297	(3,622)	-92%	NO	NO	YES	Actual units were lower than imputed units as a result of process improvements. These improvement were 1) Gas Resource Specialists performing quality field observations to further reduce and/or eliminate standbys that are not in conflict with PG&E's critical facilities, and 2) the new Ticket Management System (Locate App) which launched in 2019 and enhanced the onsite Field Meet criteria for locators in the field. This allowed for better onsite Field Meetings to occur with excavators further reducing the need for standbys.	Below variance threshold.
19	DF	Locate and Mark	DF#	Locate and Mark, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	916.3	2,658.4	1,742.1	190.1%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
20	DG	Cathodic Protection	DGA	Cathodic Protection - Monitoring	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	2,768.7	3,764.2	995.4	36.0%	76,818	86,603	9,785	13%	NO	NO	NO	Below variance threshold.	Below variance threshold.
21	DG	Cathodic Protection	DGB	Cathodic Protection - Troubleshooting	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	4,250.6	4,898.4	647.8	15.2%	6,000	12,180	6,180	103%	NO	NO	YES	Actual troubleshooting units were higher than imputed units due to incremental finds through Cathodic Protection (MAT DGD), Isolated Steel (MAT DGE), and Unprotected Steel Main Evaluation (MAT DGF) survey work. This is a regulated workstream with compliance timelines.	Below variance threshold.
22	DG	Cathodic Protection	DGC	Cathodic Protection - Rectifier Maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	474.0	714.9	240.9	50.8%	3,953	4,179	226	6%	NO	NO	NO	Below variance threshold.	Below variance threshold.
23	DG	Cathodic Protection	DGD	Cathodic Protection - Enhanced Survey	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 7	6,267.3	4,856.8	(1,410.5)	-22.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
24	DG	Cathodic Protection	DGD	Cathodic Protection - Enhanced Survey	Release of Gas with Ignition on Distribution Facilities - Non-Cross Bore	Mitigation - Enhanced CP Survey and Unprotected Main Evaluation	Exhibit (PG&E-3), Chapter 7	6,267.3	4,856.8	(1,410.5)	-22.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25	DG	Cathodic Protection	DGE	Electrically Connected Isolated Steel Services	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 7	2,751.4	3,827.3	1,075.9	39.1%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
26	DG	Cathodic Protection	DGE	Electrically Connected Isolated Steel Services	Release of Gas with Ignition on Distribution Facilities - Non-Cross Bore	Mitigation - ECISS Program	Exhibit (PG&E-3), Chapter 7	2,751.4	3,827.3	1,075.9	39.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27	DG	Cathodic Protection	DGF	Unprotected Steel Main Evaluation	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 7	0.0	26.2	26.2	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
28	DG	Cathodic Protection	DGF	Unprotected Steel Main Evaluation	Release of Gas with Ignition on Distribution Facilities - Non-Cross Bore	Mitigation - Enhanced CP Survey and Unprotected Main Evaluation	Exhibit (PG&E-3), Chapter 7	0.0	26.2	26.2	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
29	DG	Cathodic Protection	DGG	Install Casing Test Stations	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	786.7	1,285.3	498.6	63.4%	360	17	(343)	-95%	NO	NO	YES	Actual units were lower than imputed units due to a management decision to scale back the program in 2020. This decision was influenced by permit delays, COVID-19 restrictions, and a PG&E safety shut-down for all exothermic weld operations.	Below variance threshold.

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
30	DG	Cathodic Protection	DGH	Casing Short Mitigation < 100 Feet	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	2,865.6	4,239.5	1,373.9	47.9%	83	56	(27)	-33%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to a suspension of work due to COVID-19 and construction resource constraints following resumption of work.
31	DG	Cathodic Protection	DGI	Casing Monitoring without Lead	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	6.4	143.2	136.8	2150.2%	32	361	329	1028%	NO	NO	YES	Below variance threshold.	Actual casing without leads monitoring units were higher than imputed units due to a higher than forecast casing find rate from the Enhanced Cathodic Protection Survey (MAT DGD) and delays in casing test station installation (MAT DGG).
32	DG	Cathodic Protection	DG#	Cathodic Protection, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	0.0	198.6	198.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
33	EX	Meter Protection Program	EXA	Meter Protection Program Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	0.2	0.9	0.8	466.7%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
34	EX	Meter Protection Program	EXB	Meter Protection Program Protections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	8,198.0	11,471.1	3,273.1	39.9%	9,079	16,429	7,350	81%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to targeting Abnormal Operating Conditions (AOC) remediation work in 2020. Effective bundling and execution improved unit cost, which also allowed for more units to be completed in 2020.
35	EX	Meter Protection Program	EXC	Meter Protection Program Service Valves	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	23.7	13.2	(10.5)	-44.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
36	FG	Operate Gas Distribution System	FGA	Gas Distribution Control Center Operations	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	7,689.1	7,649.9	(39.2)	-0.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
37	FG	Operate Gas Distribution System	FGB ^(a)	Manual Field Operations, Mains and Services	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	1,052.8	956.7	(96.1)	-9.1%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
38	FG	Operate Gas Distribution System	FGC ^(a)	Manual Field Operations, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	245.5	161.4	(84.1)	-34.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
39	FG	Operate Gas Distribution System	FG#	Gas Distribution Control Center Operations, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	0.0	(0.5)	(0.5)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
40	FH	Gas Preventive Maintenance	FHA	Preventative Maintenance, Gas Mains	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,200.6	1,515.7	315.1	26.2%	265	368	103	39%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to additional volume of emergent work identified in 2020.
41	FH	Gas Preventive Maintenance	FHB ^(a)	Preventative Maintenance, Gas Regulator Station	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	3,237.9	4,143.4	905.5	28.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
42	FH	Gas Preventive Maintenance	FHC ^(a)	Preventative Maintenance, Gas Farm Tap	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	254.0	102.4	(151.6)	-59.7%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
43	FH	Gas Preventive Maintenance	FHE	Preventative Maintenance, Gas Services	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	3,683.1	4,869.7	1,186.6	32.2%	2,458	2,429	(29)	-1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
44	FH	Gas Preventive Maintenance	FHG ^(a)	Preventative Maintenance, Gas Valves	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,689.6	1,613.3	(76.3)	-4.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
45	FH	Gas Preventive Maintenance	FHI	Corrective Maintenance, Gas Service Valves	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	2,237.3	5,447.4	3,210.1	143.5%	18,417	27,587	9,170	50%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to AOC tags identified through AOC inspections, the leak survey program, and work previously identified as service replacement completed under maintenance.

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation	
46	FH	Gas Preventive Maintenance	FHJ	Gas Non-Recurring Projects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	2,857.8	7,801.2	4,943.4	173.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
47	FH	Gas Preventive Maintenance	FHK	Atmospheric Corrosion Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	1,035.0	499.6	(535.3)	-51.7%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
48	FH	Gas Preventive Maintenance	FHL	Atmospheric Corrosion Main Repairs	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	245.1	544.1	299.0	122.0%	100	28	(72)	-72%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units primarily due to a find rate of spans requiring mitigation that was below the average annual span repair rate presented in the 2020 GRC.	
49	FH	Gas Preventive Maintenance	FHM	Atmospheric Corrosion Service Repairs	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	400.8	1,168.7	767.8	191.6%	550	1,845	1,295	235%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units primarily due to a find rate of steel risers requiring atmospheric corrosion mitigation that exceeded the average annual find rate presented in the 2020 GRC. The risers were primarily identified through the Electrically Connected Isolated Steel (MAT DGE) program. This is a regulated workstream, therefore, mitigation is not optional.	
50	FH	Gas Preventive Maintenance	FHN	Atmospheric Corrosion Distribution Regulator Station Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	577.7	787.5	209.9	36.3%	34	43	9	26%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to a find rate of stations requiring atmospheric corrosion mitigation that exceeded average annual station repair rate presented in the 2020 GRC. This is a regulated workstream, therefore, mitigation is not optional.	
51	FH	Gas Preventive Maintenance	FHO ^(a)	Preventative Maintenance, SCADA	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	416.0	1,062.4	646.4	155.4%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
52	FH	Gas Preventive Maintenance	FHP ^(a)	Corrective Maintenance, SCADA	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	332.1	637.8	305.7	92.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
53	FH	Gas Preventive Maintenance	FHQ	Overpressure Protection Enhancements Program	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5	3,160.9	781.3	(2,379.5)	-75.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
54	FH	Gas Preventive Maintenance	FHQ	Overpressure Protection Enhancements Program	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - Station OPP Enhancements	Exhibit (PG&E-3), Chapter 5	3,160.9	781.3	(2,379.5)	-75.3%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55	FH	Gas Preventive Maintenance	FH#	Preventative Maintenance, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,147.5	815.8	(331.7)	-28.9%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
56	FI	Gas Corrective Maintenance	FIB ^(a)	Corrective Maintenance, Gas Regulator Station	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	4,553.1	1,950.8	(2,602.3)	-57.2%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
57	FI	Gas Corrective Maintenance	FIC ^(a)	Corrective Maintenance, Gas Farm Tap	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	164.0	427.2	263.3	160.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
58	FI	Gas Corrective Maintenance	FIF ^(a)	Corrective Maintenance, Gas Main Valve	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	592.4	420.8	(171.6)	-29.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.	
59	FI	Gas Corrective Maintenance	FIG/LWG ^(b)	Main Leak Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	19,754.7	26,021.7	6,267.0	31.7%	3,059	3,211	152	5%	NO	YES	NO	Program costs exceeded imputed regulatory values because of increased unit costs and because more units were completed due to higher leak find rates. Unit costs were higher due to increases in labor, paving, permitting, and traffic control costs in addition to spoils overhead applied.	Below variance threshold.	
60	FI	Gas Corrective Maintenance	FIH	Service Leak Repair, Above Ground	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	5,712.7	4,100.6	(1,612.2)	-28.2%	25,087	9,036	(16,051)	-64%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units as a result of changes to Leak Grading Procedure TD-4110P-09 that shifted above ground riser thread gradable leaks to MAT FIS as non-gradable leaks.	

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
61	FI	Gas Corrective Maintenance	FII	Corrective Maintenance, Cathodic Protection	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	2,944.8	4,566.7	1,621.9	55.1%	1,701	2,245	544	32%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units primarily due to a higher than forecast find rate in the Enhanced Cathodic Protection Survey (MAT DGD) and Electrically Connoted Isolated Steel (MAT DGE) programs. This is a regulated workstream, therefore, mitigation is not optional.
62	FI	Gas Corrective Maintenance	FIJ	Main Dig-in Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	923.9	1,052.0	128.2	13.9%	255	252	(3)	-1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
63	FI	Gas Corrective Maintenance	FIK	Service Dig-in Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	561.7	950.0	388.3	69.1%	1,504	1,537	33	2%	NO	NO	NO	Below variance threshold.	Below variance threshold.
64	FI	Gas Corrective Maintenance	FIM	Major Event	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	0.0	493.7	493.7	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
65	FI	Gas Corrective Maintenance	FIO	Encroachment Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	595.9	574.9	(21.0)	-3.5%	62	60	(2)	-3%	NO	NO	NO	Below variance threshold.	Below variance threshold.
66	FI	Gas Corrective Maintenance	FIP/LWH ^(b)	Service Leak Repair, Below Ground	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	13,936.3	22,731.1	8,794.8	63.1%	5,419	6,092	673	12%	NO	YES	NO	Program costs exceeded imputed regulatory values because of increased unit costs and more units were completed due to higher leak find rates. Unit costs were higher due to increases in labor, paving, permitting, and traffic control costs in addition to spoils overhead applied.	Below variance threshold.
67	FI	Gas Corrective Maintenance	FIQ	Atmospheric Corrosion (AC) Meter Inspection	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	2,063.1	6,885.7	4,822.6	233.8%	200,000	423,954	223,954	112%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to: 1) leak survey work was carried forward from 2019 into 2020, and 2) more AC Can't Get line (CGI) units completed than planned, both of which resulted in over 215,000 additional inspections being completed in 2020.
68	FI	Gas Corrective Maintenance	FIR	Tee-Cap Replacement Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	2,070.5	1,534.5	(536.0)	-25.9%	1,165	1,195	30	3%	NO	NO	NO	Below variance threshold.	Below variance threshold.
69	FI	Gas Corrective Maintenance	FIS	Leak Survey Meter Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	5,100.4	6,952.0	1,851.6	36.3%	64,978	64,166	(812)	-1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
70	FI	Gas Corrective Maintenance	FI#	Corrective Maintenance, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	1,277.9	3,643.0	2,365.1	185.1%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
71	GF	Gas Mapping	GFO	Mapping Support	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 11	4,268.9	3,393.9	(874.9)	-20.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
72	GG	Gas Distribution Planning and Operations Engineering	GGA	Gas System Planning	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	4,665.7	5,543.9	878.2	18.8%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
73	GG	Gas Distribution Planning and Operations Engineering	GG#	Gas Distribution Portfolio Management and Engineering	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	1,598.9	2,302.4	703.5	44.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
74	GM	Natural Gas Fueling Facilities O&M	GMC	Gas Distribution Compressed Natural Gas Station O&M	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 5 (MWC Level)	3,763.9	3,997.7	233.7	6.2%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
75	GM	Natural Gas Fueling Facilities O&M	GM#	Gas Distribution Compressed Natural Gas Station O&M	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 5 (MWC Level)	10.3	(0.5)	(10.8)	-105.3%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 2-3
GAS DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
76	HY	Gas Meter Maintenance	HYI	Meter Set Atmospheric Corrosion Remediation	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,828.4	2,182.2	353.8	19.3%	40,000	34,069	(5,931)	-15%	NO	NO	NO	Below variance threshold.	Below variance threshold.
77	HY	Gas Meter Maintenance	HY#	Meter Set Maintenance, Other	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	0.0	(0.3)	(0.3)	100.0%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
78	JQ	Gas Distribution Integrity Management Program	JQA	DIMP Leak Survey	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	668.5	889.5	221.0	33.1%	54,500	32,388	(22,112)	-41%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units due to a shift in base workplan units of measure. In 2020, the base workplan shifted from actual services to main-only surveys (miles), resulting in lower units as compared to the 2020 GRC.
79	JQ	Gas Distribution Integrity Management Program	JQC	Dig-In Reduction Team	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	2,479.6	3,371.0	891.4	35.9%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
80	JQ	Gas Distribution Integrity Management Program	JQD	DIMP Emergent Work	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 4	2,976.4	2,940.6	(35.8)	-1.2%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
81	JQ	Gas Distribution Integrity Management Program	JQD	DIMP Emergent Work	Release of Gas with Ignition on Distribution Facilities - Non-Cross Bore	Mitigation - Curb Valve Replacements	Exhibit (PG&E-3), Chapter 4	1,477.0	253.6	(1,223.4)	-82.8%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
82	JQ	Gas Distribution Integrity Management Program	JQE	Plastic Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	312.1	147.1	(165.0)	-52.9%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
83	JQ	Gas Distribution Integrity Management Program	JQG	Fitting Mitigation Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	994.7	690.7	(303.9)	-30.6%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
84	JQ	Gas Distribution Integrity Management Program	JQK	Cross Bore Program	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 4	29,878.0	31,752.1	1,874.1	6.3%	36,667	16,675	(19,992)	-55%	NO	NO	YES	Below variance threshold.	Imputed units are based on a ratio between Unable to Access (UTA) units and non-UTA units. For 2020, PG&E completed 16,675 cross-bore inspection units of which 4,113 were UTAs and 12,562 were non-UTAs. Using the 2020 GRC settlement formula, if 4,113 UTAs are performed, the imputed number of non-UTA units is 32,554. Thus PG&E performed 19,992 fewer non-UTA units than imputed. Drivers for this are: 1) Work performed in San Francisco was more complex and took longer to complete due to infrastructure, pipe condition, permitting requirements, and 2) Targeted higher risk work in San Francisco before addressing non-UTAs in other areas.
85	JQ	Gas Distribution Integrity Management Program	JQK	Cross Bore Program	Release of Gas with Ignition on Distribution Facilities - Cross Bore	Mitigation - Cross-Bore Program	Exhibit (PG&E-3), Chapter 4	29,878.0	31,752.1	1,874.1	6.3%	36,667	16,675	(19,992)	-55%	N/A	N/A	N/A	N/A	N/A
86	JQ	Gas Distribution Integrity Management Program	JQL	DIMP Program Management	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	4,233.7	4,301.2	67.5	1.6%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
87	OM	Operational Management	OM#	Operational Management	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 2	17,023.5	14,363.0	(2,660.6)	-15.6%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.

(a) The forecast for this MAT was non-utilized in the 2020 GRC, and therefore, PG&E does not have imputed adopted units. A count of the operations completed is captured in SAP, however, the operations do not equate to units because they encompass a variety of different O&M activities. Therefore, this information is not included in this table.

(b) Includes below ground grade 3 leak repairs recorded under Leak Abatement MWC LW. In 2020, approximately \$109.8 under MWC LW will be realigned to MWC FI. The correction will be captured as part of 2021 recorded data. In addition, 14 units recorded under MWC LW will be realigned to MWC FI.

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
1	14	Gas Pipeline Replacement Program	14A	Gas Pipeline Replacement Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	123,086.5	113,384.6	(9,701.9)	-7.9%	182,456	128,727	(53,729)	-29%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units due to reprioritization of work and work reduced due to emergent funding mainly needed for the Copper Service Program and some emergent fusion failure work in 2020. Additionally, due to COVID-19, there were impacts to work being shut down for workforce safety.
2	14	Gas Pipeline Replacement Program	14B	Copper Service Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	0.0	38,805.7	38,805.7	100.0%	0	1,183	1,183	100%	YES	YES	YES	Program expenditures exceeded imputed regulatory values because there was no forecast provided in the 2020 GRC for MAT 14B. The Copper Services Program was assumed to be complete in 2019. Through a records review post 2020 GRC filling, additional Copper Services were discovered that required replacement. Reprioritization of other programs was required to fund this work.	Actual units were higher than imputed units because there was no forecast provided in the 2020 GRC for MAT 14B. The Copper Services Program was assumed to be complete in 2019. Through a records review post 2020 GRC filling, additional Copper Services were discovered that required replacement.
3	14	Gas Pipeline Replacement Program	14D	Plastic Pipe Replacement Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	330,291.6	268,269.6	(62,022.0)	-18.8%	607,201	461,685	(145,516)	-24%	YES	NO	YES	Program expenditures were below imputed regulatory values due to the following programmatic impacts in 2020: 1) delay related to developing resource strategy in order to ramp up replacement in future years to meet the 2020 GRC commitment, 2) partial funding shift to emergent Copper Services work, and 3) COVID-19 impact which caused work completed to be less than planned. Expenditure shifts were partially offset by higher unit costs than planned.	Actual units were below imputed units due to the following programmatic impacts in 2020: 1) delay related to developing resource strategy in order to ramp up replacement in future years to meet the 2020 GRC commitment, 2) partial funding shift to emergent Copper Services work, and 3) COVID-19 which impacted projects to carry forward into 2021.
4	27	Gas Meter Protection	27A	Meter Protection-Capital	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	21,603.0	1,818.5	(19,784.5)	-91.6%	759	66	(693)	-91%	NO	YES	YES	Program expenditures were below imputed regulatory values because less units were performed based on a lower conversion rate from the expense Meter Protection MAT EXB materializing.	Actual units were below imputed units due to a lower conversion rate from the expense Meter Protection MAT EXB materializing.
5	2K	Gas Distribution Replace/Convert Customer HPRs	2KA	Customer HPR Main	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	22,780.5	22,780.5	100.0%	0	85	85	100%	YES	YES	YES	See MWC level explanation presented in 2K#.	See MWC level explanation presented in 2K#.
6	2K	Gas Distribution Replace/Convert Customer HPRs	2KA	Customer HPR Main	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - HPR Replacement	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	22,780.5	22,780.5	100.0%	0	85	85	100%	N/A	N/A	N/A	N/A	N/A
7	2K	Gas Distribution Replace/Convert Customer HPRs	2KB	Customer HPR Station Conversion to District Regulator Station	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	1,462.1	1,462.1	100.0%	0	5	5	100%	NO	NO	YES	Below variance threshold.	See MWC level explanation presented in 2K#.
8	2K	Gas Distribution Replace/Convert Customer HPRs	2KB	Customer HPR Station Conversion to District Regulator Station	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - HPR Replacement	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	1,462.1	1,462.1	100%	0	5	5	100%	N/A	N/A	N/A	N/A	N/A
9	2K	Gas Distribution Replace/Convert Customer HPRs	2KC	Customer HPR Replacement	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	22,806.9	22,806.9	100.0%	0	138	138	100%	YES	YES	YES	See MWC level explanation presented in 2K#.	See MWC level explanation presented in 2K#.
10	2K	Gas Distribution Replace/Convert Customer HPRs	2KC	Customer HPR Replacement	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - HPR Replacement	Exhibit (PG&E-3), Chapter 5 (MWC Level)	0.0	22,806.9	22,806.9	100%	0	138	138	100%	N/A	N/A	N/A	N/A	N/A

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
11	2K	Gas Distribution Replace/Convert Customer HPRs	2K#	Gas Distribution Replace/Convert Customer High Pressure Regulators (HPR)	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5 (MWC Level)	58,998.1	0.0	(58,998.1)	-100.0%	336	228	(108)	-32%	YES	YES	YES	The 2020 actual capital expenditure total for the HPR Station Program in MWC 2K is \$47,049.5. The High Pressure Regulator Station Program expenditures were below imputed regulatory values due to: 1) construction delays caused by COVID-19, such as readiness activities that required field job walks, and 2) several HPR projects being placed on hold in order to review the larger gas system and allow PG&E to move forward with the best work for the system (for example: downrating a transmission line and transferring HPR customers to distribution rather than rebuilding an HPR).	The total 2020 actual units for the HPR Station Program in MWC 2K is 228. The High Pressure Regulator Station Program actual units were below imputed units due to: 1) construction delays caused by COVID-19, such as readiness activities that required field job walks, and 2) several HPR projects being placed on hold in order to review the larger gas system and allow PG&E to move forward with the best work for the system (for example: downrating a transmission line and transferring HPR customers to distribution rather than rebuilding a HPR).
12	2K	Gas Distribution Replace/Convert Customer HPRs	2K#	Gas Distribution Replace/Convert Customer High Pressure Regulators (HPR)	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - HPR Replacement	Exhibit (PG&E-3), Chapter 5 (MWC Level)	58,998.1	0.0	(58,998.1)	-100%	336	228	(108)	-32%	N/A	N/A	N/A	N/A	N/A
13	31	Natural Gas Vehicles (NGV) Station Infrastructure	31A	CNG Stations	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 5 (MWC Level)	4,064.7	4,698.2	633.5	15.6%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
14	47	Gas Distribution Capacity	47B	Gas Capacity, Mains	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	30,716.1	31,397.8	681.7	2.2%	49,089	45,918	(3,171)	-6%	NO	NO	NO	Below variance threshold.	Below variance threshold.
15	47	Gas Distribution Capacity	47C	Gas Capacity, Regulator Station	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	7,409.3	3,627.0	(3,782.4)	-51.0%	6	3	(3)	-50%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units due to not enough new load to necessitate a change in regulation.
16	47	Gas Distribution Capacity	47D	Gas Capacity, Replace Regulator Station Component	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	482.6	364.9	(117.7)	-24.4%	10	7	(3)	-30%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units due to not enough new load to necessitate a change in regulation.
17	47	Gas Distribution Capacity	47F	Gas Capacity, Other Enhancements	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 9	286.4	3.9	(282.5)	-98.6%	0	0	0	0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
18	4A	Gas Distribution Control Operations Assets	4AA	Reg Station Monitor and Control	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	0.0	(337.3)	(337.3)	100.0%	0	0	0	0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
19	4A	Gas Distribution Control Operations Assets	4AA	Regulator Station Monitor and Control	Measurement and Control Failure - Release of Gas with Ignition Downstream ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	0.0	(337.3)	(337.3)	100%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
20	4A	Gas Distribution Control Operations Assets	4AA	Regulator Station Monitor and Control	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	0.0	(337.3)	(337.3)	100%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
21	4A	Gas Distribution Control Operations Assets	4AB	Regulator Station Monitoring	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	5,489.0	44.4	(5,444.7)	-99.2%	0	0	0	0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
22	4A	Gas Distribution Control Operations Assets	4AB	Regulator Station Monitoring	Measurement and Control Failure - Release of Gas with Ignition Downstream ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	5,489.0	44.4	(5,444.7)	-99.2%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
23	4A	Gas Distribution Control Operations Assets	4AB	Regulator Station Monitoring	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	5,489.0	44.4	(5,444.7)	-99.2%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
24	4A	Gas Distribution Control Operations Assets	4AC	Main Monitor	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	688.1	(0.5)	(688.6)	-100.1%	0	0	0	0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
25	4A	Gas Distribution Control Operations Assets	4AC	Main Monitor	Measurement and Control Failure - Release of Gas with Ignition Downstream ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	688.1	(0.5)	(688.6)	-100%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
26	4A	Gas Distribution Control Operations Assets	4AC	Main Monitor	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	688.1	(0.5)	(688.6)	-100%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
27	4A	Gas Distribution Control Operations Assets	4AF	Install ERX Pressure Monitoring Device	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	829.5	1,203.6	374.1	45.1%	28	31	3	11%	NO	NO	NO	Below variance threshold.	Below variance threshold.
28	4A	Gas Distribution Control Operations Assets	4AF	Install ERX Pressure Monitoring Device	Measurement and Control Failure - Release of Gas with Ignition Downstream ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	829.5	1,203.6	374.1	45.1%	28	31	3	11%	N/A	N/A	N/A	N/A	N/A
29	4A	Gas Distribution Control Operations Assets	4AF	Install ERX Pressure Monitoring Device	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	829.5	1,203.6	374.1	45.1%	28	31	3	11%	N/A	N/A	N/A	N/A	N/A
30	4A	Gas Distribution Control Operations Assets	4AK	Reg Stat Mntn Sngle No Flow-3	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	6,396.6	899.8	(5,496.8)	-85.9%	0	0	0	0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
31	4A	Gas Distribution Control Operations Assets	4AK	Reg Stat Mntn Sngle No Flow-3	Measurement and Control Failure - Release of Gas with Ignition Downstream ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	6,396.6	899.8	(5,496.8)	-85.9%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
32	4A	Gas Distribution Control Operations Assets	4AK	Reg Stat Mntn Sngle No Flow-3	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility ^(a)	SCADA Visibility-Distribution ^(a)	Exhibit (PG&E-3), Chapter 9	6,396.6	899.8	(5,496.8)	-85.9%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
33	4A	Gas Distribution Control Operations Assets	4AL	Reg Stat Mntn Dual Flow-3	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	14,890.7	(6.4)	(14,897.0)	-100.0%	0	0	0	0%	NO	YES	NO	Program expenditures were below imputed regulatory values because the 2020 GRC presented the recorded and forecast costs formerly shown under 10 separate MATs (4AA, 4AB, 4AC, 4AE, 4AH, 4AI, 4AJ, 4AK, 4AL, and 4AM) under a single MAT 4AM. Additionally, there was order cleanup performed in 2020. See the variance explanation in MAT 4AM below.	Below variance threshold.

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
34	4A	Gas Distribution Control Operations Assets	4AL	Reg Stat Mntr Dual Flow-3	Measurement and Control Failure - Release of Gas with Ignition Downstream (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	14,890.7	(6.4)	(14,897.0)	-100.0%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
35	4A	Gas Distribution Control Operations Assets	4AL	Reg Stat Mntr Dual Flow-3	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	14,890.7	(6.4)	(14,897.0)	-100.0%	0	0	0	0%	N/A	N/A	N/A	N/A	N/A
36	4A	Gas Distribution Control Operations Assets	4AM	Install RTU Pressure Monitoring Device	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	916.6	26,018.1	25,101.5	2738.6%	122	95	(27)	-22%	YES	YES	YES	The 2020 GRC presented the recorded and forecast costs formerly shown under 10 separate MATs (4AA, 4AB, 4AC, 4AE, 4AH, 4AI, 4AJ, 4AK, 4AL, and 4AM) under a single MAT 4AM. The consolidated imputed adopted amount for these MATs is \$28,831.0 as compared to the total 2020 actuals of \$26,618.1. The difference of which is below the variance threshold.	Actual units were below imputed units because units were reduced in 2020 to accommodate production losses in Q1 and Q2 due to work being stopped until COVID-19 protocols were in place to work safely. It was not feasible to make up the lost units in 2020.
37	4A	Gas Distribution Control Operations Assets	4AM	Install RTU Pressure Monitoring Device	Measurement and Control Failure - Release of Gas with Ignition Downstream (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	916.6	26,018.1	25,101.5	2738.6%	122	95	(27)	-22%	N/A	N/A	N/A	N/A	N/A
38	4A	Gas Distribution Control Operations Assets	4AM	Install RTU Pressure Monitoring Device	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	916.6	26,018.1	25,101.5	2738.6%	122	95	(27)	-22%	N/A	N/A	N/A	N/A	N/A
39	4A	Gas Distribution Control Operations Assets	4A#	SCADA Support	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 9	493.2	(7.1)	(500.3)	-101.4%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
40	4A	Gas Distribution Control Operations Assets	4A#	SCADA Support	Measurement and Control Failure - Release of Gas with Ignition Downstream (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	493.2	(7.1)	(500.3)	-101.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	4A	Gas Distribution Control Operations Assets	4A#	SCADA Support	Measurement and Control Failure - Release of Gas with Ignition at M&C Facility (a)	SCADA Visibility-Distribution (a)	Exhibit (PG&E-3), Chapter 9	493.2	(7.1)	(500.3)	-101.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42	50	Gas Distribution Reliability	50A	Reliability Main Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	46,254.3	66,945.1	20,690.9	44.7%	78,195	101,459	23,264	30%	YES	YES	YES	Program expenditures exceeded imputed regulatory values primarily due to higher unit costs for projects in more densely populated areas and partially driven by a higher volume completion.	Actual units were higher than imputed units primarily due to emergent projects in 2020.
43	50	Gas Distribution Reliability	50B	Reliability Service Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	9,755.3	10,967.7	1,212.4	12.4%	494	431	(63)	-13%	NO	NO	NO	Below variance threshold.	Below variance threshold.
44	50	Gas Distribution Reliability	50C	Gas Regulator Station Rebuilds	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 5	40,749.7	54,505.6	13,755.8	33.8%	33	22	(11)	-33%	NO	YES	YES	Program expenditures exceeded imputed regulatory values due to COVID-19 and wildfires resulting in excessive shoring and other rental costs. In addition, the adopted imputed unit cost was lower than the 5 year historical average and does not reflect increase in unit costs attributable to factors such as design changes, station location, construction constraints and local cities requirements.	Actual units were below imputed units due to COVID-19 shutdown related delays and wildfires. Many projects lost either resources or a sufficient window of time to allow work to be executed prior to winter gas constraints which resulted in executing fewer than anticipated units. In addition, PG&E's review of overall gas system needs resulted in opportunities for deactivating some stations instead of rebuilding which resulted in some unit reductions.

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
45	50	Gas Distribution Reliability	50D/50Q ^(b)	CP Systems	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	9,633.3	10,000.9	367.6	3.8%	72	129	57	79%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units because the 2020 GRC only forecast capital casing mitigation in MAT 50D and did not anticipate RMU replacements, capital atmospheric corrosion mitigations, or rectifier replacements. The 2020 actual units consist of 61 rectifier replacements, 6 atmospheric corrosion mitigations of spans, 12 RMU replacements, and 50 casing mitigations.
46	50	Gas Distribution Reliability	50E	Reliability Gas Valve Replacement	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 4	13,382.0	10,295.3	(3,086.7)	-23.1%	197	184	(13)	-7%	NO	NO	NO	Below variance threshold.	Below variance threshold.
47	50	Gas Distribution Reliability	50E	Reliability Gas Valve Replacement	Release of Gas with Ignition on Distribution Facilities - Non-Cross Bore	Mitigation - New Valve Installation	Exhibit (PG&E-3), Chapter 4	6,777.0	6,369.6	(407.4)	-6.0%	100	112	112	12%	N/A	N/A	N/A	N/A	N/A
48	50	Gas Distribution Reliability	50F	Reliability Gas Other Equipment Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	951.0	404.1	(546.9)	-57.5%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
49	50	Gas Distribution Reliability	50G/3PB ^(c)	Leak Management - Simple Service Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	24,450.8	14,130.6	(10,320.2)	-42.2%	1,569	973	(596)	-38%	NO	YES	YES	Program expenditures were below imputed regulatory values because less actual emergent service replacements materialized than expected. The forecast was based on an average conversion rate from a below ground leak to a full service replacement. In most instances, it is not known if the service will be replaced until the leak is exposed and the source is determine to be on the service.	Actual units were below imputed units because less actual emergent service replacements materialized than expected. The forecast was based on an average conversion rate from a below ground leak to a full service replacement. In most instances, it is not known if the service will be replaced until the leak is exposed and the source is determined to be on the service.
50	50	Gas Distribution Reliability	50H	Reliability, Cut-Off Idle Gas Service	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	4,825.5	6,546.0	1,720.5	35.7%	566	604	38	7%	NO	NO	NO	Below variance threshold.	Below variance threshold.
51	50	Gas Distribution Reliability	50I	Reliability Deactivation Only, Main, Regulator, Valves	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	11,950.6	5,233.3	(6,717.3)	-56.2%	N/A	N/A	N/A	N/A	NO	NO	NO	Below variance threshold.	Below variance threshold.
52	50	Gas Distribution Reliability	50J	Encroachment Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 4	18,813.7	6,773.4	(12,040.3)	-64.0%	739	312	(427)	-58%	NO	YES	YES	Program expenditures were lower than imputed regulatory due to fewer encroachments (overbuilds) and mobile home park services identified than forecast.	Actual units were lower than imputed units due to fewer encroachments (overbuilds) and mobile home park services identified than forecast.
53	50	Gas Distribution Reliability	50K	Emergent Leaking Main Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	6,642.1	3,329.8	(3,312.4)	-49.9%	11,289	2,709	(8,580)	-76%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to less actual emergent main replacements materializing than what was forecast. MAT 50K is leaking main replacement greater than 100 feet. The units are captured in 1 foot increments, therefore, on an annual basis the total units captured depend on the size of the project and the total footage replaced. As projects are identified, they are reviewed by engineering and DIMP to review current main replacement projects and a determination is made on approving the projects.
54	50	Gas Distribution Reliability	50L	Gas Regulator Stations Component Rebuilds	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 5	11,977.2	10,024.0	(1,953.1)	-16.3%	148	136	(12)	-8%	NO	NO	NO	Below variance threshold.	Below variance threshold.
55	50	Gas Distribution Reliability	50M/3PC ^(c)	Leak Management - Complex Service Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	6,741.2	417.4	(6,323.8)	-93.8%	427	28	(399)	-93%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units because less actual emergent service replacements materialized than expected. The forecast was based on an average conversion rate from a below ground leak to a full service replacement. In most instances, it is not known if the service will be replaced until the leak is exposed and the source is determined to be on the service.

**TABLE 2-4
GAS DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
56	50	Gas Distribution Reliability	50N	Overpressure Protection Enhancements Program	SRM Total	SRM Total	Exhibit (PG&E-3), Chapter 5	13,652.3	11,503.3	(2,149.0)	-15.7%	197	116	(81)	-41%	NO	NO	YES	Below variance threshold.	Actual units were below imputed units due to COVID-19 shutdown related delays. Q1 and Q2 unit production was stopped until protocols were put in place to work safely and it was not feasible to catch up on the missed units before the end of the year.
57	50	Gas Distribution Reliability	50N	Overpressure Protection Enhancements Program	Measurement and Control Failure - Release of Gas with Ignition Downstream	Mitigation - Station OPP Enhancements	Exhibit (PG&E-3), Chapter 5	13,652.3	11,503.3	(2,149.0)	(0.2)	197.0	116	(81.0)	(0.4)	N/A	N/A	N/A	N/A	N/A
58	50	Gas Distribution Reliability	50P	Cathodic Protection System - New/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 7	8,708.5	19,117.0	10,408.5	119.5%	115	75	(40)	-35%	NO	YES	YES	Program expenditures exceeded imputed regulatory values due to a higher unit cost than forecast in the 2020 GRC. PG&E continues to experience increased costs associated with the conversion of this workstream to contractors.	Actual units were below imputed units to higher costs per unit. Additionally, production for certain projects had to be halted which prevented completion based on renewing permits.
59	52	Gas Distribution Emergency Response	52B	Emergency Response, Gas Dig-Ins, Services	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	124.3	681.4	557.2	448.3%	203	162	(41)	-20%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to less instances of dig-ins, outside forces, or third party damage that required replacement or deactivation of services instead of repair than anticipated.
60	52	Gas Distribution Emergency Response	52C	Emergency Response, Gas Dig-Ins, Mains	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 8	756.4	917.8	161.4	21.3%	988	1,991	1,003	102%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to more instances of dig-ins, outside forces, or third party damage that required replacement or deactivation of mains instead of repair than anticipated.
61	74	Install New Gas Meters	74A	Gas Regulator Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-3), Chapter 6	1,940.6	2,268.5	327.9	16.9%	6,298	6,236	(62)	-1%	NO	NO	NO	Below variance threshold.	Below variance threshold.

(a) PG&E does not allocate the costs of the SCADA mitigations among the Measurement and Control risks they support because the costs cannot be allocated in a meaningful way. To monitor and operate the gas system and mitigate potentially abnormal conditions, Gas Control Center (GCC) personnel must be able to view pressure and flow data from key locations within the gas system. Typically, these locations are at regulator stations, where supply enters the downstream and pressure is highest, and at the historic or modeled points of lowest pressure. Due to their importance in operating the system, regulator stations may have multiple SCADA devices, one immediately upstream of, downstream of, and inside the station. SCADA devices provide the required visibility to GCC personnel.

(b) The information presented in the MAT 50D row also includes 2020 recorded costs and units from the following workstreams: atmospheric coating, rectifier replacements, RMU installations, casing mitigations, anode replacements, and distributed anode ground beds. PG&E created MAT 50Q in 2020 to record costs associated with casing mitigations. Some 2020 casing mitigation costs were recorded to 50Q but are presented along with 50D to match the 2020 GRC.

(c) Includes below ground grade 3 leak repairs recorded under Leak Abatement MWC 3P.

1 **F. MAT Descriptions for Safety, Reliability, and Maintenance Work – Expense**

2 For descriptions of how the following Gas Distribution expense programs
3 relate to safety, reliability, or maintenance, please see the MAT descriptions
4 which explain the type of work associated with each MAT below.

5 **MAT DDA –Field Service, Other** – Other Support costs for Field Services.
6 This is a non-unitized MAT.

7 This MAT relates to safety and/or reliability and/or maintenance as it
8 involves other support costs for MWC DD Provide Field Services.

9 **MAT DDD – Pilot Relight** – Seasonal and other gas pilot relight activities at
10 customer’s request. Does not include: (1) Relight for Gas Pipeline
11 Replacement Program; (2) “Off by crew” relights; and (3) Service restoration
12 following a major gas event. Unit of measure is number of service tickets.

13 This program relates to safety and/or reliability and/or maintenance as it
14 involves seasonal and other gas pilot relight activities at a customer’s request.

15 **MAT DDE – Appliance Adjustments** – Includes input, primary air, cleaning
16 burner or pilot, safety checks and energy cost inquiries. Unit of measure is
17 number of service tickets.

18 This program relates to safety and/or reliability and/or maintenance as it
19 includes input, primary air, cleaning burner or pilot, safety checks and energy
20 cost inquiries.

21 **MAT DDF – Gas Fumigation** – Gas starts/stops to facilitate fumigation work
22 at customer premise. Unit of measure is number of service tickets.

23 This program relates to safety and/or reliability and/or maintenance as it
24 involves gas starts/stops to facilitate fumigation work at a customer premise.

25 **MAT DDG – Gas Leaks and Emergencies** – Responding to
26 customer-reported gas emergencies, includes high/low pressure, leaks, fires,
27 explosions, carbon monoxide investigations, etc. on the customer’s side of the
28 gas meter. Includes flame pack call-out initiated by Gas Field Service where no
29 leak is found on the distribution service or main. Does not include: (1) Leak
30 Survey generated Non-hazardous leak repairs at meter; (2) Leak Survey
31 initiated Hazardous gas leak repair at the meter set; (3) Gas dig in response or
32 stand-by, company or non-company equipment; (4) Repair or replacement of
33 gas valve; (5) Replacement of gas regulators; (6) Meter replacement; and

1 (7) Leaks on distribution main or service. Unit of measure is number of service
2 tickets.

3 This program relates to safety and/or reliability and/or maintenance as it
4 involves responding to customer reported gas emergencies, including high/low
5 pressure, leaks, fires, explosions, carbon monoxide investigations, etc. on the
6 customer's side of the gas meter.

7 **MAT DDK – Gas Start** – Turn-on (start) gas service at customer's request
8 using routine change of account process. Requires site visit and manual
9 operation. Does not include: (1) Company-generated field credit activity; and
10 (2) New Business generated customer connects. Unit of measure is number of
11 service tickets.

12 This program relates to safety and/or reliability and/or maintenance as it
13 involves turning-on (starting) gas service at customer's request.

14 **MAT DDL – Gas Stop** – Turn-off (stop) gas service at customer's request
15 using routine change of account process. Requires site visit and manual
16 operation. Does not include: (1) Company-generated field credit activity; and
17 (2) Gas disconnect and removal for obsolete facilities. Unit of measure is
18 number of service tickets.

19 This program relates to safety and/or reliability and/or maintenance as it
20 involves turning-off (stopping) gas service at customer's request.

21 **MAT DEA – Leak Survey** – Perform compliance foot and mobile surveys of
22 distribution mains and services only. Includes cost of equipment calibration,
23 e.g., flame pack units. Also includes Atmospheric Corrosion (AC) Inspections of
24 exposed mains, exposed services, service risers, and meter sets being
25 conducted in the course of the leak survey. Does not include Grade 1 Leak
26 Standby unless the surveyor is actively helping with the repair (i.e., bar-hole
27 pinpointing, digging etc.). Unit of measure is services surveyed.

28 This program relates to safety and/or reliability and/or maintenance as it
29 involves performing compliance foot and mobile gas leak surveys of distribution
30 mains and services. It also includes AC Inspections of exposed mains, exposed
31 services, service risers, and meter sets being conducted in the course of the
32 leak survey.

33 **MAT DEB – Special Leak Survey** – Perform special (non-compliance) foot
34 and mobile leak survey of distribution mains and services, by special request

1 (city paving, customer callout, emergencies, engineering, and risk mitigation).
2 Includes calibration of the instruments associated to this work. It also includes
3 calibration of the instruments associated to this work. Does not include costs to
4 investigate leaks found at or downstream of the service valve. This is a
5 non-unitized program.

6 This program relates to safety and/or reliability and/or maintenance as it
7 involves special (non-compliance) foot and mobile leak survey of distribution
8 mains and services, by special request (city paving, customer callout,
9 emergencies, engineering, and risk mitigation). It also includes calibration of the
10 instruments associated to this work.

11 **MAT DEC – Leak Downgrade, No Repair** – Includes instances where a
12 repairable leak (Grade 1, 2, or 3)² is downgraded to a non-hazardous leak
13 (Grade 3) that does not require repair, the leak is not found (Grade 0) or leak is
14 due to non-PG&E gas. Unit of measure is services surveyed.

15 This program relates to safety and/or reliability and/or maintenance as it
16 includes instances where a repairable leaks (Grade 1, 2 ,or 3) are downgraded
17 to a non-hazardous leak (Grade 3) that do not require repair, instances where
18 the leak is not found (Grade 0) or the leak is due to non-PG&E gas.

19 **MAT DED – Leak Rechecks** – Includes routine above and below ground
20 Grade 3 and 2 leak rechecks, follow-up Grade 0 rechecks, and/or post-repair
21 rechecks. Unit of measure is number of rechecks performed.

22 This program relates to safety and/or reliability and/or maintenance as it
23 includes routine above and below ground Grade 3 and 2 leak rechecks,
24 follow-up Grade 0 rechecks, and/or post-repair rechecks.

25 **MAT DEE – Customer Calls** – Survey/Investigation of leaks found on the
26 distribution system where investigation is initiated by Customer Odor Complaint.
27 Does not include: (1) Leak repair (pinpointing, digging, etc.), (2) Distribution
28 assets, (3) Investigation of customer odor complaint where leak is found on the

2 Grade 1 leaks (also referred to as “hazardous” leaks) represent existing or probable hazards to persons or property and require immediate repair or continuous action until conditions are no longer hazardous. Grade 2 leaks are non-hazardous to persons or property at the time of detection, but still require a scheduled repair because they present probable future hazards. Grade 3 leaks are non-hazardous at the time of detection and can reasonably be expected to remain non-hazardous.

1 customer side of the service valve (4) Leak repair (no meter exchange/rebuild).
2 Unit of measure is number of customer calls.

3 This program relates to safety and/or reliability and/or maintenance as it
4 involves survey and/or investigation of leaks found on the distribution system
5 where the investigation is initiated by a customer odor complaint.

6 **MAT DEF – Picarro Leak Survey** – Includes: (1) Use of Picarro Surveyor
7 to perform compliance leak survey (drive) of distribution mains and services only
8 (2) Perform foot survey of leak indication search areas (LISA) and Gap Survey
9 (foot survey performed for service & mains not in the field of view of Picarro
10 surveyor); and (3) Field of View Survey (five feet from building survey sweep).
11 Does not include: If the surveyor is actively helping with the repair (i.e., bar-hole
12 pinpointing, digging etc.). Unit of measure is services surveyed.

13 This program relates to safety and/or reliability and/or maintenance as it
14 includes: (1) Use of Picarro Surveyor to perform compliance leak survey (drive)
15 of distribution mains and services only (2) Perform foot survey of LISA and Gap
16 Survey (foot survey performed for service & mains not in the field of view of
17 Picarro surveyor) and (3) Field of View Survey (five feet from building survey
18 sweep).

19 **MAT DEG – Picarro Special Survey** – Includes: (1) Use of Picarro
20 Surveyor to perform special (non-compliance) leak survey of distribution mains
21 and services, by special request (city paving, customer callout, emergencies);
22 (2) Foot survey of LISA and Gap Survey (foot survey performed for service and
23 mains not in the field of view of Picarro surveyor); and (3) Calibration of the
24 instruments associated to this work is charged here. This is a non-unitized
25 program.

26 This program relates to safety and/or reliability and/or maintenance as it
27 includes: (1) Use of Picarro Surveyor to perform special (non-compliance) leak
28 survey of distribution mains and services, by special request (city paving,
29 customer callout, emergencies); (2) Foot survey of LISA and Gap Survey (foot
30 survey performed for service and mains not in the field of view of Picarro
31 surveyor); and (3) Calibration of the instruments associated to this work is
32 charged here.

33 **MAT DEH – Gas Capacity Upgrades** – Involves expense work to upgrade
34 existing distribution systems to a higher Maximum Allowable Operating Pressure

1 (MAOP) for the primary purpose of creating new capacity. This is a non-unitized
2 MAT.

3 This program relates to safety and/or reliability as it involves expense work
4 to upgrade existing distribution systems to a higher MAOP for the primary
5 purpose of creating new capacity.

6 **MAT DE# – Leak Survey Support** – Support costs for Leak Survey. This is
7 a non-unitized MAT.

8 This MAT relates to safety and/or reliability and/or maintenance as it
9 includes other support costs such as labor and other support for MWC DE Leak
10 Survey.

11 **MAT DFA – Locate and Mark** – Locate and Mark underground Gas and
12 Electric Distribution facilities per Underground Service Alert (USA) requests.
13 Preparation of maps, process tickets, and perform administrative work, and Gas
14 and Electric damage prevention activities. Does not include locate and mark for
15 Gas and Electric Transmission, or fiber optic facilities. Also includes
16 calibration/repair of equipment. Unit of measure is number of USA tickets
17 worked.

18 This program relates to safety and/or reliability and/or maintenance as it
19 involves locating and marking underground Gas and Electric Distribution
20 facilities per USA requests and additional damage prevention activities like
21 preparation of maps, processing tickets, performing administrative work, and
22 calibration/repair of equipment.

23 **MAT DFB – Locate and Mark, Standby** – Includes observation of work
24 performed within five feet of a gas or electric transmission facility or for
25 excavation activity within close proximity of a critical distribution facility. Unit of
26 measure is number of sites requiring a standby.

27 This program relates to safety and/or reliability and/or maintenance as it
28 includes observation of work performed within five feet of a gas or electric
29 transmission facility or for excavation activity within close proximity of a critical
30 distribution facility.

31 **MAT DF# – Locate and Mark, Other** – Support costs for Locate and Mark,
32 including membership costs for Underground Service Alert. This is a
33 non-unitized MAT.

1 This MAT relates to safety and/or reliability and/or maintenance as it
2 includes support costs for MWC DF Locate and Mark.

3 **MAT DGA – Cathodic Protection: Monitoring** – Include all types of
4 pipe-to-soil reads, including isolated steel, rectifier reads, and remote
5 monitoring. Also includes remote rectifier monitoring unit communication and
6 software costs, and electric utility costs for rectifiers. Unit of measure is number
7 of monitoring points read.

8 This program relates to safety and/or reliability and/or maintenance as it
9 includes all types of pipe-to-soil reads (which provides information about the CP
10 levels on the pipeline), including isolated steel, rectifier reads, and remote
11 monitoring. Also includes remote rectifier monitoring unit communication and
12 software costs, and electric utility costs for rectifiers.

13 **MAT DGB – Cathodic Protection: Troubleshooting** – Includes
14 troubleshooting and identification of problems with down Cathodic Protection
15 Areas (CPA) and performance of any remedial actions. Unit of measure is
16 number of CPA’s troubleshot.

17 This program relates to safety and/or reliability and/or maintenance as it
18 includes troubleshooting and identification of problems with down CPA and
19 performance of any remedial actions.

20 **MAT DGC – Cathodic Protection: Rectifier Maintenance** – Perform
21 rectifier maintenance and associated costs. Unit of measure is number of
22 rectifiers maintained.

23 This program relates to safety and/or reliability and/or maintenance as it
24 involves performing rectifier maintenance.

25 **MAT DGD – Cathodic Protection: Enhanced Survey** – Conduct
26 enhanced CP survey and associated activities. This is a non-unitized program.

27 This program relates to safety and/or reliability and/or maintenance as it
28 involves conducting enhanced CP survey and associated activities.

29 **MAT DGE – Electrically Connected Isolated Steel Services**– Identify and
30 evaluate electrically connected isolated steel services and associated activities.
31 This is a non-unitized program.

32 This program relates to safety and/or reliability and/or maintenance as it
33 involves identifying and evaluating electrically connected isolated steel services
34 and associated activities.

1 **MAT DGF – Unprotected Steel Main Evaluation** – Identify and evaluate
2 unprotected steel main as part of the enhanced CP survey program. This is a
3 non-unitized program.

4 This program relates to safety and/or reliability and/or maintenance as it
5 involves identifying and evaluating unprotected steel main as part of the
6 enhanced CP survey program.

7 **MAT DGG – Installing Casing Test Stations** – Install casing test stations.
8 Unit of measure is number of casings mitigated.

9 This program relates to safety and/or reliability and/or maintenance as it
10 involves installing casing test stations.

11 **MAT DGH – Casing Short Mitigation Less Than 100 Feet** – Clear casing
12 shorts or replace cased pipe less than 100’ in length. Unit of measure is number
13 of casings mitigated.

14 This program relates to safety and/or reliability and/or maintenance as it
15 involves clearing casing shorts or replacing cased pipe less than 100’ in length.

16 **MAT DGI – Casing Monitoring Without Lead** – Annual casing monitoring
17 for casings without leads. Unit of measure is number of casings monitored.

18 This program relates to safety and/or reliability and/or maintenance as it
19 involves annual casing monitoring for casings without leads.

20 **MAT DG# – Cathodic Protection, Other** – Includes other support costs
21 related to CP. This is a non-unitized MAT.

22 This MAT relates to safety and/or reliability and/or maintenance as it
23 includes support costs for MWC DG CP.

24 **MAT EXA – MPP Inspections** – Includes inspecting the MPP database or
25 performing a special survey to identify the need for Barrier Posts or Service
26 Valves. This is a non-unitized program.

27 This program relates to safety and/or reliability as it involves inspecting the
28 Meter Protection Program database or performing a special survey to identify
29 the need for Barrier Posts or Service Valves.

30 **MAT EXB – MPP Protections** – Includes installing barrier posts in order to
31 protect above ground gas facilities (meters and risers) from damage by vehicles.
32 Does not include: Relocation requiring re-running the service from the main,
33 which is under MWC 27. Unit of measure is number of locations.

1 This program relates to safety and/or reliability as it involves installing barrier
2 posts in order to protect above ground gas facilities (meters and risers) from
3 damage by vehicles.

4 **MAT EXC – MPP Service Valves** – Includes the installation of a new
5 service valve or the relocation of an existing service valve if the property does
6 not have an accessible service valve (for emergency response). Does not
7 include: Re-running the service from the main which is under MWC 27.

8 This program relates to safety and/or reliability and/or maintenance as it
9 involves the installation of a new service valve or the relocation of an existing
10 service valve if the property does not have an accessible service valve (for
11 emergency response).

12 **MAT FGA – Gas Distribution Control Center Operations** – Includes gas
13 control personal, contractor support, increased main Remote Terminal Unit
14 (RTU) and ERXs, apprentice training program, damage prevention, abnormal
15 conditions, emergency response, compliance, systems operations, data
16 collection, clearance process and benchmarking. This is a non-unitized MAT.

17 This program relates to safety and/or reliability and/or maintenance as it
18 includes gas control personal, contractor support, increased main RTU and
19 ERXs, apprentice training program, damage prevention, abnormal conditions,
20 emergency response, compliance, systems operations, data collection,
21 clearance process and benchmarking.

22 **MAT FGB – Manual Field Operations, Mains and Services** – Includes:
23 Changing winter and station pressure recorder charts (including downloading
24 ERX), performing instrument calibrations (test equipment, gauges, portable
25 pressure recorders, etc.) operating valves (including changes in emergency
26 zones), removing distribution system pipeline liquids and monitoring system
27 pressure. Does not include: Calibration of Distribution Regulator Station
28 mechanical pressure recorders during station maintenance, distribution SCADA
29 including ERX calibrations. This is a non-unitized program.

30 This program relates to safety and/or reliability and/or maintenance as it
31 includes changing winter and station pressure recorder charts (including
32 downloading ERX), performing instrument calibrations (test equipment, gauges,
33 portable pressure recorders, etc.) operating valves (including changes in

1 emergency zones), removing distribution system pipeline liquids and monitoring
2 system pressure.

3 **MAT FGC – Manual Field Operations, Other** – Control the supply and flow
4 of gas through the distribution system via direction from the Gas Distribution
5 Control Center (GDCC), adjust and change Distribution Regulator Station
6 pressure set points, maintain station pressure in conjunction with winter or
7 planned operational clearances. This is a non-unitized program.

8 This program relates to safety and/or reliability and/or maintenance as it
9 involves controlling the supply and flow of gas through the distribution system
10 via direction from the GDCC, adjusting and changing Distribution Regulator
11 Station pressure set points, and maintaining station pressure in conjunction with
12 winter or planned operational clearances.

13 **MAT FG# –Gas Distribution Control Center Operations, Other** – Includes
14 other support costs related to gas system operations. This is a non-unitized
15 MAT.

16 This MAT relates to safety and/or reliability and/or maintenance as it
17 includes support costs for MWC FG Operate Gas Distribution System.

18 **MAT FHA – Preventative Maintenance, Gas Mains** – Includes:
19 (1) Non-leak repairs to distribution gas mains; (2) Rewrap, lower, or paint gas
20 distribution mains; (3) Replace cover; protect shallow pipe; (4) Replace/repair
21 pipe hangars; (5) Replace/relocate greater than 100 feet of gas distribution
22 main; (6) Identify pipe; and (7) Install Electrical Test Station (ETS) for the
23 purpose of locating the main. Does not include: (1) Main leak repairs; (2) Any
24 work related to gas transmission; (3) Any work caused by work or alteration by a
25 customer or third party; (5) Pothole gas facilities for potential conflicts with
26 third-party work; (6) Third-Party damage; (7) AC; (8) Install ETS for purposes of
27 corrosion prevention; (9) Fire valve repair or replacement; (10) Main or service
28 alterations due to “sewer cross-bores”; and (11) Any corrective work related to
29 sunk trenches or sunk bell holes. Unit of measure is number of mains
30 maintained.

31 This program relates to safety and/or reliability and/or maintenance as it
32 includes: (1) Non-leak repairs to distribution gas mains; (2) Rewrapping,
33 lowering, or painting gas distribution mains; (3) Replacing cover; protecting
34 shallow pipe; (4) Replacing/repairing pipe hangars; (5) Replacing/relocating

1 greater than 100 feet of gas distribution main; (6) Identifying pipe; and
2 (7) Installing ETS for the purpose of locating the main.

3 **MAT FHB – Preventative Maintenance, Gas Regulator Stations –**

4 Includes scheduled preventative maintenance inspections on distribution
5 regulator stations, required maintenance work for all associated equipment
6 inside the district regulator station, and vault dewatering. Does not include:
7 (1) Repairs to inlet and outlet fire valves with a pressure greater than 60 psig;
8 (2) SCADA calibration of GDCC RTUs and ERXs installed at a regulator station;
9 and (3) Calibration of pressure recorders for planning “winter chart” applications
10 (non-GDCC). This is a non-unitized program.

11 This program relates to safety and/or reliability and/or maintenance as it
12 includes scheduled preventative maintenance inspections on distribution
13 regulator stations.

14 **MAT FHC – Preventative Maintenance, Gas Farm Tap –** Performing

15 atmospheric inspections on customer HPR sets, including Class “A” inspections.
16 This is a non-unitized program.

17 This program relates to safety and/or reliability and/or maintenance as it
18 involves performing atmospheric inspections on customer HPR sets, including
19 Class “A” inspections.

20 **MAT FHE – Preventative Maintenance, Gas Services –** Includes:

21 (1) Repair non-leaking gas distribution services; (2) Riser replacement;
22 (3) Rewrap, lower, or paint gas distribution services; (4) Clear and/or repair
23 plugged services; (5) Replace cover, protect shallow pipe; (6) Repair, replace,
24 relocate, or cut-off less than a full service; (7) Repair, replace curb valves less
25 than 2 inches; (8) Investigate idle gas stub service cut-offs; (9) Install ETS for
26 the purpose of locating the service; and (10) Installation of excess flow valve
27 (EFV) (when not related to leak repair). Does not include: (1) Stub or service
28 cut-off; (2) Any work caused by work or alteration by a customer or third party;
29 (3) Third-Party damage; (4) AC; (5) Service valve replacement; (6) Work above
30 the service valve; (7) Install ETS for the purpose of corrosion prevention;
31 (8) Service leak repairs; (9) Main or service alterations due to “sewer
32 cross-bores”; and (10) Any corrective work related to sunk trenches or sunk bell
33 holes. Unit of measure is number of services repaired.

1 This program relates to safety and/or reliability and/or maintenance as it
2 includes: (1) Repairing non-leaking gas distribution services; (2) Riser
3 replacement; (3) Rewrapping, lowering, or painting gas distribution services;
4 (4) Clearing and/or repairing plugged services; (5) Replacing cover; protecting
5 shallow pipe; (6) Repairing, replacing, relocating, or cutting-off less than a full
6 service; (7) Repairing or replacing curb valves less than 2 inches;
7 (8) Investigating idle gas stub service cut-offs; (9) Installing ETS for the purpose
8 of locating the service; and (10) Installation of EFV (when not related to leak
9 repair).

10 **MAT FHG – Preventative Maintenance, Gas Valves** – Perform scheduled
11 inspection of distribution main valves; verify operation, identification, and
12 location; clean/pump out vaults/enclosures; lubricate/flush valves; clean/paint
13 valve/frame and cover. This is a non-unitized program.

14 This program relates to safety and/or reliability and/or maintenance as it
15 involves performing Class “A” inspections and operation checks of emergency,
16 curb, and sectionalizing valves.

17 **MAT FHI – Corrective Maintenance, Gas Service Valves** – Includes repair
18 or replace inoperative service valves less than 2 inches. Does not include:
19 (1) Valves greater than or equal to 2 inches (should be capitalized against
20 MAT 50E); and (2) Work above the service valve. Unit of measure is number of
21 valves replaced.

22 This program relates to safety and/or reliability and/or maintenance as it
23 involves repairing or replacing inoperative service valves less than 2 inches.

24 **MAT FHJ – Gas Non-Recurring Projects** – One-time non-recurring
25 maintenance projects on non-gas carrying facilities. This is a non-unitized MAT.

26 This program relates to safety and/or reliability and/or maintenance as it
27 includes one-time non-recurring maintenance projects on non-gas carrying
28 facilities.

29 **MAT FHK – Atmospheric Corrosion Inspections** – Inspect
30 atmospherically exposed gas mains and services, for AC. This is a non-unitized
31 program.

32 This program relates to safety and/or reliability and/or maintenance as it
33 involves inspecting atmospherically exposed gas mains and services, for AC.

1 **MAT FHL – Atmospheric Corrosion Main Repairs** – Perform expense
2 repair of AC on mains. Unit of measure is number of spans repaired.

3 This program relates to safety and/or reliability and/or maintenance as it
4 involves performing expense repairs of AC on mains.

5 **MAT FHM – Atmospheric Corrosion Service Repairs** – Expense repairs
6 of AC on services to below stopcock. Does not include: AC repairs of customer
7 gas regulators and meter sets. Unit of measure is number of services repaired.

8 This program relates to safety and/or reliability and/or maintenance as it
9 involves expense repairs of AC on services to below the stopcock.

10 **MAT FHN – Atmospheric Corrosion Distribution Regulator Station**
11 **Repair** – Expense repairs of AC on distribution district regulator stations. Unit of
12 measure is number of stations mitigated.

13 This program relates to safety and/or reliability and/or maintenance as it
14 involves expense repairs of AC on distribution district regulator stations.

15 **MAT FHO – Preventative Maintenance Supervisory Control and Data**
16 **Acquisition (SCADA)** – SCADA Preventive Maintenance to RTU, SCADA
17 Transmitters and ERXs. Does not include: Preventative maintenance
18 associated with pressure recorders for planning “winter chart” applications
19 (non-GDCC). This is a non-unitized program.

20 This program relates to safety and/or reliability and/or maintenance as it
21 involves performing SCADA Preventive Maintenance to RTUs, SCADA
22 Transmitters and ERXs.

23 **MAT FHP – Corrective Maintenance SCADA** – SCADA Corrective
24 Maintenance to RTUs, SCADA Transmitters, ERXs, as well as GDCC RTUs and
25 GDCC ERXs. This is a non-unitized program.

26 This program relates to safety and/or reliability and/or maintenance as it
27 involves performing SCADA Corrective Maintenance to RTUs, SCADA
28 Transmitters and ERXs. It also includes SCADA corrective maintenance of
29 GDCC RTUs and GDCC ERXs.

30 **MAT FHQ – Overpressure Protection (OPP) Enhancements** – The OPP
31 Enhancements Program includes: installation of pilot filters, system planning
32 studies to identify the most effective secondary overpressure protection option,
33 revision of standard and procedures, program management for developing and
34 maintaining the over pressure elimination plan and pilot studies on new

1 equipment technologies for applicability to the PG&E system. This is a
2 non-unitized MAT.

3 This program relates to safety and/or reliability and/or maintenance as it
4 includes installation of pilot filters, system planning studies to identify the most
5 effective secondary overpressure protection option, revision of standard and
6 procedures, program management for developing and maintaining the over
7 pressure elimination plan, and pilot studies on new equipment technologies for
8 applicability to the PG&E system.

9 **MAT FH# – Preventative Maintenance, Other** – Includes field support
10 costs. This is a non-unitized MAT.

11 This MAT relates to safety and/or reliability and/or maintenance as it
12 includes compliance support costs for MWC FH Preventative Maintenance.

13 **MAT FIB – Corrective Maintenance, Gas Regulator Station** – Maintain
14 and repair failed or inoperative distribution district regulation equipment. Does
15 not include: Repair of SCADA equipment at a district regulator station;
16 corrective paint work; or repairs for vault lids or station fencing. This is a
17 non-unitized program.

18 This program relates to safety and/or reliability and/or maintenance as it
19 involves maintaining and repairing failed or inoperative distribution district
20 regulation equipment.

21 **MAT FIC – Corrective Maintenance, Gas Farm Tap** – Perform repairs on
22 customer HPR sets. This is a non-unitized program.

23 This program relates to safety and/or reliability and/or maintenance as it
24 involves performing repairs on customer HPR sets.

25 **MAT FIF – Corrective Maintenance, Gas Main Valves** – Includes:
26 (1) Replace valves less than 2 inches; (2) Repair all distribution main valves;
27 (3) Repair/seal vaults and lids; and (4) Raise vaults and lids unless due to Work
28 Requested by Others (especially street repaving). This is a non-unitized
29 program.

30 This program relates to safety and/or reliability and/or maintenance as it
31 includes: (1) Replacing valves less than 2 inches; (2) Repairing all distribution
32 main valves; (3) Repairing and/or sealing vaults and lids; and (4) Raising vaults
33 and lids (non WRO work).

1 **MAT FIG –Main Leak Repair** – Expense repair of non-dig-in leaks less than
2 100 feet on any distribution main and appurtenances (flanges, valves, etc.).
3 Includes leak pinpointing. Includes repair of service leak by replacing a portion
4 of main (100 feet or less). Includes repair of leak on existing cut-off service tee
5 (24 inches or less). Does not include: If a suspected leak is excavated and
6 downgraded to a 3 or 0 that won't be repaired, non-PG&E gas, and if service tee
7 is cut off within 12 inches of main and no service exists. Below ground Grade 3
8 leak repairs are recorded under Leak Abatement MAT LWG. Unit of measure is
9 number of main leaks repaired.

10 This program relates to safety and/or reliability and/or maintenance as it
11 involves expense repairs of non-dig-in leaks less than 100 feet on any
12 distribution main and appurtenances (flanges, valves, etc.). It includes leak
13 pinpointing, repair of service leak by replacing a portion of main (100 feet or
14 less), and repair of leak on existing cut-off service tee (24 inches or less).

15 **MAT FIH – Gas Service Leak Repair, Above Ground** – Leak pin-pointing
16 and repair of non-dig-in leaks below the service valve on the above ground
17 portion of the service. Does not include: If a suspected leak is excavated and
18 downgraded to a 3 or 0 that won't be repaired, or non-PG&E gas. Unit of
19 measure is number of service leak repairs (above ground).

20 This program relates to safety and/or reliability and/or maintenance as it
21 includes leak pin-pointing and repair of non-dig-in leaks below the service valve
22 on the above ground portion of the service.

23 **MAT FII – Corrective Maintenance, CP** – Includes: Repair existing anodes
24 or rectifiers; dig up gas facilities to install insulating material; install new anodes
25 on isolated steel as necessary; Install an ETS; restore a down Cathodic
26 Protection Area without replacing capital plant. Does not include: any CP
27 remediation or restoration activities. Unit of measure is number of corrosion
28 tags cleared.

29 This program relates to safety and/or reliability and/or maintenance as it
30 includes: (1) repairing existing anodes or rectifiers; (2) digging up gas facilities
31 to install insulating material; (3) installing new anodes on isolated steel as
32 necessary; (4) installing an ETS; and (5) restoring a down CP Area without
33 replacing capital plant.

1 **MAT FIJ – Main Dig-In Repair** – Expense repair of dig-in leaks and other
2 third-party damage to any distribution main and appurtenances (flanges, valves,
3 etc.). Unit of measure is number of main dig-ins repaired.

4 This program relates to safety and/or reliability and/or maintenance as it
5 involves expense repairs of dig-in leaks and other third-party damage to any
6 distribution main and appurtenances (flanges, valves, etc.).

7 **MAT FIK – Service Dig-In Repair** – Expense repair of dig-in leaks and
8 other third-party damage to any service (including curb valves). Unit of measure
9 is number of service dig-ins repaired.

10 This program relates to safety and/or reliability and/or maintenance as it
11 involves expense repairs of dig-in leaks and other third-party damage to any
12 service (including curb valves).

13 **MAT FIM –Major Event** – Includes gas major events and also emergencies
14 declared by the Governor or President. This is a non-unitized MAT.

15 This program relates to safety and/or reliability and/or maintenance as it
16 involves work in response to gas major events and emergencies declared by the
17 Governor or President.

18 **MAT FIO – Encroachment Program (formerly Overbuild)** – Relocation of
19 partial gas service and/or main (less than 100 feet) due to encroachment
20 condition. Unit of measure is number of services repaired.

21 This program relates to safety and/or reliability and/or maintenance as it
22 involves the relocation of a partial gas service and/or main (less than 100 feet)
23 due to encroachment conditions.

24 **MAT FIP – Service Leak Repair, Below Ground** – Leak pinpointing and
25 repair of non-dig in leak on below ground section of any service (includes curb
26 valves) from tee to where riser breaks ground. Includes: (1) Above ground leak
27 that requires below ground repair (i.e., must replace section of below ground
28 pipe or riser); and (2) Riser replacement including section of below ground
29 service. Does not include: If a suspected leak is excavated and downgraded to
30 a 3 or 0 or non-PG&E gas. Below ground Grade 3 leak repairs are recorded
31 under Leak Abatement MAT LWH. Unit of measure is number of service leak
32 repairs (below ground).

33 This program relates to safety and/or reliability and/or maintenance as it
34 involves leak pinpointing and repair of non-dig in leak on below ground section

1 of any service (includes curb valves) from tees to where risers breaks ground. It
2 includes: (1) Above ground leak that requires below ground repair (i.e., must
3 replace section of below ground pipe or riser); and (2) Riser replacement
4 including section of below ground service.

5 **MAT FIQ – Atmospheric Corrosion Meter Inspection** – Inspect
6 atmospherically risers, customer gas regulators (including HPRs), and meter
7 sets for AC where not completed by routine leak survey work. Unit of measure
8 is number of locations inspected.

9 This program relates to safety and/or reliability and/or maintenance as it
10 involves inspecting atmospherically risers, customer gas regulators (including
11 HPRs), and meter sets for AC where not completed by routine leak survey work.

12 **MAT FIR – Tee-Cap Replacement Program** – Projects specified by the
13 plastic tee cap repair team to lower risks in the plastic system. Unit of measure
14 is number of tee caps replaced.

15 This program relates to safety and/or reliability and/or maintenance as it
16 involves projects specified by the plastic tee cap repair team to lower risks in the
17 plastic system.

18 **MAT FIS – Leak Survey Meter Repair** – Scheduled repair of
19 Non-Hazardous gas leaks at the meter set. Does not include: (1) Hazardous
20 gas leak repair at the meter set initiated by Leak Survey; (2) Customer
21 generated field orders for gas leak investigation; (3) Repair or replacement of
22 gas valve; (4) Replacement of gas regulators; (5) Meter replacement; and
23 (6) Gas leak surveys performed by Leak Surveyors. Unit of measure is number
24 of meters repaired.

25 This program relates to safety and/or reliability and/or maintenance as it
26 involves scheduled repair of Non-Hazardous gas leaks at the meter set.

27 **MAT FI# – Gas Corrective Maintenance, Other** – This includes support
28 costs for Gas Corrective Maintenance including leak repair support. This is a
29 non-unitized MAT.

30 This MAT relates to safety and/or reliability and/or maintenance as it
31 includes support costs for MWC FI Gas Corrective Maintenance.

32 **MAT GFO –Mapping Support** – Includes: (1) Distribution Mapping
33 activities not directly charged to orders such as Posting Obsolete Orders,
34 Delineations, Data Management Non-Posting and Map Reprographics,

1 Annexations, Posting Corrections, Operating Maps, and Diagrams, Asset
2 Registry and Request for Work, Corrective Action Program Mapping and
3 Information and Data Requests; and (2) Special Distribution Mapping projects.
4 This is a non-unitized MAT.

5 This program relates to safety and/or reliability and/or maintenance as it
6 includes: (1) Distribution Mapping activities not directly charged to orders such
7 as Posting Obsolete Orders, Delineations, Data Management Non-Posting and
8 Map Reprographics, Annexations, Posting Corrections, Operating Maps, and
9 Diagrams, Asset Registry and Request for Work, Corrective Action Program
10 Mapping and Information and Data Requests; and (2) Special Distribution
11 Mapping projects.

12 **MAT GGA – Gas System Planning** – Perform hydraulic analysis on gas
13 distribution systems to support operations and long-term design. Build and
14 maintain computer models of the gas distribution system. This is a non-unitized
15 MAT.

16 This program relates to safety and/or reliability and/or maintenance as it
17 involves performing hydraulic analysis on gas distribution systems to support
18 operations and long-term design. It also includes building and maintaining
19 computer models of the gas distribution system.

20 **MAT GG# – Gas Distribution Portfolio Management and Engineering** –
21 Preliminary engineering prior to determining the type of work (install vs. repair)
22 to be performed, such as, defining economic alternatives, field checking of asset
23 conditions, approximate scope/cost of work, and economic analysis. This is a
24 non-unitized MAT.

25 This MAT relates to safety and/or reliability and/or maintenance as it
26 includes support costs for MWC GG Gas Mapping.

27 **MAT GMC –CNG Station O&M** – Corrective and Preventative Maintenance
28 on CNG Stations. This is a non-unitized MAT.

29 This program relates to safety and/or reliability and/or maintenance as it
30 involves maintenance and operating expenditure for CNG Stations.

31 **MAT GM# – CNG Station, Other** – Includes other support costs related to
32 CNG maintenance. This is a non-unitized MAT.

33 For how this MAT relates to safety and/or reliability and/or maintenance see
34 MWC GM Natural Gas Fueling Facilities Operation and Maintenance.

1 **MAT HYI – Meter Set Atmospheric Corrosion Remediation** – Perform
2 remediation of AC on customer gas meters and regulators as identified through
3 the AC Inspection Program Does not include: (1) AC inspection; (2) AC repair
4 on HPRs; (3) AC repair on distribution mains, services, valves, etc.; (4) Meter
5 replacement; and (5) Regulator replacement. Unit of measure is number of
6 meters repaired.

7 This program relates to safety and/or reliability and/or maintenance as it
8 involves performing remediation of AC on customer gas meters and regulators
9 as identified through the AC Inspection Program.

10 **MAT HY# – Meter Set Maintenance, Other** – Includes provider cost center
11 SCV aligned with gas meter maintenance. This is a non-unitized MAT.

12 This MAT relates to safety and/or reliability and/or maintenance as it
13 includes support costs for MWC HY Meter Maintenance.

14 **MAT JQA – DIMP Leak Survey** – Leak Survey enhancements. Unit of
15 measure is number of services surveyed.

16 This program relates to safety and/or reliability and/or maintenance as it
17 involves system integrity leak surveys.

18 **MAT JQC – Dig-In Reduction Team** – Costs associated with the Dig-in
19 Reduction Team (DiRT). The costs include investigations of dig-ins,
20 documentation of damage incidents, 811 outreach and education,
21 811 Ambassador program management and response and other Damage
22 Prevention activities by DiRT Members. These Damage Prevention activities
23 include: Field contacts at excavation sites, follow-up on reports of unsafe
24 excavation activities and meetings with excavators. Also, costs associated with
25 the ticket management system (i.e., licensing fees, data storage and required
26 formatting changes). This is a non-unitized MAT.

27 See MWC DF Locate and Mark for how this program relates to safety and/or
28 reliability and/or maintenance.

29 **MAT JQD – DIMP Emergent Work** – Emergent work associated with
30 operational events and risk mitigation activities identified by the DIMP. This is a
31 non-unitized program.

32 This program relates to safety and/or reliability as it manages and executes
33 the DIMP emergent work.

1 **MAT JQE – Plastic Program** – Oversees selection, testing and
2 development of plastic materials, tools, and associated construction methods for
3 use on the PG&E distribution system. Also includes: Laboratory testing, sample
4 material, and prototype tools and equipment purchases. This is a non-unitized
5 MAT.

6 This program relates to safety and/or reliability and/or maintenance as it
7 oversees selection, testing and development of plastic materials, tools, and
8 associated construction methods for use on the PG&E distribution system. It
9 also includes laboratory testing, sample material, and prototype tools and
10 equipment purchases.

11 **MAT JQG – Mechanical Fitting Replacement Program** – Replacement
12 program for removal of mechanical fittings with known failures. Includes removal of
13 compression style mechanical fittings with risk of corrosion and leak.

14 This program relates to safety and/or reliability as it replaces mechanical
15 fittings with known failures, including the removal of compression style mechanical
16 fittings with risk of corrosion and leaks.

17 **MAT JQK – Cross Bore Program** – Includes: research of records, create
18 and execute legacy storm and sewer inspections. Repair costs to remove
19 legacy cross bores. Does not include: Replacement of gas pipe beyond the
20 cross bore segment. Unit of measure is number of inspections.

21 This program relates to safety and/or reliability as it involves conducting
22 storm and sewer inspections, repair costs to remediate cross bores, and records
23 research.

24 **MAT JQL – DIMP Program Management** – Costs for DIMP staff. This is
25 non-unitized work.

26 This program relates to safety and/or reliability and/or maintenance as it
27 involves costs for DIMP staff.

28 **MWC OM – Operational Management** – includes labor and
29 employee-related costs to provide supervision and management support.
30 MWC OM also includes costs incurred by the administrative staff working for the
31 Supervisors/Managers. This is a non-unitized MWC.

32 MWC OM is included as a maintenance activity in accordance with Energy
33 Division’s February 12, 2019 letter to PG&E. Gas Distribution does not consider
34 MWC OM as related directly to safety and/or reliability and/or maintenance work.

1 **G. MAT Descriptions for Safety and Reliability Work – Capital**

2 For descriptions of how the following Gas Distribution capital programs
3 relate to safety, reliability, or maintenance, please see the MAT descriptions
4 which explain the type of work associated with each MAT below.

5 **MAT 14A – Gas Pipeline Replacement Program (GPRP)** – Replace main
6 and services qualifying for replacement under the Gas Pipeline Replacement
7 Program. Does not include: Deactivation with no capital main installation less
8 than 100 feet. Unit of measure is feet of main Installed.

9 This program relates to safety and/or reliability as it involves replacing main
10 and services qualifying for replacement under the GPRP.

11 **MAT 14B – Copper Service Replacement** – Replace copper services
12 identified under the Copper Service Replacement Program. Unit of measure is
13 number of services replaced.

14 This program relates to safety and/or reliability and/or maintenance as it
15 involves replacing copper services identified under the Copper Service
16 Replacement Program.

17 **MAT 14D – Plastic Pipe Replacement**– Replace main and services
18 qualifying for replacement under the Plastic Pipeline Replacement Program.
19 Does not include: Deactivation of main with no capital main installation (less
20 than 100 feet). Unit of measure is Feet of Main Installed.

21 This program relates to safety and/or reliability and/or maintenance as it
22 involves replacing main and services qualifying for replacement under the
23 Plastic Pipeline Replacement Program.

24 **MAT 2KA – Customer High Pressure Regulator Station Main**
25 **Conversion** – Replace or install greater or equal to 100 feet gas distribution
26 main to eliminate customer HPRs. Unit of measure is number of HPRs
27 mitigated.

28 See MWC 2K Gas Distribution Replace/Convert Customer HPRs for how
29 this program relates to safety and/or reliability and/or maintenance.

30 **MAT 2KB – Customer HPR Station Conversion to District Regulator**
31 **(DR) Station** – Replace or install: (1) farm tap to convert to a HPR Station Type
32 DR, (2) HPR Type DR to convert to a pilot operated district regulator station.
33 Does not include: Replacement of pilot operated district regulator stations or

1 High Pressure Type DR with regulation 1 inch and above. Unit of measure is
2 number of HPRs mitigated.

3 See MWC 2K Gas Distribution Replace/Convert Customer HPRs for how
4 this program relates to safety and/or reliability and/or maintenance.

5 **MAT 2KC – Customer High Pressure Regulator Reg Station**

6 **Replacement** – Includes replacement of HPR in kind. Unit of measure is
7 number of HPRs mitigated.

8 See MWC 2K Gas Distribution Replace/Convert Customer HPRs for how
9 this program relates to safety and/or reliability and/or maintenance.

10 **MAT 2K# – Gas Distribution Replace/Convert Customer HPRs, Other –**

11 Includes other support costs related to HPRs.

12 See MWC 2K Gas Distribution Replace/Convert Customer HPRs for how
13 this program relates to safety and/or reliability and/or maintenance.

14 **MAT 27A – Meter Protection-Capital** – Includes: (1) Meters that cannot be
15 adequately protected by barrier posts and require relocation with re-running the
16 service from the main; and (2) services with inaccessible service valves
17 (emergency response) that require re-running the service from the main. Does
18 not include: Minor relocations or service valve installations that do not require
19 re-running the service from the main. Unit of measure is number of services
20 corrected.

21 This program relates to safety and/or reliability and/or maintenance as it
22 includes: (1) Meters that cannot be adequately protected by barrier posts and
23 require relocation with re-running the service from the main, and (2) services
24 with inaccessible service valves (emergency response) that require re-running
25 the service from the main.

26 **MAT 31A – CNG Stations** – Capital work on CNG stations. This MAT is
27 non-unitized.

28 This program relates to safety and/or reliability and/or maintenance as it
29 involves capital work to replace obsolete equipment that no longer can meet the
30 demands of the station, or is not in acceptable working condition.

31 **MAT 4AA – Regulator Station Monitoring and Control** – HPR Station
32 Monitoring and Control. Includes upstream, midstream, and downstream
33 pressure, differential pressure, flow and shut-off control. Unit of measure is
34 RTUs installed.

1 This program relates to safety and/or reliability and/or maintenance as it
2 involves HPR Station monitoring and control (single run). It includes upstream,
3 midstream, and downstream pressure, differential pressure, flow and shut off
4 control.

5 **MAT 4AB – Regulator Station Monitoring – HPR Station**
6 Monitoring-Single Run: Includes upstream, midstream, and downstream
7 pressure, differential pressure and flow. Unit of measure is RTUs installed.

8 This program relates to safety and/or reliability and/or maintenance as it
9 involves HPR Station monitoring (single run). It includes upstream, midstream,
10 and downstream pressure, differential pressure and flow.

11 **MAT 4AC – Real-Time PSR Monitor-Type 4 – HPR Station Monitoring:**
12 Includes upstream and downstream pressure. Unit of measure is RTUs
13 installed.

14 This program relates to safety and/or reliability and/or maintenance as it
15 involves HPR Station monitoring. It includes upstream and downstream
16 pressure.

17 **MAT 4AF – ERX Pressure Monitoring – Includes regulator station,**
18 **Hydraulically Independent System (HIS) pipeline or valve pressure.** Unit of
19 measure is number of electronic pressure recorders.

20 This program relates to safety, reliability, and compliance as it involves
21 electronic recorder pressure monitoring. It includes regulator stations, HIS
22 pipeline or valve pressure.

23 **MAT 4AK – Regulator Station Monitoring Single No Flow-Type 3 – High**
24 **and Low Pressure Regulator Station Monitoring-Single Run:** Includes upstream,
25 midstream, and downstream pressure, differential pressure (high pressure only)
26 and vault water level (low pressure only). Unit of measure is RTUs installed.

27 This program relates to safety and/or reliability and/or maintenance as it
28 involves High and Low Pressure Regulator Station monitoring (single run). It
29 includes: upstream, midstream, and downstream pressure, differential pressure
30 (high pressure only), vault water level (low pressure only) and shut-off control.

31 **MAT 4AL – Regulator Station Monitoring Dual Flow-Type 3 – HPR**
32 **Station Monitoring-Dual Run:** Includes upstream, midstream, and downstream
33 pressure; differential pressure; and flow. Unit of measure is RTUs installed.

1 This program relates to safety and/or reliability and/or maintenance as it
2 involves High Pressure Regulator Station monitoring (dual run). It includes:
3 upstream, midstream, and downstream pressure; differential pressure; and flow.

4 **MAT 4AM – Regulator Station Monitoring Dual No Flow-Type 3 – High**
5 **and Low Regulator Station Monitoring-Dual Run:** Includes upstream,
6 midstream, and downstream pressure; differential pressure (high pressure only)
7 and vault water level (low pressure only). Unit of measure is RTUs installed.

8 This program relates to safety and/or reliability and/or maintenance as it
9 involves High and Low Pressure Regulator Station monitoring (dual run). It
10 includes upstream, midstream, and downstream pressure, differential pressure
11 (high pressure only), and vault water level (low pressure only).

12 **MAT 4A# – Gas Distribution Control Operations Assets,**
13 **Other** – Includes other support costs related to Gas Distribution Control
14 Operations. This is a non-unitized MAT.

15 See MWC 4A Gas Distribution Control Operations Assets for how this MAT
16 relates to safety and/or reliability and/or maintenance.

17 **MAT 47B – Gas Capacity, Mains** – Installation of gas main to provide
18 additional capacity. The primary unit of measure is feet of main installed.

19 This program relates to safety and/or reliability and/or maintenance as it
20 involves installation of gas main to provide additional capacity.

21 **MAT 47C – Gas Capacity, Regulator Station** – Installation of new district
22 regulator station to provide additional capacity (including cost to install SCADA).
23 The primary unit of measure is total number of regulator stations addressed.

24 This program relates to safety and/or reliability and/or maintenance as it
25 involves installation of new district regulator station to provide additional capacity
26 (including cost to install SCADA).

27 **MAT 47D – Gas Capacity, Replace Regulator Station Component** –
28 Install or replace gas regulation equipment at an existing district regulator station
29 to provide additional capacity. Includes valves, filters, regulators, and other
30 capital equipment within the station. The primary unit of measure is number of
31 regulator station components.

32 This program relates to safety and/or reliability and/or maintenance as it
33 involves installation or replace gas regulation equipment at an existing district
34 regulator station to provide additional capacity.

1 **MAT 47F – Gas Capacity, Other Enhancements** – Install or replace facility
2 for capacity. This MAT is non-unitized.

3 This program relates to safety and/or reliability and/or maintenance as it
4 involves installing or replacing a facility for capacity.

5 **MAT 50A – Reliability Main Replacement** – Replace/install greater than or
6 equal to 100 feet of gas distribution main due to deterioration or reduced
7 reliability, and includes non-leak replacements driven by corrosion. Does not
8 include: Deactivation of main; shallow mains and services, if the condition was
9 caused by work or alteration by a customer/third party. Unit of measure is feet
10 of main installed.

11 This program relates to safety and/or reliability and/or maintenance as it
12 involves replacing and/or installing greater than or equal to 100 feet of gas
13 distribution main due to deterioration or reduced reliability.

14 **MAT 50B – Reliability Service Replacement** – Includes: (1) Replace
15 entire service due to deterioration or reduced reliability including non-leak
16 replacements driven by corrosion; and (2) re-establishing an existing electronic
17 recorder to a service that is being replaced. Does not include: capital service
18 leak repairs, opportunistic service replacements, idle stub cut-offs, shallow
19 services, if the condition was caused by work or alteration by a customer/third
20 party, or new installations of ERXs. Unit of measure is number of services
21 replaced.

22 This program relates to safety and/or reliability and/or maintenance as it
23 includes replacing an entire service due to deterioration or reduced reliability.

24 **MAT 50C – Gas Regulator Station Rebuild** – Includes: Replacement of an
25 entire district regulator station (existing pilot operated station and HPR Type
26 stations with regulation 1 inch and above) due to deterioration or reduced
27 reliability. Does not include: replacement of HPRs. Unit of measure: number
28 of regulator stations addressed.

29 This program relates to safety and/or reliability and/or maintenance as it
30 includes replacement of an entire district regulator station (existing pilot operated
31 station and HPR Type stations with regulation 1 inch and above) due to
32 deterioration or reduced reliability.

33 **MAT 50D/50Q – CP Systems** – Includes: For ETS greater than or equal to
34 five stations at a single location the following – rectifier replacement, including

1 inserts or new installations, pipe coating greater than or equal to 100 feet,
2 Remote Monitoring Units (RMU), and casing remediation greater than 100 feet.
3 Does not include: Impressed Current Anodes (Deep or Shallow bed) which is
4 part of MAT 50P. CP systems for Electrical (ETS) less than five stations at a
5 single location are expense. Units of measure include RMUs, Casing Mitigation,
6 and CP Systems.

7 This program relates to safety and/or reliability and/or maintenance as it
8 includes for ETS greater than or equal to five stations at a single location the
9 following: rectifier replacement, including inserts or new installations, pipe
10 coating greater than or equal to 100 feet, RMUs, and casing remediation.

11 **MAT 50E – Reliability Gas Valve Replacement** – Includes: Replace/install
12 gas distribution valves greater or equal to 2 inches (e.g., emergency shutdown,
13 riser valves 2” or greater, and therm billing area valves). Does not include
14 station fire valve or block valve replacement (part of MAT 50L Regulator Station
15 Components). Unit of measure is number of valves installed.

16 This program relates to safety and/or reliability and/or maintenance as it
17 includes replacing or installing gas distribution valves greater or equal to
18 2 inches (e.g., emergency shutdown, riser valves 2” or greater, and therm billing
19 area valves).

20 **MAT 50F – Reliability Gas Other Equipment Replacement** – Includes:
21 Replace/install/deactivate other units of gas capital (e.g., permanent pressure
22 recorders and new pits/vaults; all deactivation-only jobs for CP systems). Does
23 not include partial pit/vault rebuilds and/or lids only. This is a non-unitized MAT.

24 This program relates to safety and/or reliability and/or maintenance as it
25 includes: (1) replacing, installing, or deactivating other units of gas capital;
26 (2) permanent pressure recorders and new pits or vaults; and (3) all
27 deactivation-only jobs for CP systems.

28 **MAT 50G – Leak Management – Simple Service Replacement** –
29 Replace/deactivate entire or stub services due to leaks not due to idle facilities
30 or “dig-ins.” Below ground Grade 3 leak replacements are recorded under Leak
31 Abatement MAT 3PB. Unit of measure is number of services replaced.

32 This program relates to safety and/or reliability and/or maintenance as it
33 includes replacement or deactivation of an entire stub or stub service due to
34 leaks that are not due to idle facilities or dig-ins.

1 **MAT 50H – Reliability, Cut-Off Idle Gas Service** – Remove/deactivate
2 entire or stub services due to idle facilities and not due to leaks, overbuilds,
3 “dig-ins.” or demolitions. Does not include: Capital work for demolition. Unit of
4 measure is cut off idle services.

5 This program relates to safety and/or reliability and/or maintenance as it
6 involves removal or deactivation of an entire service or stub services due to idle
7 facilities and not due to leaks, overbuilds, dig-ins, or demolitions.

8 **MAT 50I – Improve Reliability – Deactivation** – Deactivate gas mains (and
9 the associated services), regulator stations, or valves. Does not include new
10 mains limited to less than 100 feet; those with greater than or equal to 100 feet
11 or gas service deactivations with no main deactivation. This program is
12 non-unitized.

13 This program relates to safety and/or reliability and/or maintenance as it
14 involves deactivation of gas main (and the associated services), regulator
15 stations, or valves.

16 **MAT 50J – Encroachment Program** – Relocation/rearrangement of gas
17 main (greater than 100 continuous feet) and/or complete gas service
18 replacement to clear encroachment conflicts. Does not include customer
19 requested relocations to clear encroachment. Unit of measure is number of
20 relocated/ rearranged mains and completed gas services replaced.

21 This program relates to safety and/or reliability and/or maintenance as it
22 involves relocation or rearrangement of a gas main (greater than 100 continuous
23 feet) and/or complete gas service replacement to clear encroachment conflicts.

24 **MAT 50K – Emergent Leaking Main Replacement** – Replace/install
25 greater than or equal to 100 feet of gas distribution main due to leaks. Does not
26 include: Deactivation of main only jobs. Unit of measure is feet of main
27 installed.

28 This program relates to safety and/or reliability and/or maintenance as it
29 involves replacement or installation of greater than or equal to 100 feet of gas
30 distribution main due to leaks.

31 **MAT 50L – Gas Regulator Station Component Rebuilds** – Replacement
32 of regulator station component due to deterioration or reduced reliability.
33 Includes valves (both upstream and downstream fire valves and block valves),

1 filters, regulators, and other capital equipment within the station. Unit of
2 measure is number of Regulator Station components replaced within a station.

3 This program relates to safety and/or reliability and/or maintenance as it
4 involves replacement of regulator station component due to deterioration or
5 reduced reliability. It includes valves (both upstream and downstream fire valves
6 and block valves), filters, regulators, and other capital equipment within the
7 station.

8 **MAT 50M – Leak Management – Complex Service Replacements –**

9 Replace/deactivate entire or stub complex services due to leaks, not due to idle
10 facilities or “dig-ins.” Also includes large commercial meter sets, and any
11 complex load calculations that require Gas Distribution Engineering and Design.
12 Below ground Grade 3 leak replacements are recorded under Leak Abatement
13 MAT 3PC. Unit of measure is number of services replaced.

14 This program relates to safety and/or reliability and/or maintenance as it
15 involves replacement or deactivation of an entire or stub complex services due
16 to leaks not due to idle facilities or dig-ins. It also includes large commercial
17 meter sets, and any complex load calculations that require Gas Distribution
18 Engineering and Design.

19 **MAT 50N – GD Overpressure Protection Enhancements – OPP includes:**

20 installation of filters and separators at strategic locations within the system to
21 reduce the likelihood of debris and liquids from entering the system and
22 impacting pilot-operated regulators and monitors; and installation of secondary
23 OPP devices at stations with pilot-operated regulators and monitors. These
24 additional devices may include slam shuts valves, monitor valves, relief valves,
25 or alternate technologies to prevent overpressure events from occurring; and
26 installation of pressure transmitters system wide for enhanced visibility and
27 removal or installation of additional MAOP separation valves. Unit of measure is
28 total number of regulator stations addressed.

29 This program relates to safety and/or reliability and/or maintenance as it
30 includes the installation of secondary OPP devices at pilot-operated regulator
31 stations. These additional devices may include slam shuts devices, monitor
32 valves, relief valves, or alternate technologies to prevent overpressure
33 events from occurring; and installation of pressure transmitters system wide

1 for enhanced visibility and removal or installation of additional MAOP
2 separation valves.

3 **MAT 50P – Cathodic Protection System - New/Replace** – Installation of
4 impressed current ground bed, deep or shallow. Unit of measure is number of
5 CP systems installed.

6 This program relates to safety and/or reliability and/or maintenance as it
7 involves installation of impressed current ground bed, deep or shallow.

8 **MAT 52B – Emergency Response to Dig-Ins, Services** –
9 Replace/deactivate entire or stub services due to “dig-in,” outside forces, or
10 third-party damage. Also, includes service cut-offs due to emergencies
11 (e.g., due to fire). Unit of measure is number of services replaced.

12 This program relates to safety and/or reliability and/or maintenance as it
13 involves replacing or deactivating an entire service or stub services due to
14 “dig-ins,” outside forces, or third-party damage. It also includes service cut-offs
15 due to emergencies (e.g., due to fire).

16 **MAT 52C – Emergency Response to Dig-Ins, Mains** – Replace greater
17 than or equal to 100 feet gas distribution main due to dig-in or damage by
18 outside forces or third party. Deactivate greater than or equal to 1-foot gas
19 distribution main due to dig-in or damage by outside forces. Unit of measure is
20 footage of main replaced.

21 This program relates to safety and/or reliability and/or maintenance as it
22 involves replacing greater than or equal to 100 feet gas distribution main due to
23 dig-ins, damage by outside forces, or third parties. It also includes deactivations
24 of greater than or equal to 1-foot gas distribution main due to dig-ins or damage
25 by outside forces.

26 **MAT 74A – Gas Regulator Replacement** – Labor to replace failed or
27 deteriorating residential and non-residential regulators while performing routine
28 maintenance or other field activity. Includes targeted regulator replacement
29 programs and filter replacement with regulator replacement for large meter work
30 2” and greater. Does not include: (1) regulator replacement in conjunction with
31 a meter set, (2) the cost of the regulator; (3) HPR replacement; (4) distribution
32 district regulation equipment; and (5) replacement of strainer. Unit of measure is
33 number of regulators.

1 This program relates to safety and/or reliability and/or maintenance as it
2 involves labor to replace failed or deteriorating residential and non-residential
3 regulators while performing routine maintenance or other field activity. It
4 includes targeted regulator replacement programs and filter replacement with
5 regulator replacement for large meter work 2” and greater.

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 3
ELECTRIC DISTRIBUTION
IMPUTED ADOPTED VS. RECORDED COMPARISON

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 3
ELECTRIC DISTRIBUTION
IMPUTED ADOPTED VS. RECORDED COMPARISON

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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **SECTION 3**
3 **ELECTRIC DISTRIBUTION**
4 **IMPUTED ADOPTED VS. RECORDED COMPARISON**

5 **A. Introduction**

6 This section includes the following information for the Electric Distribution
7 line of business: a comparison of the total 2020 imputed adopted spend vs. the
8 actual spend. This section also includes, for programs that are related to safety,
9 reliability, or maintenance, the Major Work Category (MWC)/Maintenance
10 Activity Type (MAT) Code descriptions, imputed adopted vs. actuals comparison
11 details and variance explanations. As required by Decision (D.) 19-04-020¹ the
12 MWC/MAT Code descriptions include a discussion of how each program/project
13 relates to safety, reliability, or maintenance. Also included in this section are
14 supplemental reporting on certain units of work, progress on the non-exempt
15 surge arrestor replacement program, and age data of Pacific Gas and Electric
16 Company's (PG&E or the Company) distribution poles.

1 Attachment 2, p. 9.

1 B. Comparison Summary Tables

**TABLE 3-1
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Support and Emergency Preparedness and Response (EP&R)	AB	66,476.8	58,860.3	(7,616.5)
2	Read & Investigate Meters	AR	0.0	10,095.5	10,095.5
3	Electric Distribution Operation Activities	BA	21,343.7	30,016.6	8,672.9
4	Electric Distribution Patrols and Inspections	BF	33,084.3	159,713.3	126,629.0
5	Electric Distribution Routine Emergency	BH	57,276.1	67,075.2	9,799.1
6	Maintenance of Other Equip	BK	1,662.5	1,851.5	189.0
7	Customer Field Service Work	DD	20,381.1	23,605.5	3,224.5
8	Develop & Provide Training	DN	0.0	168.0	168.0
9	Manage Service Inquiries	EV	12,624.9	12,985.8	360.8
10	Electric Operations Work Requested by Others (WRO)	EW	8,858.9	15,521.5	6,662.6
11	Change/Maintenance Used Electric Meter	EY	0.0	6,808.5	6,808.5
12	Electric Distribution Engineering and Planning	FZ	16,973.6	16,644.8	(328.8)
13	Poles – Intrusive Inspection/Test and Treat Program	GA	13,584.5	32,126.4	18,541.9
14	Operate and Maintain Substations	GC	29,124.6	49,608.4	20,483.8
15	Electric Distribution Mapping	GE	5,899.0	8,845.1	2,946.1
16	Electric Distribution Operational Technology	HG	10,947.8	7,228.3	(3,719.5)
17	Vegetation Management Balancing Account	HN	548,012.6	736,320.0	188,307.4
18	Distribution Automation & Protection Support	HX	2,048.3	2,344.2	295.9
19	Perform Gas Meter Maintenance	HY	0.0	1,552.4	1,552.4
20	Electric Distribution Major Emergency	IF	33,743.5	30,973.4	(2,770.1)
21	Various Balancing and Memorandum Accounts	IG	0.0	783,961.0	783,961.0
22	Streetlight Support	IS	1,087.5	708.5	(379.0)
23	Collect Revenue	IU	0.0	1,499.2	1,499.2
24	Maintain IT Applications & Infrastructure	JV	5,246.0	2,489.5	(2,756.5)
25	Preventive Maintenance and Equipment Repair, Overhead (OH)	KA	32,448.7	113,900.8	81,452.2
26	Preventive Maintenance and Equipment Repair, Underground (UG)	KB	12,537.2	13,147.3	610.2
27	Preventive Maintenance and Equipment Repair,	KC	4,025.3	4,890.8	865.5
28	Operational Management	OM	7,217.3	(4,204.1)	(11,421.4)
29	Operational Support	OS	22,304.7	55,554.7	33,250.1
30	Total		966,908.7	2,244,292.3	1,277,383.6

**TABLE 3-2
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Tools & Equipment	05	7,397.5	6,711.0	(686.5)
2	Electric Distribution Line and Equipment Capacity	06	90,793.5	107,255.3	16,461.8
3	Electric Distribution Install/Replace Overhead Poles	07	108,278.6	246,582.5	138,303.9
4	Electric Distribution Overhead Asset Replacement	08	544,535.2	501,370.6	(43,164.6)
5	Electric Distribution Automation & Protection	09	33,844.5	37,503.9	3,659.4
6	Electric Distribution Work Requested by Others (WRO) General	10	121,507.1	145,660.1	24,152.9
7	Electric Distribution Customer Connects	16	450,570.2	536,186.4	85,616.2
8	Electric Distribution Routine Emergency	17	183,518.1	247,499.6	63,981.5
9	Miscellaneous Capital and Emergency Preparedness & Response	21	(24,928.7)	18,469.3	43,397.9
11	Install New Electric Meters	25	0.0	24,204.9	24,204.9
12	Electric Distribution Preventive Maintenance Overhead	2A	192,504.0	314,608.5	122,104.5
13	Electric Distribution Preventive Maintenance Underground	2B	57,228.8	47,590.1	(9,638.7)
14	Electric Distribution Preventive Maintenance	2C	19,260.8	22,565.9	3,305.1
15	Build IT Applications & Infrastructure	2F	17,570.2	42,151.9	24,581.7
16	Energy Storage Capital	3R	0.0	205.6	205.6
17	Electric Distribution WRO Rule 20A	30	33,420.2	38,272.6	4,852.4
18	Electric Distribution Substation Capacity	46	33,678.1	35,574.1	1,896.0
19	Electric Distribution Substation Replace Other Equipment	48	49,406.9	77,617.7	28,210.8
20	Electric Distribution Reliability Circuit/Zone	49	35,603.4	111,792.0	76,188.7
21	Electric Distribution Substation Transformer Replacements	54	5,513.0	31,817.9	26,304.9
22	Electric Distribution Underground (UG) Asset Replacements	56	98,750.8	79,923.7	(18,827.2)
23	Electric Distribution Substation Safety and Security	58	4,609.9	3,369.0	(1,240.9)
24	Electric Distribution Substation Emergency Replacement	59	62,612.4	119,133.5	56,521.0
25	Electric Operations Control Center Facility and Operations Technology	63	36,915.1	45,490.7	8,575.6
26	Install New Gas Meters	74	0.0	18,218.1	18,218.1
27	Electric Distribution Major Emergency	95	55,086.2	64,256.8	9,170.6
28	Total		2,217,675.9	2,924,031.5	706,355.6

1 C. Comparison by MAT Code for Safety, Reliability, and Maintenance Work Tables

**TABLE 3-3
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation	
1	AB	Support and EP&R	#	Not assigned	SRM Total	SRM Total	4-18	\$ 17,717.0	\$ 51,279.6	\$ 33,562.7	189.4%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed adopted amounts due to increased costs for outside services to support business objectives, costs for PSPS that were forecast in MAT AB6 but recorded in MAT AB#, and federal land authorization costs not included in the 2020 GRC forecast. Additionally, the imputed regulatory value contains a consolidated negative forecast for expected expense efficiency offsets which are not tracked or recorded in MWC AB.	Below variance threshold.	
2	AB	Support and EP&R	#	Not assigned	RAMP Risk: DOCP Mitigation	M3 - Additional Public Awareness Outreach	4-18	\$ 43.5	\$ 491.5	\$ 448.0	1029.7%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3	AB	Support and EP&R	#	Not assigned	RAMP Risk: WF Mitigation	M13 - Public Safety Power Shutoff	4-3	\$ -	\$ 4,359.3	\$ 4,359.3	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4	AB	Support and EP&R	#	Not assigned	RAMP Risk: WF Mitigation	M28 - CWSP Program Management Office	4-18	\$ 8,249.8	\$ -	\$ (8,249.8)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5	AB	Support and EP&R	#	Not assigned	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	N/A	\$ -	\$ 297.7	\$ 297.7	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6	AB	Support and EP&R	AB6	EP&R Expense	SRM Total	SRM Total	4-3	\$ 48,759.9	\$ 7,580.7	\$ (41,179.1)	-84.5%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses were below imputed regulatory values due to wildfire mitigation activities being recorded in MWC IG instead of MWC AB. Recorded amount is primarily for EP&R base activities.	Below variance threshold.	
7	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M13 - Public Safety Power Shutoff	4-3	\$ 6,094.2	\$ 24.8	\$ (6,069.5)	-99.6%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M18 - Wildfire Safety Operations Center	4-3	\$ 6,002.6	\$ -	\$ (6,002.6)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M19 - Expanded Weather Station Deployment	4-3	\$ 558.5	\$ -	\$ (558.5)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M20 - SOPP Model Automation	4-3	\$ 292.6	\$ -	\$ (292.6)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M21 - Advanced Fire Modeling	4-3	\$ 1,154.3	\$ -	\$ (1,154.3)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M22 - Wildfire Cameras	4-3	\$ 14,361.9	\$ -	\$ (14,361.9)	-100.0%	180	0	(180)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A
13	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M23 - Satellite Fire Detection System	4-3	\$ 292.6	\$ -	\$ (292.6)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M24 - Enhanced Wire Down Detection	4-3	\$ 212.8	\$ -	\$ (212.8)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	AB	Support and EP&R	AB6	EP&R Expense	RAMP Risk: WF Mitigation	M25 - Wildfire and Infrastructure Protection Teams	4-3	\$ 13,325.7	\$ -	\$ (13,325.7)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	AR	Read & Investigate Meters	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 10,095.5	\$ 10,095.5	100.0%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to transfer of this program from Customer Care to Electric Distribution in 2018.	Below variance threshold.	
17	BA	Electric Distribution Operation Activities	#	Not assigned	SRM Total	SRM Total	4-5	\$ -	\$ -	\$ -	0.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.	
18	BA	Electric Distribution Operation Activities	#	Not assigned	RAMP Risk: WF Mitigation	M14 - Reclose Blocking	4-5	\$ -	\$ -	\$ -	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
19	BA	Electric Distribution Operation Activities	BAF	General Operations	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ 21,343.7	\$ 26,588.1	\$ 5,244.3	24.6%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program expenses exceeded imputed regulatory values due to a shortage in distribution system operator resources, which resulted in overtime or double-time to cover vacant shifts. COVID-19 illness and safety measures increased operating costs due to employee down time and staffing of temporary control centers.	Below variance threshold.	
20	BA	Electric Distribution Operation Activities	BAH	FLISR Maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ -	\$ 3,428.6	\$ 3,428.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.	

**TABLE 3-3
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
21	BF	Electric Distribution Patrols and Inspections	BF3	UG BART Cable Test/Insp	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 39.8	\$ -	\$ (39.8)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
22	BF	Electric Distribution Patrols and Inspections	BF4	UG Auto Transfer Switch Test/Insp	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 97.8	\$ 85.4	\$ (12.4)	-12.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
23	BF	Electric Distribution Patrols and Inspections	BFA	OH Poles Patrolled	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 4,802.6	\$ 6,543.8	\$ 1,741.2	36.3%	1,502,599	1,650,872	148,273	9.9%	NO	NO	NO	Below variance threshold.	Below variance threshold.
24	BF	Electric Distribution Patrols and Inspections	BFB	OH Poles Inspected	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 13,281.7	\$ 93,970.4	\$ 80,688.6	607.5%	493,600	679,096	185,496	37.6%	YES	YES	YES	Program expenses exceeded imputed regulatory values due to increased number and cost of inspections, driven by new enhanced inspection process, and increased inspections in the high fire threat areas.	Program units exceeded imputed regulatory values due to increased number of inspections, driven by new enhanced inspection process, and increased inspections in the high fire threat areas.
25	BF	Electric Distribution Patrols and Inspections	BFC	OH Infrared Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,190.8	\$ 1,561.3	\$ (629.5)	-28.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
26	BF	Electric Distribution Patrols and Inspections	BFD	UG Enclosures Patrolled	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 985.6	\$ 2,166.5	\$ 1,180.8	119.8%	184,104	259,023	74,919	40.7%	NO	NO	YES	Below variance threshold.	Program units exceeded imputed regulatory values due to increased number of patrols, driven by new requirements in the high fire threat areas.
27	BF	Electric Distribution Patrols and Inspections	BFE	UG Infrared Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 5,239.0	\$ 11,345.2	\$ 6,106.2	116.6%	60,956	170,262	109,306	179.3%	NO	YES	YES	Program expenses exceeded imputed regulatory values due to decision to move padmount equipment back to a 3 year inspection cycle instead of 5 year per GO 165.	Program units exceeded imputed regulatory values due to increased number of inspections, driven by padmount equipment moved back to a 3 year inspection cycle instead of 5 year cycle per GO 165.
28	BF	Electric Distribution Patrols and Inspections	BFF	UG Line Equipment Insp/Test	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 559.0	\$ 611.6	\$ 52.6	9.4%	2,415	1,272	(1,143)	-47.3%	NO	NO	YES	Below variance threshold.	Program units less than imputed regulatory value due to manhole inspection totals remaining at pre-2020 levels.
29	BF	Electric Distribution Patrols and Inspections	BFG	OH Line Equipment Insp/Test	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,742.6	\$ 2,574.2	\$ (168.4)	-6.1%	24,288	24,577	289	1.2%	NO	NO	NO	Below variance threshold.	Below variance threshold.
30	BF	Electric Distribution Patrols and Inspections	BFH	Inspection Projects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,724.5	\$ 40,699.0	\$ 37,974.5	1393.8%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to significant project costs related to the implementation of the 2019 WSIP program in the High Fire Threat District. These are costs associated with the transition to enhanced inspection protocols including audits and oversight costs.	Below variance threshold.
31	BF	Electric Distribution Patrols and Inspections	BFJ	OH Patrol ORT Post Outage	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 420.8	\$ 155.7	\$ (265.1)	-63.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
32	BF	Electric Distribution Patrols and Inspections	BFL	SB WF Patrols	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 0.3	\$ 0.3	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
33	BH	Electric Distribution Routine Emergency	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 57,276.1	\$ 67,075.2	\$ 9,799.1	17.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
34	BK	Maintenance of Other Equip	BKA	Line Equipment Overhauls (Emeryville)	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 1,203.3	\$ 1,547.1	\$ 343.7	28.6%	1,175	864	(311)	-26.5%	NO	NO	YES	Below variance threshold.	Program actual units were lower than imputed adopted due to shift in work to field repairs and scrapping caused by storm and wildfire recovery activities.
35	BK	Maintenance of Other Equip	BKJ	Line Equipment Overhauls (Division Up/Down Labor) (Emeryville)	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 397.6	\$ 204.5	\$ (193.0)	-48.6%	89	117	28	31.5%	NO	NO	YES	Below variance threshold.	Program actual units were lower than imputed adopted units due to shift in work to field repairs and scrapping caused by storm and wildfire damage.
36	BK	Maintenance of Other Equip	BKK	Equip Warranty Repair (Emeryville)	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 61.6	\$ 99.9	\$ 38.3	62.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
37	DD	Customer Field Service Work	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ 5,799.2	\$ 6,778.2	\$ 979.0	16.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
38	DD	Customer Field Service Work	DDC	Electric Start/Stop	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ -	\$ 399.8	\$ 399.8	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
39	DD	Customer Field Service Work	DDH	Electric Trouble Customer Equipment	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ 5,767.2	\$ 5,743.0	\$ (24.2)	-0.4%	47,535	32,876	(14,659)	-30.8%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed adopted units due to fewer outages caused by customer equipment in 2020. This is demand driven work and has many variables (customers equipment condition, business activity, weather, activation of emergency center), and PG&E responded to outages as they occurred.
40	DD	Customer Field Service Work	DDJ	Swing Service, Disconnects/Reconnects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ 8,814.7	\$ 10,684.4	\$ 1,869.8	21.2%	80,818	76,496	(4,322)	-5.3%	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 3-3
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
41	DN	Develop & Provide Training	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	N/A	\$ -	\$ 168.0	\$ 168.0	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
42	EY	Change/Maintenance Used Electric Meter	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 6,808.5	\$ 6,808.5	100.0%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program expenses exceeded imputed regulatory values due to transfer of this program from Customer Care to Electric Distribution in 2018.	Below variance threshold.
43	FZ	Electric Distribution Engineering and Planning	FZA	General Engineering	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 14,409.5	\$ 13,363.3	\$ (1,046.2)	-7.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
44	FZ	Electric Distribution Engineering and Planning	FZB	Voltage Complaints Investigations	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 589.5	\$ 1,127.4	\$ 537.9	91.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
45	FZ	Electric Distribution Engineering and Planning	FZC	Transformer Reports Manage	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 14.0	\$ 28.0	\$ 14.0	99.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
46	FZ	Electric Distribution Engineering and Planning	FZD	Field Work Plan	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 574.0	\$ 287.7	\$ (286.3)	-49.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
47	FZ	Electric Distribution Engineering and Planning	FZE	Troublemens Field Work	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 1,386.5	\$ 1,838.3	\$ 451.8	32.6%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
48	GA	Poles – Intrusive Inspection/Test and Treat Program	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ (4,187.8)	\$ (4,018.1)	\$ 169.7	-4.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
49	GA	Poles – Intrusive Inspection/Test and Treat Program	GAA	Intrusive Inspection Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 12,435.4	\$ 17,446.7	\$ 5,011.2	40.3%	246,252	238,253	(7,999)	-3.2%	NO	YES	NO	Program expenses exceeded imputed regulatory values due to process changes that included the requirement to have Locate & Mark physically assess each pole prior to soil disturbance during the intrusive inspections, as well as costs for unexpected inspections of unique pole projects (e.g. streetlight only poles, poles within substation boundaries, etc.).	Below variance threshold.
50	GA	Poles – Intrusive Inspection/Test and Treat Program	GAB	Pole Joint Util Maint Reimbursement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ 473.3	\$ 473.3	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
51	GA	Poles – Intrusive Inspection/Test and Treat Program	GAC	Pole Analyze Loading	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ 13,111.8	\$ 13,111.8	100.0%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to the implementation of new pole loading program not included in the 2020 GRC which incorporates wind loading into pole loading calculations.	Below variance threshold.
52	GA	Poles – Intrusive Inspection/Test and Treat Program	GAD	Pole Restoration Program	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ 4,902.0	\$ 4,783.5	\$ (118.5)	-2.4%	5,464	4,402	(1,062)	-19.4%	NO	NO	NO	Below variance threshold.	Below variance threshold.
53	GA	Poles – Intrusive Inspection/Test and Treat Program	GAF	Telco Engr Review Non-Reimbursed	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ 163.1	\$ -	\$ (163.1)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
54	GA	Poles – Intrusive Inspection/Test and Treat Program	GAH	Pole Joint Util Maint Non-Reim	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ 271.8	\$ 329.3	\$ 57.4	21.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
55	GC	Operate and Maintain Substations	GC1	ED Substation Engineering Maintenance Support	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 4,492.2	\$ 4,996.8	\$ 504.7	11.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
56	GC	Operate and Maintain Substations	GC2	ED Substation Major Emergency Corrective Maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 4,701.3	\$ 11,960.1	\$ 7,258.8	154.4%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program costs exceeded imputed regulatory values due to increased number of inspections, driven by new enhanced inspection process, and increased inspections in the high fire threat areas, which resulted in increased amount of corrective maintenance work.	Below variance threshold.
57	GC	Operate and Maintain Substations	GCA	ED Substation: TXImr - preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 878.3	\$ 948.6	\$ 70.4	8.0%	4,311	4,557	246	5.7%	NO	NO	NO	Below variance threshold.	Below variance threshold.
58	GC	Operate and Maintain Substations	GCB	ED Substation: Breaker - preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 742.1	\$ 559.1	\$ (183.0)	-24.7%	1,791	1,365	(426)	-23.8%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer breaker units requiring preventive maintenance.
59	GC	Operate and Maintain Substations	GCC	ED Substation: Relay - preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,164.2	\$ 2,294.0	\$ 129.9	6.0%	1,177	1,408	231	19.6%	NO	NO	NO	Below variance threshold.	Below variance threshold.
60	GC	Operate and Maintain Substations	GCD	ED Substation: Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,556.9	\$ 4,924.0	\$ 2,367.1	92.6%	8,002	6,996	(1,006)	-12.6%	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 3-3
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
61	GC	Operate and Maintain Substations	GCE	ED Substation: General station preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 436.9	\$ 438.9	\$ 2.0	0.5%	1,014	1,187	173	17.1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
62	GC	Operate and Maintain Substations	GCF	ED Substation: Batteries - preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 298.0	\$ 435.6	\$ 137.5	46.1%	646	1,171	525	81.3%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to increased number of breaker units requiring mechanism servicing.
63	GC	Operate and Maintain Substations	GCG	ED Substation Vegetation Management	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 1,479.1	\$ 7,431.3	\$ 5,952.3	402.4%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program costs exceeded imputed regulatory values due to an expansion of vegetation management activities to achieve defensible space and other clearance activities in HFTD areas.	Below variance threshold.
64	GC	Operate and Maintain Substations	GCH	ED Substation Building Maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 951.1	\$ 1,656.8	\$ 705.7	74.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
65	GC	Operate and Maintain Substations	GCI	ED Substation: Switches preventive maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 61.3	\$ 68.0	\$ 6.8	11.1%	91	104	13	14.3%	NO	NO	NO	Below variance threshold.	Below variance threshold.
66	GC	Operate and Maintain Substations	G CJ	ED Substation: Corrective (T80)	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 7,460.2	\$ 11,173.9	\$ 3,713.7	49.8%	7,469	4,461	(3,008)	-40.3%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer issues identified than planned in substations. This reduction is in part attributed to the overlap from the WSIP identified issues corrected in 2019. In addition, there is overall variability in corrective work.
67	GC	Operate and Maintain Substations	GCM	ED Substation Breaker Mechanism Services	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 822.4	\$ 1,543.8	\$ 721.4	87.7%	441	753	312	70.7%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to a higher volume of circuit breaker services undertaken. Assets are predetermined for maintenance activities using a time-based approach; however, maintenance plans include condition based triggers that may warrant accelerating the maintenance schedules.
68	GC	Operate and Maintain Substations	GCO	ED Substation Transformer Overhaul Inspections	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 1,483.8	\$ 540.6	\$ (943.2)	-63.6%	160	49	(111)	-69.4%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer Load Tap Changer (LTC) overhaul inspections undertaken. LTC inspections are projected based on anticipated LTC operations counter. The volume of LTCs exceeding their thresholds based on make and model was less than projected.
69	GC	Operate and Maintain Substations	GCS	ED Substation CKSW MOAS Mechanism Services	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 116.1	\$ 193.0	\$ 76.8	66.1%	49	90	41	83.7%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to a higher volume of circuit switcher and motor operated air switch mechanism services undertaken. Assets are predetermined for maintenance activities using a time-based approach; however, maintenance plans include condition based triggers that may warrant accelerating the maintenance schedules.
70	GC	Operate and Maintain Substations	GCV	ED Substation Breaker Overhauls	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 83.0	\$ 72.3	\$ (10.7)	-12.8%	17	15	(2)	-11.8%	NO	NO	NO	Below variance threshold.	Below variance threshold.
71	GC	Operate and Maintain Substations	G CW	ED Substation Station Washes	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 397.7	\$ 371.5	\$ (26.2)	-6.6%	444	422	(22)	-5.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
72	GE	Electric Distribution Mapping	#	Not assigned	SRM Total	SRM Total	4-18	\$ -	\$ 3,899.0	\$ 3,899.0	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
73	GE	Electric Distribution Mapping	#	Not assigned	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	4-18	\$ -	\$ 3,037.3	\$ 3,037.3	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
74	GE	Electric Distribution Mapping	GEO	Mapping	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-18	\$ 5,899.0	\$ 4,946.0	\$ (952.9)	-16.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
75	GE	Electric Distribution Mapping	GEP	Records Management	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-18	\$ -	\$ -	\$ -	0.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.

**TABLE 3-3
ELECTRIC DISTRIBUTION 2020 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
76	HG	Electric Distribution Operational Technology	#	Not assigned	SRM Total	SRM Total	4-5, 4-19	\$ 10,947.8	\$ 9.0	\$ (10,938.8)	-99.9%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses were lower than imputed regulatory values because work was recorded in new MAT codes HGC and HGD. Additionally, costs for wildfire risk mitigation M15 were recorded in MWC IG.	Below variance threshold.
77	HG	Electric Distribution Operational Technology	#	Not assigned	RAMP Risk: WF Mitigation	M15-Automation and Protection	4-5	\$ 349.9	\$ -	\$ (349.9)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
78	HG	Electric Distribution Operational Technology	HGC	ADMS Development	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-19	\$ -	\$ 5,145.3	\$ 5,145.3	100.0%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program expenses were higher than imputed regulatory values because work was recorded in new MAT code HGC.	Below variance threshold.
79	HG	Electric Distribution Operational Technology	HGD	Distribution Operational Technology	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-5	\$ -	\$ 2,074.0	\$ 2,074.0	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
80	HN	Vegetation Management Balancing Account	N/A	Not assigned	SRM Total	SRM Total	4-7	\$ 548,012.6	\$ 736,320.0	\$ 188,307.4	34.4%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to higher costs for tree workers due to SB 247 for Routine Tree work. Imputed amount also includes costs for Enhanced Vegetation Management, which were recorded in MWC IG, MAT IGI.	Below variance threshold.
81	HN	Vegetation Management Balancing Account	N/A	Not assigned	RAMP Risk: WF Mitigation RAMP Risk: DOCP Mitigation	M16 - Enhanced VM M8 - Enhanced VM	4-7	\$ 318,742.3	\$ -	\$ (318,742.3)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
82	HX	Distribution Automation & Protection Support	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-10	\$ 2,048.3	\$ 2,344.2	\$ 295.9	14.4%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
83	HY	Perform Gas Meter Maintenance	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 1,552.4	\$ 1,552.4	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
84	IF	Electric Distribution Major Emergency	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-4	\$ 33,743.5	\$ 30,973.4	\$ (2,770.1)	-8.2%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
85	IG	Various Balancing and Memorandum Accounts	#	Not assigned	SRM Total	SRM Total	N/A	\$ -	\$ 241,517.8	\$ 241,517.8	100.0%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to wildfire mitigation work forecast in MWC AB (MATs AB6 and AB#) being recorded in MWC IG. Expenses recorded in IG# include RAMP risk mitigation costs listed below, and costs associated with wildfire mitigation work not identified in the 2020 GRC.	Below variance threshold.
86	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M12 - Wildfire System Hardening	4-9	\$ -	\$ 255.2	\$ 255.2	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
87	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M13 - Public Safety Power Shutoff	4-3	\$ -	\$ 157,506.6	\$ 157,506.6	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
88	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M15 - Automation and Protection	4-5	\$ -	\$ 10.1	\$ 10.1	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
89	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M18 - Wildfire Safety Operations Center	4-3	\$ -	\$ 4,347.8	\$ 4,347.8	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M19 - Expanded Weather Station Deployment	4-3	\$ -	\$ 111.2	\$ 111.2	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
91	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M20 - SOPP Model Automation	4-3	\$ -	\$ 1,627.1	\$ 1,627.1	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**TABLE 3-3
ELECTRIC DISTRIBUTION 2019 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
92	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M21 - Advanced Fire Modeling	4-3	\$ -	\$ 5,541.3	\$ 5,541.3	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
93	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M22 - Wildfire Cameras	4-3	\$ -	\$ 6,955.8	\$ 6,955.8	100.0%	0	216	(216)	100.0%	N/A	N/A	N/A	N/A	N/A
94	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M24 - Enhanced Wire Down Detection	4-3	\$ -	\$ 3.7	\$ 3.7	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
95	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M25 - Wildfire and Infrastructure Protection Teams	4-3	\$ -	\$ 15,341.9	\$ 15,341.9	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
96	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	M28 - CWSP Program Management Office	4-18	\$ -	\$ 17,753.4	\$ 17,753.4	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
97	IG	Various Balancing and Memorandum Accounts	#	Not assigned	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	N/A	\$ -	\$ 32,063.8	\$ 32,063.8	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
98	IG	Various Balancing and Memorandum Accounts	IGI	Dead and Dying Trees	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	N/A	\$ -	\$ 87,802.6	\$ 87,802.6	0.0%	N/A	N/A	N/A	N/A	YES	NO	N/A	Program expenses exceeded imputed regulatory values due to costs for Tree Mortality work which were previously recovered in CEMA moving to the VMBA. No forecast for Tree Mortality work was included in the 2020 GRC.	Below variance threshold.
99	IG	Various Balancing and Memorandum Accounts	IGJ	Enhanced Vegetation Management	SRM Total	SRM Total	4-7	\$ -	\$ 454,705.4	\$ 454,705.4	100.0%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to imputed amount of \$318M for Enhanced Vegetation Management being included in MWC HN, where it was forecast in the 2020 GRC, and increased costs for tree workers due to SB 247.	Below variance threshold.
100	IG	Various Balancing and Memorandum Accounts	IGJ	Enhanced Vegetation Management	RAMP Risk: WF Mitigation RAMP Risk: DOCP Mitigation	M16 - Enhanced VM M8- Enhanced VM	4-7	\$ -	\$ 454,705.4	\$ 454,705.4	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
101	IS	Streetlight Support	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-18	\$ 1,087.5	\$ 708.5	\$ (379.0)	-34.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
102	IU	Collect Revenue	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 1,499.2	\$ 1,499.2	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
103	JV	Maintain IT Applications & Infrastructure	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-15	\$ 5,246.0	\$ 2,489.5	\$ (2,756.5)	-52.5%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
104	KA	Preventive Maintenance and Equipment Repair, OH	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 723.3	\$ 1,820.8	\$ 1,097.5	151.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
105	KA	Preventive Maintenance and Equipment Repair, OH	KAA	OH General CM Tag	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 18,598.6	\$ 93,916.9	\$ 75,318.3	405.0%	31,412	40,176	8,764	27.9%	YES	YES	YES	Program expenses exceeded imputed regulatory values due to costs associated with a higher volume of maintenance tags resulting from the 2019 Wildfire Safety Inspection Program (WSIP), higher volume of tags generated from enhanced inspection procedures, carry-over charges from 2019 work, and higher than planned unit costs.	Actual units were higher than imputed units due to a higher volume of completed maintenance tags resulting from the 2019 Wildfire Safety Inspection Program (WSIP), and higher volume of tags generated from enhanced inspection procedures.
106	KA	Preventive Maintenance and Equipment Repair, OH	KAC	Bird Safe Retrofit	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 739.4	\$ 756.2	\$ 16.8	2.3%	1,013	507	(506)	-50.0%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer units required due to work completed in other programs that included bird mitigation, such as system hardening, including tree wire projects, and pole replacement in raptor concentration zones.
107	KA	Preventive Maintenance and Equipment Repair, OH	KAD	Bird Safe Retrofit Annual	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 729.9	\$ 438.8	\$ (291.1)	-39.9%	1,000	292	(708)	-70.8%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer units required due to work completed in other programs that included bird mitigation, such as system hardening, including tree wire projects, and pole replacement in raptor concentration zones.
108	KA	Preventive Maintenance and Equipment Repair, OH	KAF	OH COE CM Tag	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 7,163.9	\$ 6,271.7	\$ (892.1)	-12.5%	1,419	1,203	(216)	-15.2%	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 3-3
ELECTRIC DISTRIBUTION 2019 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
109	KA	Preventive Maintenance and Equipment Repair, OH	KAH	Streetlights Replace Burnouts	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,176.8	\$ 1,602.8	\$ (574.0)	-26.4%	14,702	7,789	(6,913)	-47.0%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer burnouts driven by benefits from conversion of streetlights to LEDs.
110	KA	Preventive Maintenance and Equipment Repair, OH	KAK	RTVI Invest/Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 106.3	\$ 45.0	\$ (61.3)	-57.7%	144	102	(42)	-29.2%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to fewer customer complaints than forecasted.
111	KA	Preventive Maintenance and Equipment Repair, OH	KAM	Insulators Washing	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 206.3	\$ 47.5	\$ (158.8)	-77.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
112	KA	Preventive Maintenance and Equipment Repair, OH	KAO	Idle Facilities Invest - Svc Planning	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 179.0	\$ 681.0	\$ 502.0	280.4%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
113	KA	Preventive Maintenance and Equipment Repair, OH	KAP	OH Expense Projects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 6,617.7	\$ 6,617.7	100.0%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program costs exceeded imputed adopted amounts due to emergent work related to replacing Line Recloser actuator circuit boards, which were identified in 2019 as a safety issue.	Below variance threshold.
114	KA	Preventive Maintenance and Equipment Repair, OH	KAQ	Wood Pole Bridge Bonding	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 27.2	\$ 21.1	\$ (6.1)	-22.5%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
115	KA	Preventive Maintenance and Equipment Repair, OH	KAS	FAS Overhead Expense	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 1,798.0	\$ 1,681.3	\$ (116.6)	-6.5%	10,333	9,207	(1,126)	-10.9%	NO	NO	NO	Below variance threshold.	Below variance threshold.
116	KB	Preventive Maintenance and Equipment Repair, UG	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 644.5	\$ 241.0	\$ (403.5)	-62.6%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
117	KB	Preventive Maintenance and Equipment Repair, UG	KBA	UG General Corrective Maintenance (CM) Tag	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 10,801.7	\$ 11,881.3	\$ 1,079.6	10.0%	6,188	4,813	(1,375)	-22.2%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to re-prioritization of work plan to address other higher risk maintenance work.
118	KB	Preventive Maintenance and Equipment Repair, UG	KBC	UG COE CM Tag	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 854.2	\$ 929.3	\$ 75.2	8.8%	248	165	(83)	-33.5%	NO	NO	YES	Below variance threshold.	Program actual units were below imputed adopted units due to prioritization of resources to Tier 2 and Tier 3 HFTD area repairs and replacement work.
119	KB	Preventive Maintenance and Equipment Repair, UG	KBD	Nitrogen Cylinders CM	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 21.4	\$ 47.1	\$ 25.7	119.8%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
120	KB	Preventive Maintenance and Equipment Repair, UG	KBE	BART Cable Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 60.0	\$ 9.6	\$ (50.4)	-84.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
121	KB	Preventive Maintenance and Equipment Repair, UG	KBP	UG Expense Projects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 155.4	\$ 38.7	\$ (116.7)	-75.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
122	KB	Preventive Maintenance and Equipment Repair, UG	KBQ	Elbows/Splices Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 0.2	\$ 0.2	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
123	KC	Preventive Maintenance and Equipment Repair, Network	KCA	Network Equip CM Notifications	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 153.8	\$ 135.6	\$ (18.2)	-11.8%	75	41	(34)	-45.3%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to lower than expected abnormal conditions reported from the field.
124	KC	Preventive Maintenance and Equipment Repair, Network	KCB	Network Oil Repl & 60Day F/U	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 31.5	\$ 133.5	\$ 102.0	323.8%	27	197	170	629.6%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to preparation for upcoming SCADA work on the J Network Group. Work required oil replacement and 60-day follow-up retorque tags.

**TABLE 3-3
ELECTRIC DISTRIBUTION 2019 EXPENSE COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
125	KC	Preventive Maintenance and Equipment Repair, Network	KCC	Network Vault CM Notifications	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 159.8	\$ 70.2	\$ (89.6)	-56.1%	79	10	(69)	-87.3%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to lower than expected adverse vault conditions found in the field. Based on data from tags, mostly major vault work was reported (i.e. biohazard clean up) in 2020. Minor work (i.e. eyebolts, light bulbs) was not reported as much as in previous years.
126	KC	Preventive Maintenance and Equipment Repair, Network	KCD	Network Xmr Preventive Maintenance/Restore	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,480.9	\$ 2,985.7	\$ 504.8	20.3%	3,618	3,542	(76)	-2.1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
127	KC	Preventive Maintenance and Equipment Repair, Network	KCE	Network Protector Preventive Maintenance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 612.7	\$ 842.4	\$ 229.7	37.5%	390	402	12	3.1%	NO	NO	NO	Below variance threshold.	Below variance threshold.
128	KC	Preventive Maintenance and Equipment Repair, Network	KCF	Fiber/SCADA Comm Repair	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 586.7	\$ 723.4	\$ 136.7	23.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
1	05	Tools & Equipment	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-18	\$ 7,397.5	\$ 6,711.0	\$ (686.5)	-9.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
2	06	Electric Distribution Line and Equipment Capacity	06A	Fdr Prj Assoc w/Subst Capacity	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 7,892.4	\$ 11,131.6	\$ 3,239.3	41.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
3	06	Electric Distribution Line and Equipment Capacity	06B	Transformer Repl Overloaded	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 664.0	\$ 858.9	\$ 195.0	29.4%	50	17	(33)	-66.0%	NO	NO	YES	Below variance threshold.	Program actual units were below imputed adopted units due to less overhead transformer replacement work due to work deferral associated with COVID-19, and resource constraints due to focus on wildfire mitigation and maintenance work. In addition, several replacement projects were still in flight at the end of 2020.
4	06	Electric Distribution Line and Equipment Capacity	06D	Circuits Reinforce-DP Managed	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 3,421.6	\$ 2,015.1	\$ (1,406.5)	-41.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
5	06	Electric Distribution Line and Equipment Capacity	06E	Circuits Reinforce-PS Managed	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 18,350.2	\$ 21,097.7	\$ 2,747.5	15.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
6	06	Electric Distribution Line and Equipment Capacity	06G	Voltage Correct Secondary	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 3,209.1	\$ 2,174.0	\$ (1,035.2)	-32.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
7	06	Electric Distribution Line and Equipment Capacity	06H	Dist Line New Business Performance	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 44,338.0	\$ 53,781.5	\$ 9,443.5	21.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
8	06	Electric Distribution Line and Equipment Capacity	06I	Operational Capacity Proj	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 3,482.1	\$ 4,510.6	\$ 1,028.5	29.5%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
9	06	Electric Distribution Line and Equipment Capacity	06K	Power Factor Management	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 1,100.0	\$ 42.9	\$ (1,057.0)	-96.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
10	06	Electric Distribution Line and Equipment Capacity	06P	Enable DG Dist Line	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 1,322.1	\$ 930.2	\$ (391.9)	-29.6%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
11	06	Electric Distribution Line and Equipment Capacity	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 7,014.1	\$ 10,713.5	\$ 3,699.4	52.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
12	07	Electric Distribution Install/Replace Overhead Poles	07C	Special Criteria Pole Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ 21.3	\$ 21.3	100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
13	07	Electric Distribution Install/Replace Overhead Poles	07D	Pole Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ 108,278.6	\$ 238,785.9	\$ 130,507.4	120.5%	7,926	9,607	1,681	21.2%	YES	YES	YES	Program expenditures exceeded imputed regulatory values due to higher volume of deteriorated units identified during the 2019 WSIP inspections, and higher unit costs for pole replacements. The additional units identified were in HFTDs and the program was expanded to increase replacements in efforts to reduce overall system risk.	Actual units were higher than imputed units due to higher volume of deteriorated units identified during the 2019 WSIP inspections. The additional units identified were in HFTDs and the program was expanded to increase replacements in efforts to reduce overall system risk.
14	07	Electric Distribution Install/Replace Overhead Poles	07G	Pole Joint Util Telco Reimb	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ (4.2)	\$ (4.2)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
15	07	Electric Distribution Install/Replace Overhead Poles	07L	Steel Lattice Structures	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ 116.0	\$ 116.0	100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
16	07	Electric Distribution Install/Replace Overhead Poles	07O	Overloaded Pole Replacements	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ 11,114.4	\$ 11,114.4	100.0%	0	288	288	100.0%	NO	YES	YES	Program expenditures exceeded imputed regulatory values due to the forecast for overloaded poles being in MAT 07D in the 2020 GRC.	Program units exceeded imputed regulatory values due to the forecast for overloaded poles being in MAT 07D in the 2020 GRC.
17	07	Electric Distribution Install/Replace Overhead Poles	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-8	\$ -	\$ (3,451.0)	\$ (3,451.0)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
18	08	Electric Distribution Overhead Asset Replacement	08F	Do Not Use - Cornerstone	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ 9.8	\$ 9.8	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
19	08	Electric Distribution Overhead Asset Replacement	08J	Repl Deteriorated OH Conductor	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ 50,215.6	\$ 16,555.6	\$ (33,660.0)	-67.0%	95	29	(66)	-69.5%	YES	YES	YES	Program expenditures were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.	Program units were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.
20	08	Electric Distribution Overhead Asset Replacement	08S	Replace Obsolete OH Switches	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ 1,094.6	\$ 536.0	\$ (558.6)	-51.0%	30	10	(20)	-66.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to shifting of resources to support higher priority work such as System Hardening, WSIP tags, and PSPS.
21	08	Electric Distribution Overhead Asset Replacement	08W	System Hardening Wildfire Resiliency projects	SRM Total	SRM Total	4-9	\$ 493,225.0	\$ 484,810.4	\$ (8,414.6)	-1.7%	221	338	117	52.9%	NO	NO	YES	Below variance threshold.	The increase in units was due to the response to the 2020 lightning complex wildfires. Following those events, a new strategy was engaged to rebuild much of the damaged areas in compliance with the Fire Rebuild Design guidance where significant damage was assessed. These additional miles were funded in 08W alongside the normal planned units whilst the excess planned units were postponed until future years.
22	08	Electric Distribution Overhead Asset Replacement	08W	System Hardening Wildfire Resiliency projects	RAMP Risk: WF Mitigation	M12 - Wildfire System Hardening	4-9	\$ 493,225.0	\$ 484,755.5	\$ (8,469.5)	-1.7%	221	338	117	52.9%	N/A	N/A	N/A	N/A	N/A
23	08	Electric Distribution Overhead Asset Replacement	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ (541.2)	\$ (541.2)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
24	09	Electric Distribution Automation & Protection	09A	ED Line SCADA Install/Replace	SRM Total	SRM Total	4-10	\$ 5,517.7	\$ 66.6	\$ (5,451.1)	-98.8%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
25	09	Electric Distribution Automation & Protection	09A	ED Line SCADA Install/Replace	RAMP Risk: WF Mitigation	M15 - Automation and Protection	4-10	\$ -	\$ 50.6	\$ 50.6	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26	09	Electric Distribution Automation & Protection	09B	ED Sub SCADA/RTU Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-10	\$ 14,445.2	\$ 11,428.8	\$ (3,016.3)	-20.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
27	09	Electric Distribution Automation & Protection	09D	ED Sub SCADA/RTU Install	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-10	\$ 9,405.4	\$ 14,307.2	\$ 4,901.8	52.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
28	09	Electric Distribution Automation & Protection	09E	ED Sub Protect Relay Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-10	\$ 3,314.7	\$ 3,617.4	\$ 302.6	9.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
29	09	Electric Distribution Automation & Protection	09F	ED Sub SCADA Emergency Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-10	\$ 1,161.6	\$ 8,083.9	\$ 6,922.4	595.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
30	17	Electric Distribution Routine Emergency	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-4	\$ 183,518.1	\$ 247,499.6	\$ 63,981.5	34.9%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed values due to higher than forecast volume of emergency events, driving higher overall contract spend, higher estimating over head costs, and higher labor charges.	Below variance threshold.
31	21	Miscellaneous Capital and Emergency Preparedness & Response	#	Not assigned	SRM Total	SRM Total	4-18	\$ (26,116.0)	\$ 1,685.2	\$ 27,801.2	-106.5%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed adopted amounts due to the inclusion of capital efficiencies in MWC 21 in the 2020 GRC filing resulting in a negative imputed value. Any efficiencies achieved would be captured in the areas impacted by the process change and would not materialize in MWC 21. The recorded costs in MWC 21 represent the cost for emergency and preparedness response work not assigned to a mitigation for electric distribution in 2020.	Below variance threshold.
32	21	Miscellaneous Capital and Emergency Preparedness & Response	#	Not assigned	RAMP Risk: WF Mitigation	M19 - Expanded Weather Station Deployment	4-3	\$ 6,300.0	\$ -	\$ (6,300.0)	-100.0%	300	0	(300)	-100.0%	N/A	N/A	N/A	N/A	N/A
33	21	Miscellaneous Capital and Emergency Preparedness & Response	#	Not assigned	RAMP Risk: WF Mitigation	M21 - Advanced Fire Modeling	4-3	\$ 4,200.0	\$ -	\$ (4,200.0)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
34	21	Miscellaneous Capital and Emergency Preparedness & Response	#	Not assigned	RAMP Risk: WF Mitigation	M24 - Enhanced Wire Down Detection	4-3	\$ -	\$ 406.1	\$ 406.1	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35	21	Miscellaneous Capital and Emergency Preparedness & Response	#	Not assigned	RAMP Risk: WF Mitigation	M28 - CWSP Program Management Office	4-3	\$ 554.9	\$ -	\$ (554.9)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	SRM Total	SRM Total	4-3	\$ 1,187.3	\$ 16,803.4	\$ 15,616.1	1315.2%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program expenditures exceeded imputed regulatory values due in large part to wildfire mitigations that were forecast in MAT 21# being recorded in MAT 21A.	Below variance threshold.
37	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M13 - Public Safety Power Shutoff	4-3	\$ -	\$ 2,396.9	\$ 2,396.9	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M18 - Wildfire Safety Operations Center	4-3	\$ -	\$ (34.1)	\$ (34.1)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
39	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M19 - Expanded Weather Station Deployment	4-3	\$ -	\$ 8,334.3	\$ 8,334.3	100.0%	0	404	404	100.0%	N/A	N/A	N/A	N/A	N/A
40	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M21 - Advanced Fire Modeling	4-3	\$ -	\$ 898.8	\$ 898.8	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M24 - Enhanced Wire Down Detection	4-3	\$ -	\$ 809.5	\$ 809.5	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	M25 - Wildfire and Infrastructure Protection Teams	4-3	\$ -	\$ 1,253.9	\$ 1,253.9	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
43	21	Miscellaneous Capital and EP&R	21A	EP&R Capital	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	N/A	\$ -	\$ 2,626.2	\$ 2,626.2	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
44	21	Miscellaneous Capital and EP&R	21B	Capital projects for other LOB	SRM Total	SRM Total	4-3	\$ -	\$ (19.4)	\$ (19.4)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
45	21	Miscellaneous Capital and EP&R	21B	Capital projects for other LOB	RAMP Risk: WF Mitigation	M19 - Expanded Weather Station Deployment	4-3	\$ -	\$ (19.4)	\$ (19.4)	-100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
46	25	Install New Electric Meters	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 24,204.9	\$ 24,204.9	100.0%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenses exceeded imputed regulatory values due to transfer of this program from Customer Care to Electric Distribution in 2018.	Below variance threshold.
47	2A	Electric Distribution Preventive Maintenance OH	2AA	OH General Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 58,169.3	\$ 179,549.3	\$ 121,380.1	208.7%	12,079	13,716	1,637	13.6%	YES	YES	NO	Program expenditures exceeded imputed adopted amounts due to higher volume of tags and contract use due to higher demand (Tier 2 and Tier 3 HFTD area tag volume) than resources available.	Below variance threshold.
48	2A	Electric Distribution Preventive Maintenance OH	2AB	Bird Safe Install/Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 3,084.3	\$ 1,997.0	\$ (1,087.3)	-35.3%	1,211	500	(711)	-58.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to resource scheduling on higher priority WSIP tags and PSPS events.
49	2A	Electric Distribution Preventive Maintenance OH	2AC	Bird Safe Install/Replace Annual	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,528.8	\$ 5,977.3	\$ 3,448.5	136.4%	990	399	(591)	-59.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to resource scheduling on higher priority WSIP tags and PSPS events.
50	2A	Electric Distribution Preventive Maintenance OH	2AE	OH COE Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 31,209.3	\$ 44,510.0	\$ 13,300.7	42.6%	1,465	1,102	(363)	-24.8%	NO	YES	YES	Program expenditures exceeded imputed adopted amounts due to higher use of contract resources.	Actual units were lower than imputed units due to resource scheduling on higher priority WSIP tags and PSPS events.
51	2A	Electric Distribution Preventive Maintenance OH	2AF	OH Idle Facility Remove	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 9,809.6	\$ 5,867.5	\$ (3,942.1)	-40.2%	2,219	673	(1,546)	-69.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to re-prioritization of work plan to address other higher risk maintenance work.
52	2A	Electric Distribution Preventive Maintenance OH	2AG	SF Series Streetlights	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 29.8	\$ 29.8	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
53	2A	Electric Distribution Preventive Maintenance OH	2AH	LED Streetlights	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 2,519.9	\$ 2,519.9	100.0%	0	8,204	8,204	100.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to the program extending beyond the forecasted completion in 2019.
54	2A	Electric Distribution Preventive Maintenance OH	2AI	SF Historical Streetlights	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 477.5	\$ 477.5	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
55	2A	Electric Distribution Preventive Maintenance OH	2AP	OH Capital Projects	SRM Total	SRM Total	4-6	\$ 13,479.8	\$ 8,368.3	\$ (5,111.4)	-37.9%	625	643	18	2.9%	NO	NO	NO	Below variance threshold.	Below variance threshold.
56	2A	Electric Distribution Preventive Maintenance OH	2AP	OH Capital Projects - Non-exempt fuse replacement	RAMP Risk: WF Mitigation	M12 - Wildfire System Hardening	4-6	\$ 5,425.2	\$ 7,846.6	\$ 2,421.4	44.6%	625	643	18	2.9%	N/A	N/A	N/A	N/A	N/A

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
57	2A	Electric Distribution Preventive Maintenance OH	2AQ	Ceramic Post Insulators	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ 2,753.4	\$ 2,753.4	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
58	2A	Electric Distribution Preventive Maintenance OH	2AR	Surge Arrester Replacement	SRM Total	SRM Total	4-6	\$ 73,485.9	\$ 63,498.0	\$ (9,987.9)	-13.6%	19,340	14,362	(4,978)	-25.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to limitations in field variables concerning contractors performing work and change in strategy to prioritize work on more difficult units in Tier 2 and 3 HFTD areas.
59	2A	Electric Distribution Preventive Maintenance OH	2AR	Surge Arrester Replacement	RAMP Risk: WF Mitigation	M5 - Non-exempt Surge Arrester Replacement Program	4-6	\$ 73,485.9	\$ 63,498.0	\$ (9,987.9)	-13.6%	19,340	14,362	(4,978)	-25.7%	N/A	N/A	N/A	N/A	N/A
60	2A	Electric Distribution Preventive Maintenance OH	2AS	FAS Overhead Capital	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 737.1	\$ 213.7	\$ (523.3)	-71.0%	2,328	1,271	(1,057)	-45.4%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to re-prioritization of work plan to address other higher risk maintenance work.
61	2A	Electric Distribution Preventive Maintenance OH	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ (1,153.3)	\$ (1,153.3)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
62	2B	Electric Distribution Preventive Maintenance UG	2BA	UG General Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 44,603.1	\$ 37,857.9	\$ (6,745.2)	-15.1%	2,519	1,365	(1,154)	-45.8%	NO	NO	YES	Below variance threshold.	Program actual units were below imputed adopted units due to recategorization of fault indicators to MAT 2BB.
63	2B	Electric Distribution Preventive Maintenance UG	2BB	Fault Indicator Replacements	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 1,140.9	\$ 646.4	\$ (494.5)	-43.3%	3,796	3,060	(736)	-19.4%	NO	NO	NO	Below variance threshold.	Below variance threshold.
64	2B	Electric Distribution Preventive Maintenance UG	2BD	UG COE Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 5,761.3	\$ 7,595.9	\$ 1,834.6	31.8%	146	108	(38)	-26.0%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to resource scheduling on higher priority WSIP tags and PSPS events.
65	2B	Electric Distribution Preventive Maintenance UG	2BF	UG Idle Facility Remove	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 189.2	\$ 175.8	\$ (13.4)	-7.1%	17	10	(7)	-41.2%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to re-prioritization of work plan to address other higher risk maintenance work.
66	2B	Electric Distribution Preventive Maintenance UG	2BP	UG Capital Projects	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 2,522.0	\$ 2,015.6	\$ (506.4)	-20.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
67	2B	Electric Distribution Preventive Maintenance UG	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 3,012.4	\$ (701.4)	\$ (3,713.8)	-123.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
68	2C	Electric Distribution Preventive Maintenance Network	2CA	NP Relay Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 276.2	\$ 366.5	\$ 90.2	32.7%	25	57	32	128.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to preparation of upcoming work on the J Network group. Network Protectors on the J Network group needed to be replaced, resulting in an increased number of units than previous years.
69	2C	Electric Distribution Preventive Maintenance Network	2CB	Fiber/SCADA Communication Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 166.8	\$ 25.2	\$ (141.7)	-84.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
70	2C	Electric Distribution Preventive Maintenance Network	2CC	Network Transformer & Protector Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 5,009.7	\$ 6,225.1	\$ 1,215.4	24.3%	25	31	6	24.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to unexpected emergency replacements in December 2020. PG&E does not anticipate delays in replacing oil-filled transformers in high-rise buildings beyond the 2021 planned completion date.
71	2C	Electric Distribution Preventive Maintenance Network	2CD	Venting Manhole Covers Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 5,425.2	\$ 4,065.3	\$ (1,359.8)	-25.1%	594	541	(53)	-8.9%	NO	NO	NO	Below variance threshold.	Below variance threshold.
72	2C	Electric Distribution Preventive Maintenance Network	2CE	SCADA Communications Upgrd	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ 8,382.9	\$ 12,074.5	\$ 3,691.7	44.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
73	2C	Electric Distribution Preventive Maintenance Network	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-6	\$ -	\$ (190.7)	\$ (190.7)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
74	2F	Build IT Applications & Infrastructure	N/A	Not assigned	SRM Total	SRM Total	4-15	\$ 17,570.2	\$ 42,151.9	\$ 24,581.7	139.9%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed regulatory values due in large part to technology support for wildfire mitigation efforts (PSPS, System Hardening) not forecast in 2020 GRC.	Below variance threshold.
75	2F	Build IT Applications & Infrastructure	N/A	Not assigned	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	4-15	\$ -	\$ 22,657.9	\$ 22,657.9	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
76	3R	Energy Storage Capital	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	N/A	\$ -	\$ 205.6	\$ 205.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
77	46	Electric Distribution Substation Capacity	46A	ED Substation General install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 4,794.2	\$ 6,359.3	\$ 1,565.1	32.6%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
78	46	Electric Distribution Substation Capacity	46F	ED Substation Emergency and Operational Capacity	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 16,132.2	\$ 11,942.4	\$ (4,189.9)	-26.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
79	46	Electric Distribution Substation Capacity	46H	ED Substation New Bus Related Capacity	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 11,462.0	\$ 17,226.4	\$ 5,764.4	50.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
80	46	Electric Distribution Substation Capacity	46N	ED Substation Land Purchase New Sub	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 456.8	\$ 46.0	\$ (410.8)	-89.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
81	46	Electric Distribution Substation Capacity	46T	ED Substation Support Transmission or Substation Related work	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-13	\$ 833.0	\$ -	\$ (833.0)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
82	48	Electric Distribution Substation Replace Other Equipment	48A	Replace ED Substation Other Equipment	SRM Total	SRM Total	4-12	\$ 5,534.6	\$ 4,169.8	\$ (1,364.8)	-24.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
83	48	Electric Distribution Substation Replace Other Equipment	48A	Replace ED Substation Other Equipment	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	4-12	\$ -	\$ 749.4	\$ 749.4	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
84	48	Electric Distribution Substation Replace Other Equipment	48B	Replace ED Substation Regulators	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ -	\$ (1.3)	\$ (1.3)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
85	48	Electric Distribution Substation Replace Other Equipment	48C	Replace ED Substation Batteries	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,203.6	\$ 282.0	\$ (1,921.5)	-87.2%	10	2	(8)	-80.0%	NO	NO	YES	Below variance threshold.	Program actual units were below imputed adopted units due to the changes in the battery replacement strategy from proactive replacement to a Just-In-Time strategy. The majority of the batteries were installed under emergency work and/or included as part of other major planned projects.
86	48	Electric Distribution Substation Replace Other Equipment	48D	Replace ED Substation Breakers	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 7,203.0	\$ 3,571.2	\$ (3,631.8)	-50.4%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
87	48	Electric Distribution Substation Replace Other Equipment	48E	Replace ED Substation Switches	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 570.0	\$ 2,536.0	\$ 1,966.0	344.9%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
88	48	Electric Distribution Substation Replace Other Equipment	48F	Replace ED Substation Switchgear	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 20,458.2	\$ 45,359.8	\$ 24,901.5	121.7%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed values due to an increase in costs to pursue the next phase of switchgear projects at Larkin, El Cerrito, San Francisco M, San Francisco F (Marina Substation), and Oakland D.	Below variance threshold.
89	48	Electric Distribution Substation Replace Other Equipment	48H	Replace ED Substation Civil Structures	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 1,992.1	\$ 191.7	\$ (1,800.5)	-90.4%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
90	48	Electric Distribution Substation Replace Other Equipment	48L	Dist Line Work Support Substation	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 6,924.9	\$ 15,926.1	\$ 9,001.2	130.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
91	48	Electric Distribution Substation Replace Other Equipment	48N	ED Substation Insulators	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,196.6	\$ 622.6	\$ (1,574.1)	-71.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
92	48	Electric Distribution Substation Replace Other Equipment	48R	ED Substation Reactors	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ -	\$ (1.1)	\$ (1.1)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
93	48	Electric Distribution Substation Replace Other Equipment	48X	ED Substation Animal Abatement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,323.8	\$ 4,960.9	\$ 2,637.1	113.5%	10	2	(8)	-80.0%	NO	NO	YES	Program expenditures exceeded imputed values due to the re-initiation of deferred animal abatement projects.	Program actual units were below imputed adopted units due to prior year delays of animal abatement projects re-initiated. Additional animal abatement projects were expedited due to 2019 WSIP efforts under MWC 59.
94	49	Electric Distribution Reliability Circuit/Zone	49A	Distribution Line Automation	SRM Total	SRM Total	4-9	\$ -	\$ 1,406.4	\$ 1,406.4	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
95	49	Electric Distribution Reliability Circuit/Zone	49A	Distribution Line Automation	RAMP Risk: WF Mitigation	M15 - Automation and Protection	4-10	\$ -	\$ 1,405.1	\$ 1,405.1	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
96	49	Electric Distribution Reliability Circuit/Zone	49B	Recl Ctrls Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ 0.2	\$ 0.2	100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
97	49	Electric Distribution Reliability Circuit/Zone	49C	OH Fuses Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ 1,066.2	\$ 312.0	\$ (754.2)	-70.7%	99	12	(87)	-87.9%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to resources allocated to higher priority work such as System Hardening, WSIP tags, and PSPS.
98	49	Electric Distribution Reliability Circuit/Zone	49D	OH Recl/Sect/Swch Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ 239.3	\$ 239.3	100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
99	49	Electric Distribution Reliability Circuit/Zone	49E	General Install/Replace Circuit/Zone	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ (4,691.5)	\$ (4,691.5)	-100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
100	49	Electric Distribution Reliability Circuit/Zone	49F	UG Fuses Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ (4.4)	\$ (4.4)	-100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
101	49	Electric Distribution Reliability Circuit/Zone	49G	UG Rec/Sect/Swch Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ -	\$ 1,268.6	\$ 1,268.6	100.0%	0	0	0	0.0%	NO	NO	NO	Below variance threshold.	Below variance threshold.
102	49	Electric Distribution Reliability Circuit/Zone	49H	PSPS Sect Device Install/Replace	SRM Total	SRM Total	4-9	\$ 5,285.0	\$ 70,164.0	\$ 64,879.0	1227.6%	75	603	528	704.0%	YES	YES	YES	Program expenditures exceeded imputed adopted amounts due to installing additional sectionalizing devices to support the ability to segment distribution circuits near the HFTD boundary to reduce the impact and scope of PSPS events. In addition, working near the HFTD boundary involves increased construction complexities.	Program actual units exceeded imputed adopted amounts due to installing additional sectionalizing devices to support the ability to segment distribution circuits near the HFTD boundary to reduce the impact and scope of PSPS events.
103	49	Electric Distribution Reliability Circuit/Zone	49H	PSPS Sect Device Install/Replace	RAMP Risk: WF Mitigation	M15 - Automation and Protection	4-9	\$ 5,285.0	\$ 70,164.0	\$ 64,879.0	1227.6%	75	603	528	704.0%	N/A	N/A	N/A	N/A	N/A
104	49	Electric Distribution Reliability Circuit/Zone	49I	OH Fault Indicator/Line Sensor Install/Replace	SRM Total	SRM Total	4-9	\$ -	\$ 2,590.2	\$ 2,590.2	100.0%	0	222	222	100.0%	NO	NO	YES	Below variance threshold.	Program actual units exceeded imputed adopted units due to being added as part of CWSP/WMP program.
105	49	Electric Distribution Reliability Circuit/Zone	49I	OH Fault Indicator/Line Sensor Install/Replace	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	4-9	\$ -	\$ 2,590.2	\$ 2,590.2	100.0%	0	222	222	100.0%	N/A	N/A	N/A	N/A	N/A
106	49	Electric Distribution Reliability Circuit/Zone	49M	PIH / Microgrids: non-gen	SRM Total	SRM Total	4-9	\$ 12,847.5	\$ 13,717.9	\$ 870.4	6.8%	12	7	(5)	-41.7%	NO	NO	YES	Below variance threshold.	Program actual units were lower than imputed adopted units due to successful pilot phase and successive phases of the program presenting opportunities to build larger sites and enhance grid hardening beyond what was initially envisioned in 2018, which reduced the actual units relative to the imputed adopted.
107	49	Electric Distribution Reliability Circuit/Zone	49M	PIH / Microgrids: non-gen	RAMP Risk: WF Mitigation	M10 - Resilience Zones	4-9	\$ 12,847.5	\$ 13,717.9	\$ 870.4	6.8%	12	7	(5)	-41.7%	N/A	N/A	N/A	N/A	N/A
108	49	Electric Distribution Reliability Circuit/Zone	49R	Grid Mod Tech	SRM Total	SRM Total	4-9	\$ -	\$ 4,798.2	\$ 4,798.2	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
109	49	Electric Distribution Reliability Circuit/Zone	49R	Grid Mod Tech	RAMP Risk: WF Mitigation	Post 2020 GRC Mitigations	4-9	\$ -	\$ 4,798.2	\$ 4,798.2	100.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
110	49	Electric Distribution Reliability Circuit/Zone	49S	Elect Reliability Inst FLISR	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ 2,126.2	\$ 3,915.2	\$ 1,789.0	84.1%	8	16	8	100.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to activation of new devices installed on new business, capacity, and PSPS projects.
111	49	Electric Distribution Reliability Circuit/Zone	49T	D-TripSaverII Cutout-MountedLR	SRM Total	SRM Total	4-9	\$ 3,225.5	\$ 484.9	\$ (2,740.5)	-85.0%	208	34	(174)	-83.7%	NO	NO	YES	Below variance threshold.	Actual units were lower than imputed units due to performing less installations than forecast for both Trip Savers and Fuse Savers, in order to focus resources on the EPIC Rapid Earth Fault Current Limiter pilot.
112	49	Electric Distribution Reliability Circuit/Zone	49T	D-TripSaverII Cutout-MountedLR	RAMP Risk: WF Mitigation	M15 - Automation and Protection	4-9	\$ 2,157.4	\$ -	\$ (2,157.4)	-100.0%	105	0	(105)	-100.0%	N/A	N/A	N/A	N/A	N/A
113	49	Electric Distribution Reliability Circuit/Zone	49X	Emerging Dist Rel Improvements	SRM Total	SRM Total	4-9	\$ 6,737.4	\$ 1,233.3	\$ (5,504.1)	-81.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
114	49	Electric Distribution Reliability Circuit/Zone	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-9	\$ 4,315.8	\$ 16,357.7	\$ 12,042.0	279.0%	N/A	N/A	N/A	N/A	NO	YES	N/A	Costs exceeded imputed adopted amount due to additional units needed to support the wildfire mitigation efforts (PSPS, System Hardening).	Below variance threshold.
115	54	Electric Distribution Substation Transformer Replacements	54A	ED Substation Replace Transformer	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 5,513.0	\$ 31,817.9	\$ 26,304.9	477.1%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed values due to a higher volume of transformer replacements than forecast. The 2020 GRC forecast planned for only emergency support, whereas the actual expenditures included the continuation of key planned replacement projects that were further in the project life-cycle.	Below variance threshold.

**TABLE 3-4
ELECTRIC DISTRIBUTION 2020 CAPITAL COMPARISON BY MAT CODE FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)
(CONTINUED)**

Line No.	MWC	MWC Name	MAT	MAT Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	2020 Imputed Adopted Units (C)	2020 Actual Units (D)	2020 Unit Difference (D-C)	2020 Unit Percent Change (%) (D-C)/C	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation	Unit Variance Explanation
116	56	Electric Distribution Underground (UG) Asset Replacements	56A	UG Cable Other Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ 32,632.8	\$ 17,983.7	\$ (14,649.1)	-44.9%	20	8	(12)	-60.0%	NO	YES	YES	Program expenditures were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.	Program units were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.
117	56	Electric Distribution Underground (UG) Asset Replacements	56B	UG Cable Inject	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ 3,226.3	\$ 2,114.4	\$ (1,111.9)	-34.5%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
118	56	Electric Distribution Underground (UG) Asset Replacements	56C	UG Cable COE Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ 32,539.0	\$ 21,043.7	\$ (11,495.3)	-35.3%	221	110	(111)	-50.2%	NO	YES	YES	Program expenditures were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.	Program units were below imputed regulatory values due to work deferral associated with COVID-19, and shifting of resources to support higher priority work such as System Hardening, WSIP tags, pole replacements, and PSPS.
119	56	Electric Distribution Underground (UG) Asset Replacements	56D	TGRAM/TGRAL Switch Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ -	\$ 5,182.2	\$ 5,182.2	100.0%	0	6	6	100.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed units due to finding 6 unplanned units in the field needing replacement.
120	56	Electric Distribution Underground (UG) Asset Replacements	56N	Network Cable Replacement	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ 23,865.9	\$ 21,929.0	\$ (1,936.9)	-8.1%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
121	56	Electric Distribution Underground (UG) Asset Replacements	56S	Replace Obsolete UG Switches	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ 6,486.9	\$ 5,414.8	\$ (1,072.1)	-16.5%	64	51	(13)	-20.3%	NO	NO	YES	Below variance threshold.	Program actual units were below imputed adopted units due to the reallocation of resources to higher priority work such as System Hardening, WSIP tags, and PSPS. PG&E completed additional LBOR switch replacements in MWC 17 and 2B to meet the 2020 GRC settlement agreement compliance requirement.
122	56	Electric Distribution Underground (UG) Asset Replacements	56T	Install Temperature Indicator	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ -	\$ 8,162.5	\$ 8,162.5	100.0%	0	2,551	2,551	100.0%	NO	NO	YES	Below variance threshold.	Actual units were higher than imputed adopted units because this is a new program initiated after the 2020 GRC was filed to install temperature sensors to monitor underground equipment.
123	56	Electric Distribution Underground (UG) Asset Replacements	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-11	\$ -	\$ (1,906.4)	\$ (1,906.4)	-100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
124	58	Electric Distribution Substation Safety and Security	58A	ED Substation Safety&Envir&Fire Protect	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,225.8	\$ 2,588.1	\$ 362.4	16.3%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
125	58	Electric Distribution Substation Safety and Security	58B	Replace Dist Sub Civil Structures	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ -	\$ 197.6	\$ 197.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
126	58	Electric Distribution Substation Safety and Security	58C	Replace Dist Sub Misc Equip	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ -	\$ 10.6	\$ 10.6	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
127	58	Electric Distribution Substation Safety and Security	58S	ED Substation Security Upgrades	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 2,384.1	\$ 572.7	\$ (1,811.5)	-76.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
128	59	Electric Distribution Substation Emergency Replacement	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-12	\$ 62,612.4	\$ 119,133.5	\$ 56,521.0	90.3%	N/A	N/A	N/A	N/A	YES	YES	N/A	Program expenditures exceeded imputed values due to an increase in major equipment (transformer and breaker) replacements, and emergency work driven by 2019 WSIP inspection projects.	Below variance threshold.
129	63	Electric Operations Control Center Facility and Operations Technology	63C	Dist Ctrl Sys/Fac Install/Replace	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-19	\$ 36,915.1	\$ 44,169.7	\$ 7,254.6	19.7%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
130	63	Electric Operations Control Center Facility and Operations Technology	63D	Distribution Operational Tech	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-19	\$ -	\$ 1,108.1	\$ 1,108.1	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
131	63	Electric Operations Control Center Facility and Operations Technology	#	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-19	\$ -	\$ 212.9	\$ 212.9	100.0%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.
132	74	Install New Gas Meters	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	6-6	\$ -	\$ 18,218.1	\$ 18,218.1	100.0%	N/A	N/A	N/A	N/A	NO	YES	N/A	Program expenses exceeded imputed regulatory values due to transfer of this program from Customer Care to Electric Distribution in 2018.	Below variance threshold.
133	95	Electric Distribution Major Emergency	N/A	Not assigned	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	4-4	\$ 55,086.2	\$ 64,256.8	\$ 9,170.6	16.6%	N/A	N/A	N/A	N/A	NO	NO	N/A	Below variance threshold.	Below variance threshold.

1 **D. MWC Descriptions – Expense**

2 **MWC AB – Support and Emergency Preparedness and Response—**

3 Includes general support of the electric distribution system, including
4 performance improvement initiatives, interdepartmental meter costs, consulting
5 fees, and several smaller projects such as the Electric Magnetic Fields (EMF)
6 Program. In addition, MWC AB captures standard cost variance of multiple
7 electric distribution workgroups in Electric Operations (EO) and a forecast offset
8 for productivity improvements. This MWC also includes costs for PG&E’s
9 Emergency Preparedness and Response (EP&R) organization, including the
10 Public Safety Power Shutoffs (PSPS) Project Management Office (PMO). This
11 program relates to safety, reliability, or maintenance because the initiatives are
12 for emergency preparedness for all employees. Employees are trained to
13 respond to the Emergency Operations Center (EOC) activations during
14 emergencies, and specifically how to perform their function within the Incident
15 Command Structure organization. These activities are for the purpose of
16 responding to emergencies in a safe manner and timely restoring customer
17 service to minimize reliability impacts. In addition, this MWC includes Public
18 Awareness Outreach, the Advanced Technology Services organization
19 responsible for equipment testing and calibration and coordinating the EMF
20 Program, and the Regulatory Compliance & Quality Assurance organization.

21 **MWC AR – Read & Investigate Meters—**

22 Includes activities for field
23 resources performing manual meter reading activities, and the systems,
24 administration, and clerical support necessary to effectively perform these
25 activities. This program relates to safety, reliability, or maintenance because it
26 supports the proper functioning of PG&E’s metering infrastructure necessary to
27 reliably deliver timely and accurate customer billing.

28 **MWC BA – Electric Distribution Operation Activities—**

29 Includes electric
30 distribution control center (DCC) and field operations, including work performed
31 by Distribution operators and engineers. This work includes operating switches
32 to transfer load between circuits, isolating customer services or deenergizing
33 sections of line during planned construction or maintenance, and reconfiguring
34 circuits to mitigate unplanned situations such as dig-ins, car pole accidents, and
storms. This program relates to safety, reliability, or maintenance because the
costs are incurred for timely response and restoration during emergencies and

1 power outages and to develop and execute switching to reduce customer
2 impacts from planned work.

3 **MWC BF – EO Patrols/Inspections**—Includes patrols and inspections of
4 overhead (OH) and underground (UG) electric distribution facilities per General
5 Order (GO) 165; patrols and inspections of OH facilities in wildfire areas; infrared
6 inspections; testing and inspections of OH and UG line equipment; special
7 patrols and inspections; and other work associated with electric distribution
8 system maintenance. This program relates to safety, reliability, or maintenance
9 because it proactively identifies assets needing repair or replacement and
10 generates corrective work orders for future work planning.

11 **MWC BH – Electric Distribution Routine Emergency**—Includes repair or
12 replacement of Electric Distribution OH or UG infrastructure that are an imminent
13 hazard or have caused an outage during normal Level 1 conditions. This
14 includes routine emergency response work, as well as work issued using
15 PG&E’s Field Automation System (FAS) for either emergency response or
16 system reliability. This program relates to safety, reliability, or maintenance
17 because it concerns timely restoring power following outages, investigating
18 voltage or power quality complaints, and putting an imminent hazard in a safe
19 condition.

20 **MWC BK – Maintenance of Other Equipment**—Includes repair of
21 specialized equipment, such as transformers, voltage regulators, circuit
22 reclosers, capacitor banks and line switches, as well as equipment repair
23 activities at the Emeryville repair facility. This program relates to safety and
24 reliability because it involves overhauling, repairing, and testing distribution line
25 equipment. Units which cannot be safely restored are taken out of service and
26 disposed of properly.

27 **MWC DD – Customer Field Service Work**—Includes Electric Distribution’s
28 portion of customer-generated field service activities, specifically start/stop
29 service requests and other customer-generated electric field service requests.
30 Beginning in 2018, this work includes activities for electric turn-ons and shut-offs
31 initiated by customers, which are mainly performed by electric meter technicians
32 and meter maintenance person resources at commercial and agricultural
33 customer premises. This program relates to safety, reliability, or maintenance
34 because it supports the proper functioning of PG&E’s metering infrastructure.

1 **MWC DN – Develop and Provide Training**—Includes revising existing and
2 creating new training materials and course curriculums for PG&E’s workforce.
3 This work has moved to the Human Resources organization. This program
4 relates to safety, reliability, or maintenance because effective training equips
5 PG&E employees with the skills and experience to provide safe and reliable
6 service.

7 **MWC EV – New Customer Connection Service Inquiry Activities**—
8 Includes processing customer requests related to new business or increased
9 connection capacity (added load) on existing services. PG&E is required by its
10 approved electric tariff and franchise agreements to perform this work. This
11 program does not relate to safety, reliability, or maintenance because it is
12 customer-driven work.

13 **MWC EW – EO Work Requested by Others (WRO)**—Encompasses work
14 required by tariff, third-party requests and franchise compliance, including:

- 15 • Relocations: Non-plant related relocations of electric facilities; Land
16 Department right-of-way record research requested by third parties that are
17 not project specific; and local division office WRO service inquiries not
18 requiring Land Department involvement. (WRO related to gas service has
19 moved to MWC LK in Gas Operations.);
- 20 • Generation Interconnection Services: Managing the electric interconnection
21 process for the California Public Utilities Commission and Federal Energy
22 Regulatory Commission jurisdictional customer generation projects
23 connected at the electric distribution service level from receipt of the
24 interconnection inquiry through the in-service date of the new generation
25 facility and continuing through billing, settlements and refunds.
- 26 • Pre-Parallel Inspections: On-site inspections of electric distribution voltage
27 interconnections that are funded via Electric Tariff Rule 21. Pre-parallel
28 inspections are performed for safe and reliable operation of customer-owned
29 generators paralleled with PG&E’s grid; and

30 This program does not relate to safety, reliability, or maintenance because it
31 is customer, or other third-party driven work.

32 **MWC EY – Change/Maintenance Used Electric Meter**—Includes the
33 costs of meter activities associated with electric meter preventive maintenance,
34 electric meter Corrective Maintenance (CM), meter programming, meter network

1 maintenance, electric meter accuracy testing, and the associated staff support
2 necessary to effectively perform these activities. This program relates to safety,
3 reliability, or maintenance because it supports the proper functioning of PG&E's
4 metering infrastructure necessary to reliably deliver timely and accurate
5 customer billing.

6 **MWC FZ – Electric Distribution Engineering and Planning**—Supports
7 many programs that require engineering and planning services, including the
8 Electric Distribution Capacity, Electric Distribution Reliability, and Underground
9 Asset Management programs. This program also supports: performing
10 diagnostics on data from automated field equipment to support the DCC;
11 investigating secondary voltage complaints that Troublemens cannot resolve on
12 the first visit; and operational field work that electric planning personnel initiate,
13 such as phase balancing and replacing fuses that are projected to be
14 overloaded. This program relates to safety, reliability, or maintenance because
15 it includes the electrical engineering and planning services work necessary for a
16 variety of asset management activities.

17 **MWC GA – Poles – Intrusive Inspection/Test and Treat Program**—
18 Includes activities to assess the condition of the lower section of wood poles and
19 preserve the poles' wood strength through the application of chemicals and
20 restoration of poles as warranted. This program also includes coordinating the
21 billing of joint owners and tenants for their share of costs for work performed on
22 jointly owned or leased facilities. In addition, this program includes analyzing
23 poles for overload conditions and ensuring poles meet the strength and loading
24 requirements of GO 95. This program relates to safety, reliability, or
25 maintenance because the costs are incurred to determine whether poles are in
26 good condition so as to prevent premature failure.

27 **MWC GC – Electric Distribution Substations Operate and Maintain**
28 **Assets**—Includes preventive and CM and operations of electric distribution
29 substation assets.

- 30 • Preventive maintenance includes: Substation facility and Equipment
31 Inspections; diagnostic testing; overhauls; washing insulators; maintenance
32 of mobile and Capitalized Emergency Material equipment; maintaining
33 station logs;

- 1 • CM includes: Restoration and repair of failed equipment; switching and
2 restoring service to customers; mobile substation and mobile transformer
3 installation costs; and relocation of emergency and surplus equipment; and
- 4 • Operations in a substation include: Activities associated with providing safe
5 working conditions for employees; calibrating and adjusting substation
6 equipment; building maintenance, miscellaneous activities such as yard
7 repairs, janitorial work and landscaping, vegetation management (VM),
8 rental contracts, and system-funded expense projects, such as transformer
9 relocations.

10 This program relates to safety, reliability, or maintenance because it targets
11 the operation, preventive and CM of substation equipment and identifies any
12 abnormalities in the equipment's intended function.

13 **MWC GE – Electric Distribution Mapping**—Includes providing timely and
14 accurate data and spatial information for PG&E's electric system that supports
15 construction, engineering, estimating, operational, restoration, inspection, and
16 maintenance activities. This program includes data management activities
17 covering the full lifecycle of data: ingestion, storage, access, controls,
18 governance, quality, meta-data, usage, security, retention and disposal of data.
19 This program relates to safety, reliability, or maintenance because it enables the
20 accurate collection and effective management of records related to field assets.
21 It also enables access and use of the data to inform risk management decisions.
22 These records are crucial to determine that field assets are safely and reliably
23 operated and necessary maintenance is performed in a timely fashion.

24 **MWC HG – Electric Distribution Operations Technology**—Covers
25 technical support for Electric Distribution Operations including, but not limited to,
26 operational and development support for various control center applications and
27 tools and Integrated Grid Platform (IGP) applications, including the
28 implementation of an Advanced Distribution Management System (ADMS). This
29 program relates to reliability because it enables advanced outage management
30 applications including instantaneous fault location and automated switching
31 recommendations and relates to safety because it enhances cybersecurity and
32 promotes operator awareness of real-time (RT) circuit conditions.

33 **MWC HN – Vegetation Management Balancing Account (VMBA)**—
34 Includes costs necessary to support and execute patrolling, inspecting and

1 maintaining clearances of vegetation along PG&E's OH high-voltage electric
2 distribution lines. The program covers routine tree trimming and removal,
3 vegetation control, contractor quality control, environmental compliance and
4 public education, and fire risk reduction work. This program relates to safety
5 and reliability by managing the vegetation adjacent to power lines to reduce the
6 risk of vegetation contact with the electric distribution equipment.

7 **MWC HX – EO Automation/Supervisory Control and Data Acquisition**
8 **(SCADA), Protection Support**—Includes engineering and technical support for
9 automation and protection equipment. Also includes the service and software
10 costs associated with electric distribution SCADA software. Engineering support
11 consists of three components: (1) Automation Engineering support;
12 (2) Protection Engineering support; and (3) SCADA Specialist support. This
13 program relates to safety, reliability, or maintenance because it includes
14 engineering support for the maintenance and operation of automation and
15 protection equipment.

16 **MWC HY – Perform Gas Meter Maintenance**—Includes the costs of meter
17 activities associated with gas meter/AMI SmartMeter™ module maintenance
18 that does not result in meter/module exchanges, meter/module communication
19 trouble-shooting, programming, and repairs. This program relates to safety,
20 reliability, or maintenance because it supports the proper functioning of PG&E's
21 metering infrastructure necessary to reliably deliver timely and accurate
22 customer billing.

23 **MWC IF – Electric Distribution Major Emergency**—Includes response
24 work to significant OH or UG outages and/or imminent hazard to PG&E's electric
25 distribution facilities that requires a division Operations Emergency Center
26 (OEC) activation and is consistent with PG&E's Major Emergency Balancing
27 Account (MEBA) Criteria Guidance Document. Beginning in 2014, these costs
28 are included in the two-way MEBA authorized by D.14-08-032. This program
29 relates to safety, reliability, or maintenance because the costs incurred are for
30 timely restoring power following an outage.

31 **MWC IG – Various Balancing and Memorandum Accounts**—Includes
32 expense costs for various balancing and memorandum accounts:

- 33 • Wildfire Mitigation Balancing Account (WMBA) – Includes expense costs
34 associated with wildfire mitigations described in PG&E's 2020 General Rate

1 Case (GRC), including PSPS event activities and costs, PSPS non-event
2 preparation and programs, the Wildfire Safety Operations Center, and
3 enhanced situational awareness mitigations;

- 4 • Fire Risk Mitigation Memorandum Account – Includes costs incurred for
5 wildfire risk mitigation which were not included in PG&E’s 2020 Wildfire
6 Mitigation Plan (WMP) and not associated with wildfire mitigations described
7 in PG&E’s 2020 GRC that are recorded in the WMBA. PG&E will determine
8 the incrementality of these amounts to the Company’s revenue requirement
9 when it applies for cost recovery;
- 10 • Wildfire Mitigation Plan Memorandum Account – Includes costs incurred to
11 implement PG&E’s approved WMP that are not associated with wildfire
12 mitigations described in PG&E’s 2020 GRC that are recorded in the WMBA.
13 PG&E will determine the incrementality of these amounts to the Company’s
14 revenue requirement when it applies for cost recovery;
- 15 • VMBA – Includes enhanced vegetation management (EVM), which is a
16 wildfire risk mitigation. In addition, records costs for Tree Mortality and Fire
17 Risk Reduction work, previously recorded in Catastrophic Events
18 Memorandum Account, in the new two-way VMBA; and
- 19 • Rule 20A Balancing Account Expense – Includes costs associated with the
20 Rule 20A Audit ordered by D.18-03-022, and expense amounts for
21 cancelled projects.

22 This program relates to safety, reliability, or maintenance because the
23 memorandum and balancing accounts, excluding Rule 20A, track work to
24 address wildfire risk.

25 **MWC IS – Streetlight Support**—Includes work in support of streetlight
26 inventory and LS-2 Streetlight Audit Services, and the Light Emitting Diode
27 (LED) and other streetlight programs. This program relates to safety, reliability,
28 or maintenance for the successful inventory of streetlights necessary for ongoing
29 maintenance and safe operations.

30 **MWC IU – Collect Revenue**—Meter activities that are focused on the
31 detection, investigation, and resolution of customer energy theft. This includes
32 the costs of field employees, systems and staff support necessary to effectively
33 perform these activities. This program relates to safety, reliability, or
34 maintenance because it supports the proper functioning of PG&E’s metering

1 infrastructure and seeks to identify and address potential safety issues created
2 by unauthorized usage or connections by customers.

3 **MWC JV – Maintain IT Applications and Infrastructure**—Includes costs
4 for ongoing maintenance, operations and repair for PG&E’s IT applications,
5 systems and infrastructure. This program relates to safety, reliability, or
6 maintenance by maintaining the IT solutions that provide PG&E’s field and office
7 employees with the tools needed for them to perform their job in a safe and
8 efficient manner. These tools are intended to provide up-to-date, complete, and
9 accurate information to enable coordination of work and asset data across all
10 work streams to enhance grid safety and operational efficiency. The areas
11 covered by this MWC include asset design, asset management, and work
12 management.

13 **MWC KA – Preventive Maintenance and Equipment Repair, OH**—
14 Includes repair of OH facilities; repair of OH Critical Operating Equipment
15 (COE); repair of streetlights and group streetlight replacements; repair of OH
16 facilities to address migratory bird requirements; investigation and response to
17 Radio and Television Interference (RTVI) inquiries; washing insulators;
18 investigation of idle facilities; wood pole bridge bonding; and other OH
19 maintenance work. This program relates to safety, reliability, or maintenance
20 because it addresses non-conforming equipment identified by preventative
21 maintenance programs such as inspections and patrols, as well as internal
22 operational processes (e.g., equipment testing).

23 **MWC KB – Preventive Maintenance and Equipment Repair, UG**—
24 Includes repair of UG facilities; repair of UG COE; grounding WYE (three-phase
25 star configuration) transformers; and other UG line maintenance work. This
26 program relates to safety, reliability, or maintenance because it addresses
27 non-conforming equipment identified by preventative maintenance programs
28 such as inspections and patrols, as well as internal operational processes
29 (e.g., equipment testing).

30 **MWC KC – Preventive Maintenance and Equipment Repair, Network**—
31 Includes repair of network facilities; repair of network equipment, repair of
32 network SCADA equipment, testing and overhaul of Network Protectors (NP),
33 transformer oil sampling; and other miscellaneous network maintenance work.
34 This program relates to safety, reliability, or maintenance because it addresses

1 the maintenance and repair of the equipment necessary and fundamental to
2 maintaining a safe and reliable distribution network system.

3 **MWC OM – Operational Management (OM)**—Includes labor-and
4 employee-related costs to provide supervision and management support.
5 MWC OM also includes costs incurred by the administrative staff working for the
6 Supervisors/Managers. This program is not directly related to safety, reliability,
7 or maintenance because this MWC represents PG&E OM staff necessary to
8 direct field execution of work on PG&E assets.

9 **MWC OS – Operational Support (OS)**—Includes labor- and
10 employee-related costs that provide services and support that are unrelated to
11 supervision and management. This program is not directly related to safety,
12 reliability, or maintenance because this MWC represents PG&E OS staff
13 necessary to plan and coordinate field execution of work on PG&E assets,
14 develop asset family strategies and standards, and drive necessary process
15 coordination and improvement efforts.

16 **E. MWC Descriptions – Capital**

17 **MWC 05 – Tools & Equipment**—Includes the costs of miscellaneous tools
18 and equipment, Advanced Technology Services tools, and of overdrawn
19 materials. ATS tools include the cost of laboratory and test equipment used for
20 field work or in ATS laboratories. In the 2017 GRC, this MWC also included
21 PG&E’s forecast for an offset for capital- related productivity improvements.
22 Beginning in 2018, this category includes tools and equipment necessary to
23 perform all field metering, meter maintenance, meter repair, and accuracy
24 testing activities. This program relates to safety, reliability, or maintenance
25 because it includes funds for the purchase of necessary tools to be used in the
26 safe execution of work by field personnel.

27 **MWC 06 – Electric Distribution Line and Equipment Capacity**—Includes
28 capacity expansion work outside a substation necessary to correct specific
29 capacity deficiencies or overload conditions on electric distribution lines and
30 equipment. This work includes replacing/upgrading conductors and devices
31 along with installing capacitors, switches or other equipment; establishing new
32 circuit outlets; converting circuit line sections to a higher operating voltage; and
33 reconfiguring primary electric distribution circuits to redistribute loading. This
34 program relates to safety, reliability, or maintenance because it corrects

1 overloads on distribution equipment, mitigating the risk of equipment failure due
2 to overloads.

3 **MWC 07 – Electric Distribution Install/Replace OH Poles**—Includes the
4 replacement of poles to support safety and reliability of the electric distribution
5 system. This program relates to safety, reliability, or maintenance because it
6 actively works to determine whether poles are in good condition so as to prevent
7 premature failure. This program enhances overall system safety by replacing
8 poles identified as overloaded or nearing the end of in-service life, prior to
9 premature failure.

10 **MWC 08 – Electric Distribution OH Asset Replacement**—Includes
11 rebuilding and reframing OH electric distribution lines (including the installation
12 of covered wire and non-wood electric distribution poles); and performing other
13 reliability and system hardening improvement work such as replacing annealed
14 OH conductors and obsolete switches. This program relates to safety, reliability,
15 or maintenance because it directly funds projects designed to replace OH
16 equipment and rebuild electric distribution lines in the High Fire-Threat Districts
17 (HFTD) as part of PG&E’s Community Wildfire Safety Program (CWSP).

18 **MWC 09 – Electric Distribution Automation (DA) and Protection**—
19 Covers investments in field automation and protection devices including
20 installing or replacing substation Remote Terminal Units (RTU); installing or
21 replacing SCADA peripherals ; replacing obsolete protection equipment,
22 primarily relays, in electric distribution substations; replacing automation or
23 protection equipment due to unanticipated failure; and continuing the Fire Risk
24 Management initiative that allows remote operation of reclose relays on certain
25 circuit breakers and line reclosers to reduce the likelihood of wildland and urban
26 fires. This program relates to safety, reliability, or maintenance because it
27 directly funds projects which support the automation of substation equipment
28 and electric distribution protective devices.

29 **MWC 10 – Electric Distribution WRO General**—Includes relocating
30 electric distribution facilities at the request of a governmental agency or other
31 third parties (e.g., customers and developers) and conversion of OH electric
32 facilities to UG under Tariff Rule 20B and Rule 20C. This work is mandated by
33 PG&E’s electric tariff and franchise agreements. This program does not relate
34 to safety, reliability, or maintenance because it is third-party driven work.

1 **MWC 16 – Electric Distribution Customer Connections**—Includes
2 building new UG and OH primary electric distribution systems, and the
3 associated secondary systems and services to both residential and
4 nonresidential customers. PG&E is required by its approved electric tariff and
5 franchise agreements to perform this work. Additionally, included within this
6 MWC are all purchases for distribution transformers for use in all types of capital
7 work. This program does not relate to safety, reliability, or maintenance
8 because it is customer-driven work.

9 **MWC 17 – Electric Distribution Routine Emergency**—Includes activities
10 related to the replacement of capital-related Electric Distribution infrastructure, in
11 response to (1) a customer outage or an unsafe condition requiring immediate
12 response and standby, and (2) troubleman assessment activities and switching
13 of the system’s configuration in response to OH and UG outages occurring
14 during normal Level 1 conditions. This program relates to safety, reliability or
15 maintenance because it concerns timely restoring power following an outage
16 and putting an imminent hazard in a safe condition.

17 **MWC 21 – Miscellaneous Capital and EP&R**—Includes costs to build
18 critical infrastructure required for response to catastrophic emergencies and fire
19 related situational awareness tools and resources. This includes costs for
20 EOCs, basecamps, facility upgrades, communications and data infrastructure
21 improvements, and natural disaster models. Beginning in 2016, this MWC may
22 include an offset for capital related productivity improvements and work
23 execution risk. This program relates to safety, reliability, or maintenance
24 because work in this program is critical to effective emergency response and
25 supporting the CWSP Management Office. MWC 21 also includes
26 miscellaneous capital expenses such as Applied Technology Services (ATS) lab
27 safety and reliability upgrades.

28 **MWC 25 – Install New Electric Meters**—Includes labor necessary to
29 perform electric meter installations, exchanges, removals, and retirements. This
30 program relates to safety, reliability, or maintenance because it supports the
31 proper functioning of PG&E’s metering infrastructure necessary to reliably
32 deliver timely and accurate customer billing.

33 **MWC 2A – Electric Distribution Preventive Maintenance, OH**—Includes
34 replacing deteriorated OH facilities on a planned basis where it is not

1 cost-effective to repair those facilities. This work is like the work performed in
2 MWC KA, but includes replacing equipment, rather than repair and
3 maintenance. Typical equipment replacements include corroded transformers,
4 deteriorated cross-arms, inoperative line switches, and other OH electric
5 distribution facilities. This equipment is replaced in kind in most cases; however,
6 upgrades may be required where necessary to meet current operating
7 conditions, technology, and safety standards. Work also includes replacing
8 PG&E-owned, non-decorative High-Pressure-Sodium Vapor streetlights with
9 LED streetlights and non-exempt surge arrester replacements. This program
10 relates to safety, reliability, or maintenance because it addresses
11 non-conforming equipment identified by preventative maintenance programs
12 such as inspections and patrols, as well as internal operational processes
13 (e.g., equipment testing). In addition, the streetlight replacements address
14 certain assets (i.e., San Francisco Regulated Output Streetlights) that will
15 improve illumination, increasing safety.

16 **MWC 2B – Electric Distribution Preventative Maintenance (EDPM),**
17 **UG**—Includes replacing deteriorated UG facilities on a planned basis where it is
18 not cost-effective to repair those facilities. This work is like the work performed
19 in MWC KB, but includes replacing equipment, rather than repair and
20 maintenance. Typical equipment replacements include corroded transformers,
21 inoperative switches, damaged UG enclosures and other UG electric distribution
22 facilities. Equipment is replaced in kind in most cases; however, upgrades are
23 required where necessary to meet current operating conditions, technology, and
24 safety standards. This program relates to safety, reliability, or maintenance
25 because it addresses non-conforming equipment identified by preventative
26 maintenance programs such as inspections and patrols, as well as internal
27 operational processes (e.g., equipment testing).

28 **MWC 2C – EDPM, Network**—Includes replacing deteriorated network
29 facilities on a planned basis where it is not cost-effective to repair those facilities.
30 This work is similar to the work performed in MWC KC, but includes replacing
31 equipment, rather than repair and maintenance. Typical equipment
32 replacements include corroded transformers, inoperative switches, and other
33 network distribution facilities. Equipment is replaced in kind in most cases;
34 however, upgrades are required where the equipment must meet current

1 operating conditions, technology, and safety standards. Additional work
2 includes safety improvement programs such as High-Rise Building Transformer
3 Replacements, new monitoring system installation and the Manhole Cover
4 Replacement Program. This program relates to safety, reliability, or
5 maintenance because it addresses the replacement of faulty network equipment
6 identified by the preventative maintenance program in addition to the planned
7 new equipment upgrade, which is fundamental to maintaining a safe and reliable
8 distribution network system.

9 **MWC 2F – Build IT Applications and Infrastructure**—Includes the costs
10 to design, develop and enhance applications, systems and infrastructure
11 technology solutions. This program relates to safety, reliability, or maintenance
12 by developing and deploying IT solutions that provide PG&E’s field and office
13 employees with the tools needed for them to perform their job in a safe and
14 efficient manner. These tools are intended to provide up-to-date, complete, and
15 accurate information to enable coordination of work and asset data across all
16 work streams to enhance grid safety and operational efficiency. The areas
17 covered by this MWC include asset design, asset management and work
18 management.

19 **MWC 30 – Electric Distribution WRO – Rule 20A**—Conversion of existing
20 OH electric distribution facilities to UG facilities. To qualify under the Rule 20A
21 Tariff, a project must meet certain criteria, including being in the general public
22 interest and having sufficient work credits to convert the facilities. Beginning in
23 2017, these costs are included in the one-way Rule 20A balancing account
24 authorized by D.17-05-013. This program does not relate to safety, reliability, or
25 maintenance because it is customer-driven work.

26 **MWC 46 – Electric Distribution Substation Capacity**—Includes capacity
27 work within substations including new substations, increased capacity at existing
28 substations, and work on feeders/breakers within a substation. This program
29 relates to safety, reliability, or maintenance because it corrects overloads on
30 substation equipment, mitigating the risk of equipment failure due to overloads.

31 **MWC 48 – Electric Distribution Substation Replace Other Equipment**—
32 Includes all major and minor substation equipment replacements not included in
33 MWC 54 (Transformer Program). Specific sub-programs include: (1) Ancillary
34 Substation Equipment Replacement; (2) Ground Grid Replacement; (3) Circuit

1 Breaker Replacement; (4) Switch Replacement; (5) Battery Replacement;
2 (6) Civil Structure Replacement; (7) Switchgear Replacement; (8) Yard
3 Improvements; (9) Animal Abatement; and (10) Transformer Bushings. This
4 program relates to safety and reliability because it targets proactive replacement
5 of substation equipment that is crucial to maintaining substation reliability.

6 **MWC 49 – Electric Distribution Circuit/Zone Reliability Program—**

7 Includes various circuit reliability improvement work to address repeat outages
8 and customer service-level complaints. This program also includes the
9 purchase of line reclosers (revolving stock), the installation of Fault Location,
10 Isolation, and Service Restoration (FLISR) systems, and the targeted circuit
11 initiative which addresses the least reliable circuits and typically involves a
12 mixture of installing new fuses, reclosers, fault indicators and animal and bird
13 guards, reframing poles to increase phase separation, and repairing or replacing
14 existing equipment. This program relates to safety, reliability, or maintenance
15 because it directly supports the implementation of targeted capital projects
16 designed to improve electric service reliability and address customer outage
17 complaints.

18 **MWC 54 – Electric Distribution Substation Transformer**

19 **Replacements—**Includes maintaining or improving substation reliability by
20 replacing transformers that have the highest risk of failure. This MWC also
21 includes maintaining an adequate supply of emergency transformer stock and
22 mobile transformers for emergency response. This program relates to reliability
23 because it is the proactive planned replacement of substation transformers in
24 order to improve substation reliability and prevent transformer failures.

25 **MWC 56 – Electric Distribution UG Asset Replacements—**Includes

26 reliability related replacement of primary electric distribution cables (includes
27 tie-cables), primary and secondary Network Cables, non-emergency related
28 failed primary electric distribution cables, Transfer Ground Rocker Arm
29 Main/Transfer Ground Rocker Arm Line (TGRAM/TGRAL) switches, Load Break
30 Oil Rotary (LBOR) switches, and replacement of failed primary electric
31 distribution cables. Program also includes performing cable rejuvenation
32 (injection) and testing. This program relates to safety, reliability, or maintenance
33 because it addresses assets that have deteriorated and/or are experiencing
34 failures, some of which may pose safety risk to employees and public if they fail.

1 **MWC 58 – Electric Distribution Substation Safety and Security—**

2 Includes substation security, seismic, and fire protection and suppression work.
3 Also encompasses miscellaneous, unforeseen, short lead-time and emergency
4 environmental work (e.g., removal of an old asbestos panel in a control room
5 that requires special handling). This program relates to safety and reliability
6 because it targets work that prevents potential hazards within the substation.

7 **MWC 59 – Electric Distribution Substation Emergency Replacements—**

8 Includes replacements for substation equipment that fails or is forced out of
9 service, as well as an emergency supply of transformers and other equipment to
10 replace failed equipment. This program relates to reliability because it targets
11 the replacement of substation assets that have failed or are expected to fail
12 imminently.

13 **MWC 63 – EO Control Center Facility and Operations Technology—**

14 Covers ongoing capital improvements and enhancements to the consolidated
15 control centers, the Fresno Dispatch Facility, and technology and systems for
16 these facilities, including IGP applications such as the ADMS. This includes
17 operational technology costs to design, develop and enhance applications,
18 system and infrastructure technology solutions. This program relates to
19 reliability because it enables advanced outage management applications
20 including instantaneous fault location and automated switching
21 recommendations and relates to safety because it enhances cybersecurity and
22 promotes operator awareness of RT circuit conditions.

23 **MWC 74 – Install New Gas Meters—**Includes labor necessary to perform

24 AMI SmartMeter module installations, exchanges, removals and retirements.
25 This program relates to safety, reliability, or maintenance because accurate
26 customer usage data must be recorded and delivered to the PG&E billing
27 systems on a reliable and timely basis.

28 **MWC 95 – Electric Distribution Major Emergency—**Includes response to

29 significant OH or UG outages and/or imminent hazard to PG&E’s electric
30 distribution facilities that requires division OEC activation and is consistent with
31 PG&E’s MEBA Criteria Guidance Document. Beginning in 2014, these costs are
32 included in the two-way MEBA authorized by D.14-08-032. This program relates
33 to safety, reliability, or maintenance because the costs incurred are for timely
34 response and restoration following power outages.

1 **F. New MWC Descriptions – Capital**

2 **MWC 3R – Energy Storage Capital**—Includes the capital costs to install
3 new or replace existing energy storage equipment or components to support
4 energy storage activities. This MWC relates to safety, reliability, or maintenance
5 because the costs are associated with installing/replacing energy storage
6 equipment that is consistent with keeping the energy storage facilities reliable.

7 **G. MAT Code Descriptions – Expense**

8 **MAT AB6 – EP&R**—Emergency Preparedness and Response (EP&R)
9 expense cost, including the PSPS PMO organization. This program relates to
10 safety, reliability, or maintenance because this work drives the company
11 emergency response plan for customer safety, and timely outage restoration.

12 **MAT BAF – General Operations**—Distribution Operators manage and
13 control the electric distribution system. Activities include monitoring the
14 distribution system; performing system configuration changes, such as switching
15 and circuit reconfiguration; and processing switching applications for work that
16 enables construction to maintain and improve electric distribution system
17 infrastructure. This program relates to safety, reliability, or maintenance
18 because the costs are incurred for timely response and restoration during
19 emergencies and power outages.

20 **MAT BAH – FLISR Maintenance**—Includes testing, installation and
21 maintenance of the FLISR control systems and services associated with the
22 DCC operations and DA. This program relates to safety, reliability, or
23 maintenance because the costs are incurred for timely response and restoration
24 during emergencies and power outages.

25 **MAT BF3 – UG Bay Area Rapid Transit (BART) Cable**
26 **Testing/Inspections**—Annual UG inspections/testing of 34.5 kilovolts (kV)
27 BART Cable for compliance with Utility Standard TD-2302S. This program
28 relates to safety, reliability, or maintenance because the costs are incurred to
29 proactively identify UG BART cable assets needing repair or replacement and
30 generates corrective work orders for future work planning.

31 **MAT BF4 – UG Auto Transfer Switch Testing/Inspections**—Annual UG
32 inspections/testing of individual electronic-component style and microprocessor
33 style Auto-Transfer Switches (ATS) for compliance with Utility
34 Standard TD-2302S. This program relates to safety, reliability, or maintenance

1 because it proactively identifies UG ATS assets needing repair or replacement
2 and generates corrective work orders for future work planning.

3 **MAT BFA – OH Poles Patrolled**—Visual patrol of OH electric distribution
4 facilities to identify obvious structural problems or hazards for compliance with
5 GO 165 and the EDPM Manual. Patrolled facilities include primary, secondary,
6 and service, and other associated electric distribution facilities from the
7 substation, including poles within the substation fence, to the end of the line.
8 Towers supporting only electric distribution facilities are included in the OH
9 patrol. Patrols can be performed from a vehicle, on foot, or by helicopter. Units
10 measured: Number of poles patrolled. This program relates to safety, reliability,
11 or maintenance because it proactively identifies OH assets needing immediate
12 repair or replacement.

13 **MAT BFB – OH Poles Inspected**—Detailed inspection of OH electric
14 distribution facilities to examine and record abnormal conditions that will
15 adversely impact safety or reliability for compliance with GO 165 and the EDPM
16 Manual. Inspected facilities include PG&E solely-and jointly-owned distribution
17 poles, including all equipment and facilities on the pole; primary and secondary
18 risers and services; primary and secondary conductor; transmission poles with
19 electric distribution under build; electric distribution towers and lattices;
20 streetlights on PG&E solely owned or joint pole distribution poles; and primary
21 metering. Units measured: Number of poles inspected. This program relates to
22 safety, reliability, or maintenance because it proactively identifies OH assets
23 needing repair or replacement and generates corrective work orders for future
24 work planning.

25 **MAT BFC – OH Infrared Inspections**—Infrared inspection of OH electric
26 distribution facilities to identify pending failure of equipment. Work includes
27 contractor-performed reliability work and internal-performed ad hoc requests.
28 This program relates to safety, reliability, or maintenance because it proactively
29 identifies OH assets needing repair or replacement and generates corrective
30 work orders for future work planning.

31 **MAT BFD – UG Enclosures Patrolled**—Visual patrol of UG electric
32 distribution facilities to identify obvious structural problems or hazards for
33 compliance with GO 165 and the EDPM Manual. Patrolled facilities include
34 pad-mounted equipment, primary enclosures, and visible secondary enclosures

1 outside the substation fence to the end of the line. An UG patrol may be
2 performed by walking or driving. Units measured: Number of enclosures
3 patrolled. This program relates to safety, reliability, or maintenance because it
4 proactively identifies UG assets needing repair or replacement.

5 **MAT BFE – UG Infrared Inspections**—Detailed inspection of UG electric
6 distribution facilities to examine and record abnormal conditions that will
7 adversely impact safety or reliability for compliance with GO 165 and the EDPM
8 Manual. Inspected facilities include pad-mounted facilities; all UG equipment,
9 conductors, splices, and elbows within primary enclosures; primary metering that
10 includes all visible, primary cable up to termination point plus the primary
11 metering facilities. An infrared inspection must be performed in conjunction with
12 UG inspections. Units measured: Number of enclosures inspected. This
13 program relates to safety, reliability, or maintenance because it proactively
14 identifies UG assets needing repair or replacement and generates corrective
15 work orders for future work planning.

16 **MAT BFF – UG Line Equipment Inspected and Tested**—Annual
17 inspections of UG electric distribution line equipment for compliance with Utility
18 Standard TD-2302S. Facility inspections only include manholes with special
19 equipment (i.e., oil-filled equipment). 34.5 kV BART Cable Inspections and ATS
20 Inspections are performed and tracked in MATs BF3 and BF4, respectively.
21 Units measured: Number of UG line equipment inspected and tested. This
22 program relates to safety, reliability, or maintenance because it proactively
23 identifies assets needing repair or replacement and generates corrective work
24 orders for future work planning.

25 **MAT BFG – OH Line Equipment Inspected and Tested**—Annual
26 inspections/testing of OH, pad-mounted, and UG electric distribution line
27 equipment for compliance with Utility Standard TD-2302S. Facilities include
28 capacitors, regulators, reclosers, and SCADA operated switches, interrupters,
29 and sectionalizers. Units measured: Number of OH line equipment inspected
30 and tested. This program relates to safety, reliability, or maintenance because it
31 proactively identifies assets needing repair or replacement and generates
32 corrective work orders for future work planning.

33 **MAT BFH – Inspection Projects**—Support of annual GO 165 audits,
34 QA Electric Distribution Audits and ad hoc requests throughout the year. This

1 MAT also includes miscellaneous special projects as requested by Asset
2 Strategy. Projects include inspections or patrols of equipment determined to
3 present safety related conditions. Some projects are multi-year while others are
4 single year. Other projects are related to re-inspections or re-patrols as needed
5 as a result of work verifications and is required by GO 165. Other funding in this
6 MAT is related to UG inspection sticker costs required as part of the UG
7 inspections. This program relates to safety, reliability, or maintenance because
8 it proactively identifies assets needing repair or replacement and generates
9 corrective work orders for future work planning.

10 **MAT BFJ – OH Patrol Outage Review Team (ORT) Post Outage**—For
11 requested post-outage patrols as an action from an ORT meeting. Work scope
12 (including the area to be patrolled and the volume of poles and enclosures) must
13 be identified during the ORT meeting. This includes UG Infrared requests. This
14 program relates to safety, reliability, or maintenance because it identifies assets
15 needing repair or replacement and generates corrective work orders for future
16 work planning.

17 **MAT BFL – Santa Barbara Wildfire Poles Patrolled**—Annual patrols of
18 OH electric distribution facilities in Santa Barbara County wildfire-risk areas.
19 Work is performed in two divisions (Los Padres and Kern) in PG&E territory in
20 Santa Barbara County. Units measured: Number of poles patrolled. This
21 program relates to safety, reliability, or maintenance because the costs are
22 incurred to patrol specific areas within Santa Barbara County wildfire-risk areas,
23 now managed as part of MAT BFA.

24 **MAT BKA – Line Equipment Overhauls (Emeryville)**—For Emeryville’s
25 use only of scheduled transformer repair. Units measured: Number of
26 equipment overhauls. This program relates to safety, reliability, or maintenance
27 because it involves the overhaul, repair, and testing of all distribution line
28 equipment at the Emeryville Repair facility.

29 **MAT BKJ – Line Equipment Overhauls (Division Up/Down Labor)**
30 **(Emeryville)**—For Emeryville’s use only of scheduled equipment overhauls of
31 electrical distribution equipment: regulators, auto boosters, and reclosers. Units
32 measured: Number of equipment overhauls. This program relates to safety,
33 reliability, or maintenance because it involves the overhaul, repair, and testing of
34 all distribution line equipment at the Emeryville Repair facility.

1 **MAT BKK – Equipment Warranty Repair (Emeryville)**—For Emeryville’s
2 use only of scheduled equipment warranty repairs. This program relates to
3 safety, reliability, or maintenance because the equipment is repaired or replaced
4 under the manufacturer’s warranty period, at the Emeryville Repair facility.

5 **MAT DD# – Customer Field Service Work**—Covers Electric Distribution’s
6 portion of customer-generated field service activities, specifically start/stop
7 service requests, emergency response and other customer-generated electric
8 field service requests. The primary work includes addressing partial and
9 complete outages related to customer equipment; transfers of service; electric
10 service upgrades; and temporary disconnections or reconnections of service.
11 This work was previously included in MWC BA. This program relates to safety,
12 reliability, or maintenance as the costs are incurred for timely response, repair,
13 and service per customer requests.

14 **MAT DDC – Electric Start/Stop**—Includes activities for electric service
15 turn-ons and shut-offs initiated by customers, which are mainly performed by
16 Field Metering resources at commercial, industrial and agricultural customer
17 premises. This program relates to safety, reliability, or maintenance because
18 electric service is either established or terminated based on customer request.

19 **MAT DDH – Electric Trouble Customer Equipment**—Part outs or
20 complete outs related to customer equipment. Part outs occur when a customer
21 is only receiving energy to a portion of their home or business (e.g., burnt out
22 fuses, customer wiring, service connection at the weather-head, etc.). Units
23 measured: Number of outages. This program relates to safety, reliability, or
24 maintenance because the costs are incurred for timely response, repair, and
25 service per customer requests.

26 **MAT DDJ – Swing Service, Disconnects/Reconnects**—(1) Swing service:
27 transfer of service from old location to new, using existing wire; (2) Service
28 upgrades; (3) Temporary service disconnect, such as a temporary disconnects
29 at a customer’s request to enable tree trimming, weather-head or panel work;
30 and (4) Reconnect service due to disconnects for items such as tree trimming,
31 panel or weather-head work by customer, etc. Units measured: Number of
32 swings/upgrades/disconnects/reconnects. This program relates to safety,
33 reliability, or maintenance because the costs are incurred for timely response,
34 repair, and service per customer requests.

1 **MAT FZA – General Engineering**—Work primarily covers electric
2 distribution engineering and planning services labor, which includes wires down
3 investigations. This includes costs associated with new OH fault indicators or
4 distribution line monitoring systems and/or line sensors to improve reliability.
5 This program relates to safety, reliability, or maintenance because it directly
6 provides funding to support the electrical engineering work necessary to create
7 the various capital and expense related improvement projects.

8 **MAT FZB – Voltage Complaints Investigations**—Used for investigating
9 secondary voltage complaints that Troublemens cannot resolve on the first visit,
10 and the setting of recording volt meters for these voltage complaints. This
11 program relates to safety, reliability, or maintenance because it directly provides
12 funding to address voltage issues on distribution circuits to support safe and
13 reliable operation of customer equipment.

14 **MAT FZC – Transformer Reports Manage**—Used for investigating
15 overloaded and idle transformers. This program relates to safety, reliability, or
16 maintenance because it directly provides funding to address overloaded
17 transformers and mitigate risks of equipment failure caused by overloads.

18 **MAT FZD – Field Work Plan**—Used for supporting operational field work
19 that engineering personnel initiate, such as phase balancing, and replacing
20 fuses that are projected to be overloaded. This program relates to safety,
21 reliability, or maintenance because it directly provides funding to support the
22 field work necessary to solve overload and imbalance issues, thereby mitigating
23 equipment failure caused by overloads and outages caused by load imbalance.

24 **MAT FZE – Troublemens Field Work**—Field Personnel performing
25 seasonal, permanent and emergency load transfer field switching, change
26 settings related to seasonal capacitors, or perform special load/voltage
27 readings/setting changes when specifically requested by the Electric Distribution
28 Engineers and directed by the DCC Operator. This program relates to safety,
29 reliability, or maintenance because it directly provides funding to support the
30 field work necessary to resolve voltage issues and provide proper device
31 protection for reliability.

32 **MAT GAA – Intrusive Inspection Program**—Intrusive testing and
33 treatment of wood poles. Compliance inspection program for 95 and GO 165.
34 Units measured: Number of inspections. This program relates to safety,

1 reliability, or maintenance because the costs are incurred to determine that
2 poles are in good condition so as to prevent premature failure. In addition, this
3 program satisfies the safety and maintenance requirements of GO 95 and 165.

4 **MAT GAB – Pole Joint Utilities Maintenance Reimbursement**—Engineer
5 review of pole attachment requests submitted by third-party utilities. This
6 program relates to safety, reliability, or maintenance because it actively works to
7 determine that poles are in good condition so as to prevent premature failure. In
8 addition, this program satisfies the safety requirements by ensuring poles meet
9 the strength and loading requirements of GO 95.

10 **MAT GAC – Pole Analyze Loading**—Engineer review and analysis of
11 distribution wood pole loading for an overload condition. If the pole is
12 determined to not be overloaded, then assessment and analysis remains in
13 MAT GAC. However, if the pole is determined to be overloaded, then the MAT
14 changes to 07O to replace the pole. This program relates to safety, reliability, or
15 maintenance because it actively works to determine that poles are in good
16 condition so as to prevent premature failure. In addition, this program satisfies
17 the safety requirements by ensuring poles meet the strength and loading
18 requirements of GO 95.

19 **MAT GAD – Pole Restoration Program**—Reinforce deteriorated, decayed
20 or damaged poles with steel trusses. This program typically follows one year
21 behind Pole Test and Treat program and restores poles to original design
22 strength. Units measured: Number of reinforcements. This program relates to
23 safety, reliability, or maintenance because the costs are incurred to determine
24 that poles are in good condition so as to prevent premature failure. In addition,
25 this program satisfies the safety and maintenance requirements of GOs 95
26 and 165.

27 **MAT GAF – Joint Utilities Telecom Engineer Review Non-reimbursed**—
28 Telecommunications engineer pole attachment request review for jointly owned
29 wood poles. This program relates to safety, reliability, or maintenance because
30 it actively works to determine that poles are in good condition so as to prevent
31 premature failure. In addition, this program satisfies the safety requirements by
32 ensuring poles meet the strength and loading requirements of GO 95.

33 **MAT GAH – Joint Utilities Maintenance Non-reimbursed**—Includes
34 PG&E’s membership share of the operating costs and participation in the

1 Northern California Joint Pole Association and the Joint Pole Database
2 maintenance costs for continued operation. This program relates to safety,
3 reliability, or maintenance because the costs are incurred to determine that
4 poles are in good condition so as to prevent premature failure. In addition, this
5 program enables communication with other utilities, to determine that poles meet
6 the safety, strength and loading requirements of GO 95.

7 **MAT GC1 – Electric Distribution Substation: Engineering Maintenance**
8 **Support**—Distribution substation costs in engineering and other maintenance
9 support. This program relates to safety, reliability, or maintenance because it
10 includes substation support activities for the maintenance and operation of
11 substation equipment.

12 **MAT GC2 – Electric Distribution Substation: Major Emergency CM**—
13 Distribution substation costs from major emergencies and emergent work. This
14 program relates to safety, reliability, or maintenance because it addresses
15 emergencies and emergent maintenance work to prevent imminent failures.

16 **MAT GCA – Electric Distribution Substation: Transformer Preventive**
17 **Maintenance**—Distribution substation costs for transformers, regulators, and
18 Load Tap Changer (LTC) Oil Tests. Units measured: Number of oil tests
19 performed. This program relates to safety, reliability, or maintenance because it
20 monitors Transformer and LTC condition and identifies any abnormalities that
21 may lead to a potential mis-operation of the transformer.

22 **MAT GCB – Electric Distribution Substation: Circuit Breaker**
23 **Preventive Maintenance**—Distribution substation costs for breaker exercises.
24 Units measured: Number of circuit breakers exercised. This program relates to
25 safety, reliability, or maintenance because it confirms functional operation of the
26 circuit breaker.

27 **MAT GCC – Electric Distribution Substation: Relay Preventive**
28 **Maintenance**—Distribution substation costs for relay functional tests. Units
29 measured: Number of relay scheme tests. This program relates to safety,
30 reliability, or maintenance because it inspects the relay schemes and tests the
31 condition of the relay to prevent mis-operation.

32 **MAT GCD – Electric Distribution Substation: Inspections**—Distribution
33 substation costs for recurring station inspection of equipment. Units measured:
34 Number of substation inspections. This program relates to safety, reliability, or

1 maintenance because inspections such as Equipment Inspection, Security
2 Check, Environmental Check, and Load Data Collection are performed within
3 the substation.

4 **MAT GCE – Electric Distribution Substation: General Station**

5 **Preventive Maintenance**—Distribution substation costs for preventive
6 maintenance tasks on variety of other types of substation equipment. Units
7 measured: Number of tasks. This program relates to safety, reliability, or
8 maintenance because tests are performed on minor substation equipment
9 (e.g., hot washes, mobile exercises, fire system tests, etc.) not specifically
10 captured under other specified maintenance programs to inspect and identify
11 any abnormalities.

12 **MAT GCF – Electric Distribution Substation: Battery Preventive**

13 **Maintenance**—Distribution substation costs for battery tests. Units measured:
14 Number of batteries. This program relates to safety, reliability, or maintenance
15 because inspections, tests (e.g., resistance and discharge tests) are performed
16 on batteries to identify any abnormalities and determine the batteries can
17 perform as designed.

18 **MAT GCG – Electric Distribution Substation: VM**—Distribution

19 substation costs in VM to manage vegetation and other property issues in and
20 around the substation. Routine vegetation control, rodent control, transient
21 encampment clean-up, mowing and other fuel reduction type work for
22 compliance with local laws and administration of the program. This program
23 relates to safety, reliability, or maintenance because it involves maintaining
24 property in and around the substation.

25 **MAT GCH – Electric Distribution Substation: Building Maintenance**—

26 Distribution substation costs for substation facility/building and yard work such
27 as repair to breaches in station fences, roof leaks, plumbing repairs, station
28 security such as lighting and card readers, etc. This program relates to safety,
29 reliability, or maintenance because it involves maintaining substation facilities
30 and buildings.

31 **MAT GCI – Electric Distribution Substation: Switch Preventive**

32 **Maintenance**—Distribution substation costs for switch diagnostic/performance
33 tests. Units measured: Number of switches. This program relates to safety,

1 reliability, or maintenance because diagnostic testing and infrared inspections
2 are performed on switches to identify any abnormal conditions.

3 **MAT GCJ – Electric Distribution Substation: Corrective (T80)—**
4 Distribution substation costs for various substation equipment corrective
5 repair work. This program relates to safety, reliability, or maintenance because
6 it involves the corrective repairs of substation equipment that are identified
7 during inspections or test of substation equipment.

8 **MAT GCM – Electric Distribution Substation: Circuit Breaker**
9 **Mechanism Services—**Distribution substation costs for breaker mechanism
10 services, including required breaker oil and gas analysis. Units measured:
11 Number of breakers. This program relates to safety, reliability, or maintenance
12 because it involves the mechanism service of the circuit breaker to determine
13 whether it is operating as needed.

14 **MAT GCO – Electric Distribution Substation: Transformer Overhaul**
15 **Inspections—**Distribution substation costs for transformer/regulator LTC
16 overhaul inspections. Units measured: Number of transformer overhaul
17 inspections. This program relates to safety, reliability, or maintenance because
18 it involves the overhaul inspection of transformer and regulator LTC to detect
19 deterioration or abnormal conditions.

20 **MAT GCS – Electric Distribution Substation: Circuit Switcher &**
21 **Motor-Operated Air Switch (MOAS) Mechanism Services—**Distribution
22 substation costs for circuit switcher and MOAS mechanism services. Units
23 measured: Number of circuit switcher and MOAS. This program relates to
24 safety, reliability, or maintenance because it involves mechanism service related
25 specifically to the performance of circuit switches and MOAS (e.g., performing
26 open and closing operations manually and/or under remote test conditions).

27 **MAT GCV – Electric Distribution Substation: Circuit Breaker**
28 **Overhauls—**Distribution substation costs for circuit breaker overhauls. Units
29 measured: Number of circuit breaker overhauls. This program relates to safety,
30 reliability, or maintenance because it involves the circuit breaker overhaul which
31 includes a detailed list of maintenance tasks to determine the circuit breaker is
32 operating as designed.

33 **MAT GCW – Electric Distribution Substation: Station Washes—**
34 Distribution substation costs for station insulator washing. This program relates

1 to safety, reliability, or maintenance because it involves washing insulators to
2 prevent contamination accumulation that may result in a flashover.

3 **MAT GEO – Mapping**—Electric Distribution Mapping includes activities
4 such as annexations (city/county boundary and tax changes) and delineations
5 (internal mapping information to external agencies, e.g., engineering firms, other
6 utilities). This MAT also includes Enterprise Records and Information
7 Management (ERIM) work described in MAT GEP. This program relates to
8 safety, reliability, or maintenance because the costs are incurred for the
9 accurate collection of records related to field assets. These records are
10 necessary to determine that field assets are safely, and reliably operated and
11 necessary maintenance is performed in a timely fashion.

12 **MAT GEP – Records Management**—Records and Information
13 Management labor for full-time employees in execution of the following projects:
14 Field Asset Inventory, Field Records Inventory, Convert Paper Records and
15 Migrate Electronic Records, as well as ongoing business process reviews,
16 change management, process mapping and implementation of PG&E’s ERIM
17 Program policies and standards. This program relates to safety, reliability, or
18 maintenance because this work involves a detailed review and validation of
19 Electric field asset data. This information is critical to informing risk-reduction
20 planning activities and safely operating the system on a day-to-day basis.

21 **MAT KAA – OH General CM Tag**—Repair OH facilities or replace individual
22 components that are not an imminent hazard and have not caused an outage.
23 Facilities include connectors, insulators, low conductors, leaning poles, slack
24 guys, etc. Repair, replace, or install grounds, moldings, leaking bushings, and
25 related work on all OH transformers and equipment associated with
26 transformers. Units measured: Number of notifications. This program relates to
27 safety, reliability, or maintenance because it addresses non-conforming
28 equipment identified by preventative maintenance programs such as inspections
29 and patrols, as well as internal operational processes.

30 **MAT KAC – Bird Safe Retrofit**—Repair, replace, or install bird-guard
31 materials such as insulated jumpers, bushing covers, line covers, or perching
32 platforms on incident and/or adjacent poles for bird safety, per U.S. Fish and
33 Wildlife Service (USFWS) requirements and Utility Operating Standard

1 TD-2321S. Units measured: Number of notifications. This program relates to
2 safety, reliability, or maintenance by mitigating outages due to bird incidents.

3 **MAT KAD – Bird Safe Retrofit Annual**—Install bird-guard materials such
4 as jumper covers, bushing covers, perch guards, or perching platforms on poles
5 identified in the Annual Pole Retrofit Program for bird safety, per USFWS
6 requirements and Utility Operating Standard TD-2321S. Units measured:
7 Number of notifications. This program relates to safety, reliability, or
8 maintenance due to PG&E’s commitment made to USFWS to retrofit poles in
9 raptor concentration zones to mitigate bird-related outages.

10 **MAT KAF – OH Critical COE CM Tag**—Also includes ordering batteries for
11 work in MAT BFG. Units measured: Number of notifications. This program
12 relates to safety, reliability, or maintenance because it addresses
13 non-conforming equipment identified by preventative maintenance programs
14 such as battery and equipment testing, as well as internal operational
15 processes.

16 **MAT KAH – Streetlight Replace Burnouts**—Repair or replace lamps,
17 photocells, and related items associated with nonoperating streetlights. If the
18 streetlight head needs replacement, the time and material to replace the head is
19 charged to 2AA. If the burnout is caused by a secondary UG failure, the time
20 and material to make the repair is charged to 2BA. Units measured: Number of
21 burnout repairs. This program relates to safety, reliability, or maintenance
22 because it addresses non-conforming equipment identified by customer call-ins
23 and preventative maintenance programs such as Troublemens patrols.

24 **MAT KAK – RTVI Investigations/Repairs**—Investigation of RTVI where
25 cause is linked to Company equipment. Units measured: Number of
26 investigations. This program relates to safety, reliability, or maintenance
27 because it addresses potential non-conformances identified by customers.

28 **MAT KAM – Insulator Washing**—Washing pole-mounted insulators. This
29 program relates to safety, reliability, or maintenance because it prevents pole
30 top ignitions.

31 **MAT KAO – Idle Facilities Investigations Service Planning**—
32 Investigation by Service planning to assess whether identified idle facilities have
33 a foreseeable future use. This program relates to safety, reliability, or
34 maintenance because it identifies whether idle facilities should be removed. If

1 an idle facility is confirmed, the removal work will fall under MAT codes 2AF and
2 2BF.

3 **MAT KAP – OH Expense Projects**—Projects for the replacement of OH
4 electric facilities that are not an imminent hazard and have not caused an
5 outage. Includes pre-planned projects such as actuator board replacements.
6 This program relates to safety and reliability because it mitigates the risk of
7 equipment failure from identified Material Problem Reporting (i.e., all material
8 and/or equipment found as defective, failed, or not meeting PG&E
9 requirements).

10 **MAT KAQ – Wood Pole Bridge Bonding**—Wood Pole Bonding
11 maintenance activity where an existing wood pole supporting both electric
12 transmission and distribution line facilities is retrofitted with grounding protection
13 to prevent fires that can occur at the location on the pole where the electric
14 distribution cross arm is bolted to the pole. This program relates to safety,
15 reliability, or maintenance because it serves to prevent ignitions.

16 **MAT KAS – FAS OH Expense**—FAS OH expense is work that is identified
17 during a field job and completed by a single Troublemans. This program relates
18 to safety, reliability, or maintenance because it addresses non-conforming
19 conditions identified by preventative maintenance programs such as Troublemans
20 patrols.

21 **MAT KB# – Not assigned**—Transformer labor reclassification costs
22 incurred when a transformer is refurbished and reused instead of being replaced
23 with a new unit. Additionally, this MAT includes costs for sand, gravel, spoils
24 and other oil-filled equipment used on a variety of UG jobs. This MAT is used
25 for compliance with Generally Accepted Accounting Principles standards and is
26 not directly related to safety, reliability or maintenance.

27 **MAT KBA – UG General CM Tag**—Repair UG facilities (including UG
28 infrared tags) or replace individual components that are not an imminent hazard
29 and have not caused an outage. Includes cleaning enclosures, re-securing
30 equipment, resurfacing lids, and tagging; repairing, replacing, or installing
31 grounds, moldings, leaking bushings; and completing related work on all
32 UG transformers and equipment associated with transformers. This program
33 relates to safety, reliability, or maintenance because it addresses

1 non-conforming equipment identified by preventative maintenance programs
2 such as inspections and patrols, as well as internal operational processes.

3 **MAT KBC – UG COE CM Tag**—Repair of UG COE. This program relates
4 to safety, reliability and maintenance because it identifies certain asset life
5 replacements (e.g., UG Cable Testing).

6 **MAT KBD – Nitrogen Cylinders CM**—Replacement of Nitrogen Cylinders
7 (San Francisco and East Bay division only annual nitrogen-cylinder
8 replacements). This program relates to safety, reliability, and maintenance
9 because it maintains sufficient nitrogen levels in cables where leaking naturally
10 occurs.

11 **MAT KBE – BART Cable Repair**—Repair of 34.5 kV BART Cable issues
12 identified during annual inspections/testing performed under MAT BF3. This
13 program relates to safety, reliability, and maintenance because it checks
14 whether cables are in proper operating condition, remediating problems caused
15 by leaks, corrosion, movement of support tracks, gas pressure, etc.

16 **MAT KBP – UG Expense Projects**—Projects for the replacement of UG
17 electric facilities that are not an imminent hazard and have not caused an
18 outage. This program relates to safety because it addresses WYE (three-phase
19 star configuration) transformer grounding configurations.

20 **MAT KBQ – Elbow/Splices Replace**—Costs in this category are for special
21 splicing projects performed to fix portions of cable rather than replacing the
22 entire cable. This program relates to reliability and maintenance because it
23 addresses cable outages to major customers.

24 **MAT KCA – Network Equipment CM Notifications**—Repairs related to
25 network transformers and NPs. Does not include oil replacement work. Units
26 measured: Number of notifications. This program relates to safety, reliability, or
27 maintenance because it addresses problems found on the network equipment
28 and repairs made to correct those problems in order to maintain a safe and
29 reliable distribution network system.

30 **MAT KCB – Network Transformer Oil Replacement & 60-Day Follow Up**
31 **Notifications**—Replacement of oil in network primary termination chambers or
32 network ground switches. Includes resample of network transformer oil. Units
33 measured: Number of oil replacements. This program relates to safety,
34 reliability, or maintenance because it addresses issues identified in sample oil

1 during laboratory testing. The replacement of the oil at the network transformer
2 chamber is needed to maintain safe operation.

3 **MAT KCC – Network Vault CM Notifications**—Vault environmental
4 cleanup. Excludes work associated with network transformers and NPs. Units
5 measured: Number of vault cleanups. This program relates to safety, reliability,
6 or maintenance because it addresses hazardous conditions identified in the
7 vaults. The cleanup is for the safety and health of personnel working inside the
8 vault.

9 **MAT KCD – Network Transformer Preventive Maintenance/Restore**
10 **Notifications**—Annual maintenance on network transformers and associated
11 oil-filled chambers. Includes oil sampling on all chambers and pressure testing
12 of units. Units measured: Number of oil samplings. This program relates to
13 safety, reliability, or maintenance because it addresses the maintenance of
14 network transformers for safe and reliable operation.

15 **MAT KCE – NP Preventive Maintenance Notifications**—Routine
16 maintenance of NPs conducted once every three years (triennial). Excludes
17 repairs costing more than \$500 or requiring greater than one hour that are
18 covered by MAT category KCA. Units measured: Number of protector
19 maintenance tags. This program relates to safety, reliability, or maintenance
20 because it addresses the maintenance of NPs for safe and reliable operation.

21 **MAT KCF – Fiber Optic/SCADA Communications Repair Notifications**—
22 Repair of existing network SCADA and fiber optics systems and includes
23 communication. This program relates to safety, reliability, or maintenance
24 because it addresses the problems found on the existing network SCADA and
25 fiber optics systems and repairs made to correct the problems as needed for
26 safe and reliable operation.

27 H. New MAT Code Descriptions – Expense

28 **MAT HGC – ADMS Development**—Funds the ADMS. Used to track
29 expense associated with the multi-year grid modernization effort to consolidate
30 distribution operational technology platforms into a single platform. This
31 program relates to safety, reliability, or maintenance because it enables outage
32 management applications that include instantaneous fault location, automated
33 switching recommendations and promotes operator awareness of RT circuit
34 conditions. This project directly supports DCC operations.

1 **MAT HGD - Distribution Operational Technology**—DCC Systems,
2 Facilities, Installation and Replacement. Used to track expense related to
3 improvements and enhancements at the DCC. This program relates to safety,
4 reliability, or maintenance by supporting the development and daily operation of
5 RT applications/tools that are used to safely operate and maintain distribution
6 reliability.

7 **MAT IGI – Dead and Dying Trees**—Reduce risk associated with increased
8 tree mortality due to prolonged drought and bark beetle infestation within
9 PG&E’s service territory. Targeted removal of dead and dying trees as well as
10 certain species that pose an increased potential risk of falling into power lines.
11 Includes costs for enhanced vegetation inspection and mitigation, Urban Wild
12 Land tree work, wood management, aerial (smoke) patrol and fire safe council
13 fuel reduction program to help prevent wildfires and protect communities. This
14 program relates to safety, reliability, or maintenance because it addresses
15 wildfire risk.

16 **MAT IGJ – EVM**—EVM work is intended to reduce wildfire risk in high fire
17 threat areas. EVM meets standards requiring creating clearances of 12 feet or
18 more at time of trim to ensure compliance until the next inspection. The program
19 covers pre-inspections, tree trims and removals, work validation through quality
20 assurance and quality control, targeted species work, and fuel reduction. This
21 program relates to safety, reliability, or maintenance because it addresses
22 wildfire risk.

23 **I. MAT Code Descriptions – Capital**

24 **MAT 06# – Line Voltage Regulator Revolving Stock**—Purchase of Line
25 Voltage Regulator Revolving Stock. This program relates to safety, reliability, or
26 maintenance because it corrects voltage issues on distribution circuits to support
27 safe and reliable operation of customer equipment.

28 **MAT 06A – Feeder Projects Associated with Substation Capacity**—
29 Includes installation and replacement of UG cable and OH conductor associated
30 with a new substation transformer and feeder. This program relates to safety,
31 reliability, or maintenance because it prevents overloads on substation
32 equipment, mitigating the risk of equipment failure due to overloads.

33 **MAT 06B – Transformer Replace Overloaded**—Replacement of
34 transformers identified through overload reports using SmartMeter data,

1 recorded high oil temperature indicators, or multiple thermal protective device
2 operations during peak load periods. This does not include replacement of
3 transformers identified via the new business, WRO or any other process. Units
4 measured: Number of transformers. This program relates to safety, reliability,
5 or maintenance by replacing transformers identified as overloaded, thereby
6 mitigating the risk of transformer failure due to overloads.

7 **MAT 06D – Circuits Reinforce – Distribution Planning (DP) Managed—**

8 Installation of new OH and UG facilities or reconductoring of existing facilities
9 with larger wire to meet capacity needs or voltage support. These upgrades are
10 performed to address one of the following possible scenarios: (1) Line Capacity
11 Overload; (2) Under or Over-Voltage Conditions; (3) Operational or Emergency
12 Capacity; and (4) Future UG Facilities in Joint Trench Projects. This MAT
13 covers circuit reinforcement projects managed by DP. This program relates to
14 safety, reliability, or maintenance by replacing distribution equipment that is
15 either presently overloaded or forecast to be overloaded, mitigating the risk of
16 equipment failure due to overloads.

17 **MAT 06E – Circuits Reinforce – Project Services (PS) Managed—**

18 Installation of new OH and UG facilities or reconductoring of existing facilities
19 with larger wire to meet capacity needs or voltage support. These upgrades are
20 performed to address one of the following possible scenarios: (1) Line Capacity
21 Overload; (2) Under or Over-Voltage Conditions; (3) Operational or Emergency
22 Capacity; and (4) Future UG Facilities in Joint Trench Projects. This MAT
23 covers circuit reinforcement projects managed by PS. This program relates to
24 safety, reliability, or maintenance by correcting overloads on distribution
25 equipment caused by load growth, mitigating the risk of equipment failure due to
26 overloads.

27 **MAT 06G – Voltage Correct Secondary—**Includes adding or upgrading:

28 (1) existing transformers; (2) secondary distribution conductors; and/or
29 (3) secondary service wires to comply with the voltage requirements of Electric
30 Rule 2. This program relates to safety, reliability, or maintenance by correcting
31 secondary voltage issues to support safe and reliable operation of customer
32 equipment.

33 **MAT 06H – Electric Distribution Line New Business Performance—**

34 Includes projects identified to address capacity deficiencies related to specific

1 New Business customer’s demand increase. This program relates to safety,
2 reliability, or maintenance by correcting overloads on distribution equipment
3 caused by addition of new customer loads, mitigating the risk of equipment
4 failure due to overloads.

5 **MAT 06I – Electric Distribution Line Operational Capacity Projects—**

6 Includes OH or UG new facilities or reconductoring of existing facilities with large
7 wire to improve reliability, as well as increase emergency and operational
8 capability of the system. This program relates to safety, reliability, or
9 maintenance because it improves the ability to reconfigure the distribution
10 system, reducing the number of customers impacted by outages and reducing
11 outage restoration times.

12 **MAT 06K – Power Factor Management—**Includes installing SCADA

13 controls on strategically located electric distribution capacitor banks to allow
14 control setting changes remotely for better power factor management, as well as
15 increased voltage and reactive power support of the system. This program
16 relates to safety, reliability, or maintenance by enabling RT control over power
17 factor correction equipment, and RT solving of voltage issues in order to support
18 safe and reliable operation of customer equipment.

19 **MAT 06P – Enable Distributed Generation Electric Distribution Line—**

20 Includes installing SCADA controls on strategically located electric distribution
21 regulator banks to allow control setting changes remotely for better control of
22 two-way power flow. This program relates to safety, reliability, or maintenance
23 by enabling RT control over voltage correction equipment, and RT solving of
24 voltage issues in order to support safe and reliable operation of customer
25 equipment.

26 **MAT 07C – Special Criteria Pole Replacement—**Replace all wooden

27 center-bore poles in the system. Units measured: Number of poles. This
28 program relates to safety, reliability, or maintenance because it actively works to
29 determine whether poles are in good condition and prevents premature failure.
30 In addition, this program enhances overall system safety by replacing poles
31 identified to be nearing the end of their service life, prior to failure.

32 **MAT 07D – Pole Replacement—**Replace poles identified as

33 deteriorated/damaged and requiring replacement. Units measured: Number of
34 poles. This program relates to safety, reliability, or maintenance because it

1 actively works to determine whether poles are in good condition so as to prevent
2 premature failure. In addition, this program enhances overall system safety by
3 replacing poles identified to be nearing the end of their service life, prior to
4 premature failure.

5 **MAT 07G – Pole Joint Utility Telecommunications Reimbursement—**

6 Pole/Anchor replacement due to an overloaded condition caused by an owner's
7 tenant. This can be driven by a PG&E tenant or another joint owner's tenant.
8 This work is 100 percent reimbursed and managed by the local
9 telecommunications cable attachment project manager. Project Manager must
10 obtain tenant approval prior to creation of an 07G order. Units Measured:
11 Number of poles. This program relates to safety, reliability, or maintenance
12 because it actively works to determine whether poles are in good condition so as
13 to prevent premature failure. In addition, this program enhances overall system
14 safety by replacing poles identified as overloaded, prior to premature failure.
15 The program satisfies the safety requirements by determining poles meet the
16 strength and loading requirements of GO 95.

17 **MAT 07L – Steel Lattice Structures—**Replacement or repair of steel lattice

18 structures that carry electric distribution conductor across the Delta to meet
19 various local and state agencies' (San Joaquin, Contra Costa, Alameda, Solano,
20 and Yolo counties) Navigable Waterway height clearance requirements. Units
21 measured: Number of structures. This program relates to safety, reliability, or
22 maintenance because it actively works to determine whether structures are in
23 good condition so as to prevent premature failure. In addition, this program
24 enhances overall system safety by replacing structures identified to be nearing
25 the end of their service life, prior to premature failure.

26 **MAT 07O – Overloaded Pole Replacements—**Replace poles identified as

27 overloaded (additional load applied to the pole beyond what it is designed to
28 hold) and requiring replacement. Units measured: Number of poles. This
29 program relates to safety, reliability, or maintenance because it actively works to
30 determine whether poles are in good condition so as to prevent premature
31 failure. In addition, this program enhances overall system safety by replacing
32 poles identified as overloaded, prior to premature failure. The program satisfies
33 safety requirements by ensuring poles meet the strength and loading
34 requirements of GO 95.

1 **MAT 08F – Do Not Use – Cornerstone**—costs for work related to PG&E’s
2 Cornerstone reliability program. The MAT code is no longer in use, but some
3 costs still settle to Cornerstone project orders. The program relates to safety,
4 reliability or maintenance because the Cornerstone program objective was to
5 improve reliability.

6 **MAT 08J – Replace Deteriorated OH Conductor**—Targeted replacement
7 of primary OH conductor in non-HFTD areas deemed deteriorated through
8 processes: (1) post wire-down investigation, (2) outage review/safety team
9 recommendation, or (3) input from the system risk model. Starting in 2018,
10 MAT 08J also includes PG&E’s Wires-Down Program, which addresses
11 conductors that fail and result in a contact with the ground, a vehicle, or other
12 object. The program consists of the following actions: (1) post wire-down
13 investigation; and (2) splice data review. Units measured: Number of circuit
14 miles. This program relates to safety, reliability, or maintenance because it
15 mitigates the risk of primary OH conductor failure resulting in a potential
16 wire-down event.

17 **MAT 08S – Replace Obsolete OH Switches**—Replace “grasshopper” OH
18 switches, installed between 1950 and 1970, minimizing potential safety issues
19 and improve reliability during routine and emergency switching operations. Units
20 measured: Number of switches. This program relates to safety, reliability, or
21 maintenance because it replaces obsolete switches that have limited to
22 load-break capabilities.

23 **MAT 08W – Wires Down Generated Projects and System Hardening**
24 **Wildfire Resiliency Projects**—Performing targeted HFTD site-specific primary
25 conductor replacement, secondary conductor replacement, replacement of
26 non-exempt equipment, replacement of OH electric distribution line
27 transformers, replacement of existing wood poles with more resilient poles,
28 upgrades to electrical protective devices and systems through equipment
29 replacements and device programming. Prior to 2018, this MAT was used for
30 OH conductor replacements associated with PG&E’s wires-down program; this
31 work has been moved to MAT 08J. Units measured: Number of circuit miles.
32 This program relates directly to safety, reliability, and maintenance because the
33 work can be initiated based on: (1) deteriorated conductor identification,
34 (2) fire-risk ignition modeling, (3) bundling of electric corrective tags identified as

1 part of the WSIP, or (4) PSPS mitigation; and is completed in compliance with
2 PG&E’s Fire Rebuild Design Guidance for System Hardening.

3 **MAT 09A – Electric Distribution Line SCADA Install/Replace**—This
4 includes the DA Initiative, installing new RTU to improve visibility, reliability, and
5 operations, and continuing to upgrade and replace obsolete, deficient, and failed
6 automation and protection equipment. Starting in 2020, this work is moving to
7 MAT 49A. This program relates to safety, reliability, or maintenance because it
8 supports the installation of electric distribution line equipment to remotely isolate
9 electric lines and quickly de-energize facilities to address urgent safety issues
10 such as wire down events.

11 **MAT 09B – Electric Distribution Substation SCADA/RTU Replace**—
12 Replace obsolete SCADA/RTUs in electric distribution substations to provide
13 visibility and remote controllability to Operations. This program relates to safety,
14 reliability, or maintenance because the work targets proactive replacements of
15 SCADA systems in distribution substations that possess obsolete SCADA and
16 protective relay assets, which, if failed, would jeopardize PG&E’s ability to
17 operate the electric facility remotely and properly gather data for system
18 operators.

19 **MAT 09D – Electric Distribution Substation SCADA/RTU Install**—
20 Install additional SCADA/RTU in electric distribution substations to provide
21 visibility and remote controllability to Operations. This program relates to safety,
22 reliability, or maintenance because SCADA technology provides the ability for
23 remote distribution operators to operate relays and quickly deenergize downed
24 lines and equipment in support of wildfire risk management. In addition,
25 operational improvements are gained through remotely switching substation
26 equipment, obtaining RT information about the condition of the system, and
27 providing historical data to examine line loading trends, forecast future loading,
28 and perform outage investigations.

29 **MAT 09E – Electric Distribution Substation Protective Relay**
30 **Install/Replace**—Install and replace protective relays in electric distribution
31 substations to maintain optimal system protection and reliability. This program
32 relates to safety, reliability, or maintenance because it covers the proactive
33 replacement of aging substation protective relays. These relays serve the
34 purpose of tripping substation circuit breakers when faults are detected, such as

1 in cases of wires down resulting in over-current events, protecting power
2 equipment from catastrophic failure and increasing public safety.

3 **MAT 09F – Electric Distribution Substation SCADA Emergency**

4 **Replace**—Miscellaneous and emergency replacement projects initiated and
5 funded by the System Automation & Protection program. This program relates
6 to safety, reliability, or maintenance because it covers in-service failures of
7 substation SCADA equipment and protective relays, as well as emergency
8 replacements of equipment whose risk of failure is imminent, which, if failed,
9 would jeopardize PG&E's ability to remotely operate the electric facility safely.

10 **MAT 21A/21# – Emergency Preparedness & Response Capital—**

11 Capital work and projects supporting Emergency Preparedness and
12 Response (EP&R) focused on:

- 13 • Addressing one of PG&E's top 3 enterprise risks—a catastrophic emergency
14 incident such as a major earthquake or fire that could affect one or more
15 areas of PG&E's service territory;
- 16 • Providing additional fire mitigation actions as precautionary measures to
17 reduce the risk of future wildfire ignitions, including timely detection of
18 wildfires;
- 19 • Developing corporate emergency strategy, preparedness, response, and
20 business continuity policies and procedures for gas, electric, and generation;
21 and
- 22 • Undertaking key technology projects that support PG&E's emergency
23 preparedness to improve public and system safety, employee safety,
24 reliability, and work efficiency.

25 This program relates to safety, reliability, or maintenance because it
26 addresses catastrophic emergency incidents, fire mitigations, and corporate
27 emergency strategy.

28 **MAT 2AA – OH General Replacement**—Replace deteriorated OH facilities

29 that are not an imminent hazard and have not caused an outage. Facilities
30 include crossarms, leaking transformers, and conductor. Units measured:
31 Number of notifications. This program relates to safety, reliability, or
32 maintenance because it addresses a non-conformance identified by preventative
33 maintenance programs such as inspections and patrols, as well as internal
34 operational processes.

1 **MAT 2AB – Bird Safe Install/Replacement**—Capital modification work and
2 retrofits to distribution poles and/or adjacent poles in order to address bird-safety
3 incidents, per USFWS requirements and Utility Operating Standard TD-2321S.
4 Units measured: Number of notifications. This program relates to safety and
5 reliability by mitigating outages due to bird incidents.

6 **MAT 2AC – Bird Safe Install/Replacement Annual**—Capital modification
7 work made to distribution poles as part of the annual pole retrofit program to
8 address bird-safety issues, per USFWS requirements and Utility Operating
9 Standard TD-2321S. Units measured: Number of notifications. This program
10 relates to safety, reliability, or maintenance due to PG&E’s commitment made to
11 USFWS to retrofit poles in raptor concentration zones to mitigate bird-related
12 outages.

13 **MAT 2AE – OH COE Replacement**—Replace OH equipment classified as
14 COE. Units measured: Number of notifications. This program relates to safety,
15 reliability, or maintenance because it addresses non-conforming equipment
16 identified by preventative maintenance programs such as equipment testing, as
17 well as internal operational processes.

18 **MAT 2AF – OH Idle Facility Remove**—Removal of OH Idle Facilities that
19 have no likely foreseeable future use. Units measured: Number of facilities.
20 This program relates to safety and maintenance because it removes equipment
21 no longer in use and therefore no longer requiring maintenance.

22 **MAT 2AG – San Francisco Series Streetlights**—Replacement of the RO
23 streetlights, also referred to as constant-current streetlight systems, owned and
24 operated by PG&E in San Francisco. This project will replace the existing RO
25 loops with the type of streetlight circuits used elsewhere is PG&E’s system. This
26 program relates to safety and maintenance because it provides illumination for
27 pedestrian and vehicular traffic.

28 **MAT 2AH – LED Streetlights**—Replacement of PG&E-owned and
29 maintained decorative streetlights (LS-1) with more efficient, longer-life fixtures
30 and new photo controllers. Units measured: Number of streetlights. This
31 program relates to safety and maintenance because it provides longer-life
32 streetlights and better illumination for pedestrian and vehicular traffic.

33 **MAT 2AI – San Francisco Historical Streetlights**—Replacement or
34 refurbishment of cast-iron decorative streetlights in the Golden Triangle/Union

1 Square area of San Francisco that have been found to have corroded steel
2 support poles. This program relates to safety and maintenance because it
3 provides illumination for pedestrian and vehicular traffic.

4 **MAT 2AP – OH Capital Projects**—Major OH projects, defined as jobs
5 costing more than \$100,000 per location. This program relates to safety and
6 maintenance because it includes replacement of (1) non-exempt fuses with
7 exempt fuses for wildfire mitigation, and (2) non-wood/metallic or concrete
8 streetlight poles and foundations that have extensive corrosion or damage.

9 **MAT 2AQ – Ceramic Post Insulators**—Replacement of ceramic post
10 insulators that were manufactured in or prior to 1972 and are currently installed
11 on PG&E poles. This program relates to safety, reliability, and maintenance
12 because it replaces ceramic post insulators prior to failure.

13 **MAT 2AR – Surge Arrester Replacement**—Replacement of current
14 (non-exempt) surge arresters with exempt surge arresters to reduce fire risk
15 from electric distribution operations. Non-exempt surge arresters are OH
16 electric distribution equipment that have the potential to expel hot or molten
17 material upon normal operation, leading to an increased risk of wildfire. Units
18 measured: Number of replacements. This program relates to safety and
19 maintenance because it includes replacing equipment to mitigate wildfire risk
20 and correcting common grounding issues that pose a safety risk.

21 **MAT 2AS – FAS OH Capital**—FAS OH capital is work that is identified
22 during a field job and completed by a single Troublemans. The work could
23 involve either replacing or installing OH facilities: Electric distribution
24 conductors, components, structures, and associated equipment constructed
25 above ground level. Units measured: Number of notifications. This program
26 relates to safety, reliability, or maintenance because it addresses
27 non-conforming conductors, components, structures, and associated equipment
28 identified by Troublemans.

29 **MAT 2B# – Not assigned**—Sand, gravel, spoils and oil-filled equipment
30 used on a variety of UG jobs. This program relates to safety, reliability, or
31 maintenance because this material is used on UG work associated with safety,
32 reliability and maintenance.

33 **MAT 2BA – UG General Replacement**—Replace deteriorated UG facilities
34 that are not an imminent hazard and have not caused an outage. Facilities

1 include deteriorated transformers, conduits, enclosures, pads, and idle
2 equipment. Units measured: Number of notifications. This program relates to
3 safety, reliability, or maintenance because it addresses non-conforming facilities
4 identified by preventative maintenance programs such as inspections and
5 patrols, as well as internal operational processes.

6 **MAT 2BB – Fault Indicator Replacements**—Replace deteriorated fault
7 indicators that are not an imminent hazard and have not caused an outage.
8 Units measured: Number of fault indicators. This program relates to reliability
9 because in the event of an outage it helps sectionalize the outage area.

10 **MAT 2BD – UG COE Replacement**—Replace UG equipment determined
11 COE by the division operators, Maintenance and Construction, and restoration,
12 and validated by Distribution Engineers. Units measured: Number of
13 notifications. This program relates to reliability and maintenance because it
14 identifies certain asset replacements.

15 **MAT 2BF – UG Idle Facility Remove**—Removal of UG Idle Facilities that
16 do not to have a likely use in the foreseeable future. This program relates to
17 safety and maintenance because it removes equipment no longer in use and no
18 longer requiring maintenance.

19 **MAT 2BP – UG Capital Projects**—Major UG projects, defined as jobs
20 costing more than \$100,000 per location. This program relates to safety,
21 reliability, or maintenance because it addresses non-conforming equipment
22 identified by preventative maintenance programs such as inspections and
23 patrols, as well as internal operational processes.

24 **MAT 2CA – NP Relay Replacement**—Replacement of an NP relay as part
25 of planned replacement program. Units measured: Number of replacements.
26 This program relates to safety, reliability, or maintenance because it addresses
27 the replacement of any inoperable NP relays to maintain a safe and reliable
28 distribution network system.

29 **MAT 2CB – Fiber/SCADA Communication Replace**—Installation of new
30 network monitoring systems for the distribution networks, including sensor
31 installation, communications, fiber optic replacement and programming activities.
32 Includes any upgrade/replacement work to the existing network SCADA systems
33 for reliable operations until new SCADA systems are installed (not part of the
34 new monitoring system as part of MAT 2CE). This program relates to safety,

1 reliability, or maintenance because it addresses the replacement of any
2 inoperable existing SCADA system and related components, including fiber
3 optics, to maintain a safe and reliable distribution network system.

4 **MAT 2CC – Network Transformer & Protector Replace**—Planned
5 replacement of electric distribution network transformers, including those with
6 deteriorated oil condition or high-rise locations. Units measured: Number of
7 replacements. This program relates to safety, reliability, or maintenance
8 because it addresses the replacement of both network transformer and NP
9 including high rise locations to maintain a safe and reliable distribution network
10 system.

11 **MAT 2CD – Venting Manhole Covers Replacement**—Replacement of
12 existing manhole covers on the electric distribution network and distribution
13 radial systems with venting manhole covers. Units measured: Number of
14 replacements. This program relates to safety, reliability, or maintenance
15 because it addresses public safety in the event of an electrical failure in an UG
16 vault and the possible ejection of the manhole cover.

17 **MAT 2CE – Network SCADA Communications Upgrade**—Installation of
18 new network SCADA monitoring systems for the electric distribution networks,
19 including sensor installation, communications, fiber optic replacement and
20 programming activities. This program relates to safety, reliability, or
21 maintenance because the new safety monitoring system provides information to
22 help prevent in-service failure of the monitored equipment in the distribution
23 network system.

24 **MAT 46A – Electric Distribution Substation General Install/Replace**—
25 Projects to support general electric distribution substation capacity increases for
26 banks, bus, feeders, or other substation components that do not fall into one of
27 the other MWC 46 MATs. This program relates to safety, reliability, or
28 maintenance because it creates additional substation capacity in order to
29 prevent overloads on substation equipment, mitigating the risk of equipment
30 failure due to overloads.

31 **MAT 46F – Electric Distribution Substation Emergency and Operational**
32 **Capacity**—Projects identified in this MAT increase electric distribution capacity
33 by upgrading banks, bus, feeders, or other substation components to improve
34 reliability by providing emergency capacity and/or operational flexibility at the

1 bank and feeder level. This program relates to safety, reliability, or maintenance
2 because it improves the ability to reconfigure the distribution system, reducing
3 the number of customers impacted by outages and reducing outage restoration
4 times.

5 **MAT 46H – Electric Distribution Substation New Business Related**
6 **Capacity**—These projects are like other projects under MWC 46; however,
7 these projects have been identified to address capacity deficiencies for specific
8 New Business customers’ demand increase. This program relates to safety,
9 reliability, or maintenance because it creates additional substation capacity in
10 order to serve new customer loads, mitigating the risk of equipment failure due
11 to overloads.

12 **MAT 46N – Electric Distribution Substation Land Purchase New**
13 **Substation**—Includes projects to increase area electric distribution substation
14 capacity by siting, permitting, and constructing new substations. This program
15 relates to safety, reliability, or maintenance because it works towards siting a
16 new substation that adds additional substation capacity in order to prevent
17 overloads on substation equipment, mitigating the risk of equipment failure due
18 to overloads.

19 **MAT 46T – Electric Distribution Substation Support Transmission or**
20 **Substation Related Work**—Projects identified in this MAT replace or relocate
21 electric distribution substation equipment to support a related Transmission bus
22 reconfiguration or voltage conversion or Substation condition-based replacement
23 projects. This program relates to safety, reliability, or maintenance because it
24 supports work that creates additional transmission capacity in order to mitigate
25 the risk of equipment failure due to overloads. It also supports proactive
26 substation replacement work intended to prevent failures and maintain reliability.

27 **MAT 48A – Replace Electric Distribution Substation Other Equipment**—
28 Replace other electric distribution substation equipment, such as ancillary
29 equipment, ground grids, etc. Includes replacement projects with complex or
30 wide-ranging scope of work that include various equipment types. This program
31 relates to safety and reliability because it involves the replacement of various
32 substation equipment (e.g., ancillary equipment, ground grid upgrade, etc.) not
33 specifically captured under other specified programs under MWC 48 to maintain
34 reliability.

1 **MAT 48B – Replace Electric Distribution Substation Regulators—**
2 Replace regulators that are electric distribution substation assets, mainly electric
3 distribution class (less than 50 kV), single-phase or three-phase. This program
4 relates to reliability because it involves the proactive planned replacement of
5 substation regulators aimed to prevent regulator failures and to maintain
6 reliability.

7 **MAT 48C – Replace Electric Distribution Substation Batteries—**Replace
8 battery system at electric distribution substation. Units measured: Number of
9 batteries. This program relates to reliability because it targets the replacement
10 of substation batteries to minimize reliability risk due to battery failures.

11 **MAT 48D – Replace Electric Distribution Substation Breakers—**Replace
12 electric distribution substation circuit breakers. This program relates to reliability
13 because it involves the proactive planned replacement of circuit breakers aimed
14 to prevent failures and maintain reliability.

15 **MAT 48E – Replace Electric Distribution Substation Switches—**Replace
16 electric distribution substation disconnect switches. This program relates to
17 reliability because it targets the replacement of switches to maintain reliability.

18 **MAT 48F – Replace Electric Distribution Substation Switchgear—**
19 Replace electric distribution substation switchgear equipment. This program
20 relates to reliability because it targets the replacement of switchgear to improve
21 reliability.

22 **MAT 48H – Replace Electric Distribution Substation Civil Structures—**
23 Replace civil structures (structures, foundation, etc.) that are electric distribution
24 substation assets. This program relates to safety and reliability because it
25 replaces civil structures to prevent interruption of service and to mitigate safety
26 hazard to personnel.

27 **MAT 48L – Electric Distribution Line Work Support Substation—**
28 Includes work required on electric distribution lines associated with substation
29 equipment replacement work. This program relates to reliability because it
30 retrofits distribution lines and associated equipment work in conjunction with
31 distribution work (e.g., cutovers – 4 kV to 12 kV, switchgear and transformer
32 replacement).

33 **MAT 48N – Electric Distribution Substation Insulators—**Replacement of
34 electric distribution insulators that have reached end-of-life. This program

1 relates to reliability because it targets the replacement of insulators to minimize
2 equipment damages leading to sustained outages.

3 **MAT 48R – Electric Distribution Substation Reactors**—Replacement of
4 electric distribution reactors that have reached end-of-life. This program relates
5 to reliability because it replaces reactors to maintain reliability.

6 **MAT 48X – Electric Distribution Substation Animal Abatement**—Animal
7 abatement program retroactively mitigates substations to prevent animal
8 contacts. Units measured: Number of substations mitigated. This program
9 relates to reliability because it involves the abatement of substation assets to
10 prevent equipment damage and customer outages due to animal contacts.

11 **MAT 49# – Line Reclosers Revolving Stock**—Purchase Line Reclosers
12 Revolving Stock. This program relates to safety, reliability, or maintenance
13 because it provides a centralized inventory of equipment to support various
14 safety and reliability programs such as PG&E’s PSPS Program, targeted electric
15 reliability improvements, and distribution line automation.

16 **MAT 49B – Recloser Control Install/Replace**—Strategic upgrade of
17 recloser controls (units in-service, not deteriorated or damaged), includes minor
18 communication, or other minor upgrades to expand or improve SCADA
19 coverage and improve reliability. Units measured: Number of recloser controls.
20 This program relates to safety, reliability, or maintenance because it provides
21 replacement electronic recloser controls to improve the functionality of
22 distribution line protective devices.

23 **MAT 49C – OH Fuses Install/Replace**—Install New OH Fuses to improve
24 reliability. Units measured: Number of fuses. This program relates to safety,
25 reliability, or maintenance because it provides funding to support the installation
26 of devices to quickly de-energize faulted lines and improve electric reliability to
27 customers.

28 **MAT 49D – OH Recloser/Sectionalizers/Switch Install/Replace**—Install
29 New Reclosers, Sectionalizers, OH Switches or solid blade disconnects to
30 improve reliability. Units measured: Number of devices. This program relates
31 to safety, reliability, or maintenance because it directly funds the installation of
32 electrical equipment designed to isolate faulted lines and improve electric
33 service reliability to customers.

1 **MAT 49E – General Installations/Replace Circuits/Zone**—Line work that
2 typically includes reliability work, such as protective devices, reframing lines,
3 installing tree wire, etc.: Targeted Circuit Program, as well as system or
4 city/community programs to improve reliability. Units measured: Number of
5 circuits. This program relates to safety, reliability, or maintenance because it
6 directly funds the installation of various electrical equipment designed to isolate
7 faulted lines, prevent electrical outages, and improve electric service reliability to
8 customers.

9 **MAT 49F – UG Fuses Install/Replace**—Install or replace UG fuses to
10 improve reliability. Units measured: Number of fuses. This program relates to
11 safety, reliability, or maintenance because it directly funds the installation of
12 various electrical UG equipment designed to isolate faulted lines, limit the scope
13 of electrical outages, and improve electric service reliability to customers.

14 **MAT 49G – UG Recloser/Sectionalizers/Switch Install/Replace**—Install
15 or replace UG interrupters to improve reliability. Units measured: Number of
16 devices. This program relates to safety, reliability, or maintenance because it
17 directly funds the installation of various electrical UG equipment designed to
18 isolate faulted lines, limit the scope of electrical outages, and improve electric
19 service reliability to customers.

20 **MAT 49H – PSPS Sectionalizer Device Install/Replace**—Install or replace
21 UG fault indicators to improve reliability. Units measured: Number of devices.
22 This program relates to safety and reliability because it directly funds the
23 installation of automated electrical equipment designed to isolate faulted lines,
24 limit line reclosing, and facilitate the remote opening and closing of switches
25 necessary to efficiently implement PSPS.

26 **MAT 49I – OH Fault Indicators/Line Sensors Install/Replace**—Install new
27 OH fault indicators or distribution line monitoring systems and/or line sensors to
28 improve reliability. Units measured: Number of devices. This program relates
29 to safety, reliability, or maintenance because it provides funding to support the
30 installation of devices which assist with quickly identifying faulted lines leading to
31 improved electric reliability to customers.

32 **MAT 49M – Resilience Zones**—Build resilience zones around Pre-Installed
33 Interconnection Hubs (PIH)—permanent, “plug and play” infrastructure enabling
34 temporary generation to connect to the electric distribution grid at

1 pre-determined locations. Generally, PIHs will consist of a transformer and
2 associated interconnection equipment, ground grid, and grid isolation and
3 protection devices. This program relates to safety and reliability because it
4 improves public safety through wildfire prevention, limits the number of
5 customers impacted by PSPS outage events, and reduces the unplanned
6 outage frequency and duration.

7 **MAT 49S – Electric Reliability Install FLISR Systems**—The FLISR
8 automation system reduces the effect of outages to customers by quickly
9 opening and closing automated switches. This is the same automation work
10 done previously under the Cornerstone project. Units measured: Number of
11 circuits. This program relates to safety, reliability, or maintenance because it
12 directly funds the installation of various electrical equipment designed to isolate
13 faulted lines, limit the scope of electrical outages, and improve electric service
14 reliability.

15 **MAT 49T – Electric Distribution Trip Saver II Cutout Mounted Line**
16 **Recloser**—Install new TripSaver equipment, single unit (per phase) recloser.
17 Units measured: Number of devices. This program relates to safety, reliability,
18 or maintenance because it directly funds the installation of electrical OH
19 equipment designed to isolate faulted lines, single phase or gang tripping, limit
20 the scope of electrical outages, and improve electric service reliability.

21 **MAT 49X – Emerging Electric Distribution Reliability Improvements**—
22 Emergent Reliability projects focused on addressing localized reliability issues
23 not covered by broad, system-wide reliability programs. This program relates to
24 safety, reliability, or maintenance because it directly funds the installation of
25 various electrical equipment designed to isolate faulted lines, limit the scope of
26 electrical outages, and improve electric service reliability.

27 **MAT 54A – Electric Distribution Substation – Replace Transformer**—
28 Replace Electric Distribution Substation Transformers to maintain and improve
29 substation reliability. This program relates to reliability, because it involves the
30 proactive planned replacement of substation transformers in order to improve
31 substation reliability and prevent transformer failures.

32 **MAT 56A – UG Cable Other Replace**—Capital work associated with UG
33 primary cable systems, including replacement of UG cables and associated
34 components. Units measured: Number of miles. This program relates to

1 safety, reliability, or maintenance because it replaces UG cables in areas that
2 have experienced two or more cable failures within five years. Many of these
3 cables are unjacketed High Molecular Weight Polyethylene (HMWPE) or
4 Cross-Linked Polyethylene (XLPE) cables that have been evaluated through
5 cable testing or cable rejuvenation (MAT 56B program) and showed signs of
6 insulation and/or concentric neutral deterioration, some of which had complete
7 neutral breaks.

8 **MAT 56B – UG Cable Rejuvenation and Testing**—Rejuvenation (injection)
9 of primary UG cables to restore insulation integrity, or partial discharge testing of
10 primary UG cables, for targeted replacement work performed under MAT 56A.
11 This program relates to safety, reliability, or maintenance because it evaluates
12 the condition of HMWPE and XLPE UG cables in areas that have experienced
13 two or more failures within five years. The program evaluates and identifies
14 sections of cables that have severe insulation and/or concentric neutral
15 deterioration, which are then prioritized for replacement under MAT 56A.

16 **MAT 56C – UG Cable COE Replace**—Primary UG cable replacement
17 required to address failed primary cable sections noted on the COE list. Units
18 measured: Number of projects. This program relates to safety, reliability, or
19 maintenance because it replaces sections of cables that have failed and are out
20 of operation.

21 **MAT 56D – TGRAM/TGRAL Switch Replacement**—Replacement of UG
22 TGRAM/TGRAL switches. Units measured: Number of replacements. This
23 program relates to safety because it replaces switches that have been in service
24 since the 1950s and 1960s, and for which the insulating oil to make or break
25 load cannot be properly tested and is considered suspect.

26 **MAT 56N – Network Cable Replacement**—Systematic replacement of
27 network cable assets in San Francisco and Oakland. The work involves
28 replacing primary and secondary cables and installing new equipment. This
29 program relates to safety, reliability, or maintenance because the network cable
30 system is located in urban areas where the public potentially could be near
31 energized equipment. These factors require a safety driver to minimize
32 in-service failure; a reliability driver to minimize service outages impacting
33 customers; and a maintenance driver to execute a consistent

1 asset-management strategy for the safety and operating performance of the
2 system to balance risk, performance, and cost.

3 **MAT 56S – Replace Obsolete UG Switches**—Proactive replacement of
4 UG oil-filled switches whose condition warrants replacement in order to avoid
5 potential failures. Units measured: Number of replacements. This program
6 relates to safety because it focuses on the replacement of subsurface switches
7 that have been in service for more than 45 years, and for which the quality of the
8 insulating oil is considered suspect.

9 **MAT 56T – Install Temperature Indicator**—Install Distribution Temperature
10 Monitor, otherwise known as Temperature Alarm Devices, for Subsurface
11 Distribution Assets (Subsurface Transformers, LBOR Switches and 600 ampere
12 Mainline Switches). This program relates to safety because it installs
13 temperature indicators to safely and proactively replace UG assets that are
14 continuously running above allowable temperature or exhibiting thermal runaway
15 conditions (very quick temperature rises).

16 **MAT 58A – Electric Distribution Substation Safety, Environmental, Fire
17 Protection** – Replace or install fire protection in electric distribution substation
18 assets. This program relates to safety and reliability because it involves the
19 installation and/or upgrades of fire suppression systems which minimizes the
20 probability of fire occurrences that could lead to interruption of service and/or
21 property loss.

22 **MAT 58B – Replace Electric Distribution Substation Civil Structures**—
23 Replace civil structures in electric distribution substation assets. This program
24 relates to safety and reliability because it replaces civil structures to prevent
25 safety risk to employees or public, and/or interruption of service.

26 **MAT 58C – Replace Distribution Substation Miscellaneous
27 Equipment**—Distribution Substation miscellaneous equipment replacements.
28 This program relates to safety, reliability, or maintenance because it provides for
29 replacement of distribution substation miscellaneous equipment.

30 **MAT 58S – Electric Distribution Substation Security Upgrades**—
31 Replace, upgrade or install security in electric distribution substation assets.
32 This program relates to safety and reliability because it installs, upgrades or
33 replaces security systems (physical or technology) to provide safety to
34 employees and prevent vandalism.

1 **J. New MAT Code Descriptions – Capital**

2 **MAT 49A – Distribution Line Automation**—This includes the DA Initiative,
3 installing new RTU to improve operating control and visibility plus continuing to
4 upgrade and replace obsolete, and deficient SCADA equipment. Prior to 2020,
5 this work was recorded in MAT 09A. This program relates to safety, reliability, or
6 maintenance because it supports the installation of electric distribution line
7 equipment to remotely isolate electric lines and quickly de-energize facilities to
8 address urgent safety issues such as wire down events.

9 **MAT 49R - Grid Modernization Technology**—This includes projects and
10 programs that install new and advancing technologies on the distribution
11 system. These technologies are designed to enhance standard protection and
12 controls and identify problems that traditional systems did not detect. This
13 program relates to safety, reliability, or maintenance because it supports
14 reducing risk and improving overall safety. Initial projects will install Rapid Earth
15 Fault Current Limiter on circuits within the Tier 2 and Tier 3 HFTD areas to
16 reduce the risk of ignition from a wire down condition.

17 **MAT 63C – ADMS Development**—Funds the ADMS. Used to track capital
18 associated with the multi-year grid modernization effort to consolidate
19 distribution operational technology platforms into a single platform. This
20 program relates to safety, reliability, or maintenance because it enables outage
21 management applications that include instantaneous fault location, automated
22 switching recommendations and promotes operator awareness of RT circuit
23 conditions. This project directly supports DCC operations.

24 **MAT 63D - Distribution Operational Technology**—DCC Systems,
25 Facilities, Installation and Replacement. Used to track capital improvements
26 and enhancements at the DCCs. This program relates to safety, reliability, or
27 maintenance by supporting the development and daily operation of RT
28 applications/tools that are used to safely operate and maintain distribution
29 reliability.

1 **K. Electric Distribution Supplemental Reporting**

**TABLE 3-5
ELECTRIC DISTRIBUTION 2020 UNIT REPORT**

Line No.	Description	2020 Actual Units
1	Wood Poles replaced through Pole Replacement and other Company programs	30,947
2	Stand-alone circuit breakers replaced or installed across all Company programs	43
3	Miles of Paper Insulated Lead Cable replaced across all Company programs	5.13
4	Miles of HMWPE cable, respectively, replaced across all Company programs	20.68
5	Miles of HMWPE cable, respectively, rejuvenated across all Company programs	0.0
6	Miles of OH conductor replaced or installed across all Company programs	526.08
7	Grasshopper switches replaced across all Company programs	9
8	FLISR installations in the Reliability Program	16
9	OH fuse installations across all Company programs	4,413

**TABLE 3-6
ELECTRIC DISTRIBUTION 2020 SURGE ARRESTER PROGRESS REPORT
(THOUSANDS OF NOMINAL DOLLARS)**

Line No.	Description	Amount
1	Capital (MAT 2AR) Total Program Spend:	\$63,498
2	Units Completed	14,362
3	Locations in PG&E's survey identified as not requiring work:	1,701

**TABLE 3-7
ELECTRIC DISTRIBUTION WOOD POLE COUNT BY AGE**

Line No.	Wood Pole Count by Age	
	Age (Years)	Number of Poles
1	1-5	109,066
2	6-10	109,097
3	11-15	75,148
4	16-20	86,280
5	21-25	132,255
6	26-30	107,798
7	31-35	160,933
8	36-40	157,157
9	41-45	191,984
10	46-50	184,865
11	51-55	146,882
12	56-60	184,114
13	61-65	180,888
14	66-70	171,305
15	71-75	121,705
16	76-80	25,845
17	81-85	11,250
18	86-90	4,037
19	91-95	4,128
20	96-100	455
21	Unavailable	116,023
22	Total	2,281,215

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 4
ENERGY SUPPLY IMPUTED ADOPTED VS.
RECORDED COMPARISON

PACIFIC GAS AND ELECTRIC COMPANY
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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **SECTION 4**
3 **ENERGY SUPPLY IMPUTED ADOPTED VS.**
4 **RECORDED COMPARISON**

5 **A. Introduction**

6 This section includes the following information for the Nuclear Generation
7 and Power Generation portions of the Energy Supply line of business (LOB):
8 a comparison of the total 2020 imputed adopted spend vs. the actual spend and
9 for those programs that are related to safety, reliability, or maintenance the
10 Major Work Category (MWC) descriptions, imputed adopted vs. actuals
11 comparison details and variance explanations. In addition, per Decision
12 (D.) 19-04-020, the MWC descriptions include an explanation of how each
13 program/project relates to safety, reliability, or maintenance.

1 **B. Nuclear Generation Comparison Summary Tables**

**TABLE 4-1
NUCLEAR GENERATION 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)
1	Misc Expense	AB	14,700.0	(37.8)	(14,737.8)
2	Manage Environmental Oper	AK	1,945.5	1,996.0	50.4
3	Manage DCPD Business	BP	14,064.1	13,246.7	(817.4)
4	DCPD Support Services	BQ	47,828.1	48,876.9	1,048.9
5	Operate DCPD Plant	BR	85,587.5	78,522.8	(7,064.7)
6	Maintain DCPD Plant Assets	BS	103,526.0	109,165.0	5,639.0
7	Nuclear Generation Fees	BT	15,286.3	15,899.0	612.6
8	Procure DCPD Materials & Svcs	BU	0.0	(1,110.7)	(1,110.7)
9	Maintain DCPD Plant Configurtn	BV	42,503.0	38,727.6	(3,775.5)
10	Mnge Waste Disp & Transp	CR	0.0	0.0	0.0
11	Provide Nuclear Support	EO	61.0	(23.3)	(84.3)
12	Maintain IT Apps & Infra	JV	666.0	622.7	(43.3)
13	Operational Management	OM	7,939.6	8,084.2	144.6
14	Operational Support	OS	18,334.0	26,229.5	7,895.5
15	Manage Var Bal Acct Processes	IG	5,555.2	2,942.8	(2,612.5)
16	Total		357,996.4	343,141.3	14,855.2

**TABLE 4-2
NUCLEAR GENERATION 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)
1	Office Furniture & Equipment	03	96.4	0.0	(96.4)
2	Fleet / Auto Equip	04	0.0	0.0	0.0
3	Tools & Equipment	05	618.9	421.8	(197.1)
4	Build IT Apps & Infra	2F	4,861.9	7,826.0	2,964.1
5	DCPD Capital	20	38,362.5	43,282.8	4,920.3
6	Nuclear Safety and Security	3I	0.0	5,944.7	5,944.7
7	Total		43,939.7	57,475.3	13,535.6

1 C. Nuclear Generation Comparison by MWC Code for Safety, Reliability, and Maintenance Work Tables

**TABLE 4-3
NUCLEAR GENERATION 2020 EXPENSE COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	AB	Misc Expense	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), pp. 3-56 to 3-57	14,700.0	(37.8)	(14,737.8)	-100.3%	YES	YES	Program expenses were below imputed regulatory values due to the GRC imputed adopted costs of the second refueling outage being levelized over the 3-year GRC period (2020-2022). The GRC imputed adopted levelized amount of approximately \$15M annual. The actual costs for this outage will be recorded in 2022 when the outage is scheduled.
2	BQ	DCPP Support Services	Core Damaging Event	Security from External and Internal Threats, and Emergency Response	Exhibit (PG&E-5), pp. 3-59 to 3-60	47,828.1	48,876.9	1,048.9	2.2%	NO	NO	Below variance threshold.
3	BP	Manage DCPP Business	Core Damaging Event	Independent Oversight and Training	Exhibit (PG&E-5), pp. 3-58 to 3-59	14,064.1	13,246.7	(817.4)	-5.8%	NO	NO	Below variance threshold.
4	BR	Operate DCPP Plant	Core Damaging Event	Operating the Facility Within Requirements	Exhibit (PG&E-5), pp. 3-60 to 3-61	85,587.5	78,522.8	(7,064.7)	-8.3%	NO	NO	Below variance threshold.
5	BS	Maintain DCPP Plant Assets	Core Damaging Event	Maintaining the Systems	Exhibit (PG&E-5), pp. 3-62 to 3-64	103,526.0	109,165.0	5,639.0	5.4%	NO	NO	Below variance threshold.
6	BV	Maintain DCPP Plant Configurn	Core Damaging Event	Plant and System Configuration Control	Exhibit (PG&E-5), pp. 3-65 to 3-66	42,503.0	38,727.6	(3,775.5)	-8.9%	NO	NO	Below variance threshold.
7	IG	Manage Var Bal Acct Processes	Core Damaging Event	Regulatory Required Improvements and Ongoing Seismic Evaluations	Exhibit (PG&E-5), pp. 3-68 to 3-70	5,555.2	2,942.8	(2,612.5)	-47.0%	NO	NO	Below variance threshold.

**TABLE 4-4
NUCLEAR GENERATION 2020 CAPITAL COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	20	DCPP Capital	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), pp. 3-49 to 3-56	38,362.5	43,282.8	4,920.3	12.8%	NO	NO	Below variance threshold.
2	3I	Nuclear Safety and Security	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), pp. 3-49 to 3-56	0.0	5,944.7	5,944.7	100.0%	NO	NO	Below variance threshold.

1 **D. Nuclear Generation MWC Descriptions – Expense**

2 **MWC AB – Support** – Includes miscellaneous support cost from both within
3 and outside of Nuclear Generation. Also, used for General Rate Case (GRC)
4 imputed adopted for levelizing the cost of nuclear refueling outages when
5 two outages are forecast to occur in a single year. Refueling outage recorded
6 costs are recorded in other MWCs as appropriate. This MWC relates to safety,
7 reliability, or maintenance because the costs are associated with levelizing the
8 cost of nuclear refueling outages when two outages are forecast to occur in a
9 single year, consistent with keeping the generation facilities reliable.

10 **MWC AK – Manage Environmental Operations** – Includes managing the
11 environmental protection programs mandated by federal, state, and local
12 regulations. This MWC is not related to safety, reliability, and/or maintenance.

13 **MWC BP – Manage Diablo Canyon Nuclear Power Plant (DCPP)**
14 **Business** – Includes: (1) all activities associated with representing Pacific Gas
15 and Electric Company (PG&E) and providing technical input to committees,
16 owners groups, industry, professional and trade associations that support
17 electric utilities; (2) dues to the Institute of Nuclear Power Operators, Nuclear
18 Energy Institute, Strategic Teaming and Resource Sharing, and Diablo Canyon
19 Independent Safety Committee; (3) land management activities; and (4) planned
20 emergent work funding for the entire Nuclear Generation organization. This
21 MWC relates to safety, reliability, or maintenance because the costs are
22 associated with the above programs, consistent with keeping the generation
23 facility safe and reliable.

24 **MWC BQ – DCPP Loss Prevention** – Includes support for the
25 management and implementation of the Security, Industrial Safety and Health,
26 Emergency Preparedness and Fire Protection programs. This MWC relates to
27 safety, reliability, or maintenance because the costs are associated with
28 Security, Industrial Safety and Health, Emergency Preparedness and Fire
29 Protection programs, consistent with keeping the generation facility safe.

30 **MWC BR – Operate DCPP Plant** – Includes all activities to operate the
31 plant, radiation control, monitoring of plant chemistry, managing radioactive
32 waste and hazardous waste generation, nuclear fuel movement, and reactor
33 physics testing. This MWC relates to safety, reliability, or maintenance because

1 the costs are associated with the above programs, consistent with keeping the
2 generation facility safe and reliable.

3 **MWC BS – Maintain DCPD Plant Assets** – Includes all preventative and
4 corrective maintenance activities for systems, structures, and components at the
5 plant. This MWC relates to safety, reliability, or maintenance because the costs
6 are associated with maintaining generation equipment.

7 **MWC BT – Nuclear Generation Fees** – Includes Nuclear Regulatory
8 Commission (NRC) license fees and supporting contracts to conduct training
9 programs for license and non-license operator, maintenance, engineering, and
10 all general employee training development and delivery. This MWC is not
11 related to safety, reliability, and/or maintenance.

12 **MWC BU – Procure DCPD Materials & Services** – Includes cost for
13 under/over clearing of material burden. This MWC is not related to safety,
14 reliability, and/or maintenance.

15 **MWC BV – Maintain DCPD Plant Configuration** – Includes design
16 engineering, system engineering, component engineering, reactor engineering,
17 in service testing and inspection, reliability engineering, and fire protection
18 engineering. This MWC relates to safety, reliability, or maintenance because the
19 costs are associated with the above programs, consistent with keeping the
20 generation facility safe and reliable.

21 **MWC CR – Manage Waste Disposal and Transportation** – Includes cost
22 for disposal and transportation of site hazardous waste. This MWC is not
23 related to safety, reliability, and/or maintenance.

24 **MWC EO – Provide Nuclear Support** – Includes cost for plant support
25 provided by PG&E's Corporate Support organizations such as security and
26 communications. This MWC is not related to safety, reliability, and/or
27 maintenance.

28 **MWC IG – Manage Balancing Account Processes** – Includes costs
29 subject to the 2-way balancing account established for Nuclear Safety and
30 Security regulatory mandated projects. This MWC relates to safety, reliability, or
31 maintenance because the costs are associated with nuclear safety and security,
32 consistent with keeping the generation facility safe.

33 **MWC JV – Maintain Applications and Infrastructure** – Includes costs for
34 ongoing maintenance, operations and repair for PG&E's Information Technology

1 (IT) applications, systems and infrastructure. This MWC is not related to safety,
2 reliability, and/or maintenance.

3 **MWC OM – Operational Management** – Includes labor- and
4 employee-related costs to provide supervision and management support.
5 MWC OM also includes costs incurred by the administrative staff working for the
6 supervisors/managers. This MWC is not related to safety, reliability, and/or
7 maintenance.

8 **MWC OS – Operational Support** – Includes labor- and employee-related
9 costs to provide services and support that are unrelated to supervision and
10 management. Examples include Business Finance and Sourcing that support
11 the LOBs. This MWC is not related to safety, reliability, and/or maintenance.

12 E. Nuclear Generation MWC Descriptions – Capital

13 **MWC 03 – Office Furniture and Equipment** – Includes capital costs to
14 replace office furniture and equipment. This MWC is not related to safety,
15 reliability, and/or maintenance.

16 **MWC 04 – Fleet/Auto Equipment** – Includes replacement of station
17 fleet/auto equipment which has been in use longer than their useful life. This
18 MWC is not related to safety, reliability, and/or maintenance.

19 **MWC 05 – Tools and Equipment** – Includes replacement of tools and shop
20 equipment. This MWC is not related to safety, reliability, and/or maintenance.

21 **MWC 20 – DCPD Capital Projects** – Includes replacement of capital
22 structures, systems and components that no longer can be maintained to safely
23 and reliably operate and protect the plant. There are three major drivers to
24 these replacements: (1) reliability has degraded to cause replacement to be
25 needed; (2) obsolete replacement material, not allowing proper maintenance to
26 continue; and (3) regulatory driven (NRC) requirements. This MWC relates to
27 safety, reliability, or maintenance because the costs are associated with the
28 replacement of capital structures, systems and components that no longer can
29 be maintained to safely and reliably operate and protect the plant.

30 **MWC 2F – Build Applications and Infrastructure** – Includes the costs to
31 design, develop and enhance applications, systems and infrastructure
32 technology solutions. This MWC is not related to safety, reliability, and/or
33 maintenance.

1 **MWC 3I – Nuclear Safety and Security** – Includes DCPP capital projects
2 subject to the 2-way balancing account established for Nuclear Safety and
3 Security regulatory-mandated projects. This MWC relates to safety, reliability, or
4 maintenance because the costs are associated with Nuclear Safety and Security
5 regulatory-mandated projects.

6 **F. Power Generation Comparison Summary Tables**

**TABLE 4-5
POWER GENERATION 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)
1	Misc Expense	AB	6,303.3	5,204.6	(1,098.7)
2	Misc Expense	AB	55.4	0.0	
3	Manage Environmental Oper	AK	1,013.3	1,046.4	33.1
4	Manage Environmental Oper	AK	2,626.8	2,400.1	(226.7)
5	Maint Resv,Dams&Waterways	AX	23,691.3	28,425.8	4,734.6
6	Habitat and Species Protection	AY	136.7	112.3	(24.4)
7	Perf Reimburs Wk for Oth	BC	(0.7)	23.0	23.7
8	Manage Property & Bldgs	EP	986.1	1,400.2	414.1
9	Implement Environment Projects	ES	52.9	0.0	(52.9)
10	Manage Var Bal Acct Processes	IG	5,251.2	16,954.2	11,703.0
11	Maintain IT Apps & Infra	JV	480.1	398.5	(81.6)
12	Maintain IT Apps & Infra	JV	0.0	0.0	0.0
13	Operate Hydro Generation	KG	30,807.5	43,462.2	12,654.7
14	Maint Hydro Generating Equip	KH	21,395.1	23,121.1	1,726.0
15	Maint Hydro Bldg,Grnd,Infrast	KI	8,855.7	8,945.6	90.0
16	License Compliance Hydro Gen	KJ	36,622.3	21,963.6	(14,658.7)
17	Operate Fossil Generation	KK	12,834.4	13,662.0	827.6
18	Maint Fossil Generating Equip	KL	30,784.9	16,583.7	(14,201.2)
19	Maint Fossil Bldg,Grnd,Infrast	KM	2,930.5	2,237.8	(692.7)
20	Operate Alternative Gen	KQ	826.0	1,080.1	254.1
21	Maint AltGen Generating Equip	KR	3,321.6	1,607.7	(1,713.9)
22	Maint AltGen Bldg,Grnd,Infrast	KS	504.5	430.5	(74.0)
23	Operational Management	OM	3,298.0	2,794.5	(503.6)
24	Operational Management	OM	272.7	136.6	(136.0)
25	Operational Support	OS	6,205.5	2,836.1	(3,369.4)
26	Operational Support	OS	1,060.9	21.0	(1,039.9)
27	Corporate Items	ZC	0.0	2,007.6	2,007.6
28	Total		200,315.8	196,855.2	(3,460.6)

**TABLE 4-6
POWER GENERATION 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)
1	IT - Desktop Computers	01	0.0	7.2	7.2
2	Office Furniture & Equipment	03	15.4	0.0	(15.4)
3	Tools & Equipment	05	1,036.0	2,050.4	1,014.3
4	Relicensing Hydro Gen	11	427.2	567.1	139.9
5	Implement Environment Projects	12	487.7	83.6	(404.1)
6	Build IT Apps & Infra	2F	7,450.8	681.9	(6,768.9)
7	Instl/Rpl for Hydro Safety&Reg	2L	23,485.2	29,569.5	6,084.3
8	Instal/Repl Hydro Gneratng Eqp	2M	105,015.3	94,880.0	(10,135.3)
9	Instal/Repl Resv,Dams&Waterway	2N	52,597.2	45,193.1	(7,404.0)
10	Instl/Repl Hydr BldgGrndInfrst	2P	5,138.3	8,015.4	2,877.1
11	Instl/Rpl for Fossil Safety&Reg	2R	0.0	454.5	454.5
12	Instal/Repl Fossil Gneratng Eqp	2S	6,215.6	12,480.2	6,264.6
13	Instl/Repl Fosl BldgGrndInfrst	2T	195.1	2,330.9	2,135.9
14	Instl/Rpl for AltGen Safty&Reg	3A	23.8	0.0	(23.8)
15	Instal/Repl AltGen GneratngEqp	3B	775.4	556.7	(218.8)
16	Hydroelec Lic & Lic Conditions	3H	18,918.1	17,708.5	(1,209.6)
17	Total		221,781.0	214,579.0	(7,202.0)

1 G. Power Generation Comparison by MWC Code for Safety, Reliability, and Maintenance Work Tables

**TABLE 4-7
POWER GENERATION 2020 EXPENSE COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation
1	AX	Maint Resv,Dams&Waterways	SRM Total	SRM Total	Exhibit (PG&E-5), p. 4-103	23,691.3	26,425.8	4,734.6	20.0%	NO	NO	Below variance threshold.
2	AX	Maint Resv,Dams&Waterways	Hydro System Safety	M1 - Internal Erosion Mitigation	Exhibit (PG&E-5), p. 2-17	0.0	1,129.9	1,129.9		N/A	N/A	N/A
3	AX	Maint Resv,Dams&Waterways	Hydro System Safety	M2 - Spillway Remediation	Exhibit (PG&E-5), p. 2-17	0.0	1,069.1	1,069.1		N/A	N/A	N/A
4	AX	Maint Resv,Dams&Waterways	Hydro System Safety	M4 - LLO Refurbishment	Exhibit (PG&E-5), p. 2-17	0.0	30.6	30.6		N/A	N/A	N/A
5	BC	Perf Reimburs Wk for Oth	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-103	(0.7)	23.0	23.7	-3332.0%	NO	NO	Below variance threshold.
6	IG	Manage Var Bal Acct Processes	SRM Total	SRM Total	Exhibit (PG&E-5), p. 4-103	5,251.2	16,954.2	11,703.0	222.9%	YES	YES	Program expenses were above imputed adopted values due to approval of the expansion of the two-way hydro licensing balancing account in the GRC 2020 decision (D.20-12-005) which now permits the FERC and DSOD fees to be recovered through the hydro licensing balancing account. The costs of FERC fees and DSOD fees, cumulatively exceeding \$11M in 2020, have been moved from MWC KJ to MWC IG.
7	IG	Manage Var Bal Acct Processes	Hydro System Safety	M2 - Spillway Remediation	Exhibit (PG&E-5), p. 2-17	0.0	2,598.1	2,598.1		N/A	N/A	N/A
8	KG	Operate Hydro Generation	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-103	30,807.5	43,462.2	12,654.7	41.1%	YES	YES	Program expenses were above imputed adopted values due to several key drivers, including (1) emergent costs related to achieving full compliance for all risks at Level 3 per PG&E's Compliance Maturity Model; (2) an emergent hydro system-wide powerhouse safety mitigation program to mitigate safety risks resulting from dropped objects from heights (e.g. tools from scaffolding); (3) costs related to accelerating guidance document completion to meet Level 3 compliance deadline; and (4) emergent physical security and cybersecurity costs at our FERC-regulated facilities to meet new regulations from FERC.
9	KH	Maint Hydro Generating Equip	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-103	21,395.1	23,121.1	1,726.0	8.1%	NO	NO	Below variance threshold.
10	KI	Maint Hydro Bldg,Gmd,Infrast	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-103	8,855.7	8,945.6	90.0	1.0%	NO	NO	Below variance threshold.
11	KJ	License Compliance Hydro Gen	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-103	36,622.3	21,963.6	(14,658.7)	-40.0%	YES	YES	Program expenses were below imputed adopted values due to approval of the expansion of the two-way hydro licensing balancing account in the GRC 2020 decision (D.20-12-005) which now permits the FERC and DSOD fees to be recovered through the hydro licensing balancing account. The costs of FERC fees and DSOD fees, cumulatively exceeding \$11M in 2020, have been removed from MWC KJ and assigned to MWC IG.
12	KK	Operate Fossil Generation	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	12,834.4	13,662.0	827.6	6.4%	NO	NO	Below variance threshold.
13	KL	Maint Fossil Generating Equip	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	30,784.9	16,583.7	(14,201.2)	-46.1%	YES	YES	Program expenses were below imputed adopted values due to the Long-Term Service Agreement costs, which are leveled in the imputed adopted value; however, the outage work associated with these costs only occurs on a periodic basis once every 4 to 5 years depending on operating profile and did not occur in 2020.
14	KM	Maint Fossil Bldg,Gmd,Infrast	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	2,930.5	2,237.8	(692.7)	-23.6%	NO	NO	Below variance threshold.
15	KQ	Operate Alternative Gen	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	826.0	1,080.1	254.1	30.8%	NO	NO	Below variance threshold.
16	KR	Maint AltGen Generating Equip	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	3,321.6	1,607.7	(1,713.9)	-51.6%	NO	NO	Below variance threshold.
17	KS	Maint AltGen Bldg,Gmd,Infrast	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-63	504.5	430.5	(74.0)	-14.7%	NO	NO	Below variance threshold.

**TABLE 4-8
POWER GENERATION 2020 CAPITAL COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (\$000) (A)	2020 Actual Costs (\$000) (B)	2020 Cost Difference (\$000) (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Unit Variance Explanation Required (Y/N)	Cost Variance Explanation
1	2L	Instl/Rpl for Hydro Safety&Reg	SRM Total	SRM Total	Exhibit (PG&E-5), p. 4-104	23,485.2	29,569.5	6,084.3	25.9%	NO	NO	Below variance threshold.
2	2L	Instl/Rpl for Hydro Safety&Reg	Hydro System Safety	M1 - Internal Erosion Mitigation	Exhibit (PG&E-5), p. 2-16	2,926.4	3,162.9	236.4	8.1%	N/A	N/A	N/A
3	2L	Instl/Rpl for Hydro Safety&Reg	Hydro System Safety	M2 - Spillway Remediation	Exhibit (PG&E-5), p. 2-16	0.0	2,092.1	2,092.1		N/A	N/A	N/A
4	2L	Instl/Rpl for Hydro Safety&Reg	Hydro System Safety	M3 - Seismic Retrofit	Exhibit (PG&E-5), p. 2-16	3,901.9	15,796.9	11,895.0	304.9%	N/A	N/A	N/A
5	2L	Instl/Rpl for Hydro Safety&Reg	Hydro System Safety	M4 - LLO Refurbishment	Exhibit (PG&E-5), p. 2-16	975.5	561.4	(414.1)	-42.4%	N/A	N/A	N/A
6	2M	Instal/Repl Hydro Gneratng Eqp	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-104	105,015.3	94,880.0	(10,135.3)	-9.7%	NO	NO	Below variance threshold.
7	2N	Instal/Repl Resv,Dams&Waterway	SRM Total	SRM Total	Exhibit (PG&E-5), p. 4-104	52,597.2	45,193.1	(7,404.0)	-14.1%	NO	NO	Below variance threshold.
8	2N	Instal/Repl Resv,Dams&Waterway	Hydro System Safety	M1 - Internal Erosion Mitigation	Exhibit (PG&E-5), p. 2-16	975.5	643.3	(332.2)	-34.1%	N/A	N/A	N/A
9	2N	Instal/Repl Resv,Dams&Waterway	Hydro System Safety	M2 - Spillway Remediation	Exhibit (PG&E-5), p. 2-16	4,877.4	(18.0)	(4,895.4)	-100.4%	N/A	N/A	N/A
10	2N	Instal/Repl Resv,Dams&Waterway	Hydro System Safety	M4 - LLO Refurbishment	Exhibit (PG&E-5), p. 2-16	0.0	12,354.3	12,354.3		N/A	N/A	N/A
11	2P	Instl/Repl Hydr BldgGmdInfrst	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 4-104	5,138.3	8,015.4	2,877.1	56.0%	NO	NO	Below variance threshold.
12	2R	Instl/Rpl for Fossil Safety&Reg	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-65	0.0	454.5	454.5	100.0%	NO	NO	Below variance threshold.
13	2S	Instal/Repl Fossil Gneratng Eqp	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-65	6,215.6	12,480.2	6,264.6	100.8%	NO	NO	Below variance threshold.
14	2T	Instl/Repl Fosl BldgGmdInfrst	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-65	195.1	2,330.9	2,135.9	1094.8%	NO	NO	Below variance threshold.
15	3A	Instl/Rpl for AltGen Safy&Reg	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-65	23.8	0.0	(23.8)	-100.0%	NO	NO	Below variance threshold.
16	3B	Instal/Repl AltGen GneratngEqp	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-5), p. 5-65	775.4	556.7	(218.8)	-28.2%	NO	NO	Below variance threshold.
17	3H	Hydroelec Lic & Lic Conditions	SRM Total	SRM Total	Exhibit (PG&E-5), p. 4-104	18,918.1	17,708.5	(1,209.6)	-6.4%	NO	NO	Below variance threshold.
18	3H	Hydroelec Lic & Lic Conditions	Hydro System Safety	M2 - Spillway Remediation	Exhibit (PG&E-5), p. 2-16	0.0	2,186.2	2,186.2		N/A	N/A	N/A

1 **H. Power Generation MWC Descriptions – Expense**

2 **MWC AB – Business/Miscellaneous Expense** – Includes costs associated
3 with efficiency savings, Land Conservation Commitment, Contracts and
4 Consulting Services, and miscellaneous support costs. This MWC is not related
5 to safety, reliability, and/or maintenance.

6 **MWC AK – Manage Environmental Operations** – Includes costs
7 associated with managing environmental operations. This MWC is not related to
8 safety, reliability, and/or maintenance.

9 **MWC AX – Maintain Hydro Reservoirs, Dams & Waterways** – Includes
10 costs associated with maintenance of hydroelectric reservoirs, dams, and water
11 conveyance systems. These maintenance activities also ensure safety through
12 routine and preventive maintenance. This MWC relates to safety, reliability, or
13 maintenance because the costs are associated with maintaining the hydro dams
14 and water conveyance systems.

15 **MWC AY – Habitat and Species Protection** – Includes compliance with
16 regulations to protect endangered species and sensitive habitats as part of
17 PG&E’s broader Environmental Stewardship Program. This MWC is not related
18 to safety, reliability, and/or maintenance.

19 **MWC BC – Perform Reimbursable Work for Others** – Includes costs
20 associated with managing the irrigation district contracts and the reimbursable
21 expenses incurred to perform maintenance on behalf of the irrigation districts.
22 Also includes reimbursable work for other third parties. This MWC relates to
23 safety, reliability, or maintenance because the costs are associated with
24 performing maintenance work for third parties.

25 **MWC EP – Manage Property & Buildings** – Includes costs associated with
26 managing land rights and property leases in support of the operation of hydro
27 power plants. This MWC is not related to safety, reliability, and/or maintenance.

28 **MWC ES – Implement Environmental Projects** – Includes costs
29 associated with the implementing environmental projects and programs. This
30 MWC is not related to safety, reliability, and/or maintenance.

31 **MWC IG – Balancing Account** – Regulatory Compliance Hydro Electric
32 Generation – includes costs to maintain Federal Energy Regulatory Commission
33 (FERC) license compliance to support hydroelectric generation activities for
34 licenses received after January 1, 2014. This MWC also includes:

1 (1) regulatory fees; (2) costs associated with implementation of the Crane Valley
2 Recreation Settlement Agreement; and (3) costs associated with work required
3 because of the 2017 Oroville spillway incident. This MWC relates to safety,
4 reliability, or maintenance because the costs are associated with regulatory
5 compliance that often includes safety and/or reliability related expenditures.

6 **MWC IG – Wildfire Mitigation Plan Memorandum Account (WMPMA) –**

7 Includes costs for which PG&E is seeking recovery through WMPMA. This
8 MWC relates to safety, reliability, or maintenance because the costs are
9 associated with clearing a defensible space around the generation facilities.

10 **MWC JV – Maintain Applications and Infrastructure –** Includes costs for

11 ongoing maintenance, operations and repair for PG&E’s IT applications,
12 systems and infrastructure. This MWC is not related to safety, reliability, and/or
13 maintenance.

14 **MWC KG – Operate Hydro Electric Generation –** Includes costs to

15 operate hydroelectric power generating stations and associated facilities. This
16 MWC relates to safety, reliability, or maintenance because the costs are
17 associated with operating the hydro facilities safely and reliably.

18 **MWC KH – Maintain Hydro Electric Generating Equipment –** Includes

19 costs to maintain generating equipment or components to support hydroelectric
20 generation activities. This MWC relates to safety, reliability, or maintenance
21 because the costs are associated with maintaining generation equipment.

22 **MWC KI – Maintain Hydro Electric Generation Buildings, Grounds &**
23 **Infrastructure –** Includes costs to maintain buildings, grounds and infrastructure
24 to support hydroelectric generation activities, including roads and bridges. This
25 MWC relates to safety, reliability, or maintenance because the costs are
26 associated with maintaining buildings, grounds and infrastructure.

27 **MWC KJ – Regulatory Compliance Hydro Electric Generation –** Includes

28 costs to maintain FERC license compliance to support hydroelectric generation
29 activities for licenses received prior to January 1, 2014. This MWC relates to
30 safety, reliability, or maintenance because the costs are associated with
31 regulatory compliance that often includes safety and/or reliability related
32 expenditures.

33 **MWC KK – Operate Fossil Generation –** Includes costs to operate fossil

34 power generating stations. This MWC relates to safety, reliability, or

1 maintenance because the costs are associated with operating the fossil facilities
2 safely and reliably.

3 **MWC KL – Maintain Fossil Generating Equipment** – Includes costs to
4 maintain fossil power generating station equipment. This MWC relates to safety,
5 reliability, or maintenance because the costs are associated with maintaining
6 generation equipment.

7 **MWC KM – Maintain Fossil Generation Buildings, Grounds &**
8 **Infrastructure** – Includes costs to maintain buildings, grounds and infrastructure
9 on the plant site to support fossil generation activities, including buildings and
10 facilities, roadways, landscaping, retaining walls, fencing, and yard lighting
11 systems. This MWC relates to safety, reliability, or maintenance because the
12 costs are associated with maintaining buildings, grounds and infrastructure.

13 **MWC KQ – Operate Alternative Generation** – Includes costs to operate
14 alternative generation sites. This MWC relates to safety, reliability, or
15 maintenance because the costs are associated with safely and reliably operating
16 the other generation facilities.

17 **MWC KR – Maintain Alternative Generation Generating Equipment** –
18 Includes costs to maintain alternative power generating station equipment. This
19 MWC relates to safety, reliability, or maintenance because the costs are
20 associated with maintaining generation equipment.

21 **MWC KS – Maintain Alternative Generation Building, Ground,**
22 **Infrastructure** – Includes costs to maintain photovoltaic and fuel cell generation
23 common facilities. This MWC relates to safety, reliability, or maintenance
24 because the costs are associated with maintaining buildings, grounds and
25 infrastructure.

26 **MWC OM – Operational Management** – Includes labor and employee
27 related costs to provide supervision and management support. MWC OM also
28 includes costs incurred by the administrative staff working for the
29 supervisors/managers. This MWC is not related to safety, reliability, and/or
30 maintenance.

31 **MWC OS – Operational Support** – Includes labor and employee related
32 costs to provide services and support that are unrelated to supervision and
33 management. Examples include Business Finance and Sourcing that support
34 the LOBs. This MWC is not related to safety, reliability, and/or maintenance.

1 **MWC ZC – Corporate Items** – Includes enterprise-level expenses and
2 revenues that are planned and managed separately from Business Unit budgets.
3 Examples include environmental liabilities, insurance, workers’ compensation.
4 This MWC is not related to safety, reliability, and/or maintenance.

5 **I. Power Generation MWC Descriptions – Capital**

6 **MWC 01 – IT Computing Equipment** – Includes capital costs to replace
7 computing equipment. This MWC is not related to safety, reliability, and/or
8 maintenance.

9 **MWC 03 – Office Furniture & Equipment** – Includes capital costs to
10 replace office furniture and equipment. This MWC is not related to safety,
11 reliability, and/or maintenance.

12 **MWC 05 – Tools & Equipment** – Includes purchase of tools and equipment
13 required to perform various functions to maintain the safety and reliability of
14 fossil and hydro electric generation operations. This MWC is not related to
15 safety, reliability, and/or maintenance.

16 **MWC 11 – Relicensing and License Compliance Hydro Electric**
17 **Generation** – Includes costs for complying with the conditions required by
18 FERC licenses received prior to January 1, 2014, and other compliance work
19 generally related to facility safety. This MWC is not related to safety, reliability,
20 and/or maintenance.

21 **MWC 12 – Implement Environmental Projects** – Includes costs for capital
22 projects to comply with water and air quality regulations and various oil spill
23 prevention projects. This MWC is not related to safety, reliability, and/or
24 maintenance.

25 **MWC 2F – Build Applications and Infrastructure** – Includes the costs to
26 design, develop and enhance applications, systems and infrastructure
27 technology solutions. This MWC is not related to safety, reliability, and/or
28 maintenance.

29 **MWC 2L – Install/Replace for Hydro Electric Generation Safety &**
30 **Regulatory Requirements** – Includes capital costs primarily related to
31 employee or public safety and regulatory requirements that are not connected
32 with relicensing for hydroelectric generation. This MWC relates to safety,
33 reliability, or maintenance because the costs are associated with hydro safety.

1 **MWC 2M – Install/Replace Hydro Electric Generating Equipment –**
2 Includes capital costs to install/replace generating equipment or components to
3 support hydroelectric generation activities. This MWC relates to safety,
4 reliability, or maintenance because the costs are associated with
5 installing/replacing generating equipment that is consistent with keeping the
6 generation facilities reliable.

7 **MWC 2N – Install/Replace Reservoirs, Dams & Waterways –** Includes
8 capital costs to support the operation of reservoirs, dams and waterways. This
9 MWC relates to safety, reliability, or maintenance because the costs are
10 associated with installing/replacing equipment related to dams and water
11 conveyance systems for safe and reliable operations.

12 **MWC 2P – Install/Replace Hydro Electric Generation Buildings,**
13 **Grounds & Infrastructure –** Includes capital costs to install/replace buildings,
14 grounds and infrastructure to support hydroelectric generation activities,
15 including roads and bridges. This MWC relates to safety, reliability, or
16 maintenance because the costs are associated with installing/replacing hydro
17 buildings, grounds, and infrastructure to operate the generation facilities in a
18 safe and reliable manner.

19 **MWC 2R – Install/Replace Fossil Generating Safety & Regulatory**
20 **Requirements –** Includes capital costs primarily related to employee safety or
21 regulatory requirements for fossil generation. This MWC relates to safety,
22 reliability, or maintenance because the costs are associated with fossil safety.

23 **MWC 2S – Install/Replace Fossil Generating Equipment –** Includes
24 capital costs to install new or replace existing generating equipment or
25 components to support fossil generation activities. This MWC relates to safety,
26 reliability, or maintenance because the costs are associated with
27 installing/replacing generating equipment that is consistent with keeping the
28 generation facilities reliable.

29 **MWC 2T – Install/Replace Fossil Generation Buildings, Grounds &**
30 **Infrastructure –** Includes capital costs to install or replace new buildings,
31 grounds and infrastructure on the plant site to support fossil generation activities.
32 This MWC relates to safety, reliability, or maintenance because the costs are
33 associated with installing/replacing fossil buildings, grounds, and infrastructure
34 to operate the generation facilities in a safe and reliable manner.

1 **MWC 3A – Install/Replace Alternative Fossil Generation Safety and**
2 **Regulation** – Includes capital costs associated with the installation and/or
3 replacement of safety equipment for alternative generation. This MWC relates
4 to safety, reliability, or maintenance because the costs are associated with
5 alternative generation safety.

6 **MWC 3B – Install/Replace Alternative Generation Equipment** – Includes
7 capital costs associated with the installation of solar photovoltaic generation
8 equipment. This MWC relates to safety, reliability, or maintenance because the
9 costs are associated with installing/replacing generating equipment that is
10 consistent with keeping the generation facilities reliable.

11 **MWC 3H – Balancing Account – Relicensing Hydro Electric**
12 **Generation** – Includes costs for relicensing existing FERC licenses; obtaining
13 major license amendments; surrendering licenses for facilities that are no longer
14 economic; complying with the conditions required by existing and newly issued
15 FERC licenses and major license amendments; and anticipated to be required
16 by pending new FERC licenses for licenses. This includes costs for all pending
17 licenses as of January 1, 2014, and new licenses applied for after
18 January 1, 2014. This MWC also includes the costs associated with work
19 required because of the 2017 Oroville spillway incident. This MWC relates to
20 safety, reliability, and/or maintenance because some costs are associated with
21 spillway work that will be required because of the Oroville spillway incident.

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 5
CUSTOMER CARE
IMPUTED ADOPTED VS.
RECORDED COMPARISON

PACIFIC GAS AND ELECTRIC COMPANY
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PACIFIC GAS AND ELECTRIC COMPANY
SECTION 5
CUSTOMER CARE
IMPUTED ADOPTED VS.
RECORDED COMPARISON

6 **A. Introduction**

7 This section includes the following information for the Customer Care line of
8 business: a comparison of the total 2020 imputed adopted spend vs. the actual
9 spend and for those programs that are related to safety, reliability, or
10 maintenance the Major Work Category (MWC) descriptions, imputed adopted
11 vs. actuals comparison details and variance explanations. The MWC
12 descriptions are based on Pacific Gas and Electric Company’s (PG&E) 2019
13 Spending Accountability Report. In addition, per Decision (D.) 19-04-020 the
14 MWC descriptions include how each program/project relates to safety, reliability,
15 or maintenance.

1 B. Comparison Summary Tables

**TABLE 5-1
CUSTOMER CARE 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Misc Expense	AB	0.0	(0.2)	(0.2)
2	Read & Investigate Meters	AR	10,742.0	(361.9)	(11,103.9)
3	Provide Field Service	DD	686.8	0.0	(686.8)
4	Manage Customer Inquiries	DK	60,492.7	61,242.2	749.5
5	Develop New Revenue	EL	24,620.7	41,003.1	16,382.3
6	Change/Maint Used Elec Meter	EY	8,799.8	795.6	(8,004.2)
7	Manage Var Cust Care Processes	EZ	39,425.1	36,398.8	(3,026.2)
8	Retain & Grow Customers	FK	877.9	356.0	(522.0)
9	Manage Energy Efficiency-NonBA	GM	8,633.3	7,468.1	(1,165.3)
10	Change/Maint Used Gas Meters	HY	6,637.2	7,255.0	617.7
11	Manage Var Bal Acct Processes	IG	0.0	18,421.8	18,421.8
12	Bill Customers	IS	54,901.8	47,361.0	(7,540.8)
13	Manage Credit	IT	15,238.2	8,255.3	(6,982.9)
14	Collect Revenue	IU	21,086.0	14,549.8	(6,536.2)
15	Provide Account Services	IV	17,160.7	15,573.5	(1,587.2)
16	Maintain IT Apps & Infra	JV	3,746.4	11,852.0	8,105.6
17	Operational Management	OM	4,132.3	2,798.3	(1,334.0)
18	Operational Support	OS	307.8	(489.4)	(797.3)
19	Total		277,488.9	272,479.0	(5,010.0)

**TABLE 5-2
CUSTOMER CARE 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Tools & Equipment	05	244.0	105.5	(138.5)
2	Misc Capital	21	3,512.0	1,320.8	(2,191.2)
3	Install New Electric Meters	25	54,568.6	31,482.9	(23,085.7)
4	EV - Station Infrastructure	28	0.0	2,927.5	2,927.5
5	Build IT Apps & Infra	2F	6,725.7	14,850.1	8,124.5
6	Install New Gas Meters	74	73,647.2	84,617.9	10,970.7
7	Total		138,697.5	135,304.8	(3,392.7)

1 C. Comparison by MWC for Safety, Reliability, and Maintenance Work

**TABLE 5-3
CUSTOMER CARE 2020 EXPENSE COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	AR	Read & Investigate Meters	SRM Total (Non-Ramp)		Exhibit (PG&E-6), Chapter 6	9,984.2	0.0	(9,984.2)	-100.0%	NO	YES	Program expenses/expenditures were below imputed adopted costs due to the transfer of Field Meter Operations (FMO) to Electric Operations (EO) and Gas Operations (GO) in 2018.
2	DD	Provide Field Service			Exhibit (PG&E-6), Chapter 6	686.8	0.0	(686.8)	-100.0%	NO	NO	Below threshold variance.
3	DK	Manage Customer Inquiries			Exhibit (PG&E-6), Chapter 4	57,677.0	58,992.0	1,315.0	2.3%	NO	NO	Below threshold variance.
4	EY	Change/Maint Used Elec Meter			Exhibit (PG&E-6), Chapter 6	8,799.8	795.6	(8,004.2)	-91.0%	NO	YES	Program expenses/expenditures were below imputed adopted costs due to the transfer of Field Meter Operations (FMO) to Electric Operations (EO) and Gas Operations (GO) in 2018.
5	EZ	Manage Var Cust Care Processes			Exhibit (PG&E-6), Chapter 6	220.0	1,540.0	1,320.0	600.0%	NO	NO	Below threshold variance.
6	GM	Manage Energy Efficiency-NonBA			Exhibit (PG&E-6), Chapter 3	7,934.8	5,898.0	(2,036.8)	-25.7%	NO	NO	Below threshold variance.
7	HY	Change/Maint Used Gas Meters			Exhibit (PG&E-6), Chapter 6	6,637.2	7,255.0	617.7	9.3%	NO	NO	Below threshold variance.
8	IG	Manage Var Bal Acct Processes			N/A--FRMMA	0*	18,421.8	18,421.8	N/A	YES	YES	Program expenditures were for the new Portable Battery Program which provides no-cost backup portable batteries for eligible income-qualified customers who live in high fire-threat districts and are enrolled in the Medical Baseline program.
9	IU	Collect Revenue			Exhibit (PG&E-6), Chapters 6	1,306.9	0.0	(1,306.9)	-100.0%	NO	NO	Below threshold variance.

*PG&E did not forecast this work in the 2020 GRC.

**TABLE 5-4
CUSTOMER CARE 2020 CAPITAL COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	05	Tools & Equipment	SRM Total (Non-Ramp)		Exhibit (PG&E-6), Chapter 6	244.0	105.5	(138.5)	-56.8%	NO	NO	Below threshold variance.
2	21	Misc Equipment			Exhibit (PG&E-6), Chapter 6	3,012.0	151.0	(2,861.0)	-95.0%	NO	NO	Below threshold variance.
3	25	Install New Electric Meters			Exhibit (PG&E-6), Chapter 6	54,568.6	31,482.9	(23,085.7)	-42.3%	YES	YES	Program expenses/expenditures were below imputed adopted costs due to the transfer of Field Meter Operations (FMO) to Electric Operations (EO) and Gas Operations (GO) in 2018.
4	74	Install New Gas Meters			Exhibit (PG&E-6), Chapter 6	73,647.2	84,617.9	10,970.7	14.9%	NO	NO	Below threshold variance.

1 **D. MWC Descriptions – Expense**

2 **MWC AB – Miscellaneous Expense** – Includes costs associated with work
3 considered administrative and general in nature (i.e., benefiting the entire
4 corporation and not just one functional area). This program does not relate to
5 safety, reliability, or maintenance.

6 **MWC AR – Read & Investigate Meters** – Includes activities for dedicated
7 meter readers, other field resources performing manual meter reading activities,
8 and the systems, administration and clerical support necessary to effectively
9 perform these activities. This program relates to safety, reliability, or
10 maintenance because it supports the proper functioning of PG&E’s
11 metering infrastructure.

12 **MWC DD – Provide Field Services** – Includes customer generated
13 requests for service that require site visit by field technician, such as
14 investigating reports of possible gas leaks, carbon monoxide monitoring,
15 customer requests for stop/starts of gas service, appliance pilot relights, and
16 appliance adjustment and safety checks. This program relates to safety,
17 reliability, or maintenance because it supports the proper functioning of PG&E’s
18 metering infrastructure.

19 **MWC DK – Manage Customer Inquiries** – Includes expenses incurred in
20 operating the Company’s four Contact Centers (CC), which handle
21 approximately 20 million calls per year, with approximately 7 million of these
22 handled by a customer service representative, costs associated with PG&E’s
23 Customer Relations department, and expenses to address customer inquiries at
24 the local offices, and various non-cash receiving front counter activities. This
25 program relates to safety, reliability, or maintenance in PG&E’s CCs because
26 the CCs support customer calls on safety and reliability issues.

27 **MWC EL – Develop New Revenue** – Covers work in support of the
28 New Revenue Development team on streetlight light emitting diode turnkey
29 work, wireless telecommunications and fiber optics attachments on PG&E
30 assets, and various other services based on secondary use of PG&E assets.
31 This program does not relate to safety, reliability, or maintenance.

32 **MWC EY – Change/Maint Used Electric Meter** – Includes activities such
33 as electric meter preventive maintenance, electric meter corrective maintenance,
34 meter programming, meter network maintenance, electric meter accuracy

1 testing, and the associated staff support necessary to effectively perform these
2 activities. This program relates to safety, reliability, or maintenance because it
3 supports the proper functioning of PG&E's metering infrastructure.

4 **MWC EZ – Manage Var Cust Care Processes** – Covers customer
5 satisfaction surveys, customer service, customer experience, program
6 implementation and outreach, rate education and outreach, rate tools,
7 correspondence management and literature fulfillment, customer facing check
8 and letter generation and delivery, and tariff, risk, compliance, and privacy
9 support. Also includes activities primarily associated with SmartMeter™ Opt-Out
10 Program oversight and supplemental utility meter engineering support. This
11 program relates to safety, reliability, or maintenance because it supports the
12 proper functioning of PG&E's metering infrastructure.

13 **MWC FK – Retain and Grow Customers** – Covers responding to economic
14 development inquiries, providing detailed analyses of service options desired by
15 customers, and providing detailed explanations of special rate components.
16 MWC FK also includes “below the line” activities related to public power and
17 Community Choice Aggregation issues. Below-the-line costs are not included in
18 this report. This program does not relate to safety, reliability, or maintenance.

19 **MWC GM – Manage Energy Efficiency-NonBA** – Covers required safety
20 and compliance work associated with Low Income Energy Efficiency direct
21 installation measures, including Natural Gas Appliance Testing. This MWC also
22 covers support required for Cooling Centers and guiding and adhering to policy
23 related to electric vehicles (EV), introducing new services that benefit EV
24 customers, and for minimal market readiness activities for EVs. This program
25 relates to safety, reliability, or maintenance because it involves in-home
26 appliance safety checks and support for Cooling Centers to support customer
27 safety during hot summer days.

28 **MWC HY – Change/Maint Used Gas Meters** – Covers gas meter
29 maintenance activities that do not result in new meter exchanges, including
30 meter tests, minimal regulator maintenance, meter/module communication
31 trouble-shooting, and meter/module repairs. This program relates to safety,
32 reliability, or maintenance because it supports the proper functioning of PG&E's
33 metering infrastructure.

1 **MWC IG – Manage Var Bal Acct Processes** – This program relates to
2 safety, reliability, or maintenance because it includes expenses for the new
3 Portable Battery Program which provides no-cost backup portable batteries for
4 eligible income-qualified customers who live in high fire-threat districts and are
5 enrolled in the Medical Baseline program.

6 **MWC IS – Bill Customers** – Includes expenses incurred to print, insert, and
7 mail over 52 million customer bills annually; provide electronic bills to customers,
8 bill complex commercial and industrial accounts, including the growing number
9 of Net Energy Metering accounts; calculate and remit franchise fees and taxes;
10 perform user acceptance testing of the customer billing system to ensure billing
11 accuracy; and verify and/or resolve billing issues. Also covers work in support of
12 streetlight inventory and discontinuing service/investigations situations of
13 metered commodity usage with no customer service agreement (e.g., broken
14 lock). This program does not relate to safety, reliability, or maintenance.

15 **MWC IT – Manage Credit** – Covers expenses incurred to perform credit risk
16 management for retail customers; delinquent account follow-ups and post
17 account closure collections; open account collections on high dollar accounts;
18 balance transfers for closed accounts, fraud verification; and costs related to
19 notifying customers of past due amounts, as well as discontinuing and
20 reconnecting service for non-payment. MWC IT also includes external collection
21 agency costs. This program does not relate to safety, reliability, or maintenance.

22 **MWC IU – Collect Revenue** – Covers expenses incurred to process energy
23 payments received through the United States mail and in local offices, as well as
24 vendor transaction fees for online energy payments. MWC IU also includes
25 expenses to manage customer payment inquiries and cash refunds. This
26 program relates to safety, reliability, or maintenance because it also supports
27 activities focused on the detection, investigation, and resolution of customer
28 energy theft.

29 **MWC IV – Provide Account Services** – Covers the costs of labor,
30 materials, and other expenses incurred in responding to customer inquiries,
31 primarily for non-residential customers, regarding contracts, credit, billing and
32 accounting, collections and complaints; providing outage information; providing
33 retail interconnection information; and responding to customer needs of Energy

1 Service Providers and Core Transport Agents. This program does not relate to
2 safety, reliability, or maintenance.

3 **MWC JV – Maintain Information Technology (IT) Apps & Infra** – Includes
4 costs for ongoing maintenance, operations, and repair for PG&E’s IT
5 applications, systems, and infrastructure.

6 This program does not relate to safety, reliability, or maintenance.

7 **MWC OM – Operational Management** – Includes labor and employee
8 related costs to provide supervision and management support. MWC OM also
9 includes costs incurred by the administrative staff working for the supervisors
10 and managers. This program does not relate to safety, reliability, or
11 maintenance.

12 **MWC OS – Operational Support** – Includes labor and employee related
13 costs to provide services and support that are unrelated to supervision and
14 management. This program does not relate to safety, reliability, or maintenance.

15 **E. MWC Descriptions – Capital**

16 **MWC 05 – Tools and Equipment** – Includes tools and equipment used by
17 field technicians and meter repair facilities to perform field metering and meter
18 repair activities. This program relates to safety, reliability, or maintenance
19 because it supports the proper functioning of PG&E’s metering infrastructure.

20 **MWC 21 – Miscellaneous Capital** – Includes various capital equipment.
21 This program relates to safety, reliability, or maintenance because it supports
22 the proper functioning of PG&E’s metering infrastructure.

23 **MWC 25 – Install New Electric Meters** – Includes new electric meter
24 purchases for new customer growth, replacement of failed units, and the
25 associated installation labor necessary to perform electric meter installations,
26 exchanges, removals, and retirements. This program relates to safety,
27 reliability, or maintenance because it supports the proper functioning of PG&E’s
28 metering infrastructure.

29 **MWC 28 – EV – Station Infrastructure** – Includes the cost of electric
30 vehicle charging infrastructure for PG&E-owned vehicles. This program does
31 not relate to safety, reliability, or maintenance.

32 **MWC 2F – Build IT Apps & Infra** – Includes the costs to design, develop,
33 and enhance applications, systems, and IT solutions.

34 This program does not relate to safety, reliability, or maintenance.

1 **MWC 74 – Install New Gas Meters** – Includes new gas meter and module
2 purchases for new customer growth, replacement of failed units, and the
3 associated installation labor necessary to perform gas meter and module
4 installations, exchanges, removals and retirements. This program relates to
5 safety, reliability, or maintenance because it supports the proper functioning of
6 PG&E’s metering infrastructure.

PACIFIC GAS AND ELECTRIC COMPANY

SECTION 6

SHARED SERVICES/INFORMATION TECHNOLOGY IMPUTED

ADOPTED VS. RECORDED COMPARISON

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 6
SHARED SERVICES/INFORMATION TECHNOLOGY IMPUTED ADOPTED VS.
RECORDED COMPARISON

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PACIFIC GAS AND ELECTRIC COMPANY
SECTION 6
SHARED SERVICES/INFORMATION TECHNOLOGY IMPUTED
ADOPTED VS. RECORDED COMPARISON

A. Introduction

This section includes the following information for the Shared Services/ Information Technology (IT) lines of business: a comparison of the total 2020 imputed adopted spend vs. the actual spend and for those programs that are related to safety, reliability, or maintenance the Major Work Category (MWC) descriptions, imputed adopted vs. actuals comparison details and variance explanations. The MWC descriptions are based on Pacific Gas and Electric Company’s (PG&E or the Company) 2019 Spending Accountability Report. In addition, per Decision 19-04-020 the MWC descriptions include how each program/project relates to safety, reliability, or maintenance.

1 B. Comparison Summary Tables

**TABLE 6-1
SHARED SERVICES/IT 2020 EXPENSE COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Misc Expense	AB	205,345.0	240,440.3	35,095.4
2	Manage Environmental Oper	AK	8,287.0	8,496.4	209.5
3	Habitat and Species Protection	AY	147.5	127.6	(19.9)
4	Maint Buildings	BI	4,004.3	767.4	(3,237.0)
5	Manage DCPD Business	BP	5,358.9	2,498.9	(2,859.9)
6	Mnge Waste Disp & Transp	CR	2,204.9	2,124.2	(80.7)
7	Manage Property & Bldgs	EP	106,997.0	112,802.7	5,805.7
8	Implement Environment Projects	ES	699.0	796.6	97.5
9	Spc A&G/Oth Csts-Bud Dept	FA	0.0	166.3	166.3
10	Safety Engineering & OSHA Cmpl	FL	17,427.0	12,661.8	(4,765.2)
11	Manage Land Services	JE	3,460.0	3,053.1	(406.9)
12	Implement RealEstate Strategy	JH	8,182.9	8,152.5	(30.3)
13	Manage Environ Remed (Earning)	JK	1,974.0	5,868.3	3,894.3
14	Procure Materials & Services	JL	16,572.8	10,222.7	(6,350.1)
15	Manage Var Bal Acct Processes	IG	0.0	3,084.8	3,084.8
16	Maintain IT Apps & Infra	JV	4,326.1	3,333.9	(992.2)
17	Prov Human Resource Svcs	KX	5,806.4	8,607.1	2,800.7
18	Prov Regulation Svcs	KY	1,465.2	1,197.5	(267.7)
19	Prov Risk/Security Svcs	KZ	15,054.7	15,851.8	797.1
20	Corp A&G Allocation - ATL	LO	0.0	202.0	202.0
21	Operational Management	OM	200.7	210.2	9.5
22	Operational Support	OS	7,115.4	7,588.1	472.7
23	Corporate Items	ZC	0.0	0.0	0.0
24	Shared Services Sub-Total		414,628.8	448,254.5	33,625.7
25	Fleet Capitalization	AB	(90,714.7)	(156,577.5)	(65,862.8)
26	Building Services Capitalization	EP	(65,890.2)	(63,557.2)	2,333.0
27	Shared Services Total		258,023.9	228,119.8	(29,904.1)
28	Misc Expense	AB	0.0	107.5	107.5
29	Manage Var Bal Acct Processes	IG	0.0	0.0	0.0
30	Maintain IT Apps & Infra	JV	318,988.4	336,919.4	17,931.0
31	Prov Risk/Security Svcs	KZ	0.0	0.0	0.0
32	Charges from Affiliates	LL	0.0	0.0	0.0
33	Corp A&G Allocation - ATL	LO	0.0	169.6	169.6
34	Operational Management	OM	1,989.7	1,313.5	(676.2)
35	Operational Support	OS	612.0	6,549.4	5,937.4
36	Information Technology Sub-Total		321,590.0	345,059.3	23,469.3
37	End User Services Capitalization	AB	(34,884.5)	(36,448.3)	(1,563.8)
38	Information Technology Total		286,705.6	308,611.0	21,905.4
39	Shared Services/Information Technology Total		544,729.5	536,730.8	(7,998.7)

**TABLE 6-2
SHARED SERVICES/IT 2020 CAPITAL COMPARISON SUMMARY
(THOUSANDS OF DOLLARS)**

Line No.	MWC Description	MWC	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)
1	Fleet / Auto Equip	04	27,450.8	110,006.5	82,555.7
2	Tools & Equipment	05	1,817.1	1,997.7	180.6
3	Implement Environment Projects	12	5,979.0	12,695.9	6,716.9
4	Misc Capital	21	562.3	2,817.8	2,255.5
5	Maintain Buildings	22	78,096.8	8,593.7	(69,503.1)
6	Implement RealEstate Strategy	23	92,091.2	196,030.5	103,939.3
7	EV - Station Infrastructure	28	3,449.6	0.0	(3,449.6)
8	Manage Buildings	78	0.0	7.9	7.9
9	Security Install/Replace	3N	16,640.4	7,877.1	(8,763.3)
10	Build IT Apps & Infra	2F	2,497.2	3,595.8	1,098.6
11	Shared Services Total		228,584.4	343,622.8	115,038.4
12	Build IT Apps & Infra	2F	206,412.4	241,979.5	35,567.1
13	Security Install/Replace	3N	0.0	0.0	0.0
14	Information Technology Total		206,412.4	241,979.5	35,567.1
15	Shared Services/Information Technology Total		434,996.8	585,602.3	150,605.5

1 C. Comparison by MWC for Safety, Reliability, and Maintenance Work Tables

**TABLE 6-3
CORPORATE REAL ESTATE 2020 EXPENSE COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	BI	Maint Buildings	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-7), Chapter 5	4,004.3	767.4	(3,237.0)	-80.8%	NO	NO	Below variance threshold.
2	JH	Implement RealEstate Strategy	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-7), Chapter 5	8,182.9	8,152.5	(30.3)	-0.4%	NO	NO	Below variance threshold.

**TABLE 6-4
CORPORATE REAL ESTATE 2020 CAPITAL COMPARISON BY MWC FOR SAFETY, RELIABILITY, AND MAINTENANCE WORK
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	RAMP Risk Name	RAMP Mitigation Name	2020 GRC Testimony Reference	2020 Imputed Adopted Costs (A)	2020 Actual Costs (B)	2020 Cost Difference (B-A)	2020 Cost Percent Change (%) (B-A)/A	Spending Variance Explanation Required (Y/N)	Percentage Variance Explanation Required (Y/N)	Cost Variance Explanation
1	22	Maintain Buildings	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-7), Chapter 5	78,096.8	8,593.7	(69,503.1)	-89.0%	YES	YES	Decrease due to the consolidation of the Facility Asset Upkeep Program into MWC 23.
2	23	Implement RealEstate Strategy	SRM Total (Non-RAMP)	SRM Total (Non-RAMP)	Exhibit (PG&E-7), Chapter 5	92,091.2	196,030.5	103,939.3	112.9%	YES	YES	Increase due to work completed under the Emergency Generation Enhancement Project which is in support of Wildfire mitigation. The intent of this three-year project is to equip select service center locations with emergency generation systems that have the capability to provide back-up to the entire site, generator tap boxes and transfer switches that can support portable generators. In 2020, sites were evaluated and prioritized using HFTD based criteria and designs, including building permits, were completed for select sites. This initiative is slated for completion in 2022.

1 **D. MWC Descriptions – Expense**

2 **MWC AB – Support** – Includes costs associated with climate protection and
3 other environmental leadership initiatives. MWC AB also includes standard cost
4 variances for Shared Services departments that charge out their costs to other
5 organizations and miscellaneous support costs. In addition, this MWC
6 addresses costs related to PG&E’s heavy-lift helicopters that provide both
7 service restoration and California Department of Forestry and Fire Protection
8 (CAL FIRE) use for emergency response during fire season. This program does
9 relate to safety, reliability, and maintenance as it supports wildfire mitigations by
10 improving wildfire response capabilities and potentially reducing wildfire
11 consequences to PG&E and public infrastructure.

12 **MWC AK – Manage Environmental Operations** – Includes costs for
13 environmental compliance support, permits and day-to-day costs that are part of
14 facility environmental operations. MWC AK also includes routine environmental
15 work, including the labor costs of environmental professionals and facility
16 personnel who perform environmental compliance tasks (e.g., inspections,
17 compliance assessments, corrective actions, and hazardous waste
18 management). This program does not relate to safety, reliability, or
19 maintenance.

20 **MWC AY – Habitat and Species Protection** – Includes compliance with
21 regulations to protect endangered species and sensitive habitats as part of
22 PG&E’s broader Environmental Stewardship Program. The Environmental
23 Stewardship Program covers initiatives to support habitat and species
24 protection, Safe Harbor Agreement, avian protection, land stewardship and
25 conservation partnerships. MWC AY includes labor and expense associated
26 with administration of the different programs. This program does not relate to
27 safety, reliability, or maintenance.

28 **MWC BI – Maintain Buildings** – Includes costs to repair and maintain base
29 building to extend the life of building components, correct building component
30 deficiencies, improve equipment operating efficiencies, and increase the
31 operating reliability of buildings and yards. This program relates to safety,
32 reliability, or maintenance because the facilities are required to support PG&E’s
33 safe and reliable delivery of energy and the funding is for maintenance of the
34 buildings and related seismic safety.

1 **MWC BP – Manage DCP Business** – Includes costs of aircraft services
2 that have been moved from the Nuclear Generation line of business. This
3 program relates to safety, reliability, or maintenance because heavy-lift
4 helicopters, fixed wing aircraft and unmanned aerial vehicles (UAV) or drones
5 are all used in support of wildfire mitigation strategies.

6 **MWC CR – Manage Waste Disposal & Transportation** – Includes costs of
7 transportation and disposal of hazardous and other regulated wastes in
8 accordance with federal and state laws and regulations. This program does not
9 relate to safety, reliability, or maintenance.

10 **MWC EP – Manage Property and Buildings** – Includes costs to operate,
11 maintain, and repair PG&E’s facilities and shared conference center space. This
12 program does not relate to safety, reliability, or maintenance.

13 **MWC ES – Implement Environment Projects** – Includes costs associated
14 with repairing, replacing, or upgrading equipment to comply with environmental
15 regulations. This program does not relate to safety, reliability, or maintenance.

16 **MWC FA/FL – Safety Engineering & OSHA Compliance** – Includes costs
17 of the Safety Engineering & Health Services department which provides overall
18 direction and implementation of the Company’s occupational safety and health
19 programs. MWC FL also includes costs for the development and integration
20 of safety and health solutions supporting the goal of eliminating employee
21 injuries. This program is for employee safety.

22 **MWC IG – Manage Various Balancing Account Processes** - Includes
23 expense costs for various balancing and memorandum accounts:

- 24 • Fire Risk Mitigation Memorandum Account – Includes costs incurred for
25 wildfire risk mitigation which were not included in PG&E’s 2020 Wildfire
26 Mitigation Plan (WMP) and not associated with wildfire mitigations described
27 in PG&E’s 2020 General Rate Case (GRC) that are recorded in the Wildfire
28 Mitigation Balancing Account (WMBA). PG&E will determine the
29 incrementality of these amounts to the Company’s revenue requirement
30 when it applies for cost recovery.
- 31 • Wildfire Mitigation Plan Memorandum Account – Includes costs incurred to
32 implement PG&E’s approved WMP that are not associated with wildfire
33 mitigations described in PG&E’s 2020 GRC that are recorded in the WMBA.

1 PG&E will determine the incrementality of these amounts to the Company's
2 revenue requirement when it applies for cost recovery.

3 This program relates to safety, reliability, or maintenance because the
4 memorandum and balancing accounts track work to address wildfire risk. In
5 Shared Services, specific investments include Enterprise Health and Safety's
6 purchase of employee personal protective equipment for the protection from
7 wildfire smoke inhalation; Corporate Real Estate Strategy and Services' ongoing
8 efforts on the Emergency Generation Enhancement Project; and Land and
9 Environmental Management's work with U.S. Forest Service (USFS) to perform
10 hazardous fuel reduction work on USFS lands with a focus on areas near PG&E
11 distribution facilities.

12 **MWC JE – Manage Land Services** – Includes costs to establish policies
13 and provide support for the management and protection of the Company's land
14 and land rights in support of PG&E's utility operations. MWC JE also includes
15 costs to manage the Company's timberlands to achieve optimal revenues while
16 maintaining and/or enhancing timberland values. This program does not relate
17 to safety, reliability, or maintenance.

18 **MWC JH – Real Estate Strategy and Transactions** – Includes costs for
19 long-term real estate strategy development, space demand forecasting and
20 planning and lease administration and transaction management. This program
21 relates to safety, reliability, or maintenance because it supports seismic safety
22 as it relates to Customer Service Office (CSO) relocations.

23 **MWC JK – Manage Environmental Remediation-Earnings** – Includes
24 costs for the clean-up of contaminated sites which are not recovered through the
25 Hazardous Substance Mechanism, decommissioning accounts, or at
26 shareholder expense. These include internal labor and expenses associated
27 with management and support of the site remediation as well as contractor and
28 legal fees. This program does not relate to safety, reliability, or maintenance.

29 **MWC JL – Procure Materials & Services** – Includes costs to procure
30 goods and services, including implementing programs to improve organizational
31 effectiveness, developing supplier alliances, and maintaining and promoting a
32 diverse supplier base. This program does not relate to safety, reliability, or
33 maintenance.

1 **MWC JV – Maintain Applications and Infrastructure** – Includes costs for
2 ongoing maintenance, operations and repair for PG&E’s IT applications,
3 systems, and infrastructure. In addition, cybersecurity ongoing maintenance and
4 operations as well as project costs are addressed. This program does relate to
5 safety, reliability, or maintenance because it contains both controls and
6 mitigations for the Cyber Attack Risk Assessment and Mitigation Phase (RAMP)
7 risk.

8 **MWC KX – Provide Human Resource Services** – Represents costs for the
9 Integrated Disability Management program and support as well as services
10 provided by Human Resources. This program does not relate to safety,
11 reliability, or maintenance.

12 **MWC KY – Provide Regulations Services** – Includes costs for regulatory
13 services and support. This program does not relate to safety, reliability, or
14 maintenance.

15 **MWC KZ – Provide Risk and Security Services** – Includes support for
16 corporate security, risk management, internal audit, and insurance functions. In
17 Shared Services, this work is Corporate Security expense costs. Corporate
18 Security includes guard services, investigations and investigators, executive
19 protection, access control, physical security testing, video monitoring security
20 facilities, and maintenance of security equipment. This program does relate to
21 safety, reliability, or maintenance because it contains mitigations for the Insider
22 Threat RAMP risk.

23 **MWC OM – Operational Management** –Includes labor and employee
24 related costs to provide supervision and management support. MWC OM also
25 includes costs incurred by the administrative staff working for the
26 supervisors/managers. This program does not relate to safety, reliability, or
27 maintenance.

28 **MWC OS – Operational Support** –Includes labor and employee related
29 costs to provide services and support that are unrelated to supervision and
30 management. Examples include Business Finance and Sourcing that support
31 the lines of business. This program does not relate to safety, reliability, or
32 maintenance.

1 **E. MWC Descriptions – Capital**

2 **MWC 04 – Fleet/Automotive Equipment** – Includes acquisition of vehicles,
3 power-operated and off-road equipment, and trailers needed to respond to
4 customer service requests and the myriad of maintenance and construction
5 needs of the Company. This program does not relate to safety, reliability, or
6 maintenance.

7 **MWC 05 – Tools & Equipment** – Includes purchase of tools and equipment
8 required to perform various functions, including fleet repairs, warehouse
9 operations, etc. This program does not relate to safety, reliability, or
10 maintenance.

11 **MWC 12 – Implement Environment Projects** – Includes costs associated
12 with repairing, replacing, or upgrading equipment and facilities to comply with
13 environmental regulations. This program does not relate to safety, reliability, or
14 maintenance.

15 **MWC 21 – Purchase/Install – Other Capital** – Includes costs related to the
16 miscellaneous purchase of capital and/or the disposition and sale of PG&E's
17 surplus, obsolete or damaged assets. In addition, this MWC addresses costs
18 related to PG&E's heavy-lift helicopters that provide both service restoration and
19 California Department of Forestry and Fire Protection (CAL FIRE) use for
20 emergency response during fire season. This program does relate to safety,
21 reliability, and maintenance as it supports wildfire mitigations by improving
22 wildfire response capabilities and potentially reducing wildfire consequences to
23 PG&E and public infrastructure.

24 **MWC 22 – Maintain Buildings** – Includes the costs to replace and
25 construct base buildings, to extend the life of building components, correct
26 building component deficiencies, improve equipment operating efficiencies,
27 replace failed or functionally obsolete building components, and increase the
28 operating reliability of buildings and yards. This includes furniture, office
29 equipment, and IT Infrastructure for buildings. This program relates to safety,
30 reliability, or maintenance because the facilities are required to support PG&E's
31 safe and reliable delivery of energy and the funding is for maintenance of the
32 buildings and related seismic safety.

33 **MWC 23 – Implement Real Estate Strategy** – Includes the costs for new
34 buildings and yards, including the purchase of land and the purchase and

1 installation of furniture, office equipment, and IT Infrastructure, as well as the
2 costs to improve building environmental sustainability, to implement workplace
3 strategy, and to optimize the real estate portfolio. This program relates to safety,
4 reliability, or maintenance because it supports seismic safety as it relates to
5 CSO relocations and wildfire mitigations.

6 **MWC 2F – Build Applications and Infrastructure** – Includes the costs to
7 design, develop and enhance applications, systems, and infrastructure
8 technology solutions. In addition, costs for Cybersecurity projects are
9 addressed. This program does relate to safety, reliability, or maintenance
10 because it contains mitigations for the Cyber Attack RAMP risk.

11 **MWC 3N – Install/Replace Security Assets** – Includes the costs to design,
12 build, install, and replace Corporate Security assets. This program does relate
13 to safety, reliability, or maintenance because it contains mitigations for the
14 Insider Threat RAMP risk.

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 7
COST RECOVERY:
BALANCING AND MEMORANDUM ACCOUNTS

PACIFIC GAS AND ELECTRIC COMPANY
SECTION 7
COST RECOVERY:
BALANCING AND MEMORANDUM ACCOUNTS

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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **SECTION 7**
3 **COST RECOVERY:**
4 **BALANCING AND MEMORANDUM ACCOUNTS**

5 **A. Introduction**

6 This section includes the balancing and memorandum accounts associated
7 with actual expenditures for programs identified as related to safety, reliability, or
8 maintenance in Pacific Gas and Electric Company’s (PG&E) 2020
9 Risk Spending Accountability Report (RSAR), “where any portion of the program
10 was tracked in a balancing account or memorandum account.”¹ The tables
11 below identify which of these programs had expenditures that were recorded to
12 a balancing or memorandum account by Major Work Category (MWC), the
13 name of the account, the purpose of that account from the Preliminary
14 Statement, and the year-end balance.^{2,3}

1 D.19-04-020, p. 37.

2 As noted in the Introduction Section 1, Information Technology (IT) and Corporate Real Estate (CRE) costs attributable to the Lines of Business (LOB) at issue in this report are presented in a decentralized fashion, meaning LOB-specific IT and CRE program costs are included within the LOBs that initiated the programs.

3 Data is as of January 15, 2021.

1 **B. Gas Distribution**

**TABLE 7-1
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR GAS DISTRIBUTION
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name & Purpose	2020 Actuals
1	Expense: MWC LW ^(a)	Gas Leak Abatement Program	New Environmental Regulations Balancing Account (NERBA) Distribution Sub-Account	Decision (D.) 20-12-005	DZ: The purpose of the NERBA is to record and track actual expenses and capital revenue requirements compared to the adopted budget for incremental best practice activities related to Grade 3 leak repairs in accordance with California Public Utilities Commission (Commission) Resolution (Res.) G-3538. The NERBA is a two-way balancing account. The "Distribution Subaccount" records and tracks actual gas distribution expenses and capital revenue requirements compared to the adopted gas distribution revenue requirements for incremental best practice activities related to minimizing methane emissions.	\$930.2
2	Capital: MWC 3P	Gas Leak Abatement Program	NERBA Distribution Sub-Account	D.20-12-005	DZ: The purpose of the NERBA is to record and track actual expenses and capital revenue requirements compared to the adopted budget for incremental best practice activities related to Grade 3 leak repairs in accordance with Commission Res.G-3538. The NERBA is a two-way balancing account. The "Distribution Subaccount" records and tracks actual gas distribution expenses and capital revenue requirements compared to the adopted gas distribution revenue requirements for incremental best practice activities related to minimizing methane emissions.	\$687.5

7-2

(a) In 2020, approximately \$109.8 under MWC LW will be realigned to MWC FI. The correction will be captured as part of 2021 recorded data.

1 C. Electric Distribution

**TABLE 7-2
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR ELECTRIC DISTRIBUTION
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name & Purpose	2020 Actuals
1	Expense: MWC HN	Vegetation Management Balancing Account (VMBA)	VMBA	D.20-12-005	<p>BU: The purpose of the VMBA is to record the difference between the actual Routine and Enhanced Vegetation Management (EVM) expenses and amounts adopted in PG&E's General Rate Case (GRC) or other base revenue proceeding. The VMBA was created in compliance with D.00-02-046. In D.20-12-005, the Commission authorized PG&E to modify the VMBA to be a two-way balancing account, with a reasonableness review requirement for spending above 120 percent of adopted amounts (reasonableness threshold). In D.20-12-005, the Commission also required PG&E to track actual costs related to tree mortality work for which there is currently no adopted amount. PG&E may amend the VMBA to include additional Vegetation Management (VM) programs.</p> <p>This account is comprised of two subaccounts:</p> <p>The Main Account tracks actual Routine and EVM expenses up to 120 percent of adopted amounts. Undercollections in the Main Account will be determined through the Distribution Revenue Adjustment Mechanism (DRAM) in the Annual Electric True-Up (AET), or through another Tier 2 Advice Letter (AL) as authorized by the Commission. Overcollections will be returned to customers through a regularly scheduled AET or other rate change AL at the end of the rate case cycle or as otherwise authorized by the Commission.</p> <p>The Reasonableness Review Subaccount tracks spending above the reasonableness threshold and actual tree mortality costs, for which there is currently no adopted amount.</p> <p>PG&E may file a separate application seeking approval of any costs in the Reasonableness Review Subaccount—where actual costs exceed 120 percent of the adopted amount. Upon approval, amounts will be transferred to the DRAM or the Portfolio Allocation Balancing Account for recovery from customers.</p>	\$736,320
2	Expense: MWC Information Governance (IG)	Manage Var Bal Acct Processes				\$542,508

7-3

**TABLE 7-2
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR ELECTRIC DISTRIBUTION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name & Purpose	2020 Actuals
3	Expense: MWC IF	Electric Distribution Major Emergency	Major Emergency Balancing Account (MEBA)	D.20-12-005	GJ: The purpose of the MEBA is to recover actual expenses and capital revenue requirements resulting from responding to major emergencies and catastrophic events not eligible for recovery through the Catastrophic Event Memorandum Account (CEMA). In some cases, costs relating to major emergencies that are found by the Commission not to be eligible for recovery through the CEMA process may be recoverable through the MEBA. The MEBA is a two-way balancing account in which PG&E records the difference between actual and adopted expenses and capital revenue requirements.	\$30,973
4	Capital: MWC 95	Electric Distribution Major Emergency				\$64,257
5	Expense:		Wildfire Mitigation Balancing Account (WMBA)	D.20-12-005	IO: PURPOSE: The purpose of the Wildfire Mitigation Balancing Account – Electric (WMBA-E) is to track actual expenses and capital expenditures against adopted amounts and to record associated expenses and capital revenue requirements for fire risk mitigation work, allocated to the electric distribution and generation functions. These costs include, but are not limited to, expenses and the revenue requirements associated with capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; and enhanced operational practices including work related to Public Safety Power Shutoff (PSPS) events. Costs recorded to the WMBA-E do not include costs recovered through the CEMA, the Fire Risk Mitigation Memorandum Account (FRMMA) or the Wildfire Mitigation Plan Memorandum Account (WMPMA). The WMBA is a two-way balancing account, with a reasonableness review requirement for spending above 115 percent of expense and capital expenditure adopted amounts (reasonableness threshold). Any such amounts are tracked separately for subsequent review and approval by the Commission.	
6	AB	Support and Emergency Preparedness and Response (ENT2)				\$4,384
7	IG	Manage Var Bal Acct Processes				\$209,454
8	Capital:					
9	08	Electric Distribution Overhead (OH) Asset Replacement				\$484,756
10	09	Electric Distribution Automation and Protection				\$51
11	21	Miscellaneous Capital and ENT2				\$14,046

7-4

**TABLE 7-2
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR ELECTRIC DISTRIBUTION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name & Purpose	2020 Actuals
12	2A	Electric Distribution Preventive Maintenance OH				\$71,345
13	49	Electric Distribution Reliability Circuit/Zone				\$85,287
14	Expense:		FRMMA	Disposition Letter Dated March 12, 2019	<p>HQ: The purpose of the FRMMA is to record, pursuant to Public Utilities Code (Pub. Util. Code) Section 8386.4 (b)(1), incremental costs of fire risk mitigation work that is not otherwise recovered in PG&E's adopted revenue requirements. Such costs shall include, but are not limited to, expense and capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; enhanced event response capacity, and VM activities. Costs recorded to the FRMMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, Fire Hazard Prevention Memorandum Account (FHPMA) or other cost recovery mechanisms including the memorandum account approved as part of PG&E's Wildfire Mitigation Plan (WMP) (Pub. Util. Code Section 8386.4 (a)).</p> <p>HX: The purpose of the WMPMA is to record, pursuant to Senate Bill 901 (Pub. Util. Code Section 8386.4 (a)) and the WMP (also known as the Wildfire Safety Plan) approved by the Commission, incremental costs incurred to implement an approved WMP that are not otherwise recovered in PG&E's adopted revenue requirements. Such costs may include expense and capital expenditures for activities including but not limited to: operational practices, inspection programs, system hardening, EVM, enhanced situational awareness, PSPS, and alternative technologies. Costs recorded to the WMPMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, FHPMA, FRMMA, or other cost recovery mechanisms.</p>	
15	AB	Support and ENT2	WMPMA			\$298
16	BF	Electric Operations Patrols/Inspections				\$84,779
17	BH	Electric Distribution Routine Emergency				\$624
18	GA	Poles – Intrusive Inspection/Test and Treat Program				\$10,298
19	GC	Electric Distribution Substations Operate and Maintain Assets				\$10,008
20	GE	Electric Distribution Major Emergency				\$3,037

**TABLE 7-2
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR ELECTRIC DISTRIBUTION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name and Purpose	2020 Actuals
21	IG	Manage Var Bal Acct Processes				\$32,064
22	KA	Preventive Maintenance and Equipment Repair, OH				\$65,976
23	Capital:					
24	07	Electric Distribution Install/Replace OH Poles				\$133,389
25	17	Electric Distribution Routine Emergency				\$5,536
26	21	Miscellaneous Capital and ENT2				\$2,627
27	2A	Electric Distribution Preventive Maintenance, OH				\$104,191

**TABLE 7-2
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR ELECTRIC DISTRIBUTION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement Name & Purpose	2020 Actuals
28	2F	Build IT Applications and Infrastructure				IT: \$22,658
29	49	Electric Distribution Circuit/Zone Reliability Program				\$7,071
30	59	Electric Distribution Substation Emergency Replacements				\$12,581

1 **D. Energy Supply: Nuclear Generation**

**TABLE 7-3
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR NUCLEAR GENERATION
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
1	Expense: MWC IG	Manage Var Bal Acct Processes	Nuclear Regulatory Commission Rulemaking Balancing Account (NRCRBA)	D.14-08-032	GM: The purpose of the NRCRBA is to recover actual expenses for complying with existing, emerging or evolving Nuclear Regulatory Commission regulations, rulemakings, orders, bulletins and/or generic letters, and the Code of Federal Regulations 10-50-54F – Conditions of Licenses at Diablo Canyon. Specifically, the NRCRBA tracks and adjusts for the difference in expenses based on actual versus adopted costs.	\$2,943 ^(a)
2	Capital: MWC 05	Tools and Equipment	Diablo Canyon Retirement Balancing Account (DCRBA)	D.18-01-022	HK: The purpose of the DCRBA is to track actual expenses and capital revenue requirements based on actual capital expenditures compared to authorized expense budgets and/or capital revenue requirements and to assure recovery of incurred amounts for the following activities: (1) Diablo Canyon Power Plant's (DCPP or Diablo Canyon) full book value by the time the units cease operations; (2) PG&E's Employee Retention Program for Diablo Canyon employees; and (3) PG&E's Employee Retraining Program for Diablo Canyon employees.	\$421.8
3	Capital: MWC 2F	Build IT Apps and Infrastructure	DCRBA	D.18-01-022	HK: see above.	\$7,826.0
4	Capital: MWC 20	DCPP Capital	DCRBA	D.18-01-022	HK: see above.	\$43,282.8
5	Capital: MWC 3I	Nuclear Safety and Security	DCRBA	D.18-01-022	HK: see above.	\$5,944.7

7-8

(a) The data provided in this report is as of January 15, 2021. However, after that date an error was discovered with the dollars in MWC IG for Nuclear Generation. \$43,000 were inadvertently recorded to MWC IG and should have been recorded to MWC BV.

1 E. Energy Supply: Power Generation

**TABLE 7-4
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR POWER GENERATION
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
1	Expense: MWC IG	Manage Var Bal Acct Processes	Hydro Licensing Balancing Account (HLBA)	D.20-12-005	GL: The purpose of the HLBA is to recover actual expenses and capital revenue requirements based on actual capital expenditures related to Federal Energy Regulatory Commission (FERC) hydro licensing activities, which include, but are not limited to, renewing, amending, surrendering, decommissioning, compliance requirements, FERC and California Division of Safety of Dams (DSOD) regulatory fees, costs associated with implementation of the Crane Valley Recreation Settlement Agreement, and costs associated with work required as a result of the 2017 Oroville Dam incident. Specifically, the HLBA tracks and adjusts for the difference in actual and adopted expenses and capital revenue requirements associated with relicensing and amending/modifying licenses issued on or after January 1, 2012, including costs associated with implementing and complying with new license conditions or requirements resulting from renewed, modified, or amended licenses.	\$16,280
2	Expense: MWC IG	Manage Var Bal Acct Processes	FRMMA and WMPMA	Disposition Letter Dated March 12, 2019	HQ: The purpose of the FRMMA is to record, pursuant to Pub. Util. Code Section 8386.4 (b)(1) incremental cost of fire risk mitigation work that is not otherwise recovered in PG&E's adopted revenue requirements. Such costs shall include, but are not limited to, expense and capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; enhanced event response capacity, and vegetation management activities. Costs recorded to the FRMMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, FHPMA or other cost recovery mechanisms including the memorandum account approved as part of PG&E's annual WMP, as set forth in Pub. Util. Code Section 8386.4 (a).	\$674

7-9

**TABLE 7-4
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR POWER GENERATION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
					HX: The purpose of the WMPMA is to record, pursuant to Pub. Util. Code Section 8386.4 (a) and the WMP approved by the Commission, incremental costs incurred to implement an approved WMP that are not otherwise recovered in PG&E's adopted revenue requirements. Such costs may include expense and capital expenditures for activities including but not limited to: operational practices, inspection programs, system hardening, EVM, enhanced situational awareness, PSPS, and alternative technologies. Costs recorded to the WMPMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, FHPMA, FRMMA, or other cost recovery mechanisms.	
3	Expense: MWC IG	Manage Var Bal Acct Processes	VMBA	D.20-12-005	BU: The purpose of the VMBA is to record the difference between the actual Routine and EVM expenses and amounts adopted in PG&E's GRC or other base revenue proceeding. The VMBA was created in compliance with D.00-02-046. In D.20-12-005, the Commission authorized PG&E to modify the VMBA to be a two-way balancing account, with a reasonableness review requirement for spending above 120 percent of adopted amounts (reasonableness threshold). In D.20-12-005, the Commission also required PG&E to track actual costs related to tree mortality work for which there is currently no adopted amount. PG&E may amend the VMBA to include additional VM programs.	\$1,461

**TABLE 7-4
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR POWER GENERATION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
4	Capital: MWC 3H	Hydroelectric License and License Conditions	HLBA		GL: The purpose of the HLBA is to recover actual expenses and capital revenue requirements based on actual capital expenditures related to FERC hydro licensing activities, which include, but are not limited to, renewing, amending, surrendering, decommissioning, compliance requirements, FERC and California DSOD regulatory fees, costs associated with implementation of the Crane Valley Recreation Settlement Agreement, and costs associated with work required as a result of the 2017 Oroville Dam incident. Specifically, the HLBA tracks and adjusts for the difference in actual and adopted expenses and capital revenue requirements associated with relicensing and amending/modifying licenses issued on or after January 1, 2012, including costs associated with implementing and complying with new license conditions or requirements resulting from renewed, modified, or amended licenses.	\$17,708
5	Capital: MWC 2L	Instl/Rpl for Hydro Safety and Reg	FRMMA and WMPMA		GL: The purpose of the HLBA is to recover actual expenses and capital revenue requirements based on actual capital expenditures related to FERC hydro licensing activities, which include, but are not limited to, renewing, amending, surrendering, decommissioning, compliance requirements, FERC and California DSOD regulatory fees, costs associated with implementation of the Crane Valley Recreation Settlement Agreement, and costs associated with work required as a result of the 2017 Oroville Dam incident. Specifically, the HLBA tracks and adjusts for the difference in actual and adopted expenses and capital revenue requirements associated with relicensing and amending/modifying licenses issued on or after January 1, 2012, including costs associated with implementing and complying with new license conditions or requirements resulting from renewed, modified, or amended licenses.	\$41

**TABLE 7-4
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR POWER GENERATION
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
					<p>HQ: The purpose of the FRMMA is to record, pursuant to Pub. Util. Code Section 8386.4 (b)(1) incremental cost of fire risk mitigation work that is not otherwise recovered in PG&E's adopted revenue requirements. Such costs shall include, but are not limited to, expense and capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; enhanced event response capacity, and VM activities. Costs recorded to the FRMMA will not include costs approved for recovery in PG&E GRCs or recovered through</p>	

1 F. Customer Care

**TABLE 7-5
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR CUSTOMER CARE
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
1	Expense: MWC IG	Manage Var Bal Acct Processes	FRMMA	Disposition Letter Dated March 12, 2019	HQ: The purpose of the FRMMA is to record, pursuant to Pub. Util. Code Section 8386.4 (b)(1), incremental costs of fire risk mitigation work that is not otherwise recovered in PG&E's adopted revenue requirements. Such costs shall include, but are not limited to, expense and capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; enhanced event response capacity, and VM activities. Costs recorded to the FRMMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, FHPMA or other cost recovery mechanisms including the memorandum account approved as part of PG&E's WMP (Pub. Util. Code Section 8386.4 (a)).	\$18,422

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1 G. Shared Services

**TABLE 7-6
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR SHARED SERVICES
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
1	Expense: MWC IG	Manage Var Bal Acct Processes	FRMMA/WMPMA	Disposition Letter Dated March 12, 2019	HQ: The purpose of the FRMMA is to record, pursuant to Pub. Util. Code Section 8386.4 (b)(1), incremental costs of fire risk mitigation work that is not otherwise recovered in PG&E's adopted revenue requirements. Such costs shall include, but are not limited to, expense and capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; enhanced event response capacity, and VM activities. Costs recorded to the FRMMA will not include costs approved for recovery in PG&E GRCs or recovered through PG&E's CEMA, FHPMA or other cost recovery mechanisms including the memorandum account approved as part of PG&E's WMP (Pub. Util. Code Section 8386.4 (a)).	\$3,085
2	Capital: MWC 23	Implement Real Estate Strategy	FRMMA/WMPMA			\$38,391

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**TABLE 7-6
BALANCING AND MEMORANDUM ACCOUNTS INCLUDED IN 2020 RSAR FOR SHARED SERVICES
(CONTINUED)
(THOUSANDS OF DOLLARS)**

Line No.	MWC	MWC Name	Balancing/ Memorandum Account Name	Disposition of Cost Recovery Request	Preliminary Statement	2020 Actuals
3	Expense: MWC AB	Miscellaneous Expense	WMBA	D.20-12-005	<p>IO: PURPOSE: The purpose of the WMBA-E is to track actual expenses and capital expenditures against adopted amounts and to record associated expenses and capital revenue requirements for fire risk mitigation work, allocated to the electric distribution and generation functions. These costs include, but are not limited to, expenses and the revenue requirements associated with capital expenditures for: advanced system hardening and resiliency; expanded automation and protection; improved wildfire detection; and enhanced operational practices including work related to PSPS events. Costs recorded to the WMBA-E do not include costs recovered through the CEMA, the FRMMA or the WMPMA.</p> <p>The WMBA is a two-way balancing account, with a reasonableness review requirement for spending above 115 percent of expense and capital expenditure adopted amounts (reasonableness threshold). Any such amounts are tracked separately for subsequent review and approval by the Commission.</p>	Shared Services (Aviation): \$5,398
4	Capital: MWC 21	Miscellaneous Capital				Shared Services (Aviation): \$481

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX A

2020 GRC IMPUTED REGULATORY VALUES METHODOLOGY

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX A
2020 GRC IMPUTED REGULATORY VALUES METHODOLOGY

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1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **APPENDIX A**
3 **2020 GRC IMPUTED REGULATORY VALUES METHODOLOGY**

4 **A. Introduction**

5 On December 20, 2019, Pacific Gas and Electric Company (PG&E) and
6 other settling parties (collectively, Settling Parties) filed a Settlement Agreement
7 with the California Public Utilities Commission (CPUC). The Settlement
8 Agreement resolved all issues raised by the Settling Parties in PG&E's test
9 year 2020 General Rate Case (GRC), Application 18-12-009. On December 11,
10 2020, the CPUC issued Decision (D. or the decision) 20-12-005 in PG&E's 2020
11 GRC, adopting most provisions in the Settlement Agreement, with certain
12 modifications, and adopting base revenue requirements for the 2020-2022 GRC
13 period.

14 The section below describes the methodology used by PG&E to develop
15 expense and capital regulatory values (i.e., imputed adopted amounts).

16 **1. 2020 Test Year**

17 The decision adopted 2020 test year operations and maintenance
18 (O&M) and Administrative and General (A&G) expense values at the Major
19 Work Category (MWC) and/or Organizational level, and capital expenditure
20 values at the MWC level as specified in the Settlement Agreement. The
21 adopted test year expense and capital costs at the MWC and/or
22 Organizational levels are included in the Settlement Agreement,
23 Appendix B.

24 The Settlement Agreement had reductions for certain A&G costs
25 including Short Term Incentive Plan reduction of \$88 million for 2020.¹ The
26 capitalized portion of all A&G reduction is \$33 million. The \$33 million
27 reduction was then applied to capital expenditures as specified in the
28 Settlement Agreement Appendix B proportionately to derive the 2020 test
29 year imputed adopted capital expenditures. The capitalized A&G reduction
30 was not applied to items with specific forecast called out in the Settlement

1 See Settlement Agreement of the 2020 GRC, Article 2, Section 2.8.2.

1 Agreement, specifically, System Hardening in Electric Distribution and
2 Plastic Pipe Replacement in Gas Distribution.

3 **2. 2021 to 2022 Post-Test Year**

4 The decision adopted 2021 and 2022 revenue requirements based on
5 the attrition increases of 3.5 percent and 3.9 percent, respectively, included
6 in the Settlement Agreement for the post-test years. The Settlement
7 Agreement did not provide specific MWC values for 2021 and 2022 except
8 for certain specific programs in O&M and capital expenditures such as
9 System Hardening, Plastic Pipe Replacement and customer care
10 stipulation² of the Salesforce Phase II and III project.

11 To develop imputed regulatory values for 2021 and 2022 that conform to
12 the decision revenue requirement increase, PG&E used a 3-step process:
13 (1) derive the capital additions assumed in the rate base and capital revenue
14 requirement approved in Appendix E of the decision (2) break down
15 expense related revenue requirement approved in Appendix E of the
16 decision to expense amounts at the 2020 GRC exhibit-level by MWC
17 (3) calculate the capital expenditures using the capital additions derived
18 from step 1.

19 Step 1: PG&E used the decision Results of Operations (RO) model to
20 derive the net capital additions that supported the capital revenue
21 requirement increase in the Appendix E of the decision. The decision RO
22 model provides net capital additions at the GRC Exhibit and MWC level.

23 Step 2: PG&E determined the expense revenue requirement increase
24 for 2021 and 2022 from Appendix E of the Settlement Agreement. To
25 develop the expense imputed values for 2021, PG&E used the composite
26 escalation rates incorporated in the Settlement RO model to escalate the
27 2020 expense settlement amounts to 2021 by MWC and Maintenance
28 Activity Type (MAT) code or by corporate services department, with the
29 exception of any post-test year amounts specified in the Settlement
30 Agreement or specific Line of Business forecast items accepted as part of
31 the Settlement. For 2022, PG&E calculated the expense by MWC and MAT

2 HE 98: Stipulation Between PG&E and The Utility Reform Network Regarding
Salesforce 2 and 3 Project, p. 3.

1 code or by corporate services department by escalating the non-labor
2 component amount from 2021 to 2022 using the non-labor escalation rate,
3 while the labor component amount was held constant to 2021 to be
4 consistent with the decision RO calculation, with the exception of the
5 post-test year Settlement adjustments approved in the decision. The labor
6 escalation rates are provided in Exhibit (PG&E-8)³ and non-labor escalation
7 rates are from Global Insights, which are included in the decision RO model
8 calculation.

9 Step 3: To convert the decision capital additions to capital expenditure
10 imputed values for 2021 and 2022, PG&E first identified the 2021 and 2022
11 bottom-up capital expenditure forecast for Diablo Canyon, Hydro
12 Generation, Corporate Real Estate, System Hardening and the Gas
13 Distribution Plastic Pipe Replacement program as agreed in the Settlement
14 Agreement and calculated in the decision RO model.

15 For the other non bottom-up capital expenditure forecast programs for
16 2021 and 2022, the decision RO model applied Global Insights escalation
17 factors to escalate the 2020 settlement capital additions amounts to 2021
18 then to 2022. When a capital project becomes operational or used and
19 useful, inception-to-date capital expenditures are converted to capital
20 additions, which become part of rate base and start earning a capital
21 revenue requirement. The ratio of test year capital additions to test year
22 capital expenditures settlement amounts are calculated at the PG&E Exhibit,
23 Chapter and MWC level. This settlement ratio is then applied to the 2021
24 and 2022 capital additions to calculate the 2021 and 2022 capital
25 expenditures by Exhibit, Chapter and MWC. The 2021 and 2022 total
26 derived capital expenditure amount based on this described methodology
27 was compared to the PG&E's bottom-up forecast for 2021, 2022 and the
28 final imputed adopted was capped at PG&E's bottom-up forecast for 2021
29 and 2022.

³ See 2020 GRC D.20-12-005 of PG&E, HR Section 11.1.1

1 **3. Imputation Methodology (MAT Level for Electric Distribution and Gas**
2 **Distribution)**

3 To impute regulatory values at the MAT code level, PG&E applied
4 program specific MAT code adjustments to PG&E’s forecast for the test
5 year, as appropriate, based on the specification described in the decision,
6 Joint Comparison Exhibit and/or Settlement Agreement. For any
7 adjustments that were not specifically identified at the MAT code level,
8 PG&E prorated the adjustments to PG&E’s forecast by MWC to all MAT
9 codes, as applicable, using the MAT code to MWC ratios from PG&E’s
10 Application forecast.

11 **4. Units of Work Imputation for Gas and Electric Distribution**

12 To impute the adopted MAT code units of work for 2020, PG&E divided
13 the 2020 imputed MAT code values by the specific unit cost forecast
14 included in opening testimony or updated in the Joint Comparison Exhibits
15 and the Settlement Agreement, as applicable. MAT code labor was
16 adjusted for the change in labor escalation factors from the initial application
17 forecast to reflect the labor escalation factors update included in the
18 Settlement and decision RO model calculation. The reduction in labor
19 resulted in a change in the unit costs.

20 To impute the adopted units of work for 2021 and 2022, PG&E
21 escalated the 2020 unit cost to 2021 then to 2022 based on the composite
22 escalation rates in the decision RO Model. The imputed 2021 and 2022
23 units of work were then calculated as the imputed MAT code values divided
24 by the escalated unit cost.

25 **Gas Distribution Exceptions:** The exceptions to the above-described
26 units of work imputation methodology are the imputed regulatory volume of
27 inspections for the Gas Distribution Cross Bore Program (MAT JQK) and
28 Plastic Pipe Replacement Program (MAT 14D). For MAT JQK, per the
29 Settlement Agreement, PG&E has the flexibility to perform more or less
30 inspections than the forecast volume for this program. Each year the total
31 volume of recorded inspections will be compared to: (1) the recorded
32 volume of unable-to-access (UTA) inspections, and (2) the calculated
33 volume of non-UTA inspections using the formula adopted in the Settlement
34 Agreement: $\text{Non-UTA Units} = (\text{Target } \$ - (\text{UTA Unit Cost} \times \text{UTA}$

1 Units))/Non-UTA Unit Cost. Per Section 2.2.2 of the Settlement Agreement,
2 PG&E will replace 115, 137, 165 miles of plastic pipe under MAT 14D in
3 2020, 2021, and 2022 respectively.

4 **Electric Distribution Exceptions:** The exceptions for Electric
5 Distribution units imputation are for capital MATs (08W, 2AR, 2AP, 49T) that
6 are related to PG&E’s community Wildfire safety program. For the wildfire
7 related work, the decision approved specific post-test year forecasts.
8 Accordingly, the 2021 and 2022 imputed units for the wildfire program
9 related MATs were based on the PG&E updated forecast units as submitted
10 in PG&E’s Rebuttal Testimony⁴ Chapter 2A Table 2A-2.

11 **5. Risk Assessment and Mitigation Phase (RAMP) Regulatory Values**
12 **Imputation**

13 The imputed regulatory values by Risk Mitigation or Control were
14 developed in alignment with PG&E’s forecast.⁵ For 2020, PG&E applied
15 any specific Risk Mitigation or Control settlement adjustments to PG&E’s
16 forecast, as appropriate. For any settlement adjustments that were not
17 specifically identified, PG&E applied the settlement reductions at the MWC,
18 MAT or Department levels proportionally to all Risk Mitigations or Controls
19 based on the weighting of the RAMP forecast against the total MWC, MAT
20 or Department forecast.

21 Imputed regulatory values for 2021-2022 were developed using the
22 same methods described in the 2021-2022 Regulatory Values (Post-Test
23 Years) section for consistency to the overall GRC imputation.

24 **Gas Distribution Expense RAMP:** For Gas Distribution MAT codes
25 that were linked to a single Risk Mitigation or Control, the total MAT code
26 imputed amount was assigned to the specific Risk Mitigation or Control.
27 The exception is MAT Code JQD, which is based on Exhibit (PG&E-4),
28 Chapter 3, Table 4-6. When several MAT codes were linked to a
29 combination of Risk Mitigation or Controls and forecasts are provided in
30 aggregate, the associated aggregate MAT code imputed values were
31 assigned to the combination of Risk Mitigation or Risk Controls.

4 Exhibit (PG&E-30) Revised Rebuttal Testimony.

5 GRC-2020-Phi_DR_ED_003-Q02Atch1 and GRC-2020-Phi_DR_ED_003-Q02Atch2

1 The imputed units for Risk Mitigations or Controls were developed using
2 the same methodology described under “Units of Work Imputation for Gas
3 and Electric Distribution”.

4 **Gas Distribution Capital RAMP:** For Gas Distribution capital, all Risk
5 Mitigations or Controls except for Mitigation 2 (New Valve installations in
6 MAT 50E) corresponded to 100 percent of specific MAT codes. The
7 imputed regulatory values at MAT level were directly applied to the specific
8 Risk Mitigations or Controls. For Mitigation 2, MAT 50E work associated
9 with RAMP was imputed based on Exhibit (PG&E-3) Table 4-5 line 1 and
10 adjusted for capitalized A&G reductions from the settlement.

11 The imputed units for Risk Mitigations or Controls were developed using
12 the same methodology described under “Units of Work Imputation for Gas
13 and Electric Distribution”.

14 **Electric Distribution Expense RAMP:** The imputed regulatory values
15 for Electric Distribution Risk Mitigations or Controls were developed using
16 the same methodology described under Gas Distribution Expense RAMP.
17 Electric Distribution had additional instances when one single MAT code had
18 multiple risk mitigations or controls. In these instances, the imputed
19 amounts were developed proportionately based on the forecast weighting of
20 the specific planning orders. Specifically, for Vegetation Management (VM)
21 program, PG&E applied the specific settlement reductions to MAT code HN#
22 and mitigations M16 – Enhanced VM/M8 – Enhance VM Fuel Reduction.

23 The imputed units for Risk Mitigations or Controls were developed using
24 the same methodology described under “Units of Work Imputation for Gas
25 and Electric Distribution”.

26 **Electric Distribution Capital RAMP:** For Electric distribution capital, all
27 MAT codes except for MAT 21# (Miscellaneous capital) and MAT 2AP
28 (Overhead Capital Projects) were linked to one Risk Mitigation or Control.
29 The imputed regulatory values at MAT level were assigned to specific Risk
30 Mitigations or Controls. For MAT 21# and MAT 2AP, PG&E identified
31 specific mitigation and controls related planning orders from PG&E’s
32 forecast to develop the imputed values for each Risk Mitigation or Control.

33 The imputed units for Risk Mitigations or Controls were developed using
34 the same methodology described under “Units of Work Imputation for Gas

1 and Electric Distribution.” MAT 2AP and 21# were not unitized and hence
2 did not have unit cost or units for the respective risk mitigations or controls.

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX B
2020-2022 IMPUTED REGULATORY VALUES BY
LINE OF BUSINESS

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX B
2020-2022 IMPUTED REGULATORY VALUES BY
LINE OF BUSINESS

2020 GRC BUSINESS UNIT EXPENSE IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)

Line	Exhibit	MWC	MWC Description	2020 Imputed	2021 Imputed	2022 Imputed
Gas Distribution (Exhibit 3)						
1	3	AB	Misc Expense	17,278	17,700	17,993
2	3	DD	Provide Field Service	43,572	44,903	44,934
3	3	DE	G Dist Leak Survey	24,329	25,002	25,204
4	3	DF	G&E T&D Locate and Mark	43,953	45,211	45,415
5	3	DG	G Dist Cathodic Protection	20,171	20,727	20,901
6	3	DN	Develop & Provide Training	4,796	4,901	5,014
7	3	EX	G Dist Meter Protection	8,222	8,452	8,513
8	3	FG	G Dist Operate System	8,987	9,246	9,294
9	3	FH	G Dist Preventive Maint	22,475	23,111	23,263
10	3	FI	G Dist Corrective Maint	60,251	61,968	62,634
11	3	GF	Gas Trans & Dist Sys Mapping	4,269	4,400	4,401
12	3	GG	Gas Trans & Dist Sys Modeling	6,265	6,456	6,459
13	3	GM	Manage Energy Efficiency-NonBA	3,774	3,870	3,923
14	3	GZ	R&D Non-Balancing Account	3,403	3,488	3,542
15	3	HY	Change/Maint Used Gas Meters	1,828	1,869	1,912
16	3	JQ	G Dist Integrity Mgt (Non Bal)	41,543	42,527	43,316
17	3	JV	Maintain IT Apps & Infra	12,553	12,853	13,085
18	3	LK	G Dist WRO - Maintenance	5,946	6,129	6,240
19	3	OM	Operational Management	17,024	17,530	17,576
20	3	OS	Operational Support	18,442	18,986	19,024
21			Sub-total Gas Distribution	369,080	379,328	382,643
Electric Distribution (Exhibit 4)						
22	4	AB	Misc Expense	66,477	68,665	70,985
23	4	BA	E Dist Operate System	21,344	21,993	22,004
24	4	BF	E T&D Patrol/Insp	33,084	33,969	34,161
25	4	BH	E Dist Routine Emergency	57,276	58,923	59,154
26	4	BK	Maint Other Equip	1,662	1,707	1,717
27	4	DD	Provide Field Service	20,381	20,997	21,014
28	4	EV	Manage Service Inquiries	12,625	13,032	13,043
29	4	EW	E TD WRO - Maintenance	8,859	9,404	9,566
30	4	FZ	E Dist Planning & Ops Engineer	16,974	17,478	17,505
31	4	GA	E T&D Maint OH Poles	13,585	13,930	14,219
32	4	GC	E Dist Subst O&M	29,125	29,891	30,078
33	4	GE	E Dist Mapping	5,899	6,032	6,102
34	4	HG	Elec Trans Ops Engr & Tech	10,948	11,159	11,357
35	4	HN	E Dist Tree Trim Bal Acct	548,013	602,814	663,095
36	4	HX	E T&D Automation & Protection	2,048	2,100	2,116
37	4	IF	E Dist Major Emergency	33,743	34,648	34,841
38	4	IS	Bill Customers	1,088	1,108	1,127
39	4	JV	Maintain IT Apps & Infra	5,246	5,361	5,428
40	4	KA	E Dist Maint OH General	32,449	33,279	33,521
41	4	KB	E Dist Maint UG	12,537	12,836	12,961
42	4	KC	E Dist Maint Network	4,025	4,131	4,157
43	4	OM	Operational Management	7,217	7,429	7,444
44	4	OS	Operational Support	22,305	22,952	23,009
45			Sub-total Electric Distribution	966,909	1,033,835	1,098,603

**2020 GRC BUSINESS UNIT EXPENSE IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)
(CONTINUED)**

Energy Supply (Exhibit 5)						
46	5	AB	Misc Expense	14,700	14,711	(29,423)
47	5	AK	Manage Environmental Oper	1,946	1,989	2,033
48	5	BP	Manage DCPD Business	14,064	14,425	14,901
49	5	BQ	DCPD Support Services	47,828	47,128	47,933
50	5	BR	Operate DCPD Plant	85,587	79,481	91,137
51	5	BS	Maintain DCPD Plant Assets	103,526	97,038	125,142
52	5	BT	Nuclear Generation Fees	15,286	15,459	15,456
53	5	BV	Maintain DCPD Plant Configurtn	42,503	35,803	34,965
54	5	EO	Provide Nuclear Support	61	(12)	(12)
55	5	IG	Manage Var Bal Acct Processes	5,555	5,831	6,002
56	5	JV	Maintain IT Apps & Infra	666	682	692
57	5	OM	Operational Management	7,940	8,534	8,927
58	5	OS	Operational Support	18,334	20,954	23,264
59			Sub-total Nuclear Generation	357,996	342,022	341,016
60	5	AB	Misc Expense	6,303	6,465	6,541
61	5	AK	Manage Environmental Oper	1,013	1,042	1,048
62	5	AX	Maint Resv	23,691	24,292	24,592
63	5	AY	Habitat and Species Protection	137	141	141
64	5	EP	Manage Property & Bldgs	986	1,015	1,018
65	5	ES	Implement Environment Projects	53	54	55
66	5	IG	Manage Var Bal Acct Processes	5,251	5,397	5,433
67	5	JV	Maintain IT Apps & Infra	480	492	499
68	5	KG	Operate Hydro Generation	30,807	31,674	31,876
69	5	KH	Maint Hydro Generating Equip	21,395	21,976	22,157
70	5	KI	Maint Hydro Bldg	8,856	9,079	9,194
71	5	KJ	License Compliance Hydro Gen	36,622	37,484	38,103
72	5	OM	Operational Management	3,298	3,394	3,407
73	5	OS	Operational Support	6,205	6,378	6,421
74			Sub-total Hydro Generation	145,099	148,883	150,485
75	5	AB	Misc Expense	55	57	58
76	5	AK	Manage Environmental Oper	2,627	2,691	2,730
77	5	KK	Operate Fossil Generation	12,834	13,176	13,301
78	5	KL	Maint Fossil Generating Equip	30,785	31,586	31,928
79	5	KM	Maint Fossil Bldg	2,931	2,995	3,054
80	5	KQ	Operate Alternative Gen	826	847	858
81	5	KR	Maint AltGen Generating Equip	3,322	3,398	3,459
82	5	KS	Maint AltGen Bldg	505	516	526
83	5	OM	Operational Management	273	281	281
84	5	OS	Operational Support	1,061	1,093	1,094
85			Sub-total Fossil Generation	55,218	56,639	57,289
86			Sub-total Power Generation	200,317	205,521	207,774
87	5	AB	Misc Expense	488	502	505
88	5	CT	Acq & Manage Elect Supply	23,244	23,987	24,019
89	5	CV	Acq & Manage Gas Supply	2,086	2,149	2,151
90	5	CY	Manage Electric Grid Ops	10,765	11,070	11,109
91	5	JV	Maintain IT Apps & Infra	957	981	994
92			Sub-total Energy Policy and Procurement	37,540	38,688	38,778
93			Sub-total Energy Supply	595,853	586,232	587,567

**2020 GRC BUSINESS UNIT EXPENSE IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)
(CONTINUED)**

Customer Care (Exhibit 6)						
94	6	AR	Read & Investigate Meters	10,742	11,122	11,177
95	6	DD	Provide Field Service	687	708	708
96	6	DK	Manage Customer Inquiries	60,493	62,352	62,569
97	6	EL	Develop New Revenue	24,621	25,119	25,491
98	6	EY	Change/Maint Used Elec Meter	8,800	9,062	9,083
99	6	EZ	Manage Var Cust Care Processes	39,425	40,471	40,917
100	6	FK	Retain & Grow Customers	878	903	909
101	6	GM	Manage Energy Efficiency-NonBA	8,633	8,831	8,986
102	6	HY	Change/Maint Used Gas Meters	6,637	6,838	6,849
103	6	IS	Bill Customers	54,902	56,614	57,254
104	6	IT	Manage Credit	15,238	15,653	15,806
105	6	IU	Collect Revenue	21,086	21,714	21,866
106	6	IV	Provide Account Services	17,161	17,671	17,764
107	6	JV	Maintain IT Apps & Infra	3,746	3,827	3,875
108	6	OM	Operational Management	4,132	4,262	4,272
109	6	OS	Operational Support	308	317	318
110			Sub-total Customer Care	277,489	285,463	287,845
Shared Services & IT (Exhibit 7)						
111	7	AB	Misc Expense	9,827	10,124	10,165
112	7	FL	Safety Engineering & OSHA Cmpl	17,427	17,953	18,031
113	7	JV	Maintain IT Apps & Infra	188	193	195
114	7	KX	Prov Human Resource Svcs	5,806	5,986	6,004
115			Sub-total Safety	33,248	34,256	34,395
116	7	AB	Misc Expense	86,170	88,069	89,506
117	7	BP	Manage DCP Business	5,359	5,507	5,612
118	7	JV	Maintain IT Apps & Infra	16	17	17
119			Sub-total Transportation	91,545	93,593	95,135
120	7	AB	Misc Expense	1,604	1,653	1,659
121			Sub-total Materials	1,604	1,653	1,659
122	7	JL	Procure Materials & Services	16,573	17,064	17,157
123	7	JV	Maintain IT Apps & Infra	36	37	37
124	7	OS	Operational Support	6,689	6,883	6,904
125			Sub-total Sourcing	23,298	23,984	24,099
126	7	AB	Misc Expense	(65,890)	(67,372)	(68,605)
127	7	BI	Maint Buildings	4,004	4,088	4,174
128	7	EP	Manage Property & Bldgs	106,997	109,404	111,406
129	7	JH	Implement RealEstate Strategy	8,183	8,379	8,510
130	7	JV	Maintain IT Apps & Infra	1,420	1,455	1,476
131			Sub-total Real Estate	54,714	55,954	56,961

**2020 GRC BUSINESS UNIT EXPENSE IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)
(CONTINUED)**

132	7	AB	Misc Expense	1,455	1,500	1,505
133	7	AK	Manage Environmental Oper	8,287	8,475	8,577
134	7	AY	Habitat and Species Protection	148	151	153
135	7	CR	Mnge Waste Disp & Transp	2,205	2,245	2,285
136	7	ES	Implement Environment Projects	699	712	725
137	7	JE	Manage Land Services	3,460	3,546	3,594
138	7	JK	Manage Environ Remed (Earning)	1,974	2,033	2,043
139	7	JV	Maintain IT Apps & Infra	16	16	17
140	7	KY	Prov Regulation Svcs	1,465	1,513	1,514
141	7	OM	Operational Management	201	209	209
142	7	OS	Operational Support	427	439	440
143			Sub-total Land and Environmental	20,336	20,838	21,060
144	7	AB	Misc Expense	15,575	15,993	16,160
145	7	JV	Maintain IT Apps & Infra	2,650	2,715	2,754
146			Sub-total ERIM	18,225	18,708	18,915
147			Sub-total Shared Services	242,970	248,987	252,224
148	7	AB	Misc Expense	(34,884)	(35,768)	(36,239)
149	7	JV	Maintain IT Apps & Infra	286,478	293,513	297,728
150	7	OM	Operational Management	521	536	539
151	7	OS	Operational Support	612	640	640
152			Sub-total Information Technology	252,726	258,921	262,668
153	7	JV	Maintain IT Apps & Infra	32,511	33,311	33,792
154	7	KZ	Prov Risk/Security Svcs	15,055	15,421	15,652
155	7	OM	Operational Management	1,469	1,513	1,520
156			Sub-total Cyber and Corporate Security	49,034	50,246	50,964
157			Sub-total Information Technology and Security	301,760	309,167	313,632
158			Sub-total Shared Services & IT	544,730	558,154	565,856

**2020 GRC CORPORATE SERVICES EXPENSE IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)**

Line	Exhibit	Corporate Services Organization	2020 Imputed	2021 Imputed	2022 Imputed
1	8	Human Resources	76,096	78,308	78,950
2	9	Finance	51,195	52,738	53,128
3	9	Risk and Audit	11,462	11,832	11,893
4	9	Compliance & Ethics	7,782	7,994	8,092
5	9	Regulatory Affairs	15,385	15,875	15,965
6	9	Law	48,655	49,935	50,608
7	9	Executive Offices and Corporate Secretary	6,219	6,382	6,470
8	9	Corporate Affairs	24,871	25,543	25,861
9		Sub-total Corporate Services	241,665	248,606	250,967

Line	Exhibit	IT Expense	2020 Imputed	2021 Imputed	2022 Imputed
13	8	Human Resources	2,059	2,110	2,140
14	9	Finance	1,211	1,241	1,259
15	9	Risk and Audit	249	255	259
16	9	Compliance & Ethics	475	487	494
17	9	Regulatory Affairs	396	406	411
18	9	Law	4	4	4
19	9	Executive Offices and Corporate Secretary	0		
20	9	Corporate Affairs	101	103	105
21		Sub-total IT Expense	4,495	4,605	4,672

Line	Exhibit	Corporate Services Organization incl. IT	2020 Imputed	2021 Imputed	2022 Imputed
22	8	Human Resources	78,155	80,418	81,090
23	9	Finance	52,406	53,979	54,387
24	9	Risk and Audit	11,711	12,087	12,152
25	9	Compliance & Ethics	8,257	8,480	8,585
26	9	Regulatory Affairs	15,780	16,280	16,377
27	9	Law	48,659	49,939	50,613
28	9	Executive Offices and Corporate Secretary	6,219	6,382	6,470
29	9	Corporate Affairs	24,972	25,647	25,966
33		Total Corporate Services (incl. IT)	246,160	253,212	255,639

**2020 GRC BUSINESS UNIT CAPITAL IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)**

Line	Exhibit	MWC	MWC Description	2020 Imputed	2021 Imputed	2022 Imputed
Gas Distribution (Exhibit 3)						
1	3	5	Tools & Equipment	3,335	3,416	3,502
2	3	14	G Dist Pipeline Repl Program	453,378	528,983	626,633
3	3	27	Gas Meter Protection-Capital	21,603	17,263	15,927
4	3	29	G Dist Customer Connects	86,156	88,190	89,962
5	3	31	NGV - Station Infrastructure	4,065	4,163	4,268
6	3	47	G Dist Capacity	38,894	39,835	40,836
7	3	50	G Dist Reliability General	228,487	235,935	241,092
8	3	51	G Dist WRO	74,419	79,034	80,332
9	3	52	G Dist Leak Repl/Emergency	881	902	925
10	3	74	Install New Gas Meters	1,941	1,984	2,034
11	3	2F	Build IT Apps & Infra	11,636	11,455	11,674
12	3	2K	G Dist Repl/Convert Cust HPR	58,998	60,425	61,943
13	3	4A	G Dist Ctrl Operations Assets	29,704	30,461	30,335
14			Sub-total Gas Distribution	1,013,497	1,102,045	1,209,462
Electric Distribution (Exhibit 4)						
15	4	5	Tools & Equipment	7,397	7,816	8,241
16	4	6	E Dist Line Capacity	90,794	91,883	94,348
17	4	7	E Dist Inst/Repl OH Poles	108,279	109,237	112,168
18	4	8	E Dist Replace OH Asset	544,535	876,248	1,100,590
19	4	9	E Dist Automation & Protection	33,845	35,557	36,124
20	4	10	E Dist WRO General	121,507	142,157	140,436
21	4	16	E Dist Customer Connects	450,570	463,208	480,119
22	4	17	E Dist Routine Emergency	183,518	188,416	193,472
23	4	21	Misc Capital	(24,929)	(30,126)	(31,031)
24	4	30	E Dist WRO Rule 20A	33,420	34,312	35,233
25	4	46	E Dist Subst Capacity	33,678	58,317	30,643
26	4	48	E Dist Subst Repl Other Equip	49,407	53,475	57,551
27	4	49	E Dist Reliability Ckt/Zone	35,603	35,419	30,846
28	4	54	E Dist Subst Repl Transformer	5,513	5,660	5,812
29	4	56	E Dist Replace UG Asset-Gen	98,751	101,387	104,107
30	4	58	E Dist Repl Substation Safety	4,610	4,733	4,859
31	4	59	E Dist Subst Emergency Repl	62,612	64,284	66,008
32	4	63	E T&D Control System/ Facility	36,915	32,252	32,889
33	4	95	E Dist Major Emergency	55,086	56,557	58,074
34	4	2A	E Dist Inst/Repl OH General	192,504	198,581	195,291
35	4	2B	E Dist Inst/Repl UG	57,229	59,397	62,124
36	4	2C	E Dist Inst/Repl Network	19,261	20,019	18,509
37	4	2F	Build IT Apps & Infra	17,570	17,394	17,769
38			Sub-total Electric Distribution	2,217,676	2,626,180	2,854,182

**2020 GRC BUSINESS UNIT CAPITAL IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)
(CONTINUED)**

Energy Supply (Exhibit 5)						
39	5	3	Office Furniture & Equipment	96	31	13
40	5	5	Tools & Equipment	619	475	334
41	5	20	DCPP Capital	38,363	20,973	10,230
42	5	2F	Total Electric Distribution	4,862	4,295	4,432
43	5		Sub-total Nuclear Generation	43,940	25,774	15,008
44	5	3	Office Furniture & Equipment	15	16	16
45	5	5	Tools & Equipment	675	690	701
46	5	11	Relicensing Hydro Gen	427	212	28
47	5	12	Implement Environment Projects	488	1,511	1,596
48	5	2F	Office Furniture & Equipment	7,451	6,432	6,461
49	5	2L	Instl/Rpl for Hydro Safety&Reg	23,485	29,012	22,051
50	5	2M	Instal/Repl Hydro Gneratng Eqp	105,015	106,676	64,319
51	5	2N	Instal/Repl Resv,Dams&Waterway	52,597	59,695	69,102
52	5	2P	Instl/Repl Hydr BldgGrndInfrst	5,138	3,919	6,084
53	5	3H	Hydroelec Lic & Lic Conditions	18,918	32,110	58,285
54			Sub-total Hydro Generation	214,210	240,272	228,642
55	5	5	Tools & Equipment	361	368	373
56	5	2S	Instal/Repl Fossil Gneratng Eqp	6,216	5,081	5,057
57	5	2T	Instl/Repl Fosl BldgGrndInfrst	195	-	-
58	5	3A	Instl/Rpl for AltGen Safty&Reg	24	24	25
59	5	3B	Instal/Repl AltGen GneratngEqp	775	688	703
60			Sub-total Fossil Generation	7,571	6,161	6,159
61			Sub-total Power Generation	221,781	246,434	234,801
62	5	2F	Build IT Apps & Infra	9,243	13,126	10,237
63			Sub-total Energy Policy and Procurement	9,243	13,126	10,237
64			Sub-total Energy Supply	274,963	285,334	260,047
Customer Care (Exhibit 6)						
65	6	5	Tools & Equipment	244	255	263
66	6	21	Misc Capital	3,512	500	500
67	6	25	Install New Electric Meters	54,569	54,011	51,559
68	6	74	Install New Gas Meters	73,647	76,718	78,665
69	6	2F	Build IT Apps & Infra	6,726	7,852	12,373
70			Sub-total Customer Care	138,698	139,336	143,360

**2020 GRC BUSINESS UNIT CAPITAL IMPUTED ADOPTED REGULATORY VALUES
(THOUSANDS OF NOMINAL DOLLARS)
(CONTINUED)**

Shared Services & IT (Exhibit 7)						
71	7	2F	Build IT Apps & Infra	72	70	73
72			Sub-total Safety	72	70	73
73	7	4	Fleet / Auto Equip	27,451	28,674	67,213
74	7	5	Tools & Equipment	1,279	1,303	1,329
75	7	28	EV - Station Infrastructure	3,450	3,523	3,603
76			Sub-total Transportation	32,180	33,501	72,145
77	7	5	Tools & Equipment	238	221	203
78	7	21	Misc Capital	562	579	597
79			Sub-total Materials	800	800	800
80	7	22	Maintain Buildings	78,097	82,820	92,547
81	7	23	Implement RealEstate Strategy	92,091	92,473	88,005
82			Sub-total Real Estate	170,188	175,294	180,552
83	7	5	Tools & Equipment	300	300	300
84	7	12	Implement Environment Projects	5,979	5,979	5,979
85			Sub-total Land and Environmental	6,279	6,279	6,279
86	7	2F	Build IT Apps & Infra	2,425	1,425	1,731
87			Sub-total ERIM	2,425	1,425	1,731
88			Sub-total Shared Services	211,944	217,368	261,581
89	7	2F	Build IT Apps & Infra	184,566	179,251	180,977
90			Sub-total Information Technology	184,566	179,251	180,977
91	7	2F	Build IT Apps & Infra	21,846	23,656	20,269
92	7	3N	Security Install/Replace	16,640	17,318	18,107
93			Sub-total Cyber and Corporate Security	38,487	40,974	38,376
94			Sub-total Information Technology and Security	223,053	220,226	219,353
95			Sub-total Shared Services & IT	434,997	437,594	480,934
Human Resources (Exhibit 8)						
96	8	5	Tools & Equipment	35	35	35
97	8	22	Maintain Buildings	1,213	1,213	1,213
98	8	2F	Build IT Apps & Infra	1,165	2,186	2,241
99			Sub-total Human Resources	2,413	3,434	3,489
Administrative and General (Exhibit 9)						
100	9	2F	Build IT Apps & Infra	4,548	4,468	4,598
101	9		Sub-total Finance	4,548	4,468	4,598
102	9	2F	Build IT Apps & Infra	1,955	1,921	1,985
103	9		Sub-total Risk, Audit and Insurance	1,955	1,921	1,985
104	9	2F	Build IT Apps & Infra	379	-	-
105	9		Sub-total Compliance & Ethics	379	-	-
106	9	2F	Build IT Apps & Infra	1,439	1,735	1,447
107	9		Sub-total Regulatory Affairs	1,439	1,735	1,447
108			Sub-total Administrative and General	8,322	8,124	8,029