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Appendix C

Risk Mitigation Accountability Report Guidelines

Risk Mitigation Accountability Report Guidelines

RMAR Definitions

In addition to the terms listed here, all terms listed in the Risk-based Decision-making Framework[1] are relevant to an RMAR submission.

Term	Definition
Class	Class determines table structure and interpretation in RMAR. There are two Classes: Stock tables and Flow tables.
Benefit-Cost Ratio (BCR)	The ratio of Mitigation Benefits to Mitigation Costs as defined by D.22-12-027 and refinements required in subsequent Commission Decisions.
Flow	A Class that describes tables where the values accumulate over time and can be added. Flow Line-items include Mitigation Benefits and Mitigation Costs, and BCR. See a full explanation below.
Forecasts	Future estimates of Line-item values that are unique to the Plan Phase in RMAR, typically based on outputs from a model and/or SME judgement. Forecasts will be used for comparing against Monetized Outcomes, Results and Projections in the Reporting Phase. Forecast values are established in a Decision adopted in a GRC or other cost recovery venue. See also Scenario.
Line-item	A line in the RMAR with values associated with it. This could include, but is not limited to, BCR, Mitigation Benefit, Mitigation Cost, Post-mitigated Risk, Pre-mitigated Risk, Risk Reduction, and Work Units.
Mitigation Benefit	The monetized risk reduction of mitigations that is presented as a Flow. Mitigation Benefits are typically calculated by a model and/or SME judgement.
Mitigation Cost	The cost of mitigations that is presented as a Flow. Historical costs are taken from actual costs incurred; while future costs are based on models and/or SME judgement.
Monetized Outcome	The monetized impact of Risk Events that have occurred in a given year. This could be estimated using, for instance, but not limited to, the Safety Performance Metrics.
Plan Phase	The section in RMAR that lays out the Plan. It only contains Forecasts of the future.
Post-mitigated Risk	The risk that remains after mitigations are applied, and is presented as Stock.
Pre-mitigated Risk	The current level of risk, before any new mitigations are applied, and is presented as Stock.

[1] See Appendix A in this Decision or any subsequent Decision that updates Appendix A.

Projections	A forecast of future Line-item values unique to the Reporting Phase in the RMAR, which is typically based on outputs from a model and/or SME judgement. Based on new data or models, Projections may update and change the Plan's Forecast values established in a Decision adopted in a GRC or other cost recovery venue. Projections should be compared to the Forecasts in the Plan Phase. See also Scenario.
Results	Results are the impact of mitigation activities that have occurred in a given year. In the case of Mitigation Benefits, Results are the monetized value calculated from a model based on the mitigation activities that occurred in a given year. In the case of Mitigation Costs or Work Units, Results are based on actual costs incurred or actual work units performed in a given year. See also Scenario.
Reporting Phase	The section of RMAR that compares Monetized Outcomes, Results and Projections to the Forecasts in the Plan Phase. The Reporting Phase will include updated Projections based on the utility's current knowledge. The Reporting Phase contains both historical data of Results and future-looking Projections.
Risk Measure	How risk is presented in a table, e.g. Expected Value Risk or Tail Average Risk.
Risk Reduction	The monetized impact of mitigations, presented as a Stock value. Risk Reduction is typically calculated by a model and/or SME Judgement.
Scenario	Distinctions of Line-item values used to make comparisons between the Plan Phase and the Reporting Phase. Forecasts, Results, and Projections are Scenarios. If there are multiple Projections in the Reporting Phase, then each Reporting Phase with a unique Projection is a distinct Scenario.
Stock	A Class that describes tables where the Line-items represent point-in-time values. Stock Line-items include Pre-mitigated Risk, Post-mitigated Risk, and Risk Reduction. See a full explanation below.

Stock and Flow Explanations

Stock and Flow are two different Classes of Line-items in an RMAR that determine how monetized mitigation impacts on risk are calculated and used. Mitigation impacts are based on the output of risk models.

Flow describes the calculation of a Mitigation Benefit, which contributes to the numerator in the BCR. Once a mitigation is completed, the benefit occurs every year for the expected life of the mitigation, and the total benefit is the sum over the expected life. As such, a Flow value is additive. For example, if a mitigation is modeled to reduce risk by $10, and the expected life of the mitigation is 10 years, the mitigation benefit is the sum of the risk reduction over the 10 years, or $100. The BCR would be calculated by using the $100 Mitigation Benefit discounted by the appropriate discount rate.

Stock describes a Risk Reduction value. Once a mitigation is completed, risk is reduced from a Pre-mitigated Risk level to a Post-Mitigated Risk level. As such, Stock is a point-in-time value. Using the same example as in Flow, above, if a mitigation is modeled to reduce risk by $10 for 10 years, the modeled Risk Reduction is $10. The level of Post-mitigated Risk is $10 lower than the Pre-mitigated Risk.

RMAR Line-items

	Source of Values	Stock or Flow
Plan Phase:		
Mitigation Benefits	Modeled Forecast	Flow
Mitigation Costs	Modeled Forecast	Flow
Work Units	Modeled Forecast	Flow
BCR	Modeled Forecast (Present Value)	Flow
Pre-Mitigated Risk	Modeled Forecast	Stock
Post-Mitigated Risk	Modeled Forecast	Stock
Risk Reduction	Modeled Forecast	Stock
Reporting Phase:		
Mitigation Benefits	Modeled Result/Modeled Projection	Flow
Mitigation Costs	Actual Result/Modeled Projection	Flow
Work Units	Actual Result/Modeled Projection	Flow
BCR	Modeled Projection (Present Value)	Flow
Pre-Mitigated Risk	Modeled Projection	Stock
Post-Mitigated Risk	Modeled Result/Modeled Projection	Stock
Risk Reduction	Modeled Result/Modeled Projection	Stock
Monetized Outcomes	Actual Outcome	Stock

RMAR Required Tables and Table Elements

1. Aside from the original RAMP backcast, the first RMAR must at a minimum be four years of reporting, including the Report Year, the Report Years to date and the Forecast years.
2. All tables should include the following roll-up points:
    a. **Hierarchy**: Based on organizational structure, including, but not limited to, circuit, substation, pipeline, watershed region, High-Fire Threat District, region, division,

enterprise. Hierarchy defines how reports and tables are grouped in "parent-child" relationships.

b. **Scenario**: Forecast, Results, Projection.

c. **Version**: Risk model or methodology

d. **Risk Event**: All risks included in the most recent RAMP and GRC Applications

e. **Tranches**: Risk event-dependent.[2]

f. **Mitigations**: Risk event-dependent.

3. All tables should include the following common elements:

a. **Attribute**: Safety, Reliability, Financial.

b. **Risk Measure**: Expected Value Risk, Tail Average Risk.

c. **Line-items**: This dimension contains all the key calculations in an RMAR, including, but not limited to, BCR, Mitigation Benefit, Mitigation Cost, Post-mitigated Risk, Pre-mitigated Risk, Risk Reduction, and Work Units.

d. **Work Unit**: Corresponds to the Work Units presented in the GRC and RSAR.

e. **Time**: Periods under consideration, including years and GRC Cycle (i.e. PG&E's 2027 GRC).

[2] See D.24-05-064, Appendix A, Row 14

Required Plan Phase Tables

a¡ Forecasted.Mitigation.Costs.and.Benefits.Table.for.Expected.Value.Risk.by.Mitigation.for.each.Risk.Event

WILDFIRE RISK MITIGATION FORECAST	
Hierarchy	Enterprise
Risk Events	Wildfire
Scenario	Forecast
Version	Model 2.1
Time	Years 1-4
Sub-table 1. Work Unit Circuit Miles	
	Plan Y1Y4
UG	1,400
CC	400
Total	1,800

Sub-table 2. Mitigation Benefit Overview	Expected Value Risk		
By Mitigation Type	**Mitigation Benefit**	**Mitigation Cost**	
UG	$640	$500	
CC	$630	$340	
Total	$1,270	$790	
BCR:	**WACC**	**Social**	**Hybrid**
UG	1.86	2.79	2.34
CC	2.14	2.48	2.43
Total	1.99	2.65	2.39

Sub-table 3. Mitigation Benefit Y1Y4

Expected Value Risk	Year 1	Year 2	Year 3	Year 4	Year 5 to Expected Life	Total
3a. UG						
Mitigation Benefit	$0	$0	$80	$80	$480	$640
Mitigation Costs	$0	$500	$0	$0	$0	$500
3b. CC						
Mitigation Benefit	$63	$63	$63	$63	$378	$630
Mitigation Costs	$200	$10	$10	$10	$60	$290
3c. Total						
Mitigation Benefit	$63	$63	$143	$143	$858	$1,270
Mitigation Costs	$200	$510	$10	$10	$60	$790

b¡ Forecasted.Risk.Reduction.Table.by.Attribute.for.each.Risk.Event.

WILDFIRE RISK MITIGATION FORECAST	
Hierarchy	Enterprise
Risk Events	Wildfire
Scenario	Forecast
Version	Model 2.1
Time	Years 1-4

Sub-table 1: Risk Reduction Overview			
Expected Value Risk	Safety	Reliability	Financial
Pre-mitigated risk	$270	$300	$300
Risk reduction	$35	$54	$54
Post-mitigated risk	$235	$246	$246
Tail Average Risk*			
Pre-mitigated risk	$1,760	$1,760	$1,540
Risk reduction	$183	$282	$282
Post-mitigated risk	$1,578	$1,478	$1,258
*Tail average is not additive			

Sub-table 2 Risk Reduction Y1Y4				
Expected Value Risk	Year 1	Year 2	Year 3	Year 4
Safety				
Pre-mitigated risk	$270			
Risk reduction	$15	$15	$35	$35
Post-mitigated risk	$255	$255	$235	$235
Reliability				
Pre-mitigated risk	$300			
Risk reduction	$24	$24	$54	$54
Post-mitigated risk	$276	$276	$246	$246
Financial				
Pre-mitigated risk	$300			
Risk reduction	$24	$24	$54	$54
Post-mitigated risk	$276	$276	$246	$246
Tail Average Risk*	Year 1	Year 2	Year 3	Year 4
Safety				
Pre-mitigated risk	$1,760			
Risk reduction	$83	$83	$183	$183
Post-mitigated risk	$1,678	$1,595	$1,413	$1,230
Reliability				
Pre-mitigated risk	$1,760			
Risk reduction	$132	$132	$282	$282
Post-mitigated risk	$1,628	$1,628	$1,478	$1,478
Financial				
Pre-mitigated risk	$1,540			
Risk reduction	$132	$132	$282	$282
Post-mitigated risk	$1,408	$1,408	$1,258	$1,258
*Tail risk is not additive				

Required Reporting Phase Tables

The following example tables are from a hypothetical RMAR submitted in Year 3 of a GRC Cycle:

a¡ Monetized.Outcomes.Flow.Table.by.Attribute.for.each.Risk.Event

WILDFIRE ATTRIBUTES MONETIZED OUTCOME				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Monetized Outcome vs. Forecast			
Version	Model 2.1			
Time	Year 3			
	Y3			
	Safety	**Reliability**	**Financial**	**Risk**
Monetized Outcome by Attribute	$600	$300	$1,800	$2,700
Forecast - Expected Value Post-mitigated Risk	$235	$246	$246	$727
Monetized Outcome better(worse) than Forecast	($365)	($54)	($1,554)	($1,973)
	-155%	-22%	-632%	-271%
Forecast - Tail average Post-mitigated Risk*	$1,578	$1,478	$1,258	$3,921
Outcome better(worse) than Forecast	$978	$1,178	($542)	$1,221
	38%	20%	-143%	69%
***Tail risk is not additive**				

b¡ Monetized.Outcomes.Stock.Table.by.Attribute.for.each.Risk.Event

WILDFIRE ATTRIBUTES MONETIZED OUTCOME				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Monetized Outcome vs. Forecast			
Version	Model 2.1			
Time	Years 1-3			
	Y1Y3			
	Safety	**Reliability**	**Financial**	**Risk**
Average Y1Y3 Monetized Outcome by Attribute	$600	$330	$1,845	$2,775
Average Y1Y3 Forecast - Expected Value Post-mitigated risk	$745	$798	$798	$2,341
Monetized Outcome better(worse) than Forecast	$145	$468	($1,047)	($434)
	19%	59%	-131%	-19%

c¡ Expected.Value.Risk.Mitigation.Benefit.and.Mitigation.Cost.by.Risk.Event.Table

RISK EVENTS MITIGATION BENEFIT AND MITIGATION COST				
Hierarchy	Enterprise			
Risk Events	All			
Scenario	Results vs. Forecast and Projections vs. Forecast			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Mitigation Benefit and Cost, Y3				
			Results B(W) Forecast	
Expected Value Risk	**Results Y3**	**Forecast Y3**	**$**	**%**
Wildfire				
Modeled Mitigation Benefit	$106	$143	($37)	-26%
Actual Mitigation Cost	$260	$10	($250)	-2500%
Cyber				
Modeled Mitigation Benefit	$12	$12	$0	0%
Actual Mitigation Cost	$5	$5	$0	0%
Hydro				
Modeled Mitigation Benefit	$50	$60	($10)	-17%
Actual Mitigation Cost	$15	$15	$0	0%
Total				
Modeled Mitigation Benefit	$168	$215	($47)	-22%
Actual Mitigation Cost	$280	$30	($250)	-833%
Sub-table 2. Mitigation Benefit and Cost, Y1Y3				
			Results B(W) Forecast	
Expected Value Risk	**Results Y1Y3**	**Forecast Y1Y3**	**$**	**%**
Wildfire				
Modeled Mitigation Benefit	$216	$269	($53)	-20%
Actual Mitigation Cost	$770	$720	($50)	-7%
Cyber				
Modeled Mitigation Benefit	$36	$36	$0	0%
Actual Mitigation Cost	$15	$15	$0	0%
Hydro				
Modeled Mitigation Benefit	$50	$120	($70)	-58%
Actual Mitigation Cost	$215	$210	($5)	-2%
Total				
Modeled Mitigation Benefit	$302	$425	($123)	-29%
Actual Mitigation Cost	$1,000	$945	($55)	-6%

Sub-table 3. Mitigation Benefit and Costs: Results and Projection versus Forecast									
				Results			Projection		
Expected Value Risk:				Year 1	Year 2	Year 3	Year 4	Year 5 to Expected Life	Total
Wildfire									
Modeled Mitigation Benefit: Results/Projection				$55	$55	$106	$135	$810	$1,161
Modeled Mitigation Benefit: Forecast				$63	$63	$143	$143	$858	$1,270
Results/Projection B(W) Forecast				($8)	($8)	($37)	($8)	($48)	($109)
Actual/Modeled Mitigation Costs: Results/Projection				$200	$310	$260	$10	$60	$840
Modeled Mitigation Cost: Forecast				$200	$510	$10	$10	$60	$790
Results/Projection B(W) Forecast				$0	$200	($250)	$0	$0	($50)
Cyber									
Modeled Mitigation Benefit: Results/Projection				$12	$12	$12	$12	$72	$120
Modeled Mitigation Benefit: Forecast				$12	$12	$12	$12	$72	$120
Results/Projection B(W) Forecast				$0	$0	$0	$0	$0	**$0**
Actual/Modeled Mitigation Costs: Results/Projection				$5	$5	$5	$5	$30	$50
Modeled Mitigation Cost: Forecast				$5	$5	$5	$5	$30	$50
Results/Projection B(W) Forecast				$0	$0	$0	$0	$0	**$0**
Hydro									
Modeled Mitigation Benefit: Results/Projection				$0	$0	$50	$50	$300	$400
Modeled Mitigation Benefit: Forecast				$0	$60	$60	$60	$360	$540
Results/Projection B(W) Forecast				$0	($60)	($10)	($10)	($60)	($140)
Actual/Modeled Mitigation Costs: Results/Projection				$0	$200	$15	$15	$90	$320
Modeled Mitigation Cost: Forecast				$180	$15	$15	$15	$90	$315
Results/Projection B(W) Forecast				**$180**	($185)	**$0**	**$0**	**$0**	($5)
Total									
Modeled Mitigation Benefit: Results/Projection				$67	$67	$168	$197	$1,182	$1,681
Modeled Mitigation Benefit: Forecast				$75	$135	$215	$215	$1,290	$1,930
Results/Projection B(W) Forecast				($8)	($68)	($47)	($18)	($108)	($249)
Actual/Modeled Mitigation Costs: Results/Projection				$205	$515	$280	$30	$180	$1,210
Modeled Mitigation Cost: Forecast				$385	$530	$30	$30	$180	$1,155
Results/Projection B(W) Forecast				$180	$15	($250)	$0	$0	($55)
BCR	Projection	Forecast	B(W)						
Wildfire:									
WACC	1.73	1.92	-0.19						
Social	2.44	2.72	-0.28						
Hybrid	2.14	2.36	-0.22						
Cyber:									
WACC	2.40	2.40	0.00						
Social	2.40	2.40	0.00						
Hybrid	2.64	2.64	0.00						
Hydro									
WACC	1.18	1.52	-0.34						
Social	1.35	1.72	-0.38						
Hybrid	1.35	1.70	-0.35						

d¡ Expected.Value.Risk.Mitigation.Benefit.by.Attribute.for.each.Risk.Event.Table

WILDFIRE ATTRIBUTES MITIGATION BENEFIT				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Results vs. Forecast and Projections vs. Forecast			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Mitigation Benefits Overview				
			Results B(W) Forecast	
Mitigation benefit, Y3				
Expected Value Risk	**Results Y3**	**Forecast Y3**	**$**	**%**
Safety	$30	$35	($5)	-14%
Reliability	$38	$54	($16)	-30%
Financial	$38	$54	($16)	-30%
Total	**$106**	**$143**	**($37)**	**-26%**
Mitigation benefit, Y1Y3				
Expected Value Risk	**Results Y1Y3**	**Forecast Y1Y3**	**$**	**%**
Safety	$60	$65	($5)	-8%
Reliability	$78	$102	($24)	-24%
Financial	$78	$102	($24)	-24%
Total	**$216**	**$269**	**($53)**	**-20%**

Sub-table 2. Mitigation Benefit Y1Y3

	Results			Projection		
Expected Value Risk	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5 to Expected Life**	**Total**
Safety						
Modeled Mitigation Benefit: Results/Projection	$15	$15	$30	$35	$210	$305
Modeled Mitigation Benefit: Forecast	$15	$15	$35	$35	$210	$310
Results/Projection B(W) Forecast	**$0**	**$0**	**($5)**	**$0**	**$0**	**($5)**
Reliability						
Modeled Mitigation Benefit: Results/Projection	$20	$20	$38	$50	$300	$428
Modeled Mitigation Benefit: Forecast	$24	$24	$54	$54	$324	$480
Results/Projection B(W) Forecast	**($4)**	**($4)**	**($16)**	**($4)**	**($24)**	**($52)**
Financial						
Modeled Mitigation Benefit: Results/Projection	$20	$20	$38	$50	$300	$428
Modeled Mitigation Benefit: Forecast	$24	$24	$54	$54	$324	$480
Results/Projection B(W) Forecast	**($4)**	**($4)**	**($16)**	**($4)**	**($24)**	**($52)**
Total						
Modeled Mitigation Benefit: Results/Projection	$55	$55	$106	$135	$810	$1,161
Modeled Mitigation Benefit: Forecast	$63	$63	$143	$143	$858	$1,270
Results/Projection B(W) Forecast	**($8)**	**($8)**	**($37)**	**($8)**	**($48)**	**($109)**

e¡ Expected.Value.Risk.Mitigation.Benefit.and.Cost.by.Mitigation.for.each.Risk.Event.Table

WILDFIRE MITIGATION BENEFIT FOR EACH MITIGATION				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Results vs. Forecast and Projections vs. Forecast			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Mitigation Benefit and Cost Overview				
	Expected Value Risk		Results B(W) Forecast	
Y3	Results Y3	Forecast Y3	$	%
Undergrounding (UG)				
Modeled Mitigation Benefit	$51	$80	-$29	-36%
Actual Mitigation Cost	$250	$0	-$250	
Covered Conductor (CC)				
Modeled Mitigation Benefit	$55	$63	-$8	-13%
Actual Mitigation Cost	$10	$10	$0	0%
	Expected Value Risk		Results B(W) Forecast	
Y1Y3	Results Y1Y3	Forecast Y1Y3	$	%
Underground (UG)				
Modeled Mitigation Benefit	$51	$80	-$29	-36%
Actual Mitigation Cost	$550	$500	-$50	-10%
Covered Conductor (CC)				
Modeled Mitigation Benefit	$165	$189	-$24	-13%
Actual Mitigation Cost	$220	$220	$0	0%
	Expected Value Risk		Projection B(W) Forecast	
Projection Total	Projection	Forecast	$	%
Underground (UG)				
Modeled Mitigation Benefit	$611	$640	-$29	-5%
Actual Mitigation Cost	$550	$500	-$50	-10%
Covered Conductor (CC)				
Modeled Mitigation Benefit	$550	$630	-$80	-13%
Actual Mitigation Cost	$290	$290	$0	0%

Sub-table 2. Mitigation Benefits and Mitigation Costs: Details						
	Results			Projection		
Average Risk	Year 1	Year 2	Year 3	Year 4	Year 5 to Expected Life	Total
UG						
Modeled Mitigation Benefit: Results/Projection	$0	$0	$51	$80	$480	**$611**
Modeled Mitigation Benefit: Forecast	$0	$0	$80	$80	$480	**$640**
Results/Projection B(W) Forecast	**$0**	**$0**	**($29)**	**$0**	**$0**	**($29)**
Actual/Modeled Mitigation Costs: Results/Projection	$0	$300	$250	$0	$0	**$550**
Modeled Mitigation Cost: Forecast	$0	$500	$0	$0	$0	**$500**
Results/Projection B(W) Forecast	$0	$200	**($250)**	$0	$0	**($50)**
CC						
Modeled Mitigation Benefit: Results/Projection	$55	$55	$55	$55	$330	**$550**
Modeled Mitigation Benefit: Forecast	$63	$63	$63	$63	$378	**$630**
Results/Projection B(W) Forecast	**($8)**	**($8)**	**($8)**	**($8)**	**($48)**	**($80)**
Actual/Modeled Mitigation Costs: Results/Projection	$200	$10	$10	$10	$60	**$290**
Modeled Mitigation Cost: Forecast	$200	$10	$10	$10	$60	**$290**
Results/Projection B(W) Forecast	$0	$0	$0	$0	$0	**$0**
Total						
Modeled Mitigation Benefit: Results/Projection	$55	$55	$106	$135	$810	**$1,161**
Modeled Mitigation Benefit: Forecast	$63	$63	$143	$143	$858	**$1,270**
Results/Projection B(W) Forecast	**($8)**	**($8)**	**($37)**	**($8)**	**($48)**	**($109)**
Actual/Modeled Mitigation Costs: Results/Projection	$200	$310	$260	$10	$60	**$840**
Modeled Mitigation Cost: Forecast	$200	$510	$10	$10	$60	**$790**
Results/Projection B(W) Forecast	$0	$200	**($250)**	$0	$0	**($50)**

fi Expected.Value.Risk.Reduction.by.Risk.Event.Table

RISK EVENT EXPECTED VALUE RISK REDUCTION				
Hierarchy	Enterprise			
Risk Events	All			
Scenario	Results vs. Forecast, Results & Projections			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Expected Value Risk Reduction Overview				
	Y3		Results B(W) Forecast	
Wildfire	Results	Forecast	$	%
Pre-mitigated Risk	$870	$870		
Risk Reduction	$106	$143	($37)	-26%
Post-mitigated Risk	$764	$727		
Cyber				
Pre-mitigated Risk	$249	$249		
Risk Reduction	$12	$12	$0	0%
Post-mitigated Risk	$237	$237		
Hydro				
Pre-mitigated Risk	$581	$581		
Risk Reduction	$50	$60	($10)	-17%
Post-mitigated Risk	$531	$521		
Total				
Pre-mitigated Risk	$1,700	$1,700		
Risk Reduction	$168	$215	($47)	-22%
Post-mitigated Risk	$1,532	$1,485		

Sub-table 2. Expected Value Risk Reduction Y1Y4				
	Results			Projections
	Year 1	**Year 2**	**Year 3**	**Year 4**
Wildfire				
Pre-mitigated Risk	$870			
Risk Reduction	$55	$55	$106	$135
Post-mitigated Risk	$815	$815	$764	$735
Cyber				
Pre-mitigated Risk	$249			
Risk Reduction	$12	$12	$12	$12
Post-mitigated Risk	$237	$237	$237	$237
Hydro				
Pre-mitigated Risk	$581			
Risk Reduction	$0	$0	$50	$50
Post-mitigated Risk	$581	$581	$531	$531
Total				
Pre-mitigated Risk	$1,700			
Risk Reduction	$67	$67	$168	$197
Post-mitigated Risk	$1,633	$1,633	$1,532	$1,503

g¡ Expected.Value.Risk.Reduction.by.Tranche.Table

WILDFIRE TRANCHE RISK REDUCTION Y3	
Hierarchy	Enterprise
Risk Events	Wildfire
Scenario	Results vs. Forecast
Version	Model 2.1
Time	Year 3

	Tranche Number																								
	Total	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Expected Value Risk																										
Pre-mitigated risk	**$870**	**$191**	**$87**	**$61**	**$52**	**$44**	**$35**	**$35**	**$35**	**$35**	**$35**	**$26**	**$26**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$9**	**$9**
Tranche share	**100%**	**22%**	**10%**	**7%**	**6%**	**5%**	**4%**	**4%**	**4%**	**4%**	**4%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**1%**	**1%**
Risk Reduction																										
Results	**$106**	**$10**	**$5**	**$4**	**$25**	**$24**	**$10**	**$11**	**$13**	**$2**	**$1**	**$1**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Forecast	$143	$19	$8	$6	$31	$26	$15	$14	$17	$3	$2	$2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Results B(W) Forecast	-26%	-47%	-38%	-33%	-20%	-8%	-33%	-21%	-24%	-33%	-50%	-50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Post-mitigated risk																										
Results	**$764**	**$181**	**$82**	**$57**	**$27**	**$20**	**$25**	**$24**	**$22**	**$33**	**$34**	**$25**	**$26**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$17**	**$9**	**$9**
Forecast	$727	$172	$79	$55	$21	$18	$20	$21	$18	$32	$33	$24	$26	$17	$17	$17	$17	$17	$17	$17	$17	$17	$17	$17	$9	$9
Results B(W) Forecast	-5%	-5%	-4%	-4%	-30%	-11%	-25%	-14%	-22%	-3%	-3%	-4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tranche share (Results)	**100%**	**24%**	**11%**	**7%**	**4%**	**3%**	**3%**	**3%**	**3%**	**4%**	**4%**	**3%**	**3%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**2%**	**1%**	**1%**

hi Tail.Average.Risk.Reduction.by.Risk.Event.Table

RISK EVENT TAIL AVERAGE RISK REDUCTION				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Results vs. Forecast, Results & Projections			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Tail Average Risk Reduction Overview*				
	Y3		Results B(W) Forecast	
	Results	Forecast	$	%
Wildfire				
Pre-mitigated Risk	$4,600	$4,600		
Risk Reduction	$507	$679	($172)	-25%
Post-mitigated Risk	$4,093	$3,921		
Cyber				
Pre-mitigated Risk	$1,160	$1,160		
Risk Reduction	$72	$72	$0	0%
Post-mitigated Risk	$1,088	$1,088		
Hydro				
Pre-mitigated Risk	$3,480	$3,480		
Risk Reduction	$325	$390	($65)	-17%
Post-mitigated Risk	$3,155	$3,090		
Total				
Pre-mitigated Risk	$8,400	$8,400		
Risk Reduction	$868	$1,099	($231)	-21%
Post-mitigated Risk	$7,532	$7,301		
***Tail risk is not additive**				

Sub-table 2. Tail Average Risk Reduction Y1Y4*				
	Results			Projections
	Year 1	**Year 2**	**Year 3**	**Year 4**
Wildfire				
Pre-mitigated Risk	$4,600			
Risk Reduction	$275	$275	$507	$639
Post-mitigated Risk	$4,325	$4,325	$4,093	$3,961
Cyber				
Pre-mitigated Risk	$1,160			
Risk Reduction	$72	$72	$72	$72
Post-mitigated Risk	$1,088	$1,088	$1,088	$1,088
Hydro				
Pre-mitigated Risk	$3,480			
Risk Reduction	$0	$0	$325	$325
Post-mitigated Risk	$3,480	$3,480	$3,155	$3,155
Total				
Pre-mitigated Risk	$8,400			
Risk Reduction	$340	$340	$868	$1,000
Post-mitigated Risk	$8,060	$8,060	$7,532	$7,400
***Tail risk is not additive**				

¡¡ Mitigation.Work.Unit.Results.by.Mitigation.for.each.Risk.Event.Table

WILDFIRE MITIGATION WORK UNITS				
Hierarchy	Enterprise			
Risk Events	Wildfire			
Scenario	Results vs. Forecast and Projections vs. Forecast			
Version	Model 2.1			
Time	Year 3 and Years 1-3			
Sub-table 1. Work Units				
Work Units Y3			**Results B(W) Forecast**	
	Results Y3	**Forecast Y3**	**$**	**%**
Circuit Miles				
UG	250	0	250	0%
CC	0	0	0	
Total Mitigated	**250**	**0**	**250**	
Work Units Y1Y3				**Results B(W) Forecast**
	Results Y1Y3	**Forecast Y1Y3**	**$**	**%**
Circuit Miles				
UG	1,000	1,400	($400)	-29%
CC	380	400	($20)	-5%
Total Mitigated	**1,380**	**1,800**	($420)	**-23%**
Work Units Projection				**Projection B(W) Forecast**
	Projection	**Forecast**	**$**	**%**
Circuit Miles				
UG	1,320	1,400	($80)	-6%
CC	380	400	($20)	-5%
Total Mitigated	**1,700**	**1,800**	($100)	**-6%**

RMAR Required Narrative Sections

1. Include a narrative description of every table listed in the Required Tables and Table Elements. Explain any deficiencies or negative variances to the plan found in these tables. Explain what steps the utility intends to take to address these deficiencies and negative variances.
2. Include a narrative description of a Risk Reporting Unit (RRU) which enables aggregation of reports.
3. Include a narrative description of any discrepancies between the modeled risk and the actual outcomes recorded during the previous GRC cycle.
4. Include a narrative section that describes any new tranche structures that were not used in a previous RAMP or GRC Cycle. Provide details of the key that is used as a bridge between the old and new tranche structures. This key must also be filed with the RMAR.
5. Include a narrative description of any subjective elements and assumptions related to each mitigation that have changed during the most recent update to the RMAR. The narrative must explain how the change has affected any RMAR information from the Plan Phase.
6. Include a narrative justification for assigning attribution for risk reduction from each mitigation. The utility must explain the causal mechanism that allows them to infer attribution. The utility must also highlight any additional factors other than the mitigation

itself that could have contributed to any apparent risk reduction. Any assumptions or SME judgements must be made transparent.

7. Include a narrative discussion describing the model and data quality as well as certifies that internal quality control requirements have been met. This section should include description of any sensitivity analysis that was conducted on various model inputs or assumptions for each mitigation. This section can draw from the results of the Transparency Guidelines[3] or whatever sensitivity analyses are required by a future Decision in this or a successor proceeding or a Staff Resolution. The utility must also provide tables or workpapers to back up any sensitivity analysis results discussed in this narrative section.

[3] D.24-05-064, Appendix B.