SCE Transmission Project Review (TPR) Process

Cycle 5 - Stakeholder Meeting

August 28, 2026

Roll Call

Jerry Huerta, Senior Attorney

TPR Meeting Overview, Agenda, Safety, and Meeting Logistics

Rob Mindess, Senior Advisor
FERC Rates and Tariffs – TPR Team

Agenda

Start Time	End Time	Duration	Topic	Presenter(s)
9:00 AM	9:05 AM	5 min	Roll Call	J. Huerta
9:05 AM	9:10 AM	5 min	TPR Meeting Overview, Agenda, Safety, and Meeting Logistics	R. Mindess
9:10 AM	9:15 AM	5 min	1. TPR Process Project Spreadsheet Data Quality and Management	S. Bell; A. Last
9:15 AM	9:25 AM	10 min	3. Allowance for Funds Used During Construction (AFUDC)/Delays	J. Jacobs; D. Vandeventer
9:25 AM	9:40 AM	15 min	4. AACE Class – Project Cost Estimate Maturity (Field #48)	P. Tran; J. Huang
9:40 AM	10:10 AM	30 min	2. Utility Prioritization Ranking (Field #25)	S. Mascarenhas
			5. Project Description – What (Field 6)	S. Mascarenhas
			6. Primary and Secondary Purpose (Fields 9 and 10)	S. Mascarenhas
			20. Transmission Line Rating Remediation (TLRR)	S. Mascarenhas
10:10 AM	10:20 AM	10 min	7. Supply Chain Constraints, Tariffs, and Advance Procurement	J. Shedd; M. Vallecorsa
10:20 AM	10:30 AM	10 min	Break	
10:30 AM	10:40 AM	10 min	9. Data Centers and Private Large Load Interconnections	J. Heuser
			10. Transmission-Level Electric Vehicle Charging	J. Heuser
10:40 AM	11:10 AM	30 min	11. Grid Enhancing Technologies	M. Avendaño
			13. LA 2028 Olympics	M. Avendaño
			19. Transmission Line Sectionalizing	M. Avendaño
			22. Betterment	M. Avendaño
11:10 AM	11:20 AM	10 min	26. PB-37 Transmission Tower Corrosion Program	K. Foster; J. Stubblefield
11:20 AM	11:35 AM	15 min	27. PB-44 Transmission Planned Maintenance - Pole Replacement and other Wood to Steel Pole Replacement Programs	E. Bermudez; J. Stubblefield
11:35 AM	11:45 AM	10 min	24. PB-05 Substation Unplanned Capital Maintenance and PB-06 Substation Maintenance Program	M. Christensen
11:45 AM	11:55 AM	10 min	16. FERC Order 881	S. Gonzalez
11:55 AM	12:30 PM	35 min	Lunch Break	

*** Please note that Topics are numbered in order received from the CPUC and Stakeholders, but the order here has been reorganized in order to accommodate speakers.**

Agenda (continued)

Start Time	End Time	Duration	Topic	Presenter(s)
12:30 PM	12:40 PM	10 min	17. Transmission Telecommunication System	T. Tran; Y. Gurevich
12:40 PM	12:50 PM	10 min	18. IEC 61850 Communication Protocols	C. Hammond; J. Silva
12:50 PM	12:55 PM	5 min	21. Physical and Cyber Security-Related Projects	E. Hall; R. White
12:55 PM	1:05 PM	10 min	12. Transmission Conductors	B. Powell
1:05 PM	1:10 PM	5 min	14. Wildfire Mitigation Policies	N. Camello
1:10 PM	1:20 PM	10 min	25. PB-25 Seismic Mitigation Program – Substations	A. Topoleski
1:20 PM	1:35 PM	15 min	29. SP-04 Alberhill Substation Loop In	M. Bass
			31. SP-24 Cerritos Channel Tower Relocation	M. Bass
1:35 PM	1:45 PM	10 min	30. SP-10 Riverside Transmission Reliability Project	K. Spear
1:45 PM	1:55 PM	10 min	37. SP-168 Vista–Etiwanda 230 kV 1 Line Upgrade	C. Mirabueno
1:55 PM	2:05 PM	10 min	Break	
2:05 PM	2:20 PM	15 min	28. SP-01 Calcite Substation	H. Arshadi
			38. SP-169 San Bernardino–Etiwanda 230 kV 1 Line Upgrade	H. Arshadi
2:20 PM	2:30 PM	10 min	33. SP-151 New Lugo 3AA 500/230 kV Bank	E. Webb
2:30 PM	2:45 PM	15 min	34. SP-152 New Coolwater A 115/230 kV Bank	F. Benavides
			36. SP-162 Brightline West High Speed Rail Project	F. Benavides
2:45 PM	2:55 PM	10 min	35. SP-154 New Serrano 4AA 500/230 kV Bank and 230 kV GIS Rebuild (fka North of SONGS)	B. Coalson
2:55 PM	3:05 PM	10 min	39. SP-178 Colorado River-Red Bluff No.1 500kV Line Upgrade	R. Yuen, B. Coalson
3:05 PM	3:15 PM	10 min	32. SP-26 Control–Silver Peak TLRR Remediation	M. Orozco
3:15 PM	3:25 PM	10 min	15. Competitively Bid Projects	A. Gutierrez
3:25 PM	3:30 PM	5 min	Close Out & Next Steps	A. Ocegueda

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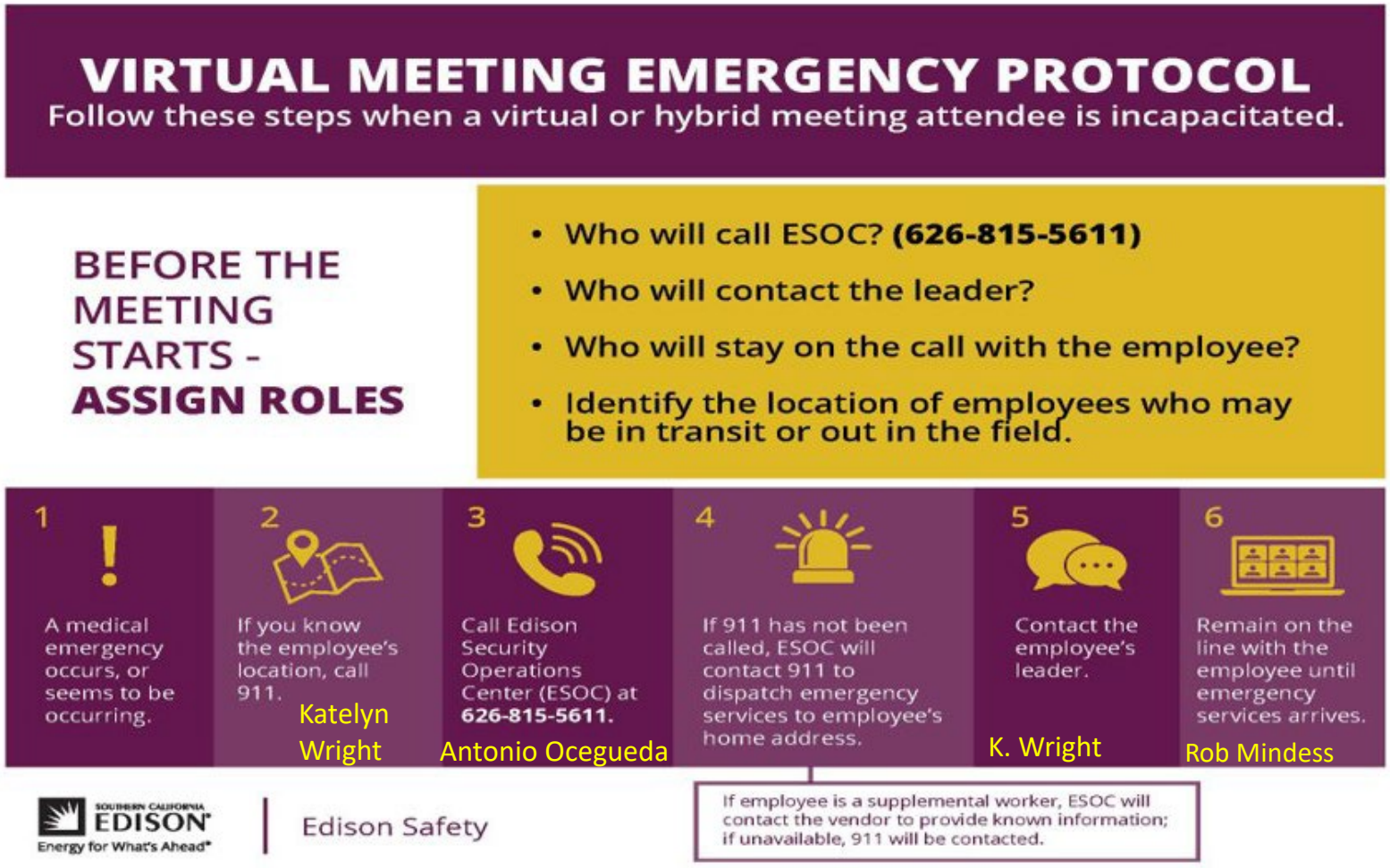
Virtual Meeting Emergency Protocol



Safety Moment – August is Back To School Safety Month

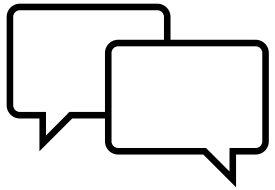
TPR Overview and Meeting Objectives

- The Transmission Project Review Process provides the Commission and all Stakeholders semi-annually with current, specific, comprehensive, and system-wide transmission data for projects with capital additions to rate base in the last five years and forecasted or actual capital expenditures in the current year and future four years
- SCE hosts a semi-annual Stakeholder Meeting on February 28 and August 28, to engage and address Stakeholder's questions and discussion topics
    - SCE has made a good faith effort to identify the appropriate subject matter experts to speak on each topic and to provide accurate information throughout this presentation but reserves the right to correct or supplement the information provided if it becomes aware of needed modifications or additions

General Meeting Logistics

- No NERC CIP confidential information will be discussed
- AI recording bots are not permitted, and will be kicked out of meeting
- Please mute your line if you are not speaking
- Presenters will take questions at the end of their section
- Please use raise your hand (icon) and we will call on you in the order it was raised; Reminder to put hand down after question
- When asking questions, please state your name and organization first
- Teams Chat feature is also available for questions (see next slide)
- Presenters will be joining throughout the day at specific times, so we will work to stay on schedule
- SCE welcomes your feedback on how to improve the stakeholder calls during next steps and in written comments

Teams Chat



- During the presentation, stakeholders may also ask questions using the Chat feature
  - Questions should be submitted during the topic presentation, so that the speaker may address them
  - The SCE team will strive to address any remaining questions that are not answered during the topic timeslot as the stakeholder call progresses
- Questions submitted via Chat do not constitute discovery submittals, which must be provided separately in accordance with the TPR Resolution and its attendant process timelines

SCE's June 2026 TPR Materials & Questions Received

- SCE's June 2026 TPR Project Spreadsheet included all electric transmission projects with actual or forecasted capital costs of one million dollars or more in the prior five calendar years, the current year, or the next four years (2021 – 2030) that are or will be included in SCE's FERC-jurisdictional electric transmission rate base
- SCE's June 2026 TPR Submission included:
  - Project Data Spreadsheet included a total of 494 rows comprised of: 44 Program Blankets, 307 programmatic projects, and 143 Specific Projects
  - 158 Public, 2 Confidential, and 0 CEII Authorization Documents that correspond to Projects in the Spreadsheet
  - No new procedures were added in Cycle 5
  - SCE addendum for AB970 eligible projects that would otherwise be excluded from TPR under the >$1M threshold in accordance with the CPUC Decision 25-01-040
- SCE received one data request set from Energy Division
    - Cycle 5 – ED - DR Set 1: 76 questions with approximately 300 subparts
- 39 topics with subparts for today's discussion were received from the CPUC (in coordination with other stakeholders)

TPR Process Milestones

Date	Milestone
June 1	SCE provides semi-annual Project Data Spreadsheet and project authorization documents to Stakeholders
July 16	Deadline for Stakeholders to provide questions/comments
August 6	SCE publishes written responses to questions/comments
August 14	CPUC and Stakeholders provide agenda items for Stakeholder meeting
August 28	SCE hosts Stakeholder meeting
September 11	Stakeholders provide questions/comments within 15 calendar days following Stakeholder meeting
October 2	SCE publishes written responses to questions/comments
October 9	Deadline for Stakeholders to provide project-specific follow-up questions/ comments
October 23	SCE publishes written responses to project-specific follow-up questions/ comments
October 30	Stakeholders may provide comments to SCE by this date
December 1	Repeat

1. TPR Process Project Spreadsheet Data Quality and Management

Steven Bell, Sr. Engineer – Technical Compliance

Ashley Last, Advisor – Technical Compliance

SCE TPR Project Spreadsheet

Please provide an overview of SCE's process for compiling and validating the TPR Project Spreadsheet, noting any changes since the last cycle. Please explain the issues encountered in preparing the June 2026 spreadsheet, including the data errors that required correction, and describe the corrective actions and process improvements planned for future cycles.

- SCE's process comprises the following steps:
  1) The set of in-scope projects is determined
  2) A working spreadsheet is initially populated using the previous TPR submission and an automated pull of various data sources (where available)
  3) SMEs review/update the initial data and populate blank cells
  4) SMEs review/update procedures and authorization documents as needed and provide any new ones for submission
  5) Project managers and leaders review the completed spreadsheet and associated documents
- The Jun-2026 process introduced the following improvements:
  - Conditional Formatting to reflect changes that flag potential errors or need additional review
  - Dedicated TPR QC Tool with daily email alerts to SMEs
  - Extra spaces were "trimmed" and not flagged as changes

SCE TPR Project Spreadsheet

- Items required correction in the Jun-2026 submission:

  There were no known issues encountered in preparing the June 2026 spreadsheet that required correction after SCE's June submission. SCE has put in place process improvements, noted below, to improve the accuracy and integrity of its TPR submission

The Dec-2026 process will introduce the following improvements:

- Add additional Quality Control flags
- Expanding drop down options (e.g. column 52) to better aid in communicating reasons for updates/changes
- Continuing to explore automation functionality

3. Allowance for Funds Used During Construction (AFUDC)/Delays

Joanna Jacobs, Sr. Manager, General Accounting

Deborah Vandeventer, Principal Manager, T&S Project Management - Programs

Allowance for Funds Used During Construction (AFUDC)/Delays

General policy follow-ups that SCE can provide to Stakeholders

- No policy updates since SCE's March 2, 2026 presentation
- SCE currently has two processes to suspend AFUDC (i.e., turn off)
  - Automatic system process
    - AFUDC accrual for inactive work orders (i.e., work orders that have no direct recorded spend for >= 6 months) will be automatically turned off by PowerPlan and will accrue when direct charges are applied to the work order again
    - Categories of direct spend are Labor, Materials, Contract, and Other ("LMCO")
  - Manual process
    - Per the Project deferral/hold process, SCE Organizational Unit ("OU") reviews projects that will be placed in deferred status and will reach out to Plant Accounting to manually turn off AFUDC accrual in PowerPlan until which time the OU directs Plant Accounting to change back to active status

4. AACE Class – Project Cost Estimate Maturity (Field #48)

Peter Tran, Manager, Cost Estimating

Jack Huang, Senior Manager, Estimating & Project Cost Development

AACE Class – Project Cost Estimate Maturity (Field #48)

Data response requests regarding implementation of AACE indicate inconsistency in whether and when project cost estimate maturity is updated. Q19 response, prepared by Jack Huang, says it is "incorrect" to assume that AACE Classification changes when a project advances, and that "a new AACE Classification will only occur if there is a business need for a new iteration of the estimate." Q45 response, prepared by Kenneth Spear, says "AACE Class is assigned at the time of estimation during designated control points in the project lifecycle…and is not thereafter reassessed or updated due to subsequent forecast changes or project advancements, including the commencement of construction", and that AACE class "serves as a fixed attribute"; Q47 response, prepared by Scott Lacy, says SCE will "assign an updated AACE class after the necessary regulatory approvals have been granted and the project proceeds into the final engineering stages."; Q48 response, prepared by Elizabeth Webb, says a "re-estimate was performed which improved the AACE estimate to an AACE Class 3"; Q57 response, prepared by Hamid Arshadi, says "the plan and timeline for progressing to an AACE Class 3 or better as engineering advances will be at Gate 4."

Given the variance in the examples above, please provide an update on how SCE assigns, updates, and governs AACE cost estimate classifications across the full project lifecycle, including:

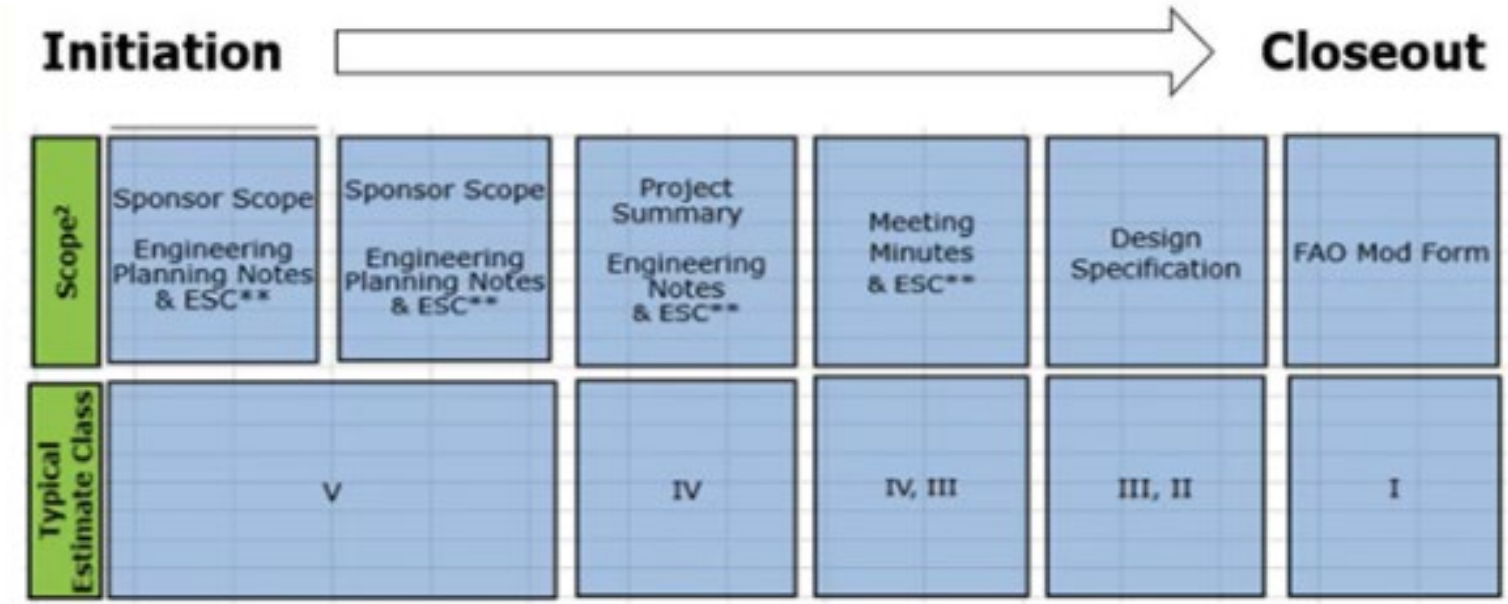
a) The methodology and criteria used to assign an initial AACE Class.

b) Whether, how, and at what project milestones AACE Classes are reviewed and updated as projects progress from planning through construction and near completion. How is a "business need" for a new iteration of an estimate defined?

c) The quality control, oversight, and correction mechanisms used to ensure AACE Class designations are accurate, consistent, and current.

SCE AACE Class Assignment Criteria

In alignment with AACE Class assignment system*, SCE approximates project maturity, level of engineering through its stage/gate process and different types of scope documents that are available throughout the project lifecycle to assign an estimate class.



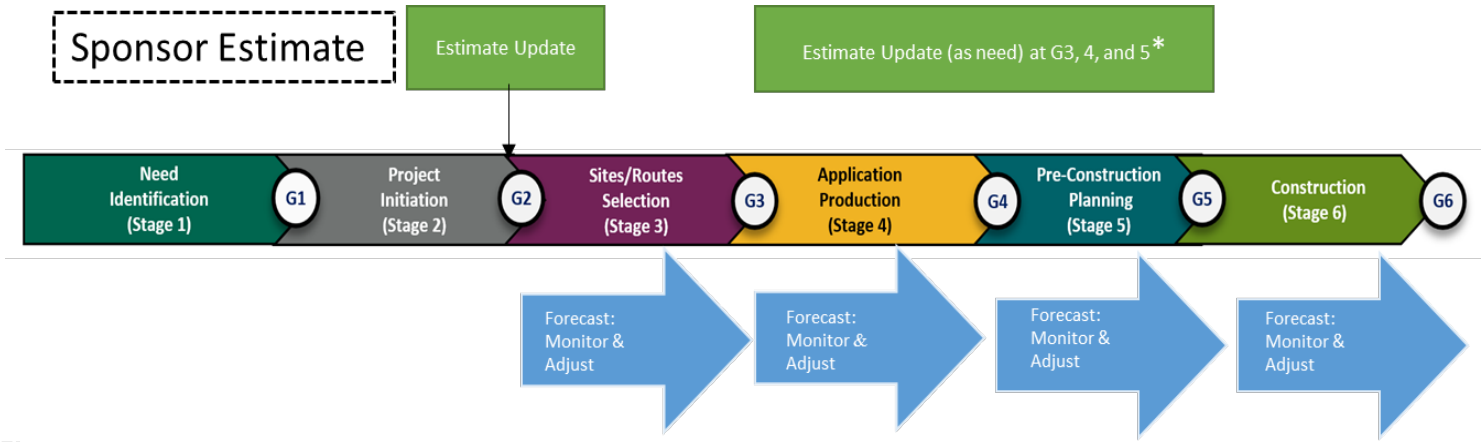
Factors in assigning estimate Class:

- Approximate location of project in lifecycle
- Approximate level of engineering
- Estimator's judgment

Energy for What's Ahead℠

Note: * AACE International Recommended Practice No.96R-18

a) SCE major projects (>$25M) follow a stage/gate lifecycle process. Each gate serves as a control point (baseline) to ensure project requirements have been met before proceeding to the next stage. Each stage involves monitoring and adjusting to the approved baseline to reflect updated scope and cost, as needed. Beyond the initial Sponsor Estimate, AACE class is typically updated at Gate 2 and is subsequently only updated if there are material changes in project scope or other business needs. Consequently, an AACE classification only pertains to the estimate developed at the time of its classification, and not to any subsequent forecast update. As part of the TPR submittals, SCE reported the last AACE classification that was developed for the project in question, which may not correspond to the latest project forecast.



Sponsor estimates are typically unit costs (cost per unit or cost per mile) and are defaulted as Class V

Estimate: a snapshot in time of the project cost with assumptions based on planned scope and execution (including items such as engineering scope of work, planned project support with assumed level of effort, scheduled milestones, current material costs, current IBEW labor rates, and SCE T&D capital project overhead rates, and other related items). Estimator assigns an **AACE Class** based on their judgement and expertise with identifying where within the project lifecycle it is at during estimation.

Forecast: monitor and adjust assumptions in the estimate to reflect actual execution (e.g., adjust project support to reflect increased level of effort, shift in schedule, materials costs, etc.) Typically forecasting is the primary mechanism for reporting, including TPR. Forecasting does not assign or adjust AACE Class.

2. Utility Prioritization Ranking (Field #25)

Sheridan Mascarenhas, Senior Advisor
Transmission

Utility Prioritization Ranking (Field #25)

A number of projects have been delayed or had their projected expenditures modified due to scope change or a "change in design strategy and construction methodology." Please describe these strategy and methodology changes in detail. How do these changes relate to how a project is prioritized? What steps SCE is making to policies and processes to reduce or eliminate these delays? Can any cost savings be quantified based on these design strategy and construction methodology changes?

- Change in design strategy and construction methodology are very project specific and depends on the circumstances of a particular project, and cannot be generalized
- Example – For the Bailey-Pardee TLRR Remediation project the original scope involved raising towers
    - During project execution, engineering and field assessments identified deteriorated OHGW conditions, constructability challenges, and environmental constraints that required refinement of the original design approach.
    - These evaluations resulted in OHGW replacement, additional tension mitigation design updates, and revisions to several structure solutions, including both structure replacements and modifications to address site-specific environmental, access, and constructability considerations.
    - The resulting design changes required additional engineering, material, and construction scope. While these changes increased project scope, they also address aging infrastructure, reduce future maintenance needs, and leverage the current outage and construction mobilization to avoid additional future costs, schedule impacts, and operational disruptions associated with performing the work later.

Utility Prioritization Ranking (Field #25)

A number of projects have been delayed or had their projected expenditures modified due to scope change or a "change in design strategy and construction methodology." Please describe these strategy and methodology changes in detail. How do these changes relate to how a project is prioritized? What steps SCE is making to policies and processes to reduce or eliminate these delays? Can any cost savings be quantified based on these design strategy and construction methodology changes?

- The changes in strategy and/or construction methodology typically drive or are a result of changes to the sequencing of multiple projects to be constructed at a particular substation and/or in a particular area. The projects can be re-sequenced due to outage constraints, delays in design and or permitting challenges, as well as if SCE was to change its construction methods employed for the projects.

- SCE is taking steps to reduce delays in many ways. One method SCE employs is to scope and design single projects that address multiple grid needs. Another way is for SCE to bundle multiple projects in the same area and construct them at a single time or in rapid succession to prevent multiple mobilization and demobilization of construction crews.

- Cost savings can be estimated but vary by project. For example, SCE bundled two projects, the Mesa-Vincent No. 1 500 kV (PB-22.33) and the Lugo-Rancho Vista 220 kV (PB-22.70) TLRR projects. These involved similar tower raises. Purchase orders were combined with a third project, the Arida Solar Farm project (SP-115) and awarded to the same contractor. This caused a reduction in over $100,000 in mobilization and demobilization costs.

5. Project Description – What (Field 6)

Sheridan Mascarenhas, Senior Advisor
Transmission

Project Description – What (Field 6)

For large or complex projects that include multiple types of work across multiple facilities, please explain how the determination of which category to use for "Project Description - What" is made. Is there a dollar threshold, a percentage of the overall work by category, or is it at the Project Manager's discretion?
a) For SP-10 Riverside Transmission Reliability Project, how was the determination made that it is "Substation – multiple"?
b) For SP-41, how was the determination made that it is "Transmission Line/Substation"?
c) For SP-44 and SP-55, please explain the primary differences between these two projects that lead one to be classified as "Substation – Multiple" and one to be classified as "Other - Remedial Action Scheme/Special Protection Scheme".
d) Please provide other examples of projects where there appear to be multiple possible choices for the Field 6 classification and explain how the determination was made.

Project Description – What (Field 6)

- Field / Column 6 "Project Description - What" is used to best describe the scope of work for the project. There is no quantification based on dollar threshold or percentage of overall work by category. It is not solely up to the Project Manager's discretion. Typically, the SCE Engineer that is responsible for project scoping & creation enters this field into the Project Spreadsheet.

a) SP-10: The scope of work for this project involves the construction of two new substations, which consist of the major scope for the project. As such "Substation – Multiple" was entered into Field 6.

b) SP-41: This project involves a transmission line between a customer generator that was interconnected to SCE's Kramer Substation. As such "Transmission Line / Substation" was entered into Field 6.

c) SP-44: This project involves modifying / upgrading relaying equipment connected to the CRAS at multiple substations. As such "Substation – Multiple" was entered into Field 6.

SP-55: This project involves modifying the CRAS to add a generator as well as other work including performing a Ground Grid Study & relay coordination study to adjust settings for inclusion of the generator in the CRAS. As such "Other - Remedial Action Scheme/Special Protection Scheme" was entered into Field 6.

Project Description – What (Field 6)

d) Other projects where there appear to be multiple possible choices for the Field 6 classification as follows;

- SP-18: This project involves interconnecting a 150 MW Solar Photovoltaic Generating Facility to SCE's Red Bluff 500/220kV Substation. The scope involves multiple elements such as work at multiple substations, engineering / modifying protection schemes, and new transmission line construction. The responsible engineer's best assessment of the major components of the project consisted of a new transmission line and extensive substation work. As such, "Transmission Line / Substation" was entered into Field 6.

- SP-88: This project involves upgrading terminal equipment at Pardee (SCE) and Sylmar (LADWP) substations, as well as raising four towers for the Pardee-Sylmar No. 1 and No. 2 230 kV lines. The responsible engineer's best assessment of the major components of the project consisted of substation terminal equipment at multiple substations. As such, "Substation - Multiple" was entered into Field 6.

- SP-164: This project is a 500 kV line upgrade project. However, the line upgrade also involves extensive substation work such as upgrading line terminating equipment at Serrano Substation and terminating the line when the Alberhill Substation is built. The responsible engineer's best assessment of the project was substation work at multiple substations. As such, "Substation - Multiple" was entered into Field 6.

6. Primary and Secondary Purpose (Fields 9 and 10)

Sheridan Mascarenhas, Senior Advisor
Transmission

Primary and Secondary Purpose (Fields 9 and 10)

For large or complex projects that address numerous issues or serve numerous purposes, please explain how the distinction between "Primary Purpose" and "Secondary Purpose" is made. Is there a dollar threshold, a percentage of the overall work by category, or is it at the Project Manager's discretion?

Fields 9 and 10 "Primary Purpose" and "Secondary Purpose" are used to best describe the need for the project. The "Primary Purpose" field is used to describe the first and main reason for the project need. The "Secondary Purpose" is used to identify a secondary need and/or benefit to the electric system from the project's implementation.

There is no quantification based on dollar threshold or percentage of work for either category. The fields are used qualitatively to best identify the primary and secondary purpose for the project.

- It is not solely up to the Project Manager's discretion. Typically, SCE's engineering personnel that are responsible for project scoping & creation enters this field into the Project Spreadsheet
- In addition to fields 9 and 10, other information in the Project Spreadsheet, approving documents, and the discovery process, provide greater detail as to the purpose of a project

20. Transmission Line Rating Remediation (TLRR)

Sheridan Mascarenhas, Senior Advisor Transmission

Transmission Line Rating Remediation (TLRR)

a) Please provide an update on the total number of discrepancies that have been addressed and the total number of discrepancies still needing remediation for all TLRR work.
b) In response to information request "CPUC - SCE- TO 2027- 001, Question 1.014, b" regarding the "SCE TO2027 Draft Annual Update – WP Schedule 16 (Summary of ISO Cap Expenditures Forecast Non-Inc Projects) – Transmission Line Rating Remediation (TLRR)", SCE provided a list of eighteen TLRR projects with projected expenditures greater than $1 million, though only six of these projects have a Project Number that corresponds to the June 2026 SCE TPR Project Spreadsheet (PS). Please discuss where the other twelve projects, listed below, with individual value over $1 million may be found in the June 2026 SCE PS.

- **PIN 7298: Ellis – Johanna 220 kV TLRR Project**
- **PIN 7298: Casa Diablo – Rush Creek 115 kV TLRR Project**
- **PIN 7298: Calectric – Highgrove No 1 115 kV TLRR Project**
- **PIN 7298: Calectric – Highgrove No 2 115 kV TLRR Project**
- **PIN 7298: Control – Plant 3 – Plant 4 115 kV TLRR Project**
- **PIN 7298: Gale – PS-512 115 kV TLRR Project**
- **PIN 7298: Mayberry – Nelson 115 kV TLRR Project**
- **PIN 7298: Eagle Mountain – Blythe 161 kV TLRR Project**
- **PIN 7867: Eldorado – Pisgah – Lugo 220 kV TLRR Project**
- **PIN 7904: Ivanpah – Control 115 kV TLRR Project**
- **PIN 7907: Gorman – Kern River 66 kV TLRR**
- **PIN 7906: Control – Silver Peak 55 kV TLRR Project**

Transmission Line Rating Remediation (TLRR)

a) Please provide an update on the total number of discrepancies that have been addressed and the total number of discrepancies still needing remediation for all TLRR work.

CLEARED DISCREPANCIES	
Construction Complete / Remediated	3824
Cleared by other Project/Program	956
Cleared (No violation)	1245
Cleared by radial re-rating	217
Removed due to incorrect Rating	36
TOTAL	**6278**

PENDING DISCREPANCIES	
To be cleared by other Project / Program	147
Currently in design / construction	5358
TOTAL	**5505**

NOTE:
Discrepancies still needing remediation include the following projects that are under licensing with the CPUC.

1) Eldorado – Pisgah – Lugo 220 kV TLRR Project — 266 discrepancies
2) Control – Silver Peak 55 kV TLRR Project — 756 discrepancies
3) Ivanpah – Control 115 kV TLRR Project — 2,516 discrepancies
4) Eagle Mountain – Blythe 161 kV TLRR Project — 172 discrepancies

Transmission Line Rating Remediation (TLRR)

b) Please see the information & responses below for the 12 projects listed below

1. PIN 7298: Ellis – Johanna 220 kV TLRR Project – project not started
2. PIN 7298: Casa Diablo – Rush Creek 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
3. PIN 7298: Calectric – Highgrove No 1 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
4. PIN 7298: Calectric – Highgrove No 2 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
5. PIN 7298: Control – Plant 3 – Plant 4 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
6. PIN 7298: Gale – PS-512 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
7. PIN 7298: Mayberry – Nelson 115 kV TLRR Project – not FERC jurisdictional and therefore not in scope for the TPR
8. PIN 7298: Eagle Mountain – Blythe 161 kV TLRR Project – refer to **PB-22.45** of the TPR PS
9. PIN 7867: Eldorado – Pisgah – Lugo 220 kV TLRR Project – refer to **SP-23** of the TPR PS
10. PIN 7904: Ivanpah – Control 115 kV TLRR Project – refer to **SP-25** of the TPR PS
11. PIN 7907: Gorman – Kern River 66 kV TLRR – not FERC jurisdictional and therefore not in scope for the TPR
12. PIN 7906: Control – Silver Peak 55 kV TLRR Project – refer to **SP-26** of the TPR PS

7. Supply Chain Constraints, Tariffs, and Advance Procurement

Jeremy Shedd, Interim Principal Manager, Direct Materials Procurement

Michael Vallecorsa, Principal Manager, Procurement

Supply Chain Constraints, Tariffs, and Advance Procurement

a) SCE indicated that several critical equipment categories are facing material cost or schedule risks due to supply chain constraints and manufacturing capacity constraints, and SCE provided one example of a project with a delayed in-service date due to these constraints. Please describe which other projects or programs are facing similar cost pressure or schedule risks due to supply chain constraints.

These supply chain constraints are not unique to any single project, nor are they unique to SCE. Lead times for power transformers, circuit breakers, and many other equipment types remain well above historical averages across the industry, therefore every project that relies on long-lead equipment carries potential cost and schedule exposure. To mitigate this risk, starting in 2024 and continuing for the foreseeable future, SCE negotiates production slot reservations covering forecasted demand and is ordering major equipment earlier in the project implementation process to mitigate potential project delays.

b) Please describe whether and how tariffs are affecting the cost and availability of transformers, circuit breakers, and other critical transmission-related infrastructure, and whether particular categories of project or types of equipment are more impacted than others by tariffs.

Tariffs have not created availability constraints but are raising costs across finished goods, sub-components, and raw materials. The largest exposure comes from Section 232, which applies regardless of origin and most heavily impacts materials with high steel, aluminum, and copper content, affecting both domestically built equipment and finished goods imported from Korea, Japan, Europe, Brazil, Mexico, and Canada. Chinese goods are more affected by Section 301. SCE continues to apply competitive pressure, qualify alternate sources, and negotiate with suppliers to limit the impact, and will pursue IEEPA reimbursement where the opportunity arises.

Supply Chain Constraints, Tariffs, and Advance Procurement

c) Please provide an update on SCE's advance procurement of transformers and circuit breakers, both for emergency inventory and known projects. Please include updates on the preferred manufacturers/production slot reservation strategy and the work order process improvement pilot. Include examples of tangible results from the slot reservation strategy and process pilot (money saved, delays averted, etc), as well as a description of challenges encountered.

SCE improved its procurement process to focus on risk reduction, capital stewardship, cross-functional governance, and portfolio optimization. The current strategy allows SCE to secure multi-year production slots for long-lead transformers and circuit breakers from manufacturers identified through competitive RFPs and best value awards. Furthermore, internal process improvements help avert delays by proactively authorizing the procurement process, especially for SCE's most common equipment designs. Key challenges include a dynamic marketplace, evolving tariffs, increased supplier leverage, unplanned customer projects whose demand timelines fall short of market lead times, the CARB SF_6 phase-out, post-award technical changes, and scarce sub-components that create unanticipated bottlenecks.

Break

9. Data Centers and Private Large Load Interconnections

Jo Heuser, Senior Manager,
CIMOS/Added Facilities

Data Centers and Private Large Load Interconnections

a) Has SCE received any applications for transmission-level interconnections for data center or private large load projects? If so, please describe the details of the planned project(s), including but not limited to cost, timeline, and rate schedule. If not, please describe how SCE plans to treat such an interconnection application in the future.
b) Discuss whether SCE has seen or anticipates congestion impacts from data center loads in neighboring utility territories.
c) Please discuss any load cluster studies SCE has undertaken or plans to undertake with regard to private large load projects.

- No SCE has not received any Transmission level requests
- Requests which require a transmission voltage are provided in accordance with SCE's Rule 2.B and 2.H.
    - The process is captured through the Method of Service (MOS) Study analyzing transmission system impacts, technical requirements, estimated costs, and schedule for the installation of any equipment required to serve the new load

- SCE has not observed congestion impacts on its system resulting from data center load growth in neighboring utility service territories. Transmission Planning primarily evaluates internal load growth and generation interconnections; potential inter-utility impacts are addressed through CAISO's TPP and Affected System Study procedures where applicable. SCE will continue monitoring regional load trends through CAISO coordination.

10. Transmission-Level Electric Vehicle Charging

Jo Heuser, Senior Manager,
CIMOS/Added Facilities

Transmission-Level Electric Vehicle Charging

Has SCE received any applications for transmission-level interconnections for electric vehicle charging projects? If so, please describe the details of the planned project(s), including but not limited to cost, timeline, and rate schedule. If not, please describe how SCE plans to treat such an interconnection application in the future.

- SCE has not received any applications of this type. Should SCE receive such an application, it will conduct a study for transmission service and discuss the results with the applicant.

- Requests which require a transmission voltage are provided in accordance with SCE's Rule 2.B and 2.H.
  - The process is captured through the Method of Service (MOS) Study analyzing transmission system impacts, technical requirements, estimated costs, and schedule for the installation of any equipment required to serve the new load

11. Grid Enhancing Technologies

Manuel Avendaño, Engineering Senior Manager, Central System Planning

Grid Enhancing Technologies

Please provide any updates on Grid Enhancing Technologies (GETs) SCE is evaluating, including but not limited to Ambient Adjusted Ratings (AAR), Dynamic Line Rating (DLR), Advance Conductors, Advanced Voltage Control). Include in the discussion whether any GETs projects have been in coordination with the CAISO, and how deployment of these technologies has enhanced grid operation and congestion/constraint mitigation timelines and/or demonstrated cost benefits.

- **Ongoing evaluation in coordination with the CAISO.** SCE evaluates GETs alongside traditional solutions through the annual Transmission Planning Process (TPP) and submitted its SB 1006 studies to the CAISO in the 2025-2026 TPP. A Study of the Feasibility of Projects using Grid Enhancing Technologies and Reconductoring with Advanced Conductors
- **Ambient Adjusted Ratings (AAR).** Actively being implemented across SCE's Bulk Electric System in compliance with FERC Order 881.
- **Dynamic Line Rating (DLR).** Nine candidate circuits identified from CAISO's 2024-2025 congestion and curtailment results, with average capacity gains of roughly 15%-44% over static ratings, at between $50,000-$500,000 and 1-2 years per line. The 2025 GRC decision did not approve DLR funding.
- **Advanced conductors.** Hundreds of miles reconductored with high-temperature low-sag conductor over the past decade; SB 1006 screening identified 56 further candidates. Two reliability-driven projects were proposed in the 2025-2026 TPP: Pardee-Santa Clara and Santa Clara-Vincent 230 kV (~40 miles each), raising emergency ratings to 2,180 A and resolving overloads.
- **Power flow control and topology optimization.** No viable solutions identified; applicable cases already have cost-effective mitigations in place, such as Remedial Action Schemes or operational adjustments.
- **Operational and cost benefits to date.** No DLR project has yet been recommended through the TPP, so benefits remain study-based estimates. studies refresh in 2027 (GETs) and 2029 (conductors).

13. LA 2028 Olympics

Manuel Avendaño, Engineering Senior Manager, Central System Planning

LA 2028 Olympics

Please provide an overview of expected work on SCE transmission facilities and work impacts (delays, etc) related to the upcoming LA 2028 Olympics, including estimated cost, any anticipated betterment, and expected cost allocation of the associated projects.

- No CAISO transmission level projects (new or upgrades) have been identified as being solely driven by the LA 2028 Olympic and Paralympic Games
  - Existing and planned transmission investments address broader system reliability and increased capacity needs and provides benefits to the electric system beyond the Games

19. Transmission Line Sectionalizing

Manuel Avendaño, Engineering Senior Manager, Central System Planning

Transmission Line Sectionalizing

Please provide an overview of transmission line sectionalizing and control including SCE's overall sectionalizing philosophy, how sectionalizing is deployed, types of devices, number of devices, voltages, and planned upgrades in the future.

- SCE's transmission system uses a different approach to sectionalizing than distribution systems. Transmission lines faults are primarily isolated through circuit breakers at substation and switching stations, enabled by coordinated protection and control systems. Additional switching facilities may be provided where needed based on system configuration, protection requirements, and reliability considerations.

- SCE does not generally characterize its transmission system in term of a fleet of standalone "sectionalizer" devices comparable to those used on distribution circuits.

22. Betterment

Manuel Avendaño, Engineering Senior Manager, Central System Planning

Betterment

Betterment: Facilities installed or work performed by SCE or SCE's customers on behalf of SCE to serve future customers in addition to required project scope.
a) Does SCE add betterment scope to transmission projects? If so, please answer the following questions.
b) How does betterment work? How does SCE determine which projects receive betterment scope and which do not?
c) Please list the projects in the TPR PS that include betterment scope. For each of these projects, how much of the total cost is associated with betterments? Is there a way to identify projects in the TPR PS that include betterment scope?
d) If SCE constructs betterment facilities, how does SCE track whether the betterment facilities are actually utilized?
e) Can betterment facilities be approved without CPUC approval? If yes, what percentage of betterment projects do not receive CPUC approval. If no, what type of CPUC approval do betterment facilities require?
f) Is betterment recovered through SCE's GRC or the TAC?

Betterment

- For purposes of this response, SCE interprets "betterment" as incremental facilities or capabilities beyond the facilities required to address the identified project need.

- SCE generally designs and constructs transmission facilities based on identified system needs and the scope approved for the applicable project. Where appropriate, SCE may consider opportunities to coordinate additional facilities or capabilities with planned work when they are supported by identified system needs, provide operational or reliability benefits, and are technically and economically justified.

- The scope of a transmission project is established through the applicable planning, engineering, regulatory, and project-development processes. SCE does not have a blanket practice of adding facilities solely to serve unspecified future customers.

- Accordingly, SCE does not maintain a separate, standardized category of "betterment" projects within the TPP portfolio or a universal percentage of project costs attributable to betterment. Where incremental scope is included in a project, the associated costs and cost recovery are evaluated based on the specific project, applicable regulatory requirements, and the entity or entities benefiting from the facilities.

26. PB-37 Transmission Tower Corrosion Program

Karissa Foster, Principal Manager, Electric Transmission and/or Distribution Project Management

Jonathan Stubblefield, Manager, Electric Transmission and/or Distribution Project Management

PB-37 Transmission Tower Corrosion Program

Please provide an update on the overall program and major projects in this program, their current status, and any significant risks or challenges.

Tower Corrosion Program – The program begins with inspection of existing towers to document and identify corrosion. Towers to be inspected are strategically identified based on specific parameters, such as age, high fire, tower types, geographic, environment, etc. SCE has completed 3,900 inspections to date and intend to complete additional in the future based on the criteria referenced above. This inspection data is then studied and prioritized for tower corrosion mitigation works based on priority / need. The program intends to execute tower mitigation works annually.

- 2026/2027 Tower Corrosion Program
  - This project has a scope of approximately 100 towers
  - A contractor was awarded and began construction in 2nd quarter of 2026.
  - Anticipated construction completion is 2nd quarter of 2027.
  - Risks / challenges reference below; likely that a few towers will be, beyond 2nd quarter 2027.

- 2027/2028 Tower Corrosion Program
  - 2027 planned scope is approximately 175 towers
  - SCE is in the process of preparing engineering studies to determine the scopes of work for each tower.
  - SCE anticipates going out to bid for this work in 1st quarter of 2027 and then starting construction in 2nd quarter of 2027.
  - Anticipate construction to take approximately one year to complete.
  - 2028 planned scope is approximately 100 towers

- Risks / Challenges
  - Some of the towers to be mitigated require outages on the line, some of the circuits have outage constraints.
  - Some of the towers are in environmentally sensitive areas that require special permitting.
  - Some of the towers are located in Gov't agency lands, BLM, Forest, Desert, etc. and require specific approvals

27. PB-44 Transmission Planned Maintenance - Pole Replacement and other Wood to Steel Pole Replacement Programs

Elias Bermudez, Senior Manager, Electric Transmission and/or Distribution Project Management

Jonathan Stubblefield, Manager, Electric Transmission and/or Distribution Project Management

27. PB-44 Transmission Planned Maintenance - Pole Replacement and other Wood to Steel Pole Replacement Programs

Please provide an overview of and update on the Wood to Steel or Fiber Transmission pole upgrades underway under PB-44. Please also include information from other programs that involve pole replacements, including but not limited to PB-09 Transmission Deteriorated Pole Program, PB-22.60 Control-Silver Peak 'A' High Fire Pole Replacement, and PB-22.61 Control-Silver Peak 'C' High Fire Pole Replacement.

- SCE's Transmission Planned Maintenance – Pole Replacement program involves the replacement of wood poles with engineered steel poles for safety and reliability. These pole replacements are not due to deterioration and include freeway crossings, major thoroughfares, and other critical crossings. The program is part of SCE's overall Transmission Infrastructure Replacement (Trans IR) strategy which is a proactive asset management initiative designed to systematically replace aging transmission infrastructure such as towers, poles, switches, underground structures, cables, and conductors before failures occur, helping maintain a safe, reliable, and resilient electric grid.

- The program currently has a total of 9 active projects at various stages of execution and 1 recently completed project.
    - Projects completed in 2025 (1)
    - Projects projected for completion in 2026 (4)
        - 3 projects currently in design
        - 1 project field complete
    - Projects projected for completion in 2027 (4)
        - 2 projects currently in design
        - 2 projects pending permits
    - Projects projected for completion in 2029 (1)
        - 1 project currently in design

- Notable Risks
    - Permits pending from various agencies could delay execution
    - Budget constraints causing project deferment

PB-09 Transmission Deteriorated Pole Program

Executive Summary | August 2026

SAFETY • COMPLIANCE • DELIVERY

PROGRAM OVERVIEW

- Primary pole replacement program supporting GO 95 and GO 165 compliance.
- Transmission poles enter scope through intrusive inspections, external-condition findings, and failed pole-loading calculations.
- RAC priority establishes the compliance timeframe based on condition and location.

DELIVERY PATH

1 Identify → 2 Prioritize → 3 Design & Clear → 4 Replace

SCOPE

ANNUAL TRANSMISSION PLAN

2,175 2025 authorized

2,000 2026 target

BROADER DET-POLE INFLOW

~36,000 → 5,700 / year

All deteriorated-pole volume; not transmission-only.

PERFORMANCE

1,708 2025 recorded replacements vs. 2,175 authorized

79%

1,142 2026 completed through July vs. 2,000 annual target

57%

EXECUTIVE TAKEAWAY PB-09 converts condition and loading findings into prioritized, compliance-driven pole replacements; 2026 delivery was at 1,142 units through July.

24. PB-05 Substation Unplanned Capital Maintenance and PB-06 Substation Maintenance Program

Mark Christensen, Manager – Apparatus and Maintenance Field Support

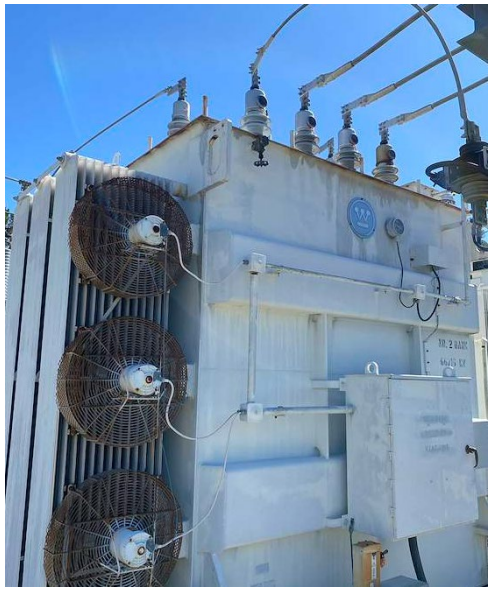
PB-06 Substation Capital Maintenance Program

Summary of PB-06: Substation Capital Maintenance Program

- Proactively replaces aging, deteriorated, or obsolete substation assets or major components before failure
- Uses asset health data and condition-based ordering to identify and address equipment risks
- Reduces forced outages, extends asset life, and improves overall system reliability
- Provides a structured framework for engineering, procurement, outage coordination, and resource planning
- Supports long-term grid performance and risk reduction through planned capital maintenance investments

Project example– Transformer Life Extension

- Replaces aged bushings on older power transformers exhibiting increased risk of in-service failure
- Extends transformer life and improves reliability without full transformer replacement.
- Reduces schedule risk by utilizing bushing replacements with substantially shorter lead times than a new transformer which could be around 4 yrs
- Demonstrates the value of capital maintenance by reducing outage risk with reduced supply chain demand for entire new transformer.



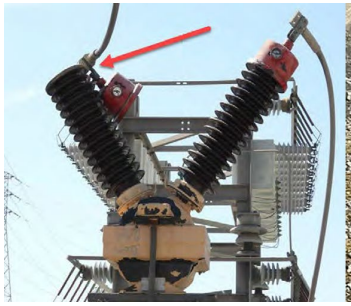
Project Example– Circuit Breaker Life Extension

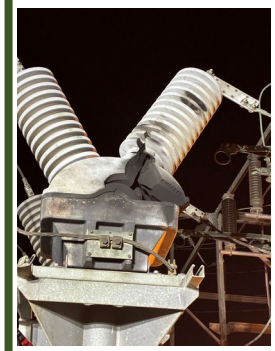
- HV circuit breaker with new bushings and SF6 seals
- Extends asset life and improves reliability.
- Avoids costly full replacement
- Reduces delivery risk by using 8-month lead-time parts versus a 4-year lead time for a new breaker
- Demonstrates efficient capital deployment for life extension of SF6 CBs
- Refurbish 30-year-old

PB-05 Substation Unplanned Capital Maintenance

Summary of PB-05: Unplanned (Reactive) Substation Capital Maintenance Program

- Addresses unexpected failures of critical substation equipment that threaten safety, reliability, or service continuity.
- Provides rapid, like-for-like replacement of failed assets resulting from equipment deterioration, weather events, animal intrusion, or other emergent conditions.
- Supports timely restoration of normal operations while minimizing outage impacts and operational risk.
- Requires expedited engineering, procurement, and resource coordination to respond to emergent needs.
- Program workload and costs vary significantly from year to year due to the unpredictable nature of equipment failures





Potential Transformer Failures

- Insulation degradation from long-term electrical and thermal stress
- Moisture intrusion and contamination resulting in dielectric breakdown
- Bushing deterioration, tracking, and corona activity
- Arcing and overheating at electrical connection points
- Internal faults associated with aging assets nearing end of service life

Pot Head Termination Failure

- Cable termination (pot head) failed, resulting in a transformer bank lockout and load interruption
- Arcing and flashover occurred at the cable termination, causing catastrophic mechanical damage
- Concentric neutral conductors experienced overheating and electrical discharge damage
- Failure was believed to have originated external to the termination at the cable neutral/grounding interface
- Electrical stresses contributed to the final failure event

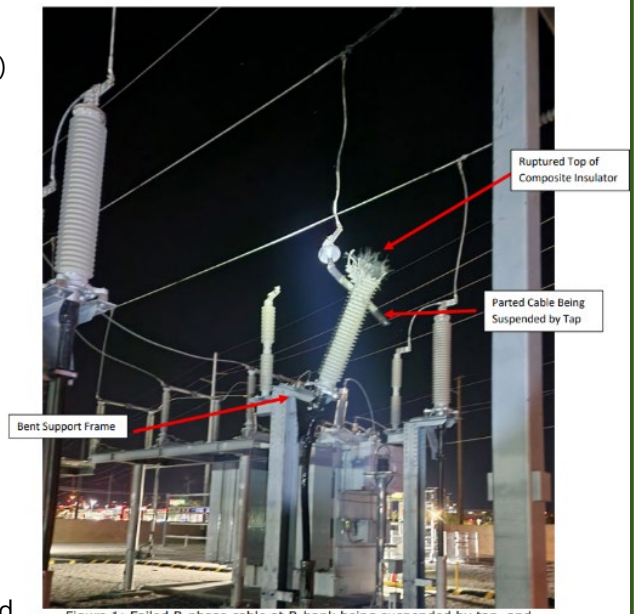


Figure 1: Failed B-phase cable at B-bank being suspended by tap, and ruptured insulator still mounted to bent bracket due to force from failure. Tap to lightning arrestor is not shown in photo.

16. FERC Order 881

Saulo Gonzalez, Sr. Advisor
Technology Engagement Office

FERC Order 881

Please provide detailed project description, upgrades required, project scope, estimate and milestone schedule FERC Order 881 implementation Plans and current compliance with CAISO Implementation Plans

Project Description:

- On Dec. 16, 2021, FERC issued Order 881. The order requires transmission providers to implement and use ambient-adjusted ratings for transmission lines used to provide transmission service. Regional transmission organizations (RTOs) and independent system operators (ISOs) must develop systems and procedures to allow transmission owners to electronically submit updated transmission line ratings at least hourly.

Project Scope:

- Real time Ambient Adjusted Ratings (AAR)
- 10-day Ambient Adjusted Ratings (AAR)
- Seasonal Ambient Adjusted Ratings (AAR)
- AAR Methodology & IEEE Standards
- EMS ICCP to CAISO
- CAISO Requirements for 10-Day Look Ahead (Interface to CAISO)

Estimate: $8.7M

Schedule:

Phase 1: ACE tool changes and EMS Integration – Q1 2027
Phase 2: RAS/CRAS implementation – Q2 2027
FERC Compliance Date: Oct 2027

Current Status:

Performing UAT testing of ACE tool.
Performing SAT-1 for EMS integration changes.

Lunch Break

17. Transmission Telecommunication System

Thang Tran
Network Architect - IT Digital Grid Services

Yuriy Gurevich
Sr Mgr - IT Telecom Infrastructure Engineering

Transmission Telecommunication System

Please provide an overview of SCE's transmission Telecommunication system, including but not limited to substation to substation to control centers communications, technologies deployed (ADSS, OPGW, microwave, and other technologies as relevant), and fiber types. Describe the current state of the system, including any planned upgrades.

Transmission Telecommunication System

Overview: The SCE Transmission Telecommunication System is built across a combination of optical, MW (microwave), and MPLS (Multi-Protocol Label Switching) networks to provide effective communications between substation to substation to control center for critical services such as teleprotection, RAS (Remedial Action Scheme), EMS (Energy Management System), and various Grid applications.

- The optical transport networks are consisted of SCE privately owned single mode fiber optic cable backbone such as OPGW (optical ground wire), ADSS (All Dielectric Self Supporting), Skywrap, and UG (underground) loosetube; and the optical transport systems such as SONET (Synchronous Optical Network) and DWDM (Dense Wavelength Division Multiplexing).
- The microwave transport networks are consisted of MW RF (radio frequency) paths and the MW transport systems.
- The MPLS networks are IP based multi-protocol label switching networks routed across fiber, optical, and MW backbone networks.

Refresh/Upgrade Strategy: The network refresh or system upgrade is based on SCE network refresh plan, technology modernization strategy, and the established lifecycle management to meet business requirements.

- Replace old fiber optic cable backbone
- Refresh end-of-life SONET transport networks
- Refresh end-of-life DWDM transport networks
- Refresh end-of-life MW transport networks

18. IEC 61850 Communication Protocols

Craig Hammond
Network Architect - IT Digital Grid Services

Jesse Silva
Senior Engineer – Grid Architecture Innovation

IEC 61850 Communication Protocols

Please describe any plans for implementation or pilot programs related to implementation of IEC 61850 communication protocols at SCE substations, including but not limited to substation transmission monitoring of transformers, circuit breakers, and batteries, and upgrades to microprocessor protection and control.

IEC 61850 – High-Speed Communications for Smarter Substations

An international standard enabling intelligent devices to communicate quickly and reliably, improving interoperability, protection, control, and monitoring of power systems.

IEC 61850 COMMUNICATION PROTOCOLS

GOOSE
(Generic Object Oriented Substation Events)

- High-speed messaging for protection and control
- Delivery time: 1–4 ms typical
- Used for: Trip, interlocking, status changes

SAMPLED VALUES (SV)

- Real-time streaming of current and voltage measurements
- High speed: 80 samples/cycle (or higher)
- Used for: Protection, monitoring, power quality

MMS
(Manufacturing Message Specification)

- Client/server communication for monitoring and control
- Reliable, report-based communication
- Used for: Supervisory control, configuration, alarms, logging

PTP / SNTP
(Precision Time Protocol / Simple Network Time Protocol)

- Precise time synchronization across all devices
- Accuracy: < 1 µs with PTP (typical)
- Used for: Time stamping of events and measurements

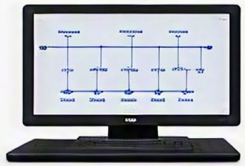
HIGH-SPEED ETHERNET NETWORK

Fast, reliable data exchange using IEC 61850 protocols

PROTECTION RELAY
Sends/receives GOOSE messages for protection and control

MERGING UNIT
Publishes Sampled Values (SV) with real-time current and voltage measurements

CONTROL & MONITORING DEVICE (IED)
Uses MMS for monitoring, control, configuration, and data access



HMI / SCADA
Accesses data and alarms using MMS for situational awareness and control

TIME SERVER
Provides precise time using PTP/SNTP to all devices

KEY BENEFITS

- **INTEROPERABILITY** — Works across devices and vendors
- **HIGH SPEED** — Millisecond-level communications
- **RELIABILITY** — Designed for mission-critical operations
- **EFFICIENCY** — Simplifies engineering, testing and maintenance
- **BETTER DECISIONS** — Real-time data for faster and smarter actions

IEC 61850 Communication Protocol – RGOOSE

- SCE uses a Centralized Remedial Action Scheme (CRAS) solution to provide wide area monitoring and control at transmission locations with many interconnects
- CRAS uses IEC 61850 RGOOSE to communicate between field relays and the backend analytics/controllers
- RGOOSE is a layer 3 version of the standard GOOSE protocol, which can be routed over a wide area network
- Solution is expected to grow over the next five years

Today's Standard – IEC 61850 Communications

Standardized at distribution substations for 10+ years, recently at transmission substations

Substation Devices
Relays, meters, IEDs

61850 MMS

Substation HMI/RTUs
Local/Remote monitoring & control

DNP3

EMS SCADA
Control center

(MMS Enabled) Enterprise Historian (DGA only)

Inside the Substation — IEC 61850 MMS

- IEC 61850 MMS has been the SCE standard at distribution substations for over 10 years
- Recently started implementation at transmission substations
- Serves as the communications protocol between the HMI and substation devices
- Automatic HMI configuration build is unique to the industry and fully uses IEC 61850 SCL files

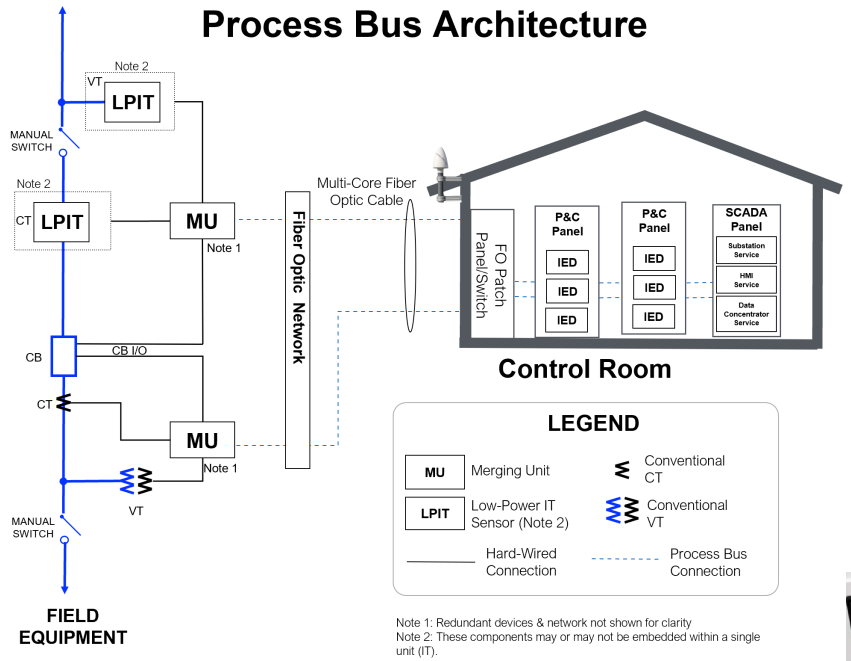
Upstream

- DNP3 is primarily used for EMS SCADA
- 61850 MMS used for DGA applications at transmission

Proven at distribution, expanding to transmission — MMS inside the substation, DNP3 upstream to EMS SCADA and IEC 61850 to Historian

Coming Soon - IEC 61850 Process Bus (GOOSE / SV)

Being standardized for compact distribution substations; transmission to be considered in the future



IEC 61850 process bus: LPITs and merging units feeding protection over a fiber-optic network

In Standardization Now

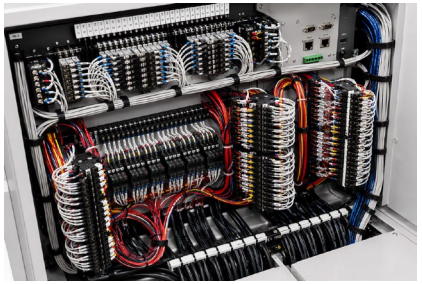
- GOOSE and Sampled Values being standardized for compact **distribution** substations
- Digital process-level communications replace hard-wired signals

Why Process Bus

- Less copper wiring and a smaller substation footprint
- Supports compact, digital substation designs
- Lays foundation for grid modernization and future applications such as VPR

Transmission — Learn, Then Scale

- Transmission substations will be considered in a future phase
- Lessons from distribution inform the transmission standard



IEC 61850 Process Bus
Merging units + fiber

Process bus is the next standardization step — compact distribution substations first, transmission under evaluation.

IEC 61850 Based Virtual Protection Relay

Tested in the lab under the EPIC 3 demonstration project; a monitoring-only field pilot is planned

01 Concept

- IEC 61850 Based
- Protection functions hosted on a shared digital computing platform
- Moves away from stand-alone physical relays

02 EPIC 3 Lab Demonstration

- Virtual protection relay concept tested in the lab
- Part of the EPIC 3 demonstration project

03 Field Pilot Planned

- SCE is planning a future field pilot
- Validates virtual protection in live substation conditions – Monitoring Mode Only
- Future deployments based on lessons learned

Lab-tested under EPIC 3 — the next step is a monitoring-only field pilot of virtual protection at an SCE substation.

21. Physical and Cyber Security-Related Projects

Earl Hall, Senior Advisor, Corporate Security

Randall White, Principal Manager, Corporate Security

Physical and Cyber Security-Related Projects

Please provide an update on major projects in this category, their current status, and any significant risks or challenges.

- The following slide presents a table summarizing SCE's security-related transmission programs included in the June TPR submission. It outlines each program's scope, key activities, current status, and primary challenges.

- SCE's physical security transmission programs focus on hardening critical transmission assets and do not incorporate cybersecurity components. While individual projects may encounter schedule, sourcing, or implementation challenges, lessons learned are applied across the program portfolio to improve future project execution and mitigate recurring risks.

Security Programs' Summary

Program Name	Row ID	Programmatic Overview	Major Projects / Initiatives	Current Status	Potential Challenges
Critical Infrastructure Protection	PB-21	Physical security access controls to meet NERC CIP V5 compliance requirements (high & medium impact sites)	NERC CIP v5	Completed	N/A
Physical Security Enhancements	PB-30	Physical security upgrades at Tier 1 sites in compliance with NERC CIP-14 **(Corp Sec Component)**	NERC CIP 014	Completed	N/A
NERC CIP V6 Physical Security Access	PB-31	Physical security access controls to meet NERC CIP 006 V6 compliance requirements (low impact sites)	NERC CIP v6	Completed	N/A
Grid Infrastructure Protection Program	PB-32	Physical security upgrades at non-Tier 1 critical sites **(Corp Sec Component)**	Tier Program General Security Upgrade	On Track (2035 – Ongoing)	Scope Changes Construction Delays Permitting Issues Environmental
Substation Security Upgrades	PB-39	Special fences around Tier 4 transmission facilities	Metal Abatement	Completed	N/A
NERC CIP Physical Security Project (NERC CIP 014)	PB-45	Physical Security upgrades at Tier 1 sites in compliance with NERC CIP-14 **(T&D Component)**	NERC CIP 014	Completed	N/A
Substation Perimeter Security Upgrade	PB-46	Physical security upgrades at non-Tier 1 critical sites **(T&D Component)**	Tier Program General Security Upgrade	On Track (2035 – Ongoing)	Scope Changes Construction Delays Permitting Issues Environmental

12. Transmission Conductors

Brian Powell, Senior Engineer 2,
Transmission Engineering

Transmission Conductors

SCE reported that it is still developing the conductor component of its grid modernization strategy to increase adoption of advanced conductors. Please describe SCE's plan and progress Please describe any issue related to managing supply chain, SCE-internal processes, and other identified factors to help stakeholders to understand when implementation of advanced conductors is the preferred solution for transmission and reconductoring projects.

SCE Strategy for Advanced Conductors

- Expanding SCE's use of High-Temperature Low-Sag (HTLS) conductors (ACSS and ACCC), Standardizing on Bulk and sub transmission voltages to increase capacity on existing transmission lines while reducing the needs for structure replacement
- Updated engineering standards, design guidance and tools to support consistency for evaluation and application of HTLS technologies
- Provide training, tools and inspection practices for planners, engineers, and field personnel on HTLS design, construction, and maintenance
- Expanded the list of approved manufacturers to improve competition, supply flexibility, and procurement options. This enables competitive pricing, improved material availability, and reduced lead times while maintaining SCE's required quality standards.

Transmission Conductors

Implementation Challenges and Considerations

- Material costs and lead times have increased.
  - One data point: Between 2023 and 2026 : HTLS ACCC conductor product rising 81% from the same supplier.
  - Lead times have roughly doubled.
- Tariffs and global demand continue to put upward pressure on pricing and lead times.
- HTLS conductors extends the useful capacity of existing transmission corridors, helping meet growing grid demand while reducing the need for new structures and right-of-way acquisitions. This complements new transmission line construction as part of an overall grid expansion strategy.

SCE is building the standards, training, and supplier network needed to support broader HTLS adoption while addressing cost and supply chain challenges.

14. Wildfire Mitigation Policies

Nathaniel Camello, Sr. Engineer,
Transmission/Substation Asset Strategy

Wildfire Mitigation Policies

Have there been any changes to SCE's wildfire mitigation plan or policies, such as additional measures in the transmission plan, as a result of the January 2025 wildfires?

SCE continues to advance wildfire risk mitigation and reliability initiatives on its 220 kV and 500 kV facilities

- This includes structure inspections and enhanced conductor inspections as needed, 2025 completion of Transmission Open Phase Detection (TOPD) technologies where feasible, and development of avian protection measures to reduce bird-streaming related outage risk on select legacy 220 kV structures
- Also, targeted rebuild projects are underway on certain FERC-jurisdictional subtransmission facilities, such as the 115 kV Control-Coso lines (part of the SP-25 Ivanpah – Control TLRR project), to address recurring small-wire reliability issues, including wire-down events and outages

In addition, key Wildfire Mitigation Plan (WMP) activities target sub-transmission lines in High Fire Risk Areas (HFRA) and may affect the handful of FERC-jurisdictional sub-transmission circuits

- Sub-transmission overhead conductor replacement
- Transmission proactive splice shunting
- High-risk transition spans
- Transmission hardware replacement

25. PB-25 Seismic Mitigation Program – Substations

Amber Topoleski, Senior Advisor, Business Continuity

PB-25 Seismic Mitigation Program – Substations

Please provide an update on major projects in this program, their current status, and any significant risks or challenges.

- SCE's Substation Seismic Mitigation Program currently includes a total of 34 active projects at various stages of execution. The program status is as follows:
  - Projects projected for completion in **2026** (**10 total**):
    - 9 projects currently in active construction
  - Projects projected for completion in **2027** (**14 total**):
    - 14 projects in active design
  - Projects projected for completion in **2028** (**10 total**):
    - 2 projects in active design

- SCE has identified a couple of significant risks or challenges impacting substation seismic projects, including:
  - Customer outage coordination
  - Competing work scopes at the substation

- See next slide for a summary of the individual projects that will be implemented over the next few years, along with certain projects which will be deferred and reasons for those deferrals

PB-25 Seismic Mitigation Program – Substations

2026 OD (10)	2027 OD (14)	2028 OD (10)

• Chatsworth (904636818)
• Narrows (904720674)
• Olinda (904636535)
• Pisgah (904636631)
• Ravendale (904637140)
• Repetto (904637141)
• Yucaipa (904636816)
• Devers (904554106)
• Center (902214368)
 	
Project Deferred to end of 2026:
 	
• Vista (SAP# 904636533)
  • CM-2357 Approved
  • Construction Finish date moved from 9/25/2026 to 12/31/2026
  • Extension required to complete the bid process after construction drawings became available
	• Colorado (905053563)
	• Culver (905083678)
	• Isla Vista (904990171)
	• Rush (904993659)
	• San Marcos (904990168)
	• Valdez (905094011)
	• Wakefield (904990169)
	• Wimbledon (905055410)
	• Lighthipe (902506490)
	• Santiago & Jr (904636939)
	• Hinson(902214374)
	• Nelson (904360280)
	
	Projects OD Deferred to 2027:
	• Magunden (SAP# 903444362)
	  • CM-2184 Approved
	  • Deferred OD from 3/01/2027 to 8/30/203? (pending final deferral year)
	  • Project will be re-baselined for CDM in 2029, targeting construction for 2030 for the 18-month construction
	
	• Granada (SAP# 904198621)
	  • CM-2071 Approved
	  • Deferred OD from 12/31/26 to 12/31/27
	  • Engineering faced delays with retrofitting the MEER due to historical integrity of building.
		• Laguna Bell (SAP# 904158460) (Approved CM-7300)
		  • OD deferred from 12/31/26 to 12/31/28 due to bundling with associated projects at Laguna Bell. (Assoc. Projects: Laguna Bell 220/66kV (SAP# 903968999), Laguna Bell - Velasco 220kV Relay Replacement (SAP# 903159473)).
		• Vegas
		• Eisenhower
		• Glen Avon
		• Brea
		• Canyon
		• Timoteo
		• Del Amo
		• Ellis
		• Villa park Jr.

29. SP-04 Alberhill Substation Loop In

Michael Bass, Sr. Project Manager, Transmission, Substation Project Management

SP-04 Alberhill Substation Loop In

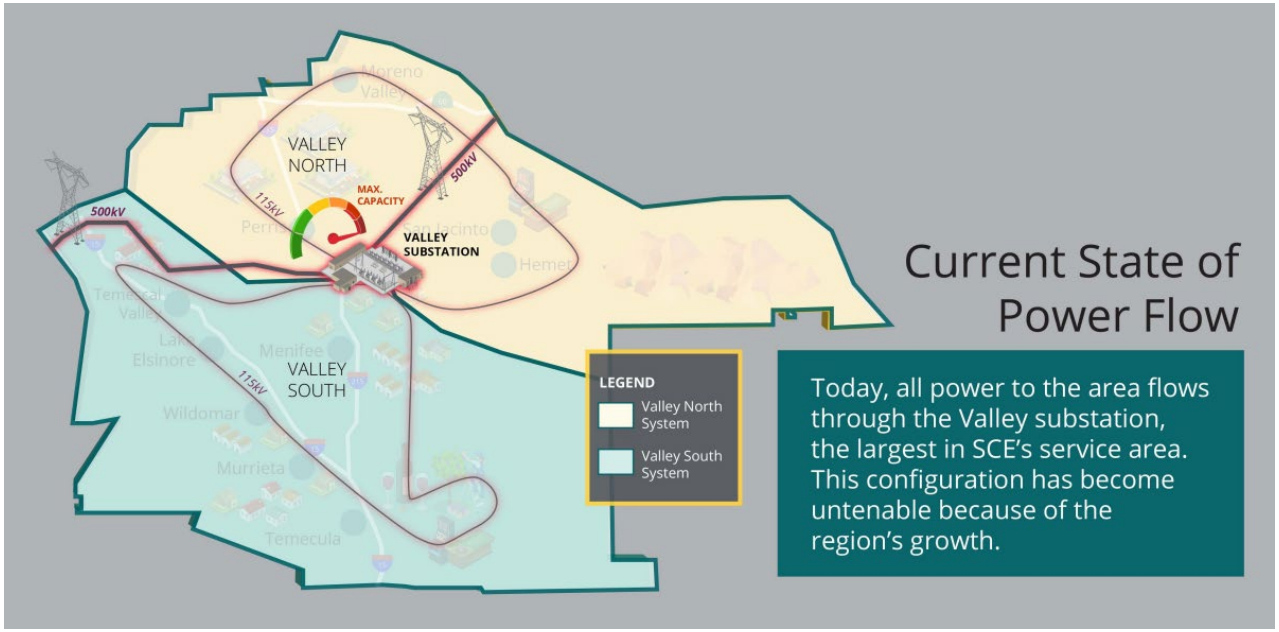
Purpose of Project
Due to increased load in Western Riverside County, SCE has proposed the Alberhill System to power 5 existing distribution substations, previously powered by the Valley Substation. When the Alberhill System is complete, SCE will create additional capacity at Valley and activate tie-lines between the Alberhill and Valley systems resulting in greater system capacity, increased reliability and greater resilience as well as opening of additional operating capacity for connection of future renewable energy projects and storage projects to the SCE grid.

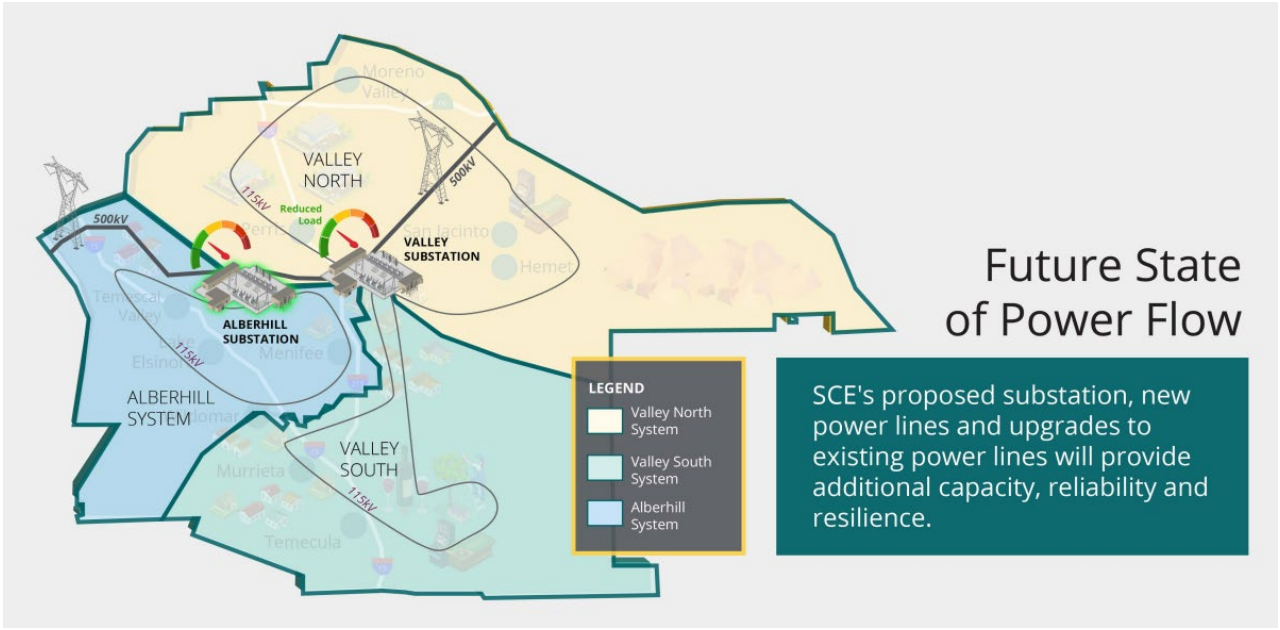
Scope and Budget
- 3.5 mi of 500 kV Transmission Line with 12 new towers to loop-in existing Serrano-Valley Transmission Line
- 1,120 MVA 500/115 kV Substation, 24-acre property near Temescal Canyon Rd. / 15 Fwy
- 20 mi of new double circuit 115kV lines to connect satellite distribution substations, 11 mi of dist. circuits
- 5 mi of new Telecom fiber optic circuit and microwave communication system
- 5 new access roads, 3 helicopter landing pads for access to new Transmission towers
- No scope changes last 12 months
- $472.4M nominal (FERC-$229.7M + CPUC $242.7M)

Project Status/Regulatory Update
- ***Final Decision received March 2026***
- SCE has launched final engineering and major materials (transformers, circuit breakers) procurement to expedite energization of the project
- Contract for design, procurement and construction of linear scope expected Q4 2026 issuance
- Contract to initiate substation grading activities expected to be issued 4Q 2026
- Substation construction (grading) and linear scope engineering scheduled to start 4Q 2026
- Substation and 500kV lines to be energized by June 2029

Project Risks
- Schedule - Environmental Permitting
- Budget – Bids to be received from substation construction contractor have the potential to exceed forecast, purchase orders for certain major materials exceeded 2023 estimates

SP-04 Alberhill – Current vs Future





31. SP-24 Cerritos Channel Tower Relocation

Michael Bass, Sr. Project Manager - Transmission, Substation Project Management

SP-24 Cerritos Channel Tower Relocation

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

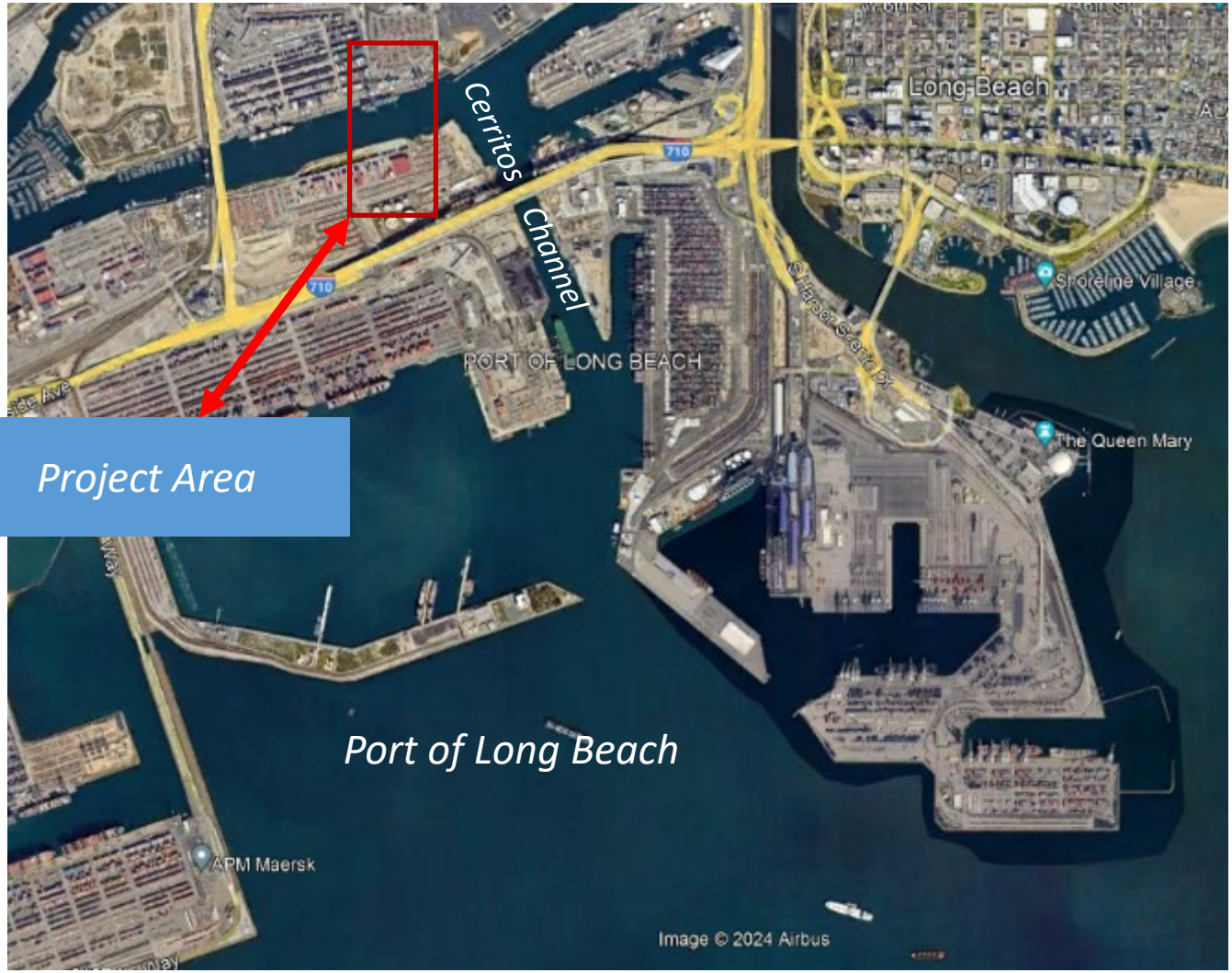
Project Drivers - Remove four existing, idle tower foundations from underwater in Cerritos Channel. Benefits are facilitating Port of Long Beach "POLB" ability to dredge the channel to facilitate ship traffic. Previous work to replace previous shorter transmission tower with higher towers and energization of new lines has been completed. SCE executed and agreement with POLB in 2025 requiring SCE to remove the four idle foundations.

Timelines -

- RFP Issuance: April 2026
- Bid Received: July 2026
- PO Issuance: March 2027
- Construction Start: August 2027
- Construction Finish: August 2029

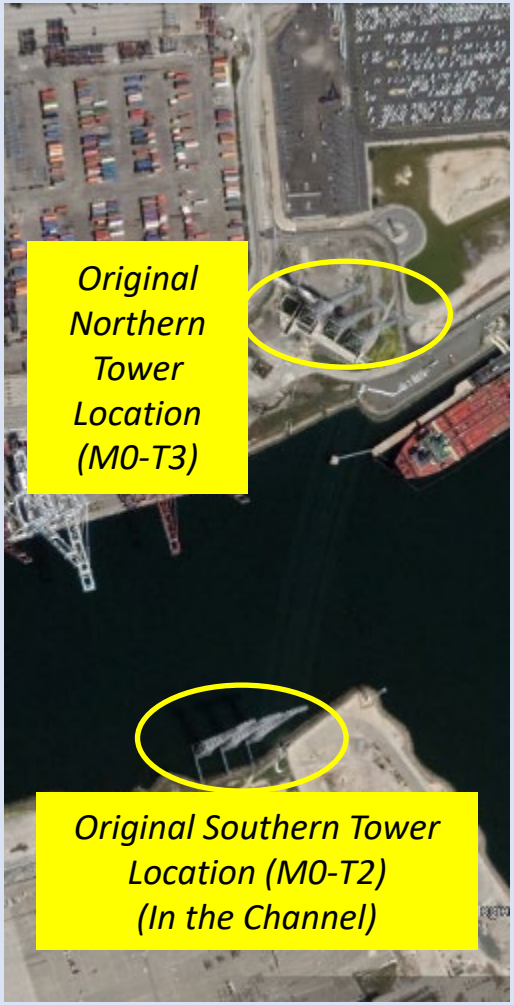
Current Status – Five bids received July 2026 to perform the foundation removal work
Risks – 1) geotechnical risk (instability of pier), 2) previous unknown underwater pipeline identified, 3) release of fuel or hydraulic fluid from construction equipment during foundation removal
Project Budget (FRM 2018) is $85M for this Phase 2 scope; $45M FERC, $40M CPUC.
Project Forecast is $189M for this Phase 2 scope (based on bids received); $105M FERC, $84M CPUC.
Changes past 12 months – Project scope has not changed. During the previous 12 months, SCE issued an RFP to complete the work. Five bids have been received and the bids are under evaluation.

Project Location



Original and Current Configuration

Original Configuration (as of 2017)



Current Configuration (as of 2026)

Remnants of Original M0-T2 Tower

30. SP-10 Riverside Transmission Reliability Project

Kenneth Spear, Sr. Project Manager, Transmission, Substation Project Management

SP-10 Riverside Transmission Reliability Project

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

- **Project Driver (reason):** Request from Riverside Public Utilities for load growth and reliability

- **Timelines to completion:**
  - **Underground Construction**
    Vista circuit Construction started June 2025, Completion forecast: Dec 2026
    The Mira Loma 220kV UG circuit civil construction started in Feb 2026 and construction forecast completion: Sep 2027
  - **Cable system installation forecast:** Q1 2027 thru March 2028
  - **Overhead construction**
    Started civil: April 2026
    Completion forecast**:** Q4 2027
  - **Substation construction**
    Site grading: 90% complete
    Above ground construction start forecast**:** Oct 2027
    Completion forecast**:** Oct 2029
  - **Project commissioning/completion**: **Forecast: Q4 2029**

SP-10 Riverside Transmission Reliability Project

- **Current Status –**
  - Construction remains in progress on the 2-mile Underground 230kV Transmission Line
  - Grading is nearly complete on the Wilderness Substation site.
  - Work on the 230kV overhead Transmission Line has been on pause since May 2026 (pending Environmental approvals) and is forecasted to recommence on October 1, 2026
- **Project Risks** –
  - Project risks include:
    - Public opposition to overhead design
    - Material availability for certain long lead items
    - Obtaining approved outage windows
    - Environmental approvals and seasonal restrictions.
    - Delays due to archaeological or cultural findings
- **Project Budget:** $756M
- **Project Dependencies:**
  - RTRP is dependent on collaboration with the City of Riverside Public Utilities Substation
  - Fiber Optic connectivity by SCE and RPU is a key element to test relay systems
  - RTRP depends on collaboration with local jurisdictions to support encroachment permits, traffic control permits, and other local permits

SP-10 Riverside Transmission Reliability Project

- **Project Changes (Last 12 months) –**
  - In the most recent 12 months RTRP has successfully completed significant portions of the underground civil construction work within the City of Jurupa Valley
  - Initial civil construction work began for the overhead portion of the project located south of the Santa Ana River. However, work was paused pending environmental approvals, expected by October 1, 2026
  - RTRP has also initiated engineering design and manufacturing preparations for the underground cable system
  - RTRP has begun procurement and taken delivery of key overhead construction components.
- **Notable Project Challenges –**
  - RCA approval of pending MSHCP JPR Amendment to continue overhead construction
  - Public Opposition & Involvement to the overhead portion of the project
  - Wildfire Impacts
  - Material Delivery Delays
  - 3rd party underground utility crossings - unmarked drawings/unknown owners, trenchless 3rd party crossing requirements
  - Availability of sites to accept contaminated soils/disposal (both UG and OH)

37. SP-168 Vista–Etiwanda 230 kV 1 Line Upgrade

Cyrus Mirabueno, Associate Project Manager, Transmission & Substation Project Management

SP-168 Vista–Etiwanda 230 kV 1 Line Upgrade

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

Driver: Approved as a Policy Driven Project by CAISO per 2022-2023 TPP to prioritize the development of several transmission projects that will help meet California's clean energy policies, particularly to enable the delivery of many new renewable generation projects and relieve constraints on the existing grid.

Timeline:

- Final Design/Engineering work in progress
- Major Material Delivery: 2026-2027
- Construction Start: Dec 2027 – Jan 2028
- Construction Completion: June 2028

Status: The project is progressing towards completing final transmission engineering and preparing application submittals for all required environmental and external agency permits.

Risks: Outage availability is limited to the winter season and coordination with multiple projects requiring similar outages could significantly delay construction completion.

SP-168 Vista–Etiwanda 230 kV 1 Line Upgrade

Budget: The current total project budget is $66.1M. The increase of the budget was due to the previous budget ($13M) serving as an initial placeholder, reflecting only anticipated transmission-related direct expenses. The change in cost was due to changes in transmission design and construction methods. The current project budget is also comprehensive, accounting for environmental and permitting expenses, departmental overhead, anticipated risks, and contingency allocations.

Dependencies: The project dependencies include timely delivery of the ACCC wire conductors, alignment with outage windows and acquiring various permits from external agencies.

Changes: The most significant changes to the project in the past 12 months are listed below:

- The forecasted Operating Date (OD) has shifted from June 2027 to June 2028 due to major material delivery constraints. The ACCC wire is tentatively expected to be delivered by the end of 2026
- Significant increase to the project budget. Notably, the transmission design scope changed due to adjacent project design

See Cycle 4 CPUC Data Request 2-36 for further information

Break

28. SP-01 Calcite Substation

Hamid Arshadi, Project Manager, Transmission & Substation Project Management

SP-01 Calcite Substation

Project Background:

- **Calcite Substation** (formerly known as Jasper Substation) is a proposed 220 kV switching station, to be located near Lucerne Valley in San Bernardino County, CA
- This project is intended to strengthen the local electrical grid infrastructure and facilitate the integration of renewable energy sources. It plays a critical role in advancing California's commitment to expanding its clean energy portfolio, focusing on sustainable and reliable energy supply
- Through the Generation Interconnection Process, Avantus, the customer for the following interconnection projects requested interconnection into the proposed Calcite 220 kV Substation:
    - **Sienna Solar 1:** a 200 MW solar PV project **Sienna Solar 2:** a 55 MW solar PV/BESS project

Calcite Substation Scope:

- Construction of the new Calcite 220 kV substation
- Loop in of the Lugo-Pisgah No.1 220 kV Transmission Line into the new Calcite substation
- Construction of SCE portion(s) of Sienna Solar 1 & 2 gen-ties line into the substation
- Construction of associated distribution and telecommunication work

Project Budget:

- Current project cost estimate is approximately $97 million

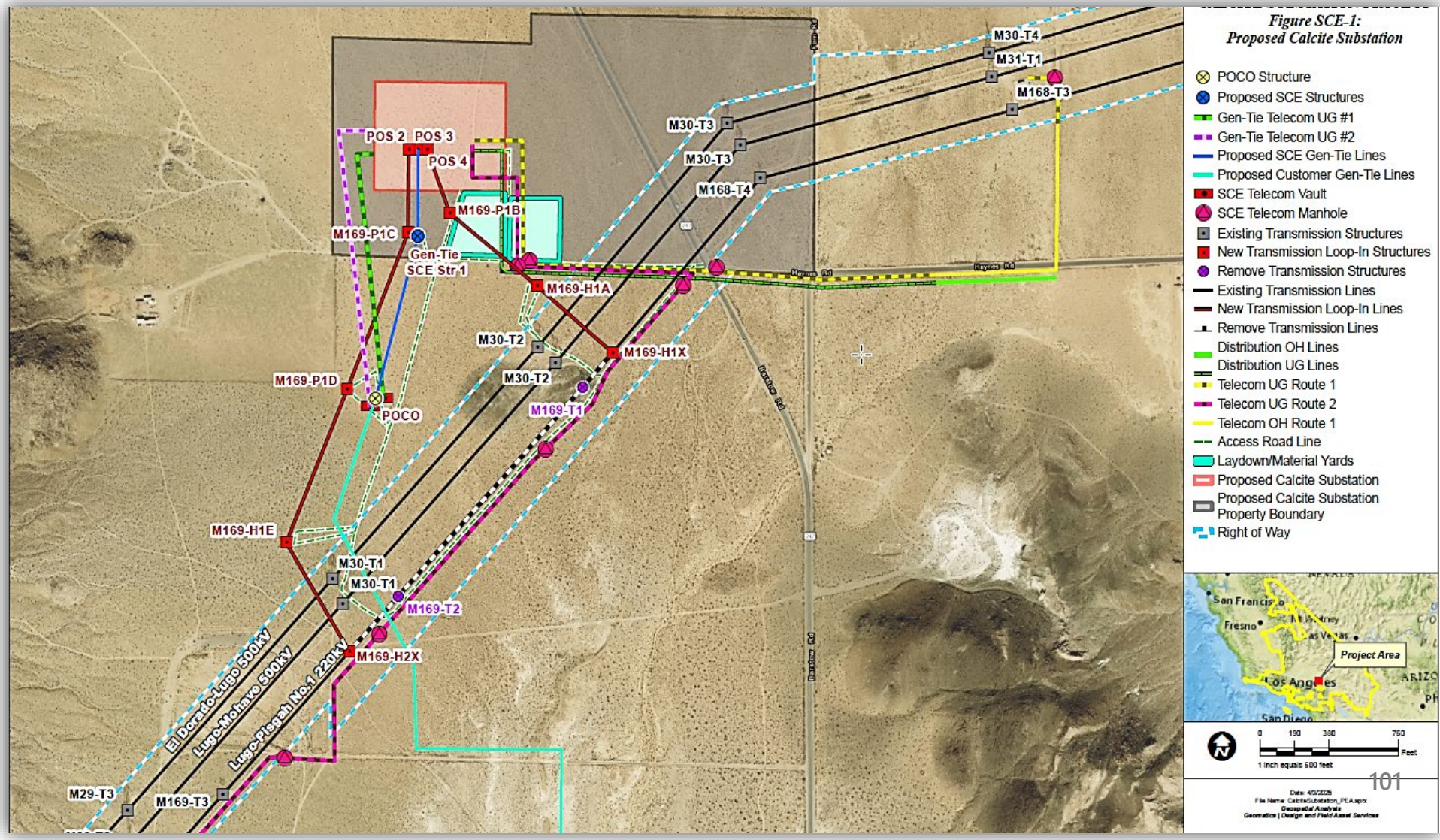
Changes: The most significant changes to the project in the past 12 months:

- The 23-month delay in processing these projects was primarily due to the interconnection customer's CEQA review and permitting responsibilities under the County of San Bernardino as the CEQA lead agency. As a result the in-service date has been shifted from December 2028 to March 2029
- On January 27, 2026, San Bernardino County Board of Supervisors upheld the Planning Commission's decision by: 1) Approving the Interconnection Customer (Avantus) Sienna Solar 1 and 2 Projects; and 2) Certifying the Environmental Impact Report (EIR), which also includes and covers the SCE Calcite Substation's environmental analysis.
- On June 28, 2026, received CPUC exemption from the Permit to Construct (PTC) filing requirements

Notable Risks & Construction Schedule:

- The primary schedule risk remains the acquisition of property rights and potential condemnation proceedings required to secure right-of-way easements. Calcite Substation construction to start in Q1 2028. Forecasted OD in March 2029

Calcite Substation Components



38. SP-169 San Bernardino–Etiwanda 230 kV 1 Line Upgrade

Hamid Arshadi, Project Manager, Transmission & Substation Project Management

SP-169 San Bernardino–Etiwanda 230 kV 1 Line Upgrade

Driver: CAISO Policy Driven Project per 2022-2023 TPP to prioritize the development of several transmission projects, particularly the deliverability constraints needed to support development of many new renewable generation projects

Budget: The current total project budget is $94.5M. The increase of the budget was due to the previous budget serving as an initial placeholder, reflecting only anticipated transmission-related direct expenses. The change in cost was due to changes in transmission design and construction methods. The current project budget is also comprehensive, accounting for environmental and permitting expenses, departmental overhead, anticipated risks, and contingency allocations, not accounted for in original budget.

Dependencies: The project dependencies for the San Bernardino-Etiwanda 230kV Line Upgrade include timely delivery of the ACCC wire/conductors and acquisition of all required permits from various external agencies and municipalities to ensure SCE meets the forecasted start date of construction.

Changes: The most significant changes to the project in the past 12 months:

- As noted in the response to the Cycle 4 CPUC Data Request 2-37, the most significant change to the project in the past 12 months is the increase in the project budget. Notably, the major components that impacted existing or added to the project cost included: changes to engineering scope of work, added costs due to increased construction method (e.g. helicopter use and crossing existing 66kV lines), permitting (Caltrans, railroad, water treatment facility), environmental costs, added known risks and contingency.

Timeline:

- Final Design/Engineering work in progress
- Major Material Delivery: 2027-2029
- Construction Start: October 2028
- Construction Completion: December 2031

Risks: Outage availability in the general area are restricted to winter season and coordination with multiple ongoing projects with the same outage needs could significantly delay construction completion.

33. SP-151 New Lugo 3AA 500/230 kV Bank

Elizabeth Webb, Major Construction Project Manager, TSPM

SP-151 New Lugo 3AA 500/230 kV Bank

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

Scope: The project scope includes installation of three (3) new 500/230/13.8 kV single-phase transformers and one (1) spare transformer, installation of two circuit breakers and related terminal equipment at the respective 500 kV and 230 kV switchrack positions, and extension of the 230 kV double operating bus at Lugo Substation. SCE will be utilizing spares from the Spare Transformer Equipment Program (STEP) to reduce delays related to long lead equipment

Project Drivers: Mitigation of system reliability risks (thermal overloads, transient instability) with loss of AA banks and increased deliverability of renewable generation from North of Lugo, needed to enable Renewable Portfolio Standard (RPS)

Status: In pre-engineering and moving forward towards a June 2029 expected completion date

Budget: Current projected cost is $68M

Risks/Challenges: If the Lugo–Victorville 500 kV Thermal Overload Project is not completed in 2027; CAISO outage coordination

Schedule: Engineering 4/26-10/27, Construction Start 1/28, OD 6/29

34. SP-152 New Coolwater A 115/230 kV Bank

Fernando Benavides, Strategic Planning Senior Advisor, Integrated Major Projects Development

SP-152 New Coolwater A 115/230 kV Bank

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

- **Project Overview:** The project consists of the installation of one 230/115kV transformer, one 220kV position, one 115kV position, and one MEER.
- **Project Drivers:** This project mitigates low voltage and potential voltage collapse under various outage conditions in the North of Lugo (NOL) Area.
- **Timelines to completion:** Current forecasted completion date is April 2029.
- **Current Status:** The project is progressing through engineering design and placing long lead time material orders.
- **Project Risks:** Project risks include obtaining required permitting and material lead times.
- **Project Budget:** Total project budget is $140M (77% FERC, 23% CPUC)
  - Budget increase primarily driven by increase in scope related to transmission line work, civil, and requirement for a larger MEER
- **Update to the Project:** After being placed on hold in 2025, the CAISO reaffirmed the need for the Project to continue in the 2025-2026 Transmission Plan.

36. SP-162 Brightline West High Speed Rail Project

Fernando Benavides, Strategic Planning Senior Advisor, Integrated Major Projects Development

SP-162 Brightline West High Speed Rail Project

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include an explanation of expected cost allocation for the project, including under what circumstances the $5.421 million paid by the Customer as a "deposit subject to refund" will need to be repaid or refunded by SCE.

- **Project Overview:** Projects DesertXpress (PIN 8301) and Velocity (PIN 8678) support Brightline West's request for electrical service infrastructure. SCE's scope of work consists of constructing three new 115kV service points classified as Added Facilities (Rule 2H) near Ivanpah, Barstow, and Hesperia, referred to as Rapid, Accelerate, and Velocity, respectively.
- **Project Drivers:** The projects are driven by Brightline West's request for 115kV electrical service to support its planned high-speed rail operations.
- **Timeline to Completion:** During the requested period, project completion was anticipated by December 2028. The current schedule reflects an in-service date of April/May 2028.
- **Current Status:** Engineering is approximately 40% complete, and the projects continue to progress through engineering and material procurement activities.
- **Project Risks:** Key risks include material lead times, environmental requirements, and right-of-way constraints, which may impact project schedule and cost.
- **Total Project Budget/Forecast:** The total forecast for the project is $125.1M.

SP-162 Brightline West High Speed Rail Project

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include an explanation of expected cost allocation for the project, including under what circumstances the $5.421 million paid by the Customer as a "deposit subject to refund" will need to be repaid or refunded by SCE.

- **Project Dependencies:** Added Facilities Agreement – Currently operating under a Letter Agreement with customer, and BLM Notice To Proceed.
- **Changes During the Prior 12 Months:** Engineering and project development activities progressed, and project scope continued to be reviewed and refined.
- **Expected Cost Allocation:** The current cost allocation for both projects are approximately 73% Standard Facilities (SF) and 27% Added Facilities (AF), subject to change upon final engineering.
- **$5.421M Deposit Subject to Refund:** Generally, per Rule 2 Tariff, SF provides standard service to a load customer within SCE territory. Per Rule 2H, AF include additional items that are above and beyond SF and are requested by the customer. These items can include equipment or service redundancy which are optional to the customer. All AF costs are paid for by the customer and subject to actual cost true-ups. AF costs are not considered as a "deposit subject to refund" per tariff. There are currently no associated reimbursements identified for either project.

35. SP-154 New Serrano 4AA 500/230 kV Bank and 230 kV GIS Rebuild (fka North of SONGS)

Ben Coalson, Senior Engineer, Integrated Major Project Development

SP-154 New Serrano 4AA 500/230 kV Bank and 230 kV GIS Rebuild (fka North of SONGS)

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

SCE clarifies SP-154 is not the North of SONGS-Serrano Transmission Line Project

The primary driver for SP-154 is the material lead time of the selected vendor for manufacture and installation of GIS switchgear. SCE is actively working with the vendor to identify any opportunities to accelerate delivery and installation of that equipment.

- The project is currently in the Engineering and Design phase of execution.
- Remaining major milestones to completion based on current schedule:
  - Site Mobilization: March 29, 2027 - for 500kV, July 8, 2027 - for 230kV
  - Civil Construction Start: March 29, 2027
  - First Major Material Delivery: May 26, 2028
  - 500 kV Construction Start: July 31, 2028
  - 220 kV Construction Start: November 27, 2028
  - Major Material Delivery Complete: July 26, 2030
  - Construction Complete: May 26, 2033
  - Project In-Service: August 31, 2033
- The current forecast for the project is $242M.

SP-154 New Serrano 4AA 500/230 kV Bank and 230 kV GIS Rebuild (fka North of SONGS) - continued

- The project's primary dependency is on the vendor's production capacity. During construction, availability and coordination of outages may be a dependency affecting the schedule. There are no dependencies on the completion of other projects.

- Changes over the past 12 months include execution of the EPC contract between SCE and vendor in 12/2025; increase in total cost from $120M (TPP initial estimate) to $241M based on vendor provided cost for material and services; deferral of operating date from 12/31/2027 to 8/21/2033 based on vendor's production schedule; commencement of engineering & design activities; and regular progress meetings with SCE, vendor, and subcontractors.

- Risks and challenges include the nature of GIS switchgear itself, the regulatory moratorium on SF6 gas, and the need to implement operational mitigations for high short-circuit duty

39. SP-178 Colorado River-Red Bluff No.1 500kV Line Upgrade

Ben Coalson, Senior Engineer, Integrated Major Project Development

Roxanne Yuen, Project Manager, Transmission & Substation Project Management

SP-178 Colorado River-Red Bluff No.1 500kV Line Upgrade

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

- **Driver**: Approved as a Policy Driven Project by CAISO per 2022-2023 TPP to prioritize the development of several transmission projects that will help meet California's clean energy policies.
- **Timeline & Budget**: CAISO need-date of December 2032. Currently, forecasted construction completion has moved to April 2028 (previously, 2027) based on current outage restriction windows. The current budget is $56.9M.
- **Status**: The project is currently in process of issuing a Request for Proposal (RFP) and to be awarded to a EPC contractor by Q1 2027. The awarded EPC contractor will be responsible for providing a project schedule that meets the need dates and coordinates the outages with the similar projects in the area.
- **Risks**: Outage availability is restricted to fall/winter season and is limited to one 500 kV line at a time. Requires coordination with other similar projects in the vicinity or their outages could cause delays.

32. SP-26 Control–Silver Peak TLRR Remediation

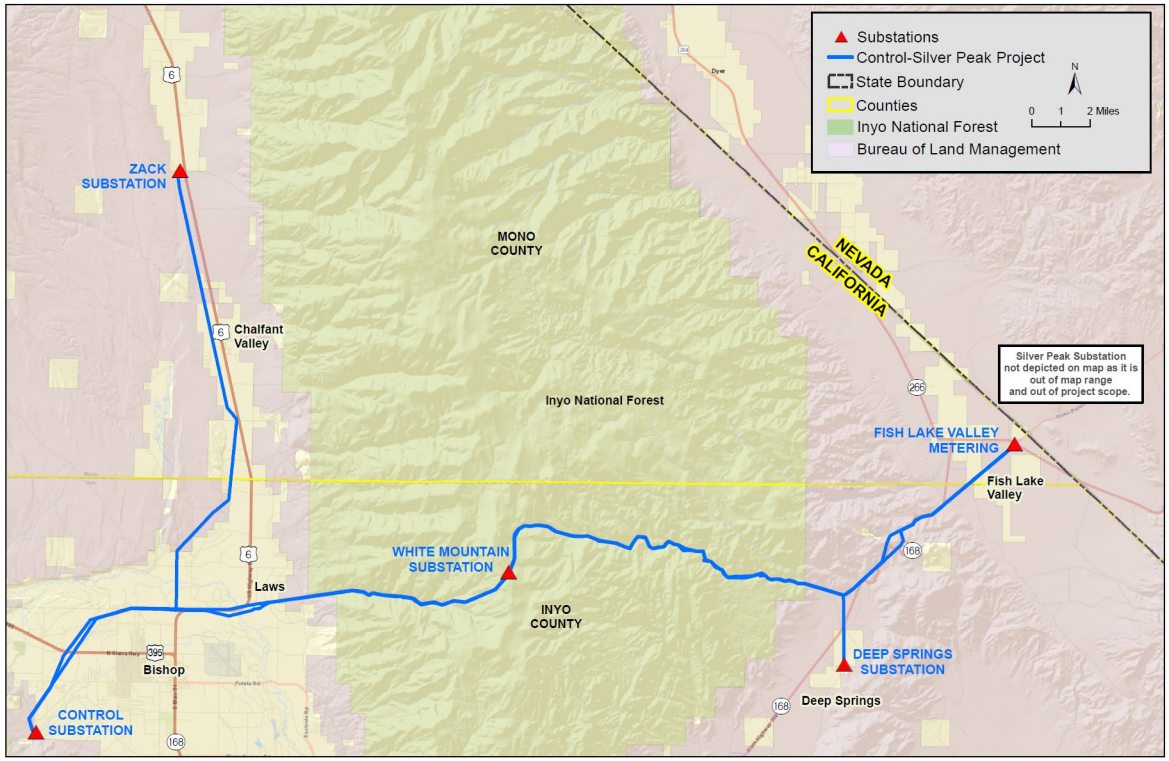
Marco Orozco, Project Manager – Transmission, Substation Project Management

SP-26 Control–Silver Peak TLRR Remediation

Please provide an overview of the project, including any project drivers, timelines to completion, current status, project risks, budget, project dependencies, and changes to the project in the past 12 months. Please include in the discussion any notable risks or challenges to this program.

Driver and Project Overview: The Transmission Line Rating Remediation (TLRR): Control-Silver Peak 55kV Subtransmission Project is a compliance-driven initiative that spans approximately 61 circuit miles and is focused on ensuring adherence to the California Public Utilities Commission's (CPUC) General Order 95 clearance requirements and the North American Electric Reliability Corporation (NERC) Facility Ratings. The project is located in northern Inyo and southern Mono counties near the city of Bishop, and the Chalfant Valley, Fish Lake Valley, and Deep Springs areas.

To achieve compliance, the project will implement various remediation strategies throughout the circuits including full rebuild of certain segments (e.g., replacement of all existing poles/tower and conductor with completely new materials), while only requiring targeted pole replacements in the other segments.



Status & Timeline: SCE filed CEQA and NEPA applications with the CPUC and the BLM in 2021. If approved by the agencies, the project currently anticipates to begin construction in 2028 and project completion in 2031.

Budget: Current Project Budget is ~ $328M

Risks: See next slide

Project Dependencies: Regulatory approval

Project Changes in the Past 12 Months: None

SP-26 Control–Silver Peak TLRR Remediation

Please include in the discussion any notable risks or challenges to this program.

- **Sensitive Environmental Areas** - The project alignment cross several sensitive environmental areas including Bi-State Sage Grouse habitat, Bighorn Sheep habitat, the Ancient Bristlecone Pine Forest and culturally sensitive areas requiring extensive environmental review and mitigation planning.

- **Seasonal Restrictions -** Because construction occurs in high-altitude and environmentally sensitive areas, certain activities may be limited or prohibited during specific seasons to protect wildlife and prevent environmental impacts. These restrictions, combined with potential for heavy winter conditions, would limit site access and shorten the workable construction window, which may significantly constrain the overall construction schedule.

- **Restoration** – Restoration efforts will be challenging because vegetation in the White Mountains, rising to elevations near 10,000 feet, grows slowly and has limited natural recovery capacity.

- **Difficult Terrain for Construction -** Large portions of the transmission corridor traverse the White Mountains and steep canyon regions (e.g., Silver and Wyman Canyons), making construction access, equipment transport, and structure replacement significantly more challenging.

15. Competitively Bid Projects

Alex Gutierrez, Sr. Project Manager, TSPM

Competitively Bid Projects

Please provide an update on the competitively bid projects that SCE have incumbent-utility responsibilities for, addressing the following:
a) Cost estimate for the SCE-responsible incumbent-utility upgrades and interconnections
b) Integrated project schedule, milestones, and contractual status
c) Reliability impacts and interim mitigation

Upgrades at Serrano Substation supporting the North of SONGS – Serrano Transmission Project:

a) Upgrades at Serrano Substation are currently under development and an estimate has not been developed at this time
b) Upgrades at Serrano Substation are currently under development and an integrated project schedule has not been developed at this time.
c) The competitively bid project and its incumbent-utility upgrades support policy needs and are not reliability driven

Upgrades at Colorado River Substation supporting the Delaney - Colorado River Transmission Project:

a) Upgrades at Colorado River Substation are complete. SCE's estimate for the upgrades are $33M.
b) Upgrades at Colorado River Substation are complete
c) There are no reliability impacts or interim mitigation

Close Out & Next Steps

Antonio Ocegueda, Principal Manager
FERC Rates and Tariffs

Close Out & Next Steps

- Stakeholders to submit comments to ferccaseadmin@sce.com

  [Please cc: Jerry Huerta (jerry.huerta@sce.com) and Mark Khouzam (mark.khouzam@sce.com)]

- Stakeholder questions and/or comments are to be submitted by September 11, 2026
  - SCE will respond to questions within 15 business days of receipt
- Project-specific follow-up questions/comments are to be submitted by October 9, 2026
  - SCE will respond to questions within 10 business days of receipt
- Stakeholders may provide comments to SCE by October 30, 2026
- Next TPR submission to occur on December 1, 2026