San Diego Gas & Electric 2021 Change Order Report

November 1, 2021

Table of Contents

Change Order 1
Microgrids - 7.3.3.8.2 2
Resiliency Assistance Programs - 7.3.3.11.3 5
Strategic Undergrounding - 7.3.3.16 7
Lightning Arrestor Removal and Replacement - 7.3.3.18.2 9
Drone Assessment of Transmission - 7.3.4.9.4 11

Change Order

The Office of Energy Infrastructure Safety (OEIS or Energy Safety) issued the Final Action Statement on SDG&E's 2021 WMP Update on July 14, 2021. In its discussion of next steps, Energy Safety required San Diego Gas and Electric Company (SDG&E) to submit a change order report if it seeks to significantly modify (i.e., reduce, increase, or end) any Wildfire Mitigation Plan (WMP) mitigation measures in response to data and results on electrical corporation ignition risk reduction impacts.[1]

Energy Safety further stated that at a high level, the objective of the change order process is to ensure the electrical corporation continues to follow the most effective and efficient approach to mitigating its wildfire risk and acknowledged that the approach described in the WMPs could change as new information becomes available. The change order process, according to Energy Safety, maximizes Energy Safety's visibility and ability to respond to any significant changes to the approved plan as efficiently and in as streamlined manner as possible.

Energy Safety provided further clarifications on the updated change order reporting requirements in its electronic correspondence dated October 21, 2021.[2]

Pursuant to Energy Safety's direction, SDG&E provides the following updates that meet the change order requirements.

[1] Energy Safety Final Action Statement on SDG&E 2021 WMP Update at pg. 87.
[2] Kevin Miller via e-mail dated October 21, 2021 to the large electrical corporations.

Microgrids - 7.3.3.8.2

i. *Proposed Change*:

a. *The initiative being altered with reference to where in the WMP is discussed*: The initiative being altered is Microgrids (7.3.3.8.2) discussed in pages 200-202 in SDG&E's 2021 WMP Update.

b. The planned budget of that initiative, including

i. *Planned spend in the 2021 WMP of the initiative being altered*: The planned spend of the Microgrids initiative as reported in SDG&E's 2021 WMP Update is $18.9 million.

ii. Of the planned spend identified in i. above, how much has already been spent: $10.1 million has been recorded in 2021 as of September 30th

iii. *Planned spend for the remainder of the WMP plan period*: $16.9 million is planned for the remainder of the WMP plan period including $4.0 million in Q4 2021 and $12.9 million in 2022.

iv. *If spend is being redeployed, how much is being redeployed and to/from which budget:* Spend is not being redeployed.

c. The type of change being proposed, reported as one of the following:

i. Increase in scale
ii. Decrease in scale
iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)

The type of change being proposed is a decrease in scale.

d. A detailed description of the proposed change:

At the time of filing the 2021 WMP Update, SDG&E had two microgrid projects identified for completion in 2021. The two sites were Sherilton Valley and Cameron South. Sherilton Valley was later identified by SDG&E's WiNGS model as a candidate for hardening via strategic undergrounding and/or covered conductor. Therefore, the Sherilton Valley microgrid has been put on hold pending finalization of the grid hardening scope. Further evaluation for the need of a microgrid will be conducted after the grid hardening scope has been finalized.

The Cameron South microgrid has been removed from scope because upon fielding the area, it was found that the area critical facilities have existing backup propane generators that are used during power outages. Only one facility did not have backup generation. SDG&E will deploy a mobile battery solution to this customer to mitigate against PSPS events. SDG&E continues to look for and develop additional microgrid sites for implementation in 2022. The microgrid spend in 2021 is related to SDG&E converting existing microgrid sites from traditional generation to renewable power sources.

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness

ii. Technical feasibility of the initiative

iii. Effectiveness of the initiative

iv. Resource use efficiency over portfolio of WMP initiatives

This change addresses the effectiveness of the initiative and the resource use efficiency over the portfolio of WMP initiatives. In the case of Cameron South, the proposed microgrid project did not produce a PSPS risk reduction to the critical facilities in the area. A more effective solution is the mobile battery being supplied to the remaining critical facility that lacks existing backup generation.

In the case of Sherilton Valley, the proposed alternatives of strategic undergrounding and covered conductor are more appropriate initiatives for this circuit segment. These grid hardening initiatives will provide additional reductions in wildfire risk while also addressing the reduction in PSPS events.

iii. Change in expected outcomes from the proposed change

a. What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?

The Cameron South Microgrid was expected to reduce the PSPS impacts to six critical facilities.
The Sherilton Valley Microgrid was expected to reduce the PSPS impacts to 60 customers with an accompanying 47% reduction in wildfire risk to the segment from the undergrounding of the branch segment.

b. What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?

The Cameron South reduction in PSPS impacts remains the same with six critical facilities avoiding PSPS impacts. Five customers due to existing propane backup generation, and the final customer due to SDG&E's mobile battery.

The Sherilton Valley proposed alternatives have varying additional benefits to wildfire risk reduction and PSPS reductions. The table below provides the four alternatives being considered and the accompanying risk reduction data. This risk reduction will not be achieved in 2021, as this work is being scoped for construction in 2023 and 2024.

Mitigation	% wildfire risk reduction on segment(s)	PSPS customer reductions	PSPS probability reduction	% PSPS probability reduction
Original plan: Underground Sherilton Valley branch and put microgrid there	47%	60	7%	100%
Alternative 1: Underground Sherilton valley branch and backbone all the way to the substation (via direct UG, no RFS due to recent hardening through CNF)	47%	60	7%	100%
Alternative 2: Underground unhardened lines on segment where Sherilton valley is and convert previously hardened lines to covered conductor	86%	161	13%	84%
Alternative 3: Underground segment where Sherilton valley is and all upstream segments	100%	161	15%	100%
Alternative 4: Cover Conductor segment where Sherilton valley is and all upstream segments	64%	161	13%	84%

Resiliency Assistance Programs - 7.3.3.11.3

i. The proposed change

a. The initiative being altered with reference to where in the WMP is discussed:
The initiative being altered is "Resiliency Assistance Programs" (7.3.3.11.3) discussed in pages 212-214 in SDG&E's 2021 WMP Update

b. The planned budget of that initiative, including

i. *Planned spend in the 2021 WMP of the initiative being altered*: The planned spend of the Resiliency Assistance Programs initiative as reported in SDG&E's 2021 WMP Update is $1.8 million

ii. Of the planned spend identified in i. above, how much has already been spent: $1.2 million has been recorded in 2021 as of September 30th

iii. *Planned spend for the remainder of the WMP plan period:* $2.4 million is planned for the remainder of the WMP plan period including $0.6 million in Q4 2021 and $1.8 million in 2022

iv. *If spend is being redeployed, how much is being redeployed and to/from which budget:* The spend is not being redeployed.

c. The type of change being proposed, reported as one of the following:

i. Increase in scale
ii. Decrease in scale
iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)
The change being proposed is a decrease in scale for 2021.

d. A detailed description of the proposed change:
As of September 30th, SDG&E's Resiliency Assistance Program has led to 367 generators being purchased by eligible customers, which is only 29% of SDG&E's target of 1,250. Therefore, SDG&E is decreasing the target for this initiative to 600 generators. SDG&E has invited all 55,218 eligible customers to participate in the program and has received 1,075 responses that have led to 367 purchased generators. In an attempt to increase participation, the program has been promoted at SDG&E wildfire community outreach events, and follow-up emails are being sent to customers in October and November. SDG&E has not yet had a PSPS event in 2021, which in previous years was a driver for customer participation in the program.

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness
ii. Technical feasibility of the initiative
iii. Effectiveness of the initiative
iv. Resource use efficiency over portfolio of WMP initiatives

The change is dependent upon customer participation in the program. SDG&E is continuing to work on notifying eligible customers of the program, including reminders specific to well pump customers, and adding additional generator models to the eligible product list.

iii. Change in expected outcomes from the proposed change

a. What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?
The initiative was expected to mitigate PSPS impacts to 1,250 customers.

b. What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?
The adjustment will mitigate the PSPS risk reduction to a smaller number of customers than the intended 1,250. SDG&E is currently forecasting that 600 customers will participate in the program and receive a generator in 2021.

Strategic Undergrounding - 7.3.3.16

i. The proposed change

a. *The initiative being altered with reference to where in the WMP is discussed:* The initiative being altered is "Undergrounding of electric lines and/or equipment (Strategic Undergrounding)" (7.3.3.16) discussed in pages 215-217 in SDG&E's 2021 WMP Update.

b. The planned budget of that initiative, including

i. *Planned spend in the 2021 WMP of the initiative being altered:* The planned spend of the Strategic Undergrounding initiative as reported in SDG&E's 2021 WMP Update is $120.3 million.

ii. Of the planned spend identified in i. above, how much has already been spent: $57.4 million has been recorded in 2021 as of September 30th

iii. *Planned spend for the remainder of the WMP plan period*: $217.6 million is planned for the remainder of the WMP plan period including $20.4 million in Q4 2021 and $197.2 million in 2022.

iv. *If spend is being redeployed, how much is being redeployed and to/from which budget:* The spend is not being redeployed.

c. The type of change being proposed, reported as one of the following:

i. Increase in scale
ii. Decrease in scale
iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)

The change being proposed is related to the estimated spend. SDG&E reported a 2021 forecast of $120.3 million, but is expected to close the year at approximately $77.8 million.

d. A detailed description of the proposed change:

The reduction in forecasted costs is not related to a change in the scope of the project as SDG&E is expected to meet its target of 25 miles of undergrounding to be completed in 2021. The reduced cost forecast is related to two main factors. The first is that SDG&E was able to be more efficient in constructing the new underground circuits. SDG&E has developed new construction standards, including allowances for a shallower trench, that has helped to reduce undergrounding construction costs on a per-mile basis. The second is that the projects chosen this year did not run into any subsurface conditions that required significant re-routes or alternate construction methods.

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness
ii. Technical feasibility of the initiative
iii. Effectiveness of the initiative

iv. Resource use efficiency over portfolio of WMP initiatives

The change is financial only and does not change the completeness or effectiveness of the initiative.

iii. Change in expected outcomes from the proposed change

a. What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?

The initiative will meet all expected outcomes related to ignition probability and PSPS risk reduction as described in the 2021 WMP Update on page 216.

b. What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?

The proposed adjustment is financial in nature and does not change the expected outcomes related to ignition probability and PSPS risk reduction as described in the 2021 WMP Update on page 216.

Lightning Arrestor Removal and Replacement - 7.3.3.18.2

i. The proposed change

a. *The initiative being altered with reference to where in the WMP is discussed:* The initiative being altered is "lightning arrestor removal and replacement" (7.3.3.18.2) discussed on pages 229-230 of the 2021 WMP Update.

b. The planned budget of that initiative, including

i. *Planned spend in the 2021 WMP of the initiative being altered:* The planned spend of the lightning arrestor removal and replacement initiative as reported in the 2021 WMP Update is $1.3 million.

ii. Of the planned spend identified in i. above, how much has already been spent: $1.6 million has been recorded in 2021 as of September 30th.

iii. *Planned spend for the remainder of the WMP plan period*: $3.2 million is planned for the remainder of the WMP plan period including $0.6 million in Q4 2021 and $2.6 million in 2022.

iv. *If spend is being redeployed, how much is being redeployed and to/from which budget:* The spend is not being redeployed.

c. The type of change being proposed, reported as one of the following:

i. Increase in scale
ii. Decrease in scale
iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)

The change being proposed is an increase in scale.

d. A detailed description of the proposed change:

The lightning arrester removal and replacement initiative is replacing all existing lightning arresters in the HFTD with new CALFIRE approved lightning arresters. SDG&E was able to expedite design and construction of this work in 2021 and has exceeded the 2021 target with approximately 1,350 lightning arresters replaced as of September 30, 2021. The proposed target for year end is now 1,400 lightning arresters in 2021.

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness
ii. Technical feasibility of the initiative
iii. Effectiveness of the initiative
iv. Resource use efficiency over portfolio of WMP initiatives

The proposed change addresses the completeness of the initiative. By accelerating the replacement of lightning arresters, the initiative can complete all lightning arrester replacements in the HFTD ahead of schedule.

iii. Change in expected outcomes from the proposed change

a. *What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?*
   The initiative was expected to reduce ignitions in Tier 3 by 0.018 ignitions by the end of 2022, as stated in the 2021 WMP Update on page 230.
b. *What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?*
   The proposed adjustment would result in the number of ignitions reduced by the end of 2022 increasing to from 0.018 to 0.021 ignitions.

Drone Assessment of Transmission - 7.3.4.9.4

i. The proposed change

a. The initiative being altered with reference to where in the WMP is discussed:
The initiative being altered is "drone assessment of transmission" (7.3.4.9.4) discussed on pages 252-254 of the 2021 WMP Update.

b. The planned budget of that initiative, including

i. *Planned spend in the 2021 WMP of the initiative being altered:* The planned spend of the drone assessment of transmission initiative is not reported in the 2021 WMP Update as it is subject to FERC jurisdiction.
ii. *Of the planned spend identified in i. above, how much has already been spent:* Not applicable as the spend is under FERC jurisdiction.
iii. *Planned spend for the remainder of the WMP plan period:* Not applicable as spend is subject to FERC jurisdiction.
iv. *If spend is being redeployed, how much is being redeployed and to/from which budget:* The spend is not being redeployed.

c. The type of change being proposed, reported as one of the following:

i. Increase in scale
ii. Decrease in scale
iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)

The change being proposed is a decrease in scale.

d. A detailed description of the proposed change:
The drone assessment target is being modified from 2,715 inspections to 1,200 inspections. SDG&E completed its initial pilot effort, which included flights and assessments of approximately 1600 transmission structures from October 2020 through March 2021. The results of that pilot yielded findings that approximately 1.5% of structures flown had a potential fire hazard. Accordingly, the target for 2021 is being reduced to allow drone flights to focus on the distribution system and select higher risk transmission structures. The identification of high-risk transmission assets was done through a collaborative review with multiple departments including our transmission construction and maintenance group, transmission grid operations, fire safety, and transmission engineering to perform flights and assessments. Examples of higher risk structures include older wood structures in high wind areas, areas subject to PSPS events, and Western Energy Coordinating Council (WECC) tielines.

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness
ii. Technical feasibility of the initiative

iii. Effectiveness of the initiative

iv. Resource use efficiency over portfolio of WMP initiatives

The proposed change addresses a resource use efficiency over the portfolio of WMP initiatives. Specifically, it allows the drone inspection program to focus on distribution structures and target higher risk transmission structures.

iii. Change in expected outcomes from the proposed change

a. What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?

The initiative was expected to identify 4 priority issues and 94 non-critical issues resulting in a reduction of approximately 0.04 ignitions in 2021.

b. What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?

The proposed adjustment would result in the initiative identifying 2 priority issues and 42 non-critical issues resulting in a reduction of approximately 0.02 ignitions in 2021.