During the period January 2018 through December 2019, SCE forecasts:

- $550 million in ISO non-incentive network transmission closings to plant in-service (including $318 million in ISO Blanket Specifics closings),
- $666 million in FERC incentive rate qualified CWIP expenditures, and;
- $89 million of CWIP Expenditures closing to plant in-service

In addition to the numerous but relatively small transmission projects, there are 20 significant transmission projects (each $5 million or greater in ISO-related costs) that are expected to be placed in service in the period January 2018 through December 2019 – six Blanket Specifics (items 1 through 6 below), 11 Specific non-incentive projects (items 7 through 17 below), and three Specific incentive projects (items 18 and 20 below). These projects will increase the reliability of the ISO transmission grid, increase access to new generation resources to serve the ISO market, and/or provide congestion relief. SCE's Formula Protocols, Section 3(a) specifies that SCE will provide work papers detailing specific information regarding its capital forecast.

Table 1
Forecast Direct Capital Expenditures Projected Closing to Plant In-Service between 2018 and 2019
(Nominal $Millions)

No.	PIN	Project	FERC CWIP	FERC Non-CWIP	Total
1	4211	Replace Bulk Power Circuit Breakers	-	11.796	11.796
2	4756	Substation Miscellaneous Equipment Additions & Betterment	-	16.078	16.078
3	5089	Bulk Power 500kV & 220kV Line Relay Replacement	-	16.451	16.451
4	5210	Substation Transformer Bank Replacement Program (AA-Bank & A-Bank)	-	40.241	40.241
5	Various	Transmission Line Rating Remediation	-	162.928	162.928
6	7392	Seismic Assessment and Mitigation Program for Transmission Assets	-	29.792	29.792
7	7820	Substation Physical Security Enhancements Project[1]	-	61.061	61.061

[1] PIN 7820 Substation Physical Security Enhancements Project is split between Blanket Specifics with $12.567 million and Specific non-incentive with another $48.493 million in ISO related capital additions to rate base (*see* WP Schedule 16 – Summary of ISO Cap Expenditures Non-Incentive Projects).

8	Various	Substation Maintenance and Test Building Improvements Program	-	33.121	33.121
9	3138	LADWP DC electrode replacement	-	41.093	41.093
10	6791	Lugo 500 kV Substation breaker installation for No. 1AA & No. 2AA	-	7.925	7.925
11	6824	La Fresa Sub (Phase 2 Scope): Install new MEER building	-	9.190	9.190
12	7113	El Nido 230/66 kV: Bank on Circuit Breaker Project	-	11.257	11.257
13	7115	Johanna 230/66 kV: Bank on Circuit Breaker Project	-	6.107	6.107
14	7119	Walnut 230/66 kV: Bank on Circuit Breaker Project	-	6.690	6.690
15	7120	Chino 230/66 kV: Bank on Circuit Breaker Project	-	23.899	23.899
16	7763	Lugo-Victorville 500 kV T/L SPS	-	12.636	12.636
17	8090	Bob Switch to Eldorado 220 kV Interconnection	-	7.979	7.979
18	6420	West of Devers	29.476	-	29.476
19	7546	Eldorado-Lugo-Mohave Upgrade	42.707	-	42.707
20	7555	Mesa Substation	9.742	-	9.742
21	Various	Less than $5m each	7.329	51.491	58.820
		Total	**89.254**	**549.735**	**638.988**

1. Bulk Power Circuit Breaker Replacement (PIN: 4211)

Bulk power circuit breakers interrupt the flow of electricity through a transmission lines, typically at the 500 kV or 220 kV voltage levels. Circuit breakers are essential in preventing equipment damage and public injury when faults occur in their downstream circuits. Bulk power circuit breaker replacement program identifies and replaces bulk power circuit breakers approaching the end of their service lives that contain parts known to be problematic or no longer available, or that can no longer be cost-effectively maintained. The replacement of bulk power circuit breakers is under FERC jurisdiction and is necessary to proactively replace aging 220 kV and 500 kV circuit breakers at substations to enhance transmission system safety and to improve system reliability. This program also increases the reliability of the ISO transmission grid. The estimated ISO-related capital expenditures for this program that are projected to go into rate base in the period January 2018 through December 2019 are $11.796 million.

2. **Substation Miscellaneous Equipment Additions & Betterment (PIN: 4756)**
   Substation Miscellaneous Equipment Additions & Betterment captures the cost to remove, replace, and retire miscellaneous assets on a reactive or programmatic basis. It does not include the costs for preemptive replacement of circuit breakers, substation transformers, substation protection, and control systems. Instead, it is predominantly like-for-like replacement of miscellaneous substation equipment with limited engineering. Equipment that is identified as requiring replacement must be replaced in a timely manner because substation equipment failures may lead to prolonged outages, unsafe operating conditions, or more expensive reactive solutions. Example includes the replacement of obsolete Digital Fault Recorders ("DFRs") at Mira Loma, Antelope, Colorado River, Devers, Eldorado, and Rancho Vista 500 kV Substations. The estimated ISO-related direct capital expenditures for this program that are projected to go into rate base in the period January 2018 through December 2019 are $16.078 million.

3. **Bulk Power 500 kV & 220 kV Line Relay Replacement (PIN: 5089)**
   Relays are devices that monitor the currents and voltages for each piece of equipment in substations and actuate circuit breakers should these parameters exceed acceptable limits. Relays in 500 kV and 220 kV substations fall under FERC jurisdiction. Examples include the replacement of bulk relay(s) at Lugo, Vincent, Eldorado 500 kV, and Vista, Ellis, Hinson 220 kV substations. The estimated ISO-related direct capital expenditures for this program that are projected to go into rate base in the period January 2018 through December 2019 are $16.451 million.

4. **Substation Transformer Bank Replacement Program (PIN: 5210)**
   AA-Bank transformers are located in major substations where they take electricity at the 500 kV transmission level and transform it down to 220 kV. The Substation

Infrastructure Replacement ("SIR") program identifies and replaces AA-Bank transformers that are approaching the end of their service lives, that contain parts which are known to be seriously problematic or are no longer available, or that can no longer be cost effectively maintained. The costs of AA-Bank transformer replacement are all under FERC jurisdiction.

A-Bank transformers are located in major substations where they take electricity at the 220 kV transmission level and transform it down to a subtransmission voltage, either 115 kV or 66 kV. The SIR program identifies and replaces A-Bank transformers those are approaching the end of their service lives, that contain parts which are known to be seriously problematic or are no longer available, or that can no longer be cost-effectively maintained. The consequences of an in-service failure of an A-Bank transformer are highly undesirable. A-Bank transformers typically supply power to large portions of SCE's distribution system servicing hundreds of thousands of customers. While redundancy is built into the A-Bank system, an in-service failure would place the system into an "N-1" condition, wherein a second failure or system disturbance could result in a massive blackout affecting significantly large areas. The consequences of such a blackout are so severe that SCE believes that every reasonable precaution must be taken to prevent it. Although infrequent, in-service failures of A-Bank transformers can be violent. These transformers are oil-filled and catastrophic failures and ensuing fires can endanger the safety of SCE employees and the operability of nearby equipment. Inspections are extremely helpful in identifying many incipient failures. However, because of the speed at which failure mechanisms can arise and progress, inspections cannot prevent all failures. Therefore, planned preemptive replacements under controlled conditions of transformers clearly approaching the end of their service lives are a prudent and responsible action to minimize the risk of in-service failures.

In summary, the replacement of AA- and A-Bank transformers is managed by the Substation Infrastructure Replacement program which combines engineering analysis and expert judgment to ensure that the appropriate number of AA- and A-Bank transformers is replaced each year and that those which are replaced are the most risk-significant.

The estimated ISO-related direct capital expenditures for this program that are projected to go into rate base in the period January 2018 through December 2019 are $40.241 million.

5. Transmission Line Rating Remediation (PINs: 7298, 7867, 7904, 7905, & 7906)

SCE has been conducting a Transmission Line Rating Study to identify transmission lines potentially in violation of CPUC GO 95. As part of the study, SCE has completed its initial survey of all of SCE's CAISO-controlled transmission lines built before 2005. Based on the results of the survey, SCE prioritized the transmission line discrepancies that will require line clearance remediation. A discrepancy is any condition found in the field requiring remediation to meet GO 95 requirements during peak loading conditions. Discrepancies have been prioritized based on criteria such as line sag when operating at or below 130 degrees Fahrenheit, and potential risk to public safety and system reliability based on location of span, terrain, encroachment type, and extent of deviation from standards. The study prioritized the discrepancies within a span into six levels, with A1 being the highest priority, and followed by A2, A3, B1, B2, and B3. Remediation work to address discrepancies includes replacing towers and poles, clearing brush, replacing insulators, removing slack from lines, and other efforts to remediate line clearance issues.

In 2015, SCE finalized work on a plan to remediate all CAISO discrepancies over a ten-year period, 2016 – 2025. This plan requires a significant

increase in work and spend over the ten-year period. Through 2015, remediation efforts have focused on the higher priority discrepancies. This remediated 428 discrepancies, cleared 866 discrepancies, and identified 344 discrepancies cleared by other SCE programs or projects. As of the end of 2015, there are approximately 6,167 CAISO discrepancies to be remediated within the ten-year period. To accomplish this increased level of work, SCE plans to take a more programmatic approach to the remediation work, including the utilization of CPUC licensing projects, major projects exempt from licensing (i.e., re-conductors), and minor projects exempt from licensing (individual tower/pole modifications or replacements). The ten-year plan was developed with North American Electricity Reliability Corporation ("NERC") and Western Electricity Coordinating Council ("WECC") input.

Besides the CAISO discrepancies, NERC/WECC requested that SCE perform studies on the non-CAISO controlled lines (radial lines). This study was completed in 2015 and will require additional discrepancies to be remediated by 2030, as agreed to by SCE and NERC/WECC.

Transmission Line Rating Remediation ("TLRR") efforts include both O&M and capital work. A high percentage of these expenditures are for work on CAISO-controlled transmission, which is under FERC jurisdiction.

The forecast of TLRR capital expenditures is based on a specific, project-based forecast. The forecast includes the costs for remediation activities, engineering and design work, and materials, allocated by year and by priority level. Most projects and associated costs are FERC jurisdictional.

The significant increase in spend is correlated with the change in program strategy to meet the regulatory requirements discussed above. Using the previous strategy, it would have taken SCE well beyond the agreed upon ten-year timeframe to remediate all discrepancies. To shorten the time to achieve compliance, SCE developed a plan that focuses more on bundling many

discrepancies by circuit and geographic location, such as utilizing major licensed re-conductor projects which can remediate many discrepancies in the scope of one large project. Since licensing projects take longer to complete, the costs requested in this rate case are for many smaller scale projects that do not require licensing, though the same bundling approach applies. This will allow SCE to complete the remediation to meet the regulatory requirements. Forecasts for projects in the preliminary stages of engineering use a cost per remediation method and projects with completed engineering use cost estimates for specific scope.

Total forecast of TLRR direct capital expenditures between 2018 and 2019 is $189.004 million and estimated ISO-related direct capital expenditures that are projected to go into rate base during this period are $162.928 million.

6. Seismic Mitigations for Transmission Assets (PIN: 7392)

SCE forecasts $4.163 million between 2018 and 2019 to mitigate vulnerabilities to transmission corridors. The forecast is based on high level unit cost estimates from Phase I Assessments (including interviews with subject matter experts and geographic information system analyses), identified several transmission towers and lines are in areas prone to landslides following earthquakes. Mitigation work includes: (1) relocation or replacement of structures, (2) the reinforcement of existing structures or hardware, and (3) foundation modifications in identified areas prone to liquefaction and landslides.

SCE forecasts another $25.629 million to retrofit and harden components in transmission substation structures built to older standards (pre-1992) and specifications that could lead to a loss of equipment functionality. This capital cost forecast is based on high level unit cost estimates provided by third party consultants and internal estimates based on similar work. SCE anticipates a steady pace of mitigation work from 2018 with costs relatively stable over each year. The work includes: (1) adjusting slack between interconnected equipment, (2)

retrofitting anchorage and bracing for electrical equipment, and (3) replacing older equipment or components to comply with current seismic standards. Based on the scope and costs to mitigate both transmission towers and lines/corridors and transmission substation structures, SCE forecasts ISO-related capital expenditures of $29.792 million to perform corresponding mitigations for SCE's transmission assets in the period January 2018 through December 2019. All of the amount is projected to go into rate base during this period.

7. Substation Physical Security Enhancements (PIN: 7820)

In 2013, a Pacific Gas and Electric Company ("PG&E") substation was attacked, resulting in substantial reduction in transmission capability and over $15 million in damages. This was the first significant attack on a substation in the United States. In 2014, NERC developed physical security regulations to require utilities to protect critical substations from attack that could cause widespread outages in the bulk electrical system. This program was identified as Tier 1-NERC Critical Infrastructure Protection ("CIP")-014. CIP-014 requires utilities to assess, review, and identify critical facilities that are vulnerable to physical attack risks, and furthermore, develop and implement a plan to enhance protection for these assets.

After the 2013 attack at the PG&E's Metcalf transmission substation, SCE evaluated its substations to identify areas where the company should bolster its security to prevent a similar occurrence on SCE assets. Because of this, and prior to the development of the NERC CIP-014 program, SCE identified seven substations in 2014 for physical security enhancements. These substations were critical to the reliable operation of our grid. In addition, SCE considered these substations to be probable candidates for future NERC CIP-014 requirements due to their criticality. Therefore, SCE initiated pilot physical security enhancements to four out of the seven substations in 2014, in anticipation of the release of CIP-014. These enhancements included improvements to walls, reinforcement of gates,

concealment of key assets, and improvements to technical security to detect threats and improve response, including improved cameras, alarms, and lighting. CIP-014 does not define the specific mitigation tools and methods for identified critical facilities but requires utilities to develop and implement a security risk mitigation plan. To prepare and help inform the development of our security mitigation plan, this pre-CIP-014 pilot program was created not only for SCE to get ahead of the anticipated compliance requirements but also to pilot and test security technology options to determine the best practices to be later incorporated into the remaining CIP-014 qualified sites. Examples of piloting scope include testing long range video or gunshot detection technology to increase situational awareness, building high-security physical perimeter walls, improving security lighting and audible alarms to deter attacks.

In 2015, CIP-014 was released and the final version of the regulation included criteria that two of the four pilot sites met. Together with the remaining three CIP-014 qualified sites, SCE has seven substations that require physical security enhancements under Tier 1 Physical Security Program.

Both prior recorded and forecast between 2018 and 2019 of Substation Physical Security Enhancements Project direct capital expenditures capture these programs' expenditures in the Transmission Substation portion of the projects. These expenditures are required to fund physical security enhancements such as AC/DC power feeds to security equipment and lighting, providing ballistic barriers around critical equipment, installing concealment, and replacing or modifying substation fences and gates. SCE will focus on completing the majority of Tier 1 (CIP-14) site enhancements by 2018, with completion of all remaining work in the following year.

The proposed operating date for the specific project is December 2019 and estimated ISO-related direct capital expenditures that are projected to go into rate base during this period are $61.061 million.

8. Substation Maintenance and Test Building Improvements (PINs: 7924, 7956, 7957, 7958, & 7959)

SCE operates approximately 900 substations. The T&D crews that perform maintenance and testing are strategically located throughout the service territory in order to best access these substations. Staff are located in buildings that, initially, were built as a temporary solution or they are in permanent facilities that were not built to adequately support a safe work environment. T&D evaluated all maintenance and test work function locations and identified six substations as priority for improvement. The six in scope for this project were built between 1955 and 1975. The six substations are: Antelope 500/220/66/12 kV, Mesa 220/66/12 kV, Pardee 220 kV, Devers 500/220/115 kV, Santa Clara 220/66 kV, and Rector 220/66/12 kV substation. Few renovations to these buildings have been made since they were originally constructed. Test and maintenance operations, at the six identified substations, are performed in separate areas of the site. Sometimes, crew members work at different substation locations due to the lack of space to accommodate the entire crew. Current storage facilities do not provide secure protection of equipment. In some instances, valuable testing parts and equipment are stored in temporary trailers or are not adequately protected from the environment. Many of the substations do not have adequate shop and storage spaces for the crews to perform their work or store critical equipment. This makes it difficult for work flow continuity and communication between the test and maintenance groups. Co-locating the test and maintenance functions within one building, at each of these six sites, will improve efficiencies to work flow and communication, reduce downtime, and efficiently bring critical services to the system. Based on preliminary investigation, SCE identified deficient building conditions such as:

- The building areas cannot support productive working conditions (e.g., no break areas, lack of adequate restrooms).
- Given the age and type of construction, some buildings likely have lead or asbestos in the walls, ceilings, or floor tiles.
- The structural integrity of buildings is poor due to the age of some buildings.
- Buildings are not compliant with modern accessibility or building system regulations (e.g., lighting).

The Substation Maintenance and Test Building Program will address the areas of risk, at the six existing substations, that could have a direct impact on safety and service reliability. Given the: (1) age and condition of existing buildings, (2) productivity issues with crews working in poor building conditions and separate locations, and (3) limited space and storage, it is prudent to build a test and maintenance facility, at each of the six identified substations, which is tailored to its specific site conditions. For this project, SCE will:

- Design and develop an efficient site plan to include safe vehicular access, circulation, and parking.
- Obtain required studies (e.g., engineering and environmental), permits, and approvals.
- Prepare the site (e.g., excavation and/or grading) for circulation, run-off and water management, and utilities; secure the site for construction.
- Construct a test and maintenance building (approximately 13,000 square feet), at each of the six identified substations, with maintenance shops, test benches, employee work areas, meeting areas, and rest and break rooms.
- Construct covered parking for SCE trucks. Construct employee parking areas.

SCE forecasts total expenditures of $45.728 million for five of the six identified substations whose capital spend is projected to go into rate base by 2019. Capital

spend on the remaining Mesa 220/66/12 kV Substation is projected to go into rate base beyond 2019, so it is excluded in this request. The proposed operating date is December 2019 and $33.121 million out of the total spend amount is ISO related. All of the amount is projected to go into rate base during this period.

9. LADWP DC electrode replacement (Land and Ocean segments) (PIN: 3138)

The purpose of this project is to improve the availability and reliability of the newly upgraded Sylmar Converter Station East, the ground return cables need to be replaced and encased in a separate conduit bank along a new circuit route to the ocean electrodes. The project scope includes replacing the existing underground cables with higher-rated, insulated cables that eliminates oil pressure build-up and rupturing of the external lead sheath. The existing cables carry ground return current to ocean electrodes for the Sylmar High Voltage Direct Current ("HVDC") transmission system and they were installed in 1969 when the Pacific DC Intertie ("PDCI") was originally energized at +/- 400 kV, 1800 Amps, and 1440 MW.

After several upgrades to the PDCI, there have been no upgrades to the electrode and numerous failures have been sustained. Current operations are at a higher rating of +/- 500 kV, 3100 Amps, and 3100 MW. To replace the underground portion of the PDCI ground return system, project scope includes 7-8 miles of underground line from Kenter Terminal Tower and installation of up to 8 new miles of concrete encased conduit bank and 120,000 feet of new cable. The proposed operating date is December 2018 with estimated ISO-related direct capital expenditures of $41.093 million, which represents SCE's 50% share of the project. All of the total project cost is projected to go into rate base during this period.

10. Lugo 500 kV Substation breaker installation for No. 1AA & No. 2AA (PIN: 6791)

Currently, both No. 1AA and No. 2AA 500/230 kV transformer banks at Lugo substation are connected to the North and South Buses (respectively) via a bank-on-bus configuration. This configuration violates SCE's existing Transmission Planning Criteria. The project will improve operational flexibility, simplify future additions, and minimize the loss of station capacity during planned outages. The proposed operating date is July 2019 with estimated ISO-related direct capital expenditures of $7.925 million. All of the amount is projected to go into rate base during this period.

11. La Fresa Substation New MEER (PIN: 6824)

This project involves the installation of a new Mechanical Electrical Equipment Room ("MEER") building in addition to the current MEER building, and cutting over the existing protection. The new MEER is the second phase of a prior addition of a 220/66 kV transformer bank and new 220 kV circuit breakers at La Fresa. The new MEER building is necessary to address the aged control building, house the existing substation controls and protection, as well as to accommodate current standard SCE substation automation. The proposed operating date is December 2018 with estimated ISO-related direct capital expenditures of $9.190 million. All of the amount is projected to go into rate base during this period.

12. El Nido 220 kV Circuit Breakers (PIN: 7113)

This project involves conversion of the current bank-on-bus configuration to a double breaker configuration for 220/66 kV transformer banks. Equipping the banks in circuit breakers configuration would ensure compliance with present SCE Line and Bus Criteria. The new double breaker configuration provides greater operational flexibility, simplifies future additions, and minimizes the loss of station capacity during planned outages. The proposed operating date is June 2018

with estimated ISO-related direct capital expenditures of $11.257 million. All of the amount is projected to go into rate base during this period.

13. Johanna 230/66 kV: Bank on Circuit Breaker Project (PIN: 7115)

Currently No. 3A and 4A banks at Johanna 230/66 kV Substation are connected in bank-on-bus configuration. Equipping the banks in circuit breakers configuration would ensure compliance with current planning criteria and guidelines which would offer higher operation flexibility. The proposed operating date is May 2019 2018 with estimated ISO-related direct capital expenditures of $6.107 million. All of the amount is projected to go into rate base during this period.

14. Walnut 220 kV Circuit Breakers (PIN: 7119)

This project involves conversion of the current bank-on-bus and line-on-bus configuration to a double breaker configuration for 220/66 kV transformer banks and the Mesa 220 kV transmission line. Equipping the banks and line in circuit breakers configuration would ensure compliance with present SCE Line and Bus Criteria. The new double breaker configuration provides greater operational flexibility, simplifies future additions, and minimizes the loss of station capacity during planned outages. The proposed operating date is December 2018 and estimated ISO-related direct capital expenditures that are projected to go into rate base during this period are $6.690 million.

15. Chino 220 kV Circuit Breakers (PIN: 7120)

Currently the No. 1A bank at Chino 230/66 kV Substation is connected in bank-on-bus configuration. Equipping the bank in circuit breakers configuration would ensure compliance with current planning criteria and guidelines which would offer higher operation flexibility. The proposed operating date for the specific project is

June 2018 and total ISO related direct capital expenditures that are projected to go into rate base during this period are $23.899 million.

16. Lugo-Victorville 500 kV T/L Special Protection Scheme ("SPS") (PIN: 7763)

The purpose of this project is to prevent overloads on the jointly-owned Lugo-Victorville 500 kV transmission line. This SPS trips the Transition Cluster ("TC") generation projects for the N-1 loss of the Eldorado-Lugo 500 kV line and the N-2 loss of the Eldorado-Lugo and Lugo-Mohave 500 kV transmission lines. This project was approved by the CAISO in an executed LGIA. The proposed operating date is December 2019 and estimated ISO-related direct capital expenditures that are projected to go into rate base are during this period $12.636 million.

17. Bob Switch to Eldorado 220 kV Interconnection (PIN: 8090)

Valley Electric Association, Inc. ("VEA") requested interconnection of the Bob Switch to SCE-owned Eldorado 220 kV Switchyard inside the co-owned Eldorado Substation. VEA is in the midst of expanding its transmission system to enable them to move power between its customers, power producers, and the CAISO. On September 14, 2017, VEA sold its interest in the Bob Switch Station and the Bob Switch-Eldorado 220 kV Transmission Line to GridLiance West Transco LLC the Connecting Customer. The proposed operating date is July 2019 and estimated ISO-related direct capital expenditures that are projected to go into rate base during this period are $7.979 million.

18. West of Devers (PIN: 6420)

The West of Devers Project consists of upgrading and reconfiguring approximately 48 miles of existing 220 kV transmission lines between the Devers,

El Casco, Vista and San Bernardino substations, increasing the power transfer capabilities in support of California's renewable portfolio standards goals.

In August 2016, the CPUC approved the construction of the West of Devers Project. As a result of the delay in receipt of the Project's approval from the CPUC, SCE deferred the forecasted timing of project capital expenditures. ORA filed an Application for Rehearing in September 2016 stating that the August 2016 decision failed to follow the California Environmental Quality Act when it approved the Project and should have approved an alternative project with an amended scope. In March 2017, the CPUC issued a decision denying ORA's September 2016 Application for Rehearing. This action confirmed SCE's proposed project. In December 2017, SCE awarded the competitive bid for transmission construction, which resulted in a decrease to the expected cost of the Project. The proposed operating date is May 2021 with estimated ISO-related direct capital expenditures of $29.476 million in projected closing to plant in-service in the period January 2018 through December 2019.

19. Eldorado-Lugo-Mohave Upgrade (PIN: 7546)

The Eldorado-Lugo-Mohave Upgrade Project will increase capacity on existing transmission lines to allow additional renewable energy to flow from Nevada to southern California. The Project would modify SCE's existing Eldorado, Lugo, and Mohave electrical substations to accommodate the increased current flow from Nevada to southern California; increase the power flow through the existing 500 kV transmission lines by constructing two new capacitors along the lines; raise transmission tower heights to meet ground clearance requirements; and install communication wire on our transmission lines to allow for communication between existing SCE substations. SCE has proposed an expedited schedule and a non-standard review process with the regulatory permitting agencies in order to meet the current in-service date. During September 2017, SCE awarded the

competitive bid for the Project which resulted in a decrease to the expected capital forecast for the Project. The proposed operating date is June 2020 with estimated ISO-related direct capital expenditures of $42.707 million in projected closing to plant in-service in the period January 2018 through December 2019.

20. Mesa Substation (PIN: 7555)

The Mesa Substation Project consists of replacing the existing 220 kV Mesa Substation with a new 500/220 kV substation. The Mesa Substation Project would address reliability concerns by providing additional transmission import capability, allowing greater flexibility in the siting of new generation, and reducing the total amount of new generation required to meet local reliability needs in the Western Los Angeles Basin area. In February 2017, the CPUC issued a final decision approving the Project largely consistent with SCE's proposal and rejected alternative project configurations proposed by CPUC staff.

In October 2017, SCE awarded the competitive bid for the new 220 kV portion of substation construction. SCE updated the expected cost of the Project due to schedule delays and scope changes. The remainder (500 kV portion of substation construction) will be put out for bid by early 2019. The proposed operating date is June 2021 with estimated ISO-related direct capital expenditures of $9.742 million in projected closing to plant in-service in the period January 2018 through December 2019.

For further details, please see the following work papers: “WP-Schedule 10-Summary of ISO Capital Expenditures – Incentive Projects”, “WP-Schedule 16-Summary of ISO Capital Expenditures - Non-Incentive Projects”, and “WP-Schedule 10 & 16.”