DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 9

To: Energy Safety
Prepared by: Scott Scudder
Job Title: Senior Manager
Received Date: 6/27/2023

Response Date: 6/30/2023

Question 01:
Regarding Palantir Foundry:
a. Please explain SCE's Palantir Foundry system and how it interacts with its Emergency Outage Notifications System (EONS) for PSPS events. Information to provide should include:
I. When did SCE begin using Palantir as a fully implemented system?
II. When did SCE begin using EONS?
III. What is the relationship between Palantir and EONS?
IV. If the Palantir/EONS combination has been utilized for a PSPS event, explain SCE's experience with the combined system for each PSPS event it was used for.
V. How has the addition of Palantir changed SCE's PSPS communications process? For partners? For customers? For the AFN community?
VI. If the Palantir/EONS combination has not yet been utilized, explain what Palantir/EONS testing results have shown.
VII. How does the addition of Palantir change SCE's PSPS communications process? For partners? For customers? For the AFN community?
VIII. What challenges has SCE experienced with Palantir?
IX. What further improvements are needed in their combined interaction, if any.

Response to Question 01:

a. *Please explain SCE's Palantir Foundry system and how it interacts with its Emergency Outage Notifications System (EONS) for PSPS events. Information to provide should include:*

    I. *When did SCE begin using Palantir as a fully implemented system?*

        SCE began the engagement with Palantir in 2021 and started to use the system during PSPS events in 2022.

    II. *When did SCE begin using EONS?*

        SCE started using EONS in 2019 to facilitate PSPS notifications.

    III. *What is the relationship between Palantir and EONS?*

        Palantir develops the notification campaigns (who to send to and when) and EONS

executes sending those messages to those customers based on their notification preferences and contact information. Palantir has a direct Application Programming Interface (API) with SCE's EONS application/vendor.

IV.   *If the Palantir/EONS combination has been utilized for a PSPS event, explain SCE's experience with the combined system for each PSPS event it was used for.*

SCE began using the Palantir/EONS combination during PSPS events in 2022. The connection between Palantir and EONS has been stable and effective and has enabled SCE to send notifications based on weather forecasts and operational decisions.

V.   *How has the addition of Palantir changed SCE's PSPS communications process? For partners? For customers? For the AFN community?*

Palantir has made it possible to automate and expedite the generation of notification campaigns for all customer segments (e.g., critical infrastructure, medical baseline, etc.), which used to be a more time-consuming manual process. Palantir is also used, to the extent possible, to ensure consistency of PSPS outage data and notification status to the Public Safety Partner Portal, other public and elected officials, and the sce.com outage webpage.

VI.   *If the Palantir/EONS combination has not yet been utilized, explain what Palantir/EONS testing results have shown.*

Please see SCE's response to 1.a.IV above.

VII.   *How does the addition of Palantir change SCE's PSPS communications process? For partners? For customers? For the AFN community?*

Please see SCE's response in 1.a.V above.

VIII.   *What challenges has SCE experienced with Palantir?*

The Palantir product/application and team have experienced very few issues with the application itself or support thereof. That said, as with the adoption of any new technology tool or application, it requires time to learn how to program and utilize the application, and make improvements as challenges arise. This time has focused on, [1] the Palantir team to get up to speed on the dynamics of grid operations and, [2] for the SCE team to learn how to program and use a new application.

For example, in 2022, during the first PSPS season utilizing the application, we

experienced a challenge of integrating Palantir with existing event management systems. This at times necessitated manual notification campaigns resulting in notification and post-event reporting errors. As stated previously, improvements to this process were made as the Palantir team gained experience with real-time grid operation dynamics, and the SCE team gained experience programming and using the application during events. SCE is committed to leveraging lessons learned from past events to enhance our technology to adapt to the dynamic conditions that are inherent within real-time electrical grid operations.

Another challenge has been managing standard reporting requirements versus ad-hoc requests. The current Palantir data ontology was designed for and structured around reporting requirements adopted in Commission decisions. However, ad hoc or other one-time data requests often seek information at a more granular level than what is necessary for reporting purposes. These instances require additional logic programming and manual data source queries, which is often time-consuming and requires substantial resource dedication to complete.

IX.   *What further improvements are needed in their combined interaction, if any.*

No further improvements or enhancements between the Palantir and EONS interfaces are planned at this time.

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To: Energy Safety
Prepared by: Ellecia Purvis
Job Title: Advisor
Received Date: 6/27/2023

Response Date: 6/30/2023

Question 02a:
Regarding Lessons Learned:
a. In Table 10-1 Lessons Learned some entries require clarification to identify the lesson learned and related information. These include, but are not limited to, lessons numbered three, four, and fourteen. Please provide further information per page 208 the Technical Guidelines, for each lesson learned the electrical corporation must identify: […]
i. Brief description of the lesson learned that informed improvement to the WMP […]
ii. Reference to the documentation that describes and substantiates the need for improvement including
(1) Where relevant, a hyper linked section and page number in the appendix of the WMP
(2) Where relevant, the title of the report, date of the report, and link to the electrical corporation web page where the report can be downloaded
(3) If any lessons learned were derived from quantifiable data, visual/graphical representations of these lessons learned in the supporting documentation.

Response to Question 02a:

This response addresses lessons learned #3 and #4, as identified in the data request prompt.

SCE included lesson learned #3 and #4 in Table 10-1 to highlight SCE's effort to continuously improve PSPS execution. SCE develops After-Action Reports following all PSPS exercise and real-world events to evaluate lessons learned and identify areas for improvement. Specific lessons learned from PSPS Exercises and real-world events are captured in After-Action Reports, which were provided in SCE's response to DATA REQUEST SET OEIS-P-WMP_2023-SCE-006, Q2.

An example of a lesson learned that resulted in SCE updating and improving its training exercise (lesson learned #3) can be found in the After-Action Report titled *02_2922.05.16-PSPS FE Series After Action Report*. It was observed that "surge team members were uncomfortable accessing and obtaining information from CDP (Central Data Platform) and need further instruction/practice on the process." As a result of this, SCE conducted CDP Drill in August 2022 to increase proficiency.

The After-Action Report lesson learned that resulted in the proposed improvements stated in lesson learned number #4 from Table 10-1 is as follows:

Line	Proposed WMP Improvement	2022 AAR Date	Observation
1	SCE is in the process of auto-enrolling all customers that live in the High Fire Risk Area not currently enrolled to receive PSPS alerts.	07.22.2022	Some customers in High Fire Risk Areas have not enrolled in or opted out of SCE's PSPS alerts. As a result, they could not be notified during this event.
2	In December 2022, SCE will also discontinue the customer opt-out feature for PSPS alerts and begin auto-enrolling customers during account sign-up	09.09.2022	Some customers in High Fire Risk Areas have not enrolled in or opted out of SCE's PSPS alerts. As a result, they could not be notified during this event.
3	SCE is in the process of enhanced outreach to these customers to confirm their contact information and enroll them in PSPS notifications.	09.09.2022	Some customers in High Fire Risk Areas have not provided validated contact information to SCE. As result, they could not be notified during this event
4	Evaluate process for sending imminent restoration notifications to identify possible opportunities to reduce end-to-end processing time.	11.22.2022	1,611 customers and 1 Public Safety Partner could not be notified before being restored due to the circuit being re-energized faster than expected and before notifications could be sent.
5	Evaluate process for sending cancellation notices to customers on circuit segments removed from scope to reduce end-to-end processing time in situations where segment-level (and sub-segment level) decision making is necessary to minimize customer impacts.	11.22.2022	2,807 were not sent cancellation notifications within two hours of the decision to cancel or remove from scope due to the complexity of segment-level decision making intended to minimize customer impacts.
6	SCE will continue refining its PSPS event management capabilities to improve timeliness and accuracy of notifications	n/a	See Line 4 and 5.

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 9

To: Energy Safety
Prepared by: Lisa Mau
Job Title: Senior Advisor
Received Date: 6/27/2023

Response Date: 6/30/2023

Question 02b:
Regarding Lessons Learned:
a. In Table 10-1 Lessons Learned some entries require clarification to identify the lesson learned and related information. These include, but are not limited to, lessons numbered three, four, and fourteen. Please provide further information per page 208 the Technical Guidelines, for each lesson learned the electrical corporation must identify: […]
i. Brief description of the lesson learned that informed improvement to the WMP […]
ii. Reference to the documentation that describes and substantiates the need for improvement including
(1) Where relevant, a hyper linked section and page number in the appendix of the WMP
(2) Where relevant, the title of the report, date of the report, and link to the electrical corporation web page where the report can be downloaded
(3) If any lessons learned were derived from quantifiable data, visual/graphical representations of these lessons learned in the supporting documentation.

Response to Question 02b:
SCE included lesson learned #14 to highlight SCE's process to continuously improve and refine its practices on utility wildfire mitigation and response. All insights that SCE has gained from industry collaboration may not necessarily warrant detailed discussion in the WMP. For example, in 2022, the joint IOUs worked with Exponent and Kinetric to test covered conductor effectiveness, which led to slight improvements to its mitigation effectiveness value. In addition, in 2022, as informed by industry benchmarking and discussion, SCE refined its TUG standards related to conduit depth and the use of pad-mounted equipment (see the discussion in SCE's 2025 GRC, SCE-04 Vol. 05 Pt. 2, page 24[1]).

Please also see SCE's separate response to this question, regarding lessons learned #3 and #4.

On the following page, SCE has provided an abbreviated version of Table 10-1 with further explanation (in red text) in the Reference column.

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1 Available here:
https://edisonintl.sharepoint.com/teams/Public/regpublic/Regulatory%20Documents/Forms/RIMS%20Doc%20Set%20View.aspx?id=%2Fteams%2FPublic%2Fregpublic%2FRegulatory%20Documents%2FPD%2FCPUC%2F22023

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
1	2022	Tracking of risk events	Finding from current tracking method for the Fire Investigation team	There is a need for better capture of event information including reviewing more events to identify fire incidents.	• Evaluation of all repair order data to identify potential ignitions in our system. Maintenance Performance/Failure Report (MPFR) form to have information coming in from field personnel who have eyes on the events taking place. •	• Repair Order Review implemented and being evaluated by Q1 2023	Internal Processes See WMP Ch 11, pages 650-652 (i.e. SCE's FIPA process)
2	2022	Root cause analysis	Findings from fire root cause analysis are discussed and evaluated with Asset Performance	Process to identify trends/upcoming concerns and translate to mitigation strategies can be improved to streamline identification.	• Dashboards and committee meeting setup to identify and present upcoming issues that can be converted to a detailed view into potential mitigations.	• Committee for review of identified trends/analysis setup and begin projects 12/2023.	Internal Processes See WMP Ch 11, pages 650-652 (i.e. SCE's FIPA process)
5	2022	Internal monitoring and evaluating initiatives	Feedback from community engagement	Received recommendation to expand marketing and promotion of meetings. Refine messages and channels based on 2022 performance data	• Expand outreach to additional social media platforms. • Continue to develop ads with relevant messages.	• Ongoing	N/A Based on SCE's internal assessment, not a specific report per se.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
6	2022	Internal monitoring and evaluating initiatives	Performance of mitigation initiatives: Customer Care Programs	In 2022, the WMP compliance targets for the Customer Service activities (namely PSPS-2.A: Critical Care Battery Back-Up Enrollments and PSPS-2.B: Customer Care Portable Power Station & Generator Rebates) were set based on 2021 historical program performance and assumed 2022 would have more PSPS events and customers de-energized. With fewer PSPS events in 2022, and even fewer customers de-energized, the need for customer resiliency products greatly diminished.	• Given this shift, the compliance targets for future years will pivot focus from an enrollment / rebate target which is heavily dependent on a customer's need for resiliency products and will instead focus on timely issuance of batteries / rebates.	• 2023	N/A See 2023 targets for activities PSPS-2 and PSPS-3 in Table 8-35.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
8	2022	Collaboration with other electrical corporations	International Wildfire Risk Management Consortium (IWRMC)	Hazard tree definition, assessment, risk analysis, and mitigation techniques, in addition to regulatory controls and budget treatment, all vary widely across member utilities	• SCE will serve as the lead utility of the joint Hazard/Strike Tree Benchmarking and Best Practices Study to be conducted in 2023. Lessons learned and best practices are anticipated to influence future activities and/or programs related to hazard tree mitigation and will be included, as applicable, in future WMP submittals.	• Draft report by 12/2023 • Final report by 2/2024	N/A This lesson learned is not documented in a specific report; it arose from verbal discussions within the working group.
10	2021	San Jose State University's (SJSU) Wind Profiler Project	Wind profiling pilot project using LiDAR technology	The project showed us that there was low predictability with the winds being measured compared to what was occurring at the surface	• SCE will continue the pilot project through the 2023 fire season to make a final determination on if this effort will add value to the de-energization decision process during PSPS events.	• Funds are expected to run out in 2023 and thus the project will be completed by 2024	N/A See WMP 8.3.2.3.1 (Remote Sensing)

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
11	2022	SJSU's Wildfire Interdisciplinary Research Center	A membership with SJSU allows for voting privileges to decide what potential projects will be funded.	Projects are underway and no lessons have been learned yet.	• University collaboration is ongoing and future research will allow for continuous improvement.	• Ongoing • Next project cycle begins in 2023. • Continued membership though 2025.	N/A See WMP 8.3.2.1.3 (Fire Science Enhancements)
12	2022	University of Colorado Boulder Vegetation Build-Up Index	Development of the vegetation build-up index which will systematically and objectively help determine areas of high fire potential.	There needs to be an index that identifies elevated areas of vegetation vulnerability to wildfire, to support SCE's efforts for mitigation selection and prioritization.	• SCE will continue to work with the University of Colorado, Boulder, to create an algorithm that will use remote sensing observations of vegetation to determine areas of vulnerability on the landscape.	• Ongoing • Algorithm completion by 2024 • Product support through 2025	N/A See WMP 8.3.2.3.1 (Remote Sensing)
13	2022	Cal Poly San Luis Obispo's Wildland Urban Interface Fire Information Research and	SCE sponsors this program through a financial commitment of $110k per year.	Projects are underway and no lessons have been learned yet.	• University collaboration is ongoing and future research will allow for continuous improvement.	• Ongoing • Continued membership though 2023.	N/A See WMP 8.3.2.1.3 (Fire Science Enhancements)

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
		Education Institute (WUI FIRE Institute)					
14	2022	Collaboration with industry trade associations	Industry collaboration and engagement	Share and gain insights on best practices on utility wildfire mitigation and response by engaging with industry trade associations, including but not limited to Electric Utility Consultants, Inc. (EUCI), Western Energy Institute (WEI), Institute of Electrical and Electronics Engineers (IEEE) and Western Electricity Coordinating Council (WECC)	• Continue to share best practices and engage with industry trade associations and utilities by participating in industry conferences and events.	• Ongoing	N/A There was not a specific report that recommended SCE to perform this activity. It is understood as a best practice generally and an expectation from OEIS.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
16	2022	Collaboration with other electrical corporations	Risk Modeling Working Group	Information gathering from utilities and comparing risk modeling methodologies.	• Upcoming 2023 discussions will move to understanding best practices and towards consistency on utility approaches to risk modeling.	• Ongoing	N/A Conducted per OEIS direction. https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=risk-model-group
17	2022	Collaboration with other electrical corporations	Joint IOU PSPS Working Group	Increase alignment amongst California electrical corporations related to PSPS lessons learned and best practices.	• For example, PG&E, SDG&E and SCE are collaborating to enhance the process for identifying and notifying shared customers[2] during PSPS events.	• Ongoing	N/A In compliance with D. 21-06-014. Joint Working Group Reports are filed in R.18-12-005 and can be found in the docket.
19	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	Improvements can be explored for non-exempt equipment replacements on HFRA hardened circuits.	1. Continue working with Cal Fire and the Board of Forestry for unique product testing for exemption status and California Codes and Regulations updates for	1. Ongoing	N/A The need for improvement was communicated to SCE by Filsinger Energy Partners,

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[2] A shared customer is defined as a customer whose electrical distribution circuit is sourced by a utility other than the one billing that customer.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
					exemption classifications. 2. Continue tracking opportunities to replace material by bunding with other work. 3. Make improvements to SCE standards for guidance on exempt material use and replacement and evaluate/ improve training for inspectors.	2. Ongoing 3. Complete 12/31/22	who were brought in on behalf of the Governor's Office to provide oversight and potential enhancement opportunities for SCE's wildfire mitigation strategies. SCE understands a report was provided to the Governor.
21	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	A high volume of environmental holds could impede wildfire mitigation work.	1. Explore the adjustment of work management processes in SCE Environmental 2. Pursue incidental take permits for greater operational flexibility in key regions. 3. Apply for a Master Streambed Alteration Agreement (MSAA) for work in jurisdictional waters. 4. Benchmark with other IOUs to ascertain best	1. Initial implementation Q1 2023 2. Yosemite Toad and Arroyo Toad complete; Pacific Fisher, San Bernardino Kangaroo Rat, and Santa Catalina Island Fox ongoing 3. Estimated permit approval in 2024	N/A See comments in item #19.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
					practices in environmental hold processes.	4. Ongoing	
22	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	Clarity needed on written checklist for long span length and slack inspection work.	1. Review existing survey questions and responses to ensure alignment with long span requirements, making changes to survey and updating Long Span standards as necessary. 2. Review cancelled long span notifications to ensure remediations are not required.	1. In progress; target completion Q2 2023 2. In progress; target completion Q2 2023	N/A See comments in item #19.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
23	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	A significant number of questions on the inspection form address asset inventory rather than ignition/wildfire risk reduction.	1. Evaluate survey questions to identify opportunities to streamline unnecessary questions; implement survey question updates as identified. 2. Explore feasibility of adjusting to a time-based or work-based data capture approach for asset inventory questions. 3. Investigate long term solutions for optimizing inspection survey completion for asset inventory, including potential use of drone pictures and AI/ML to automate survey completion.	1. Q2 2023 2. Q2 2023 3. Q4 2023	N/A See comments in item #19.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
24	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	Decision-making criteria for PSPS thresholds could be more transparent in terms of how thresholds are set and updated and how covered conductor and Priority 2 conditions inform and influence thresholds.	• Engage a third-party vendor expert to assess methodology for wind speed threshold development.	• Target completion Q3 2023	N/A See comments in item #19.
25	2022	Feedback from Energy Safety or other authoritative bodies	Independent Third-Party Evaluation	Improvements can be explored to improve quality assurance and quality control of equipment inspections.	1. Review the inspection questionnaire related to compliance, safety, and reliability. 2. Incorporate data capture conditions into the current QC program to ensure a QC finding is identified whenever a data capture notification is not generated by the inspector. 3. Pilot then implement QC improvements to address exempt/non-exempt equipment status. 4. Identify opportunities to	1. Complete 2. Q2 2023 3. Q2 2023 4. Q1 2023	N/A See comments in item #19.

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
					better align QC with evolving risk mitigation strategies.		

DATA REQUEST SET O E I S - P - W M P _ 2 0 2 3 - S C E - 0 0 9

To: Energy Safety
Prepared by: Cindy Jacobs
Job Title: Senior Manager
Received Date: 6/27/2023

Response Date: 6/30/2023

Question 03:
Regarding DIMP Gatekeeper:
a. In the supplemental document Distribution Inspection and Maintenance Program (DIMP), reference is made to a "Gatekeeper" who can reassess timeframes on E1P2 notifications. Please provide further details regarding this role including the following:
i. How many DIMP E1P2 notifications were evaluated by the Gatekeeper(s) in 2022?
ii. How many DIMP E1P2 notification timeframes were modified by the Gatekeeper(s) in 2022?
iii. In 2022, how many DIMP E1P2 timeframes were delayed, and how many were advanced?
iv. What standards are in place to govern the Gatekeeper's decision regarding DIMP E1P2 timeframe modification?

Response to Question 03:

i. In 2022, Gatekeepers evaluated 24,269 E1P2 distribution notifications.
ii. In 2022, 7,753 E1P2 distribution notifications had the end date modified by Gatekeepers.
iii. In 2022, 5,248 E1P2 distribution notifications had the end date move out, and 2,505 E1P2 notifications had the end date moved in.
iv. The Distribution Inspection and Maintenance Program (DIMP) is the governing document for Gatekeeper decisions on E1P2 notification timeframe modifications. This provides guidance on both remediation timeframes and exceptions to remediation timeframes. Gatekeepers review notifications based on standards currently in place and can reassess timeframes as outlined on pages 9 - 11 of the DIMP, including in the associated attachments referenced on page 12.