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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Application of Southern California Edison Company (U338E) for Approval of the Results of Its 2013 Local Capacity Requirements Request for Offers for the Moorpark Sub-Area.	Application 14-11-016 (Filed November 26, 2014)

OPENING BRIEF OF NRG CALIFORNIA SOUTH LP ON PHASE 2 ISSUES

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SUMMARY OF RECOMMENDATIONS

NRG California South LP ("NRG") recommends that the Commission approve the two contracts between NRG and Southern California Edison Company ("SCE") that are before the Commission in Phase 2 of this proceeding. The two contracts are a tolling agreement for the existing 54 megawatt ("MW") Ellwood Generating Station, which will be refurbished (without any change in capacity) to demonstrate a remaining thirty-year design life ("Ellwood Refurbishment Contract"), and a tolling agreement for a new 0.5 MW energy storage project to be built at the same site ("Ellwood Storage Contract," and together with the Ellwood Refurbishment Contract, the "Ellwood Contracts").

The Ellwood Contracts address a unique reliability need in the Santa Barbara/Goleta area at a reasonable cost, while adding storage capacity. SCE has demonstrated that there is an "unmet local reliability need" in the Santa Barbara/Goleta area – specifically a 105 MW local capacity shortfall – that is not addressed by the resources approved in Decision 16-05-050. The Ellwood Refurbishment Contract would meet over half of that local resiliency target, while providing critical "short circuit duty" support for the safe functioning of protective equipment on the local 66 kV backup system. The Ellwood Refurbishment Contract also meets a separate need identified by the California Independent System Operator Corporation for 29.6 MW of local capacity in the Moorpark sub-area. The Ellwood Refurbishment Contract meets all of those needs while improving the reliability of existing infrastructure. Continued operation of the Ellwood Generating Station is compatible with the development of new preferred resources, and provides a cost-effective reliability backstop to ensure local reliability during an emergency.

NRG recommends that the Commission approve the Ellwood Contracts expeditiously to allow the refurbishment work at the Ellwood Generating Station to occur in time for the contract start date of June 2018.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of Southern California Edison Company (U338E) for Approval of the Results of Its 2013 Local Capacity Requirements Request for Offers for the Moorpark Sub-Area.	Application 14-11-016 (Filed November 26, 2014)

OPENING BRIEF OF NRG CALIFORNIA SOUTH LP ON PHASE 2 ISSUES

I. INTRODUCTION

Pursuant to Rule 13.11 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), and the Second Assigned Commissioner's Ruling and Scoping Memo issued on August 18, 2016 ("Second Scoping Memo"), NRG California South LP ("NRG") submits this opening brief on Phase 2 issues.

As stated in the Second Scoping Memo, Phase 2 of this proceeding addresses the request of Southern California Edison Company ("SCE") for approval of two contracts with NRG. One contract is a ten-year tolling agreement for the existing 54 megawatt ("MW") Ellwood Generating Station, which will be refurbished (without any change in capacity) to demonstrate a remaining thirty-year design life ("Ellwood Refurbishment Contract").[1] The second contract is a ten-year tolling agreement for a new 0.5 MW energy storage project to be built at the same site ("Ellwood Storage Contract," and together with the Ellwood Refurbishment Contract, the "Ellwood Contracts").[2] SCE selected both Ellwood Contracts as winning contracts in its 2013 Local Capacity Requirements ("LCR") Request for Offers ("RFO") for the Moorpark sub-area of the Big Creek/Ventura local reliability area.

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[1] Exhibit SCE-11 (Chinn) at 5:11-14.

[2] Exhibit SCE-11 (Chinn) at 5:9-11.

In Decision ("D.") 16-05-050, issued in Phase 1 of this proceeding, the Commission ordered that both Ellwood Contracts "will be considered" in Phase 2 of this proceeding.[3] This resolved in the affirmative the question of whether it is "appropriate" to consider the Ellwood Refurbishment Contract, which does not add incremental capacity, in the same proceeding where SCE sought approval of the results of its 2013 LCR RFO.

Consistent with that Commission determination, and based on the evidence in the record, both Ellwood Contracts should be approved as reasonable. The Ellwood Contracts address a unique reliability need in the Santa Barbara/Goleta area at a reasonable cost, while adding incremental storage capacity. In response to the questions posed in D.16-05-050 and the Second Scoping Memo, SCE has demonstrated that there is an "unmet local reliability need" in the Santa Barbara/Goleta area – specifically a 105 MW local capacity shortfall – that is not addressed by the resources approved in Phase 1 of this proceeding. This occurs because the Santa Barbara/Goleta area is served solely by two 230 kV transmission lines that are at risk of simultaneous outage. If both 230 kV transmission lines go down, re-routing power through the adjacent lower voltage 66 kV system would allow service of 100 MW of load today, which will increase to 180 MW after a planned transmission upgrade is completed in April 2018. However, rerouting even the full 180 MW through the 66 kV system would not allow for all of the 285 MW of local area peak load to be met, and there would be a 105 MW shortfall. SCE has explained that this 105 MW shortfall is the "resiliency target" for the Santa Barbara/Goleta area, and the amount of local capacity that is needed to ensure that customers retain service after an emergency affecting the two 230 kV transmission lines.

The 54 MW Ellwood Generating Station is capable of satisfying over half of the 105 MW resiliency target in the Santa Barbara/Goleta area. Without Ellwood's contribution to the resiliency target, a long-term outage of the two 230 kV transmission lines can result in rolling

[3] D.16-05-050 at Conclusion of Law 8 and Ordering Paragraph 1.

blackouts spanning several weeks. The Ellwood Refurbishment Contract thus serves as the cornerstone of SCE's integrated mitigation strategy to provide for resiliency in the Santa Barbara/Goleta area, and allows SCE to meet the remainder of the resiliency target through traditional system upgrades and/or new Distributed Energy Resources ("DERs").

The Ellwood Refurbishment Contract also provides a critical source of "short circuit duty" ("SCD") to support the safe functioning of protective equipment on the 66 kV backup transmission system. The backup 66 kV system, though thermally capable of serving 180 MW once the planned upgrade is complete, is unable to do so safely without Ellwood's SCD contribution. Loss of the SCD supplied by the Ellwood Generating Station would result in a significant threat to public safety.

In addition to supplying more than half of the 105 MW local resiliency target and supplying SCD to support safe operation of the local 66 kV system, the Ellwood Refurbishment Contract meets a separate need identified by the California Independent System Operator Corporation ("CAISO") for 29.6 MW of local capacity in the Moorpark sub-area.

The Ellwood Refurbishment Contract meets these needs while also improving the reliability and availability of existing infrastructure. This will be accomplished through the refurbishment required by the Ellwood Refurbishment Contract, which will ensure a remaining thirty-year operating life for the plant. The Ellwood Refurbishment Contract both requires the refurbishment, and ensures that SCE has the right to dispatch the facility when needed for the next ten years.

The Commission's approval of the Ellwood Refurbishment Contract would provide a helpful insurance policy to ensure reliability without interfering with development of new DERs in the local area. SCE's strategy for meeting the 105 MW resiliency target in the Santa Barbara/Goleta area already includes development of new cost effective local DERs to meet

some of the load that will be unserved in the Santa Barbara/Goleta area following a loss of the 230 kV transmission lines. Continued operation of the Ellwood Generating Station is compatible with the development of new preferred resources, and is appropriately characterized as a reliability backstop that would help ensure local reliability during an emergency.

Finally, the Commission should not require the Ellwood Contracts to be resubmitted in a new RFO. SCE already conducted an RFO as required in D.13-02-015, and selected both Ellwood Contracts as winning offers following a thorough and extensive solicitation and bid evaluation process. A second RFO is unlikely to yield lower cost alternatives that are capable of meeting the unique local reliability needs in the Santa Barbara/Goleta area.

II. DISCUSSION

A. The Commission Ordered in D.16-05-050 That the Ellwood Refurbishment Contract Will Be Considered in this Proceeding.

In response to the request of the Administrative Law Judge ("ALJ") during the evidentiary hearing on November 1, 2016, NRG addresses the threshold question of whether the Commission has decided that it is appropriate to consider the Ellwood Refurbishment Contract in this proceeding.[4] The Commission addressed and resolved that question in its decision in Phase 1 of this proceeding. As explained below, in D.16-05-050 the Commission concluded and ordered that the Ellwood Refurbishment Contract will be considered in Phase 2 of this proceeding.

In Phase 1, parties argued that it was not appropriate to consider approving the Ellwood Refurbishment Contract in this proceeding because it does not offer incremental capacity, but instead provides for refurbishment of an existing capacity resource that was presumed to be available in the CAISO's studies underlying the LCR need determination that was the basis for

[4] Reporter's Transcript ("RT"), Vol. 5 (ALJ DeAngelis) at 781:1-13 and 782:10-19.

requiring SCE to conduct an LCR RFO for the Moorpark sub-area. To address this, the first Assigned Commissioner's Ruling and Scoping Memo ("First Scoping Memo") included the following issue: "Is the 54 MW Ellwood Refurbishment project appropriate for the Commission to consider in this proceeding, and if so, is the contract reasonable?"[5]

In D.16-05-050, the Commission resolved the first part of that question in the affirmative, and concluded as follows:

> **We find that it is appropriate to consider the Ellwood contract in this proceeding**. SCE clearly stated in its approved procurement plan that it would evaluate reliability issues in Goleta. Further, parties have litigated SCE's proposal for the Ellwood refurbishment contract; there is no value in starting anew and duplicating the efforts already undertaken by the parties.[6]

In addition to this finding in the text of D.16-05-050, the Commission adopted a conclusion of law and an ordering paragraph confirming that the Ellwood Refurbishment Contract "should be considered" and "will be considered" in this docket. Specifically, Conclusion of Law 8 and Ordering Paragraph 1 in D.16-05-050 provide as follows (emphasis added):

Conclusion of Law 8:	The ten-year agreement with NRG California South for the existing 54 MW Ellwood Generating Station (Ellwood) **should be considered in a subsequent decision in this docket**.
Ordering Paragraph 1:	All contracts presented by Southern California Edison Company are accepted and approved, with the exception of 447021 (Ellwood) and 447030 (Energy Storage). **These contracts will be considered in a subsequent decision in this docket.**

[5] D.16-05-050 at 28.

[6] D.16-05-050 at 30 (emphasis added).

The Second Scoping Memo adheres to those determinations and states that "as directed by D.16-05-050, the second phase of this proceeding will address SCE's request for approval of the 54 MW Ellwood Refurbishment contract (447021) and the related 0.5 energy storage contract (447030),"[7] and confirms that Phase 2 of this proceeding "will solely address" those two contracts.[8] Whereas the First Scoping Memo identified as an issue whether it is "appropriate" for the Commission to consider the Ellwood Refurbishment Contract in this proceeding, the Second Scoping Memo does not include that issue.

Thus, it is clear that the Commission determined in D.16-05-050 that SCE's request for approval of the Ellwood Refurbishment Contract should be considered and decided in this proceeding. Consistent with that Commission determination, and based on the evidence in the record, the Ellwood Refurbishment Contract should be approved as reasonable for the reasons explained below.

B. The Ellwood Contracts Address a Unique Reliability Need in the Santa Barbara/Goleta Area at a Reasonable Cost While Adding Storage.

1. The Santa Barbara/Goleta area is served by two transmission lines that are at risk of simultaneous outage, which creates a need for 105 MW of local capacity to maintain service during an emergency.

The Santa Barbara/Goleta area has a unique reliability need that is distinct from the long-term local capacity needs that will be caused by the retirement of once-through cooled generating units in the Moorpark sub-area.[9] The CAISO's analysis of LCR needs in the Moorpark sub-area focused on the loss the Moorpark-Pardee No. 1, No. 2, and No. 3 transmission lines, which would result in voltage collapse for the Moorpark sub-area.[10] In

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7 Second Scoping Memo at 3.

8 Second Scoping Memo at 4.

9 Exhibit SCE-11 (Chinn) at 1:16-18 (referencing Exhibit SCE-1 at 6-7).

10 Exhibit SCE-11 (Chinn) at 7:5-7; Exhibit CAISO-4 (Yimer) at 3:2-6.

addition to that risk, a more localized concern exists in the Santa Barbara/Goleta area that is not addressed by the North American Electric Reliability Corporation ("NERC") and CAISO Transmission Planning Standards.[11]

Under normal conditions, customer load in the Santa Barbara/Goleta area is served by the Goleta Substation, which is connected to the rest of the SCE transmission system by two 230 kV transmission lines.[12] These two 230 kV transmission lines are the only points of interconnection between the Goleta Substation and the transmission grid, and thus are the sole source of transmission service for the Santa Barbara/Goleta area.[13]

The two 230 kV transmission lines are co-located on the same set of transmission towers, which presents a unique risk because (1) the towers are located on rugged mountainous terrain where landslides caused by heavy rainfall and frequent fires create a heightened risk to the transmission lines and towers, (2) events such as landslides or fires that could cause a failure of one line are likely to cause a failure of both lines, and (3) there are no other high voltage transmission lines that can serve the Santa Barbara/Goleta area in the event of such a failure.[14] SCE estimates that it could take weeks to repair and restore service via the two 230 kV lines.[15]

If both 230 kV transmission lines are out, a large number of customers in the Santa Barbara/Goleta area would lose power until emergency electrical backup power is delivered to the area.[16] Emergency backup power would be delivered via three existing subtransmission tie

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11 Exhibit SCE-11 (Chinn) at 7:7-10.

12 Exhibit SCE-11 (Chinn) at 1:19-20 and 7:11-14.

13 Exhibit SCE-11 (Chinn) at 1:21 through 2:2.

14 Exhibit SCE-11 (Chinn) at 2:2-8 and 8:1-12.

15 Exhibit SCE-11 (Chinn) at 8:12 through 9:2.

16 Exhibit SCE-11 (Chinn) at 2:9-10 and 9:13-15.

lines from the Santa Clara 66 kV system.[17] This 66 kV system normally serves western Ventura County but can also act as a partial back up that is capable of replacing a portion of the capacity provided by the two 230 kV transmission lines.[18] If the 230 kV transmission lines go down and cannot be reenergized, SCE's system operators would begin utilizing the 66 kV lines to pick up load within the Santa Barbara/Goleta area within an hour,[19] to restore service to some local customers, with priority given to critical services such as hospitals, schools, and street lights.[20] This solution would only serve a portion of the forecasted 285 MW peak load in the Santa Barbara/Goleta area.[21] If both 230 kV transmission lines go down, re-routing power through the 66 kV system would allow service of 100 MW of load today, which will increase to 180 MW after a planned transmission upgrade known as the Santa Barbara County Reliability Project ("SBCRP") is completed in April 2018.[22] However, rerouting even the full 180 MW through the 66 kV system would not allow for all of the 285 MW of local area peak load to be met, and there still would be a 105 MW shortfall.[23]

In response to questions posed in D.16-05-050 and the Second Scoping Memo, SCE has shown that this 105 MW capacity shortfall is an "unmet local reliability need" in the Santa Barbara/Goleta area that is not addressed by the resources that were approved in D.16-05-050.[24] To satisfy this unmet need, SCE developed a strategy to provide "resiliency in the Santa Barbara/Goleta area," explaining that "resiliency refers to the ability of the electrical system to

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17 Exhibit SCE-11 (Chinn) at 9:17-18.

18 Exhibit SCE-11 (Chinn) at 9:18-21.

19 Exhibit SCE-11 (Chinn) at 9:21-23.

20 Exhibit SCE-11 (Chinn) at 2:10-14.

21 Exhibit SCE-11 (Chinn) at 2:17-20 and 10:10-13 ("The projected annual peak load forecast for the Santa Barbara/Goleta area in 2018 is 285 MW. . . .").

22 Exhibit SCE-11 (Chinn) at 2:20-23 and 9:24 through 10:7.

23 Exhibit SCE-11 (Chinn) at 2:23 through 3:2 and 10:7-13.

24 Exhibit SCE-12 (Chinn) at 1:16-20.

respond to an emergency event so that customers maintain service."[25] SCE's strategy to address the 105 MW shortfall in the Santa Barbara/Goleta area has three components: (1) obtain approval of the Ellwood Refurbishment Contract, which meets 54 MW of the 105 MW resiliency target using an existing power plant that also addresses the need for SCD (which is addressed in more detail in Section II(B)(3) below); (2) pursue cost-competitive DERs in the local area; and (3) consider the implementation of any cost-effective traditional electric system upgrades.[26] Thus, under SCE's plan, the Ellwood Refurbishment Contract solves a substantial portion – although not all – of the unmet reliability need.

ORA is the only party that disputes the existence of an unmet reliability need in the Santa Barbara/Goleta area, but ORA's criticism is unsubstantiated. ORA first argues that the Commission should dismiss the unique reliability issues because "there is no unmet local reliability need in the Goleta area, based on the NERC and CAISO standards."[27] ORA's argument improperly disregards a unique local reliability need that SCE has explained does not arise from NERC or CAISO planning standards, but is valid and requires addressing in order to ensure adequate service to SCE's customers. As SCE's transmission expert confirmed, the unique issues in the Santa Barbara/Goleta area should not be dismissed simply because they are not studied as part of the CAISO Transmission Planning Process.[28] Loss of both 230 kV transmission lines is an "N-2" contingency, and the NERC standards allow load to be interrupted for this contingency without a specified time for restoring service.[29] SCE has explained that it has a responsibility to plan for restoring service after the N-2 contingency, notwithstanding what the CAISO transmission planning standards and applicable NERC standards allow. "The fact is

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25 Exhibit SCE-11 (Chinn) at 3:3-5.

26 Exhibit SCE-11 (Chinn) at 3:5-10 and 12:5-12.

27 Exhibit ORA-5 (Li) at 3:13-15.

28 Exhibit SCE-12 (Chinn) at 1:21-22.

29 Exhibit SCE-11 (Chinn) at 2:4-8 and footnote 6.

SCE's subtransmission system is unable to fully restore service to the Santa Barbara/Goleta area after an identified N-2 event, and though this issue is not within CAISO's purview, SCE should not ignore the issue and nor should the Commission."[30]

ORA also challenges the very concept of resiliency, on grounds that SCE's definition of resiliency as "the ability of the electrical system to response to an emergency event so that customers maintain service" is "too imprecise to use as a standard."[31] It is not clear why ORA opposes SCE's effort to ensure that ratepayers maintain service after an emergency. In response to cross examination, ORA's witness could not provide additional support for ORA's opposition to SCE's definition of resiliency.[32]

ORA's opposition to SCE's resiliency goal based on an asserted lack of official "standards" also ignores Commission and statutory mandates. In D.13-02-015, the Commission confirmed: "A primary responsibility of this Commission is to ensure reliability in the electrical system. It would neither be prudent nor responsible to allow the system to fail and the lights to go out when we reasonably could have avoided such deleterious outcomes."[33] The Commission elaborated on this responsibility in D.14-03-004, and again stated that "a primary responsibility of the Commission is to ensure safety and reliability in the electrical system," while recognizing that "California law repeatedly emphasizes the importance of maintaining the reliability of the electric grid," citing the following examples from the Public Utilities Code, which confirm that the goal of ensuring adequate service to customers is of paramount importance:

- "Reliable electric service is of utmost importance to the safety, health, and welfare of the state's citizenry and economy." (§ 330(g))

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30 Exhibit SCE-12 (Chinn) at 2:2-4.

31 Exhibit ORA-5 (Li) at 3:18-21.

32 RT, Vol. 6 (ORA/Li) at 1051:13 through 1052:26.

33 D.13-02-015 at 36.

- "It is important that sufficient supplies of electric generation will be available to maintain the reliable service to the citizens and businesses of the state." (§ 330(h))

- "Reliable electric service is of paramount importance to the safety, health, and comfort of the people of California." (§ 334)

- The CAISO "shall ensure efficient use and reliable operation of the transmission grid" (§ 345) and shall "ensure the reliability of electric service and the health and safety of the public." (§ 345.5(b))

- The Commission "shall ensure that facilities needed to maintain the reliability of the electric supply remain available and operational." (§ 362(a))[34]

ORA's objection to ensuring resiliency also contradicts the "CPUC Overarching Safety Mission" which specifies that: "The safety mission and goal of the CPUC is to assure to the State of California that all of us will work every day to assure that the regulated utilities we depend on for critical services are as safe and ***resilient*** as they can possibly be."[35]

ORA's only recommendation for addressing resiliency is delay and more process, but this is not a reasonable plan for resolving the unique reliability need in the Santa Barbara/Goleta area. ORA asks the Commission to reject SCE's definition of resiliency and instead open a rulemaking to allow "all interested stakeholders to assess the need for such a standard and to adequately define it."[36] During hearings, ORA's witness could not explain how ORA would define resiliency or offer any insight into how ORA's recommended standard for resiliency might differ from SCE's definition of that concept.[37] ORA has not justified its refusal to recognize the unmet reliability need in the Santa Barbara/Goleta area.

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34 D.14-03-004 at 12-13.

35 *Safety Policy Statement of the California Public Utilities Commission* (July 10, 2014) at 1 (emphasis added), available via this link: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/VisionZero4Final621014_5_2.pdf

36 Exhibit ORA-5 (Li) at 4:18-20.

37 RT, Vol. 6 (ORA/Li) at 1052:18-26.

2. The Ellwood Refurbishment Contract ensures the availability of 54 MW of local capacity during an emergency, and thus meets over half of the 105 MW resiliency target.

SCE's testimony states that the Ellwood Refurbishment Contract is "essential" to the strategy for addressing the resiliency target in the Santa Barbara/Goleta area.[38] The 54 MW Ellwood Generating Station is capable of satisfying over half of the 105 MW resiliency target in the Santa Barbara/Goleta area.[39] Without Ellwood's contribution to the resiliency target, a long-term outage of the Goleta-Santa Clara 230 kV transmission lines can result in rolling blackouts spanning several weeks.[40] With Ellwood serving as a cornerstone of SCE's integrated mitigation strategy to provide for resiliency in the Santa Barbara/Goleta area, the remainder the resiliency target can be satisfied through traditional system upgrades and/or DERs.[41]

There is no question that the Ellwood Refurbishment Contract supplies a significant source of capacity in the local Santa Barbara/Goleta area. The plant is currently operating and has a long history of serving as an emergency and peaking local resource. There is no risk that this resource might fail to materialize, given that it operates today.

Parties argue that the Ellwood Refurbishment Contract is merely "insurance" to provide a source of capacity that can be dispatched when there is a transmission outage.[42] While cast as criticism, this characterization describes a benefit of the Ellwood Refurbishment Contract. The Ellwood Generating Station is not expected to operate to supply energy under normal conditions.[43] Its function is to serve as a source of emergency and peaking capacity. This means that under normal conditions, the Ellwood Generating Station does not and should not be

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38 Exhibit SCE-11 (Chinn) at 12:13-14.

39 Exhibit SCE-11 (Chinn) at 12:15-16.

40 Exhibit SCE-11 (Chinn) at 12:20-22.

41 Exhibit SCE-11 (Chinn) at 12:22 through 13:2.

42 Exhibit WBA-4 (Perry) at 3:1-5.

43 Exhibit SCE-11 (Sekhon) at 15:22 through 16:4.

expected to be dispatched, and therefore would not create emissions or other impacts. During the relatively small number of hours when local capacity is needed, however, such as when there is an emergency event that causes a failure of the two 230 kV transmission lines, the availability of a reliable plant that can be started quickly and operated to serve local customers is a critical and beneficial resource. It is not necessary, and it would not be cost effective, to build a new source of peaking capacity for this purpose because the Ellwood Generating Station already exists and is operational, and can be retrofitted to extend its useful life at a cost that is far less than the cost associated with building a new resource.[44]

Parties have raised concerns about whether the Ellwood Generating Station would be able to run continuously during an extended outage of the 230 kV transmission lines in light of operating restrictions in its air permit, which allows 400 hours of operation per calendar year.[45] This concern is not grounds for rejecting the Ellwood Refurbishment Contract. Having 54 MW of capacity available for dispatch for 400 hours per year is obviously better than not having the capacity available at all. Further, if it were run continuously 24 hours per day, the Ellwood Generating Station could operate for more than 16 consecutive days, which would cover a transmission outage lasting more than two weeks. In the event that the plant were required more than 400 hours per year (which would be an extraordinary event in light of its historic operating record), SCE has stated that it would ask NRG to obtain an emergency variance from the local air district to allow the plant to exceed its annual operating hours.[46] There is a procedure for this, as explained in Late-Filed Joint Exhibit SCE/NRG-1, that could allow the plant to operate for up to 30 days through expedited approval that can be granted within a day. Certainly no one would ask for this type of emergency variance unless there were a legitimate need to operate the plant

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44 Exhibit SCE-11 (Sekhon) at 15:22 through 16:4.

45 *See* Exhibit NRG-7 (Ellwood Permit to Operate) at 2 (Under the heading "CONDITIONS," Section 2(b) states: "Hours Limit: Each gas turbine shall not operate more than 400 hours per year.").

46 Exhibit SCE-12 (Chinn) at 8:19-22.

in excess of its annual limit. But the process exists and could be utilized to address an emergency.

3. The Ellwood Refurbishment Contract also provides critical short circuit duty support for the safe functioning of protective equipment on the 66 kV backup system.

As a conventional, synchronous generator, Ellwood also supplies a significant amount of SCD to decrease the time required to detect and isolate faults from the electric system.[47] The 66 kV subtransmission ties, though thermally capable of serving 180 MW (once the planned upgrade of the 66 kV system is complete), are unable to do so safely without Ellwood's SCD contribution, as discussed further below.[48]

In addition to providing local capacity during emergencies, Ellwood provides an important source of SCD that supports the functioning of emergency equipment on SCE's local 66 kV transmission system. As described above, the 66 kV system is the lower voltage subtransmission system that will be used to reroute power to serve the Santa Barbara/Goleta area if the larger 230 kV transmission lines go down. The 66 kV subtransmission system currently is capable of serving 100 MW of demand in the Santa Barbara/Goleta area, and will be capable of serving 180 MW of demand after SCE completes the SBCRP upgrade. The 66 kV system is an important backup that would be used to serve a portion of customer load in the Santa Barbara/Goleta area when the larger 230 kV transmission lines experience an outage.

To operate safely and avoid potential injuries, the transmission system requires sufficient amounts of SCD, which ensures that protective equipment will activate and shut off transmission lines if there is a downed line. Following the loss of the two 230 kV transmission lines, a major

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47 Exhibit SCE-11 (Chinn) at 12:16-18.

48 Exhibit SCE-11 (Chinn) at 12:18-20.

source of SCD is removed and overall SCD in the Santa Barbara/Goleta area is reduced.[49] This results in insufficient SCD to safely clear faults in the area and prevents protective equipment from being able to quickly distinguish between normal current and an electrical fault in the electric system.[50] SCD is the amount of electric current (also known as fault current) observed throughout the system in the event of a fault.[51] Low SCD can allow hazards, such as downed power lines, to remain active for a longer period because protective equipment needs to be able to differentiate between normal and fault current levels in order to detect and automatically shut down these lines.[52]

SCD is primarily supplied by two sources: (1) transmission/sub-transmission lines, and (2) conventional synchronous generation, such as the existing Ellwood Generating Station. Although asynchronous, inverter-based generation, such as storage and solar facilities, are capable to supplying SCD, asynchronous sources are not as effective as synchronous generation in supplying SCD.[53] Conventional synchronous generation, such as gas-fired generation, can more effectively supply adequacy SCD to effectively detect and isolate faults.[54] The Ellwood Refurbishment Contract thus facilitates safe operation of the local electric system after the loss of the two 230 kV transmission lines.[55]

ORA disputes the need for a minimum level of SCD, but ORA's position is unfounded and seems irresponsible. As SCE's transmission expert explained: "It is in the public interest for SCE to provide safe and reliable electric service by maintaining appropriate levels of [SCD]

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49 Exhibit SCE-11 (Chinn) at 10:14-16.

50 Exhibit SCE-11 (Chinn) at 10:16-18.

51 Exhibit SCE-11 (Chinn) at 10:18-19.

52 Exhibit SCE-11 (Chinn) at 10:19-22.

53 Exhibit SCE-11 (Chinn) at 11:1-5.

54 Exhibit SCE-11 (Chinn) at 11:7-9.

55 Exhibit SCE-11 (Chinn) at 11:9-10.

after the loss of the Goleta-Santa Clara 230 kV transmission lines, which Ellwood helps to provide."[56] SCE's testimony also explains how low SCD poses a threat to public safety:

> For example, if a car hits a pole and brings down a 66 kV line onto the ground this becomes an immediate threat to public safety since an energized line can electrify nearby conductive material such as cars, water pipes, and water on the ground. An energized line on the ground is known as a fault and SCE has specialized equipment to detect faults and de-energize the line. Low SCD will result in SCE taking longer to clear the fault by de-energizing the line. The risk of an electrocution to a member of the general public with an energized line on the ground increases in proportion to the length of time required to clear the fault.[57]

ORA asserted that the SBCRP, planned for completion in April 2018, provides sufficient SCD, but SCE's transmission expert explained that ORA misstated SCE's response to ORA's data request on this issue. SCE's expert explained that with the Ellwood Generating Station in service, SCD is sufficient and will be improved with completion of the SBCRP, but the SBCRP by itself, without the Ellwood Generating Station, would be insufficient to provide adequate SCD for the Santa Barbara/Goleta area and would not facilitate safe operation of the electric system after a loss of the two 230 kV transmission lines.[58]

ORA argues that SCE cannot rely on the need for SCD as a reason for approving the Ellwood Refurbishment Contract because there is not "any CPUC or non-CPUC requirement or standard for appropriate levels of SCD," but ORA fails to provide technical support for its position. Indeed, ORA's position seems irresponsible in light of SCE's expert testimony explaining the threat to public safety if there are inadequate levels of SCD. As SCE's witness explained: "SCE needs to provide safe and reliable electric service to its customers and

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56 Exhibit SCE-12 (Chinn) at 3:24 through 4:2.

57 Exhibit SCE-12 (Chinn) at 4:2-8.

58 Exhibit SCE-12 (Chinn) at 4:9-18.

employees, and in doing so there may not always be a specific CPUC or non-CPUC standard supporting SCE's efforts."[59] "In this instance, as explained in SCE's response to ORA's data request, SCE needs to rely on its own data and professional judgment to determine what level of SCD is needed to maintain safe and reliable electric service for its customers, and the lack of a 'standard' should not prohibit SCE from using good utility practices in determining the appropriate SCD level for the Santa Barbara/Goleta area under the N-2 contingency."[60] ORA has not adequately explained its position on SCD or demonstrated that its position is consistent with maintaining safe and reliable electric service in the Santa Barbara/Goleta area. The Commission should not adopt ORA's position.

4. The Ellwood Refurbishment Contract also solves a separate CAISO-identified LCR need in the Moorpark sub-area.

In addition to addressing over half of the unique 105 MW local resiliency target and supplying SCD to support safe operation of the 66 kV system, the Ellwood Refurbishment Contract meets a separate CAISO-identified need for local capacity in the Moorpark sub-area. The CAISO sponsored testimony in Phase 2 presenting the results of CAISO's analysis regarding the Moorpark sub-area need identified in Rulemaking 12-03-014 and addressed through D.16-05-050.[61] The CAISO testimony explains that there is a residual unmet reliability need in the Moorpark sub-area that would be met through the Ellwood Contracts.

The CAISO's analysis indicates that absent generation at the Ellwood or Mandalay 3 facilities, there is a residual unmet reliability need in the Moorpark sub-area in the amount of 29.6 MW.[62] "Ellwood" refers to the existing 54 MW Ellwood Generating Station, and

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59 Exhibit SCE-12 (Chinn) at 4:21-23.

60 Exhibit SCE-12 (Chinn) at 4:23 through 5:4.

61 Exhibit CAISO-4 (Yimer) at 2:2-4.

62 Exhibit CAISO-4 (Yimer) at 2:10-12.

"Mandalay 3" refers to Unit 3 of the existing Mandalay Generating Station. These are two existing gas-fired peaking facilities that do not use once-through cooling technology and thus are not subject to the mandatory compliance deadlines imposed under the State's once-through cooling policy. However, consistent with the CAISO's previous analysis in this proceeding and the assumptions and scenarios developed by the Commission, the Mandalay 3 facility is considered to be offline due to the age of the facility.[63]

The CAISO's testimony confirms that together the 54 MW Ellwood Refurbishment Contract and the associated 0.5 MW Ellwood Storage Contract would adequately address this 29.6 MW residual need.[64] In summary, the CAISO testimony confirms:

> Absent generation at the Ellwood or Mandalay 3 facility, the CAISO found a Moorpark sub-area LCR need of 29.6 MW. The 54 MW Ellwood Refurbishment contract and related 0.5 MW energy storage contract would meet the identified LCR needs. The CAISO understands no other resources are available to meet this need. As a result, the CAISO recommends that the Commission approve these contracts at this time.[65]

Approval of the Ellwood Contracts to meet the 29.6 MW of LCR need makes sense for several reasons. First, as discussed above, the Ellwood Contracts will meet the LCR need while at the same time addressing the unique, localized reliability issues in the Santa Barbara/Goleta area. The Ellwood Contracts thus serve multiple reliability purposes. SCE explained this in its rebuttal testimony: "Ellwood is operating beyond its original design life, and it is prudent to plan for an extension of the capacity through refurbishment, especially considering that Ellwood is also crucial to addressing the unique resiliency needs in the Santa Barbara/Goleta area."[66]

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63 Exhibit CAISO-4 (Yimer) at 2:19-21.

64 Exhibit CAISO-4 (Yimer) at 2:12-14.

65 Exhibit CAISO-4 (Yimer) at 3:23 through 4:2.

66 Exhibit SCE-12 (Chinn) at 3:2-5.

Second, the Ellwood Contracts meet the LCR need by preserving existing infrastructure while adding incremental storage, all at a price below the price of new capacity. As SCE confirmed, this is a more cost effective solution than would result from building anything new: "If SCE waited for NRG to retire Ellwood instead of contracting to refurbish the plant, this would create a situation in which the Commission would have to reassess the LCR need in the Moorpark sub-area and then order SCE to fulfill that need with a resource or portfolio of resources that could take years to build, and very likely cost much more than the Ellwood refurbishment."[67] "Thus, the Commission should approve the Ellwood Refurbishment contract to prevent a situation that would create additional LCR need in the Moorpark sub-area that will need to be filled by more expensive resources that could take years to build."[68] Third, the 54 MW Ellwood Generating Station is the smaller of the two existing gas-fired plants, with Mandalay 3 at 130 MW.[69] Refurbishment of the smaller of the two existing resources more surgically meets the current identified LCR need.

5. The Ellwood Refurbishment Contract improves the reliability and availability of existing infrastructure.

One feature of the Ellwood Refurbishment Contract is the requirement that NRG must refurbish the plant to ensure a remaining thirty-year operating life.[70] The refurbishment was described in NRG's response to a data request from ORA:

a. The 2013 LCR Power Purchase Tolling Agreement between Southern California Edison Company ("SCE") and NRG California South dated November 3, 2014 ("Tolling Agreement") specifies the requirements for when refurbishment of the Project (as defined in the Tolling Agreement) must be complete. NRG California

67 Exhibit SCE-12 (Chinn) at 2:14-17.

68 Exhibit SCE-12 (Chinn) at 3:5-7.

69 Exhibit CAISO-4 (Yimer) at Attachment 1.

70 Exhibit SCE-11 (Chinn) at 5:11-14; Exhibit ORA-9 (Data Request Responses from NRG California South LP) at 2-3.

South expects to perform all necessary refurbishment work in accordance with those requirements. The work will be conducted after the Commission's approval of the Tolling Agreement becomes final. Assuming timely Commission approval, the work likely will be conducted during a planned maintenance outage in 2017 or 2018, before the Delivery Period under the Tolling Agreement commences. Work will be conducted during a planned maintenance outage in accordance with the resource adequacy agreement that is currently in effect.

b. As stated in SCE's testimony in this proceeding, refurbishment of the Project "will result in a resource that can be relied on for the next 30 years." (Exhibit SCE-1 at page 57, lines 11-15.) NRG California South will perform all work required by an independent professional engineer in order to confirm that the 30-year standard is satisfied. The independent engineer will determine the scope of the required work, and that scope will determine how long the work will take to complete. As explained in part (a) above, the work will be conducted during a planned maintenance outage before the Delivery Period under the Tolling Agreement commences.

c. As explained in part (b) above, the refurbishment must satisfy the specifications of an independent engineer. Work likely will involve inspections of components of the Project, which will then be repaired and replaced as needed in order for the independent engineer to certify a 30-year remaining design life. The Ellwood Generating Station experienced a forced outage in 2016, and it became necessary to conduct major maintenance work during 2016 that was not expected. It is possible that the unexpected completion of this major maintenance work could affect the scope of the work required for the refurbishment. As stated above, the independent engineer will make that determination.[71]

The required refurbishment is designed to improve the reliability of the Ellwood Generating Station, so that it can be relied upon to provide critical local capacity in response to emergency events. Requiring this refurbishment is warranted and prudent in light of the major

[71] Exhibit ORA-9 (Data Request Responses from NRG California South LP) at 2-3.

forced outage issues that occurred at the plant in 2015 and 2016.[72] The Ellwood Refurbishment Contract both requires the refurbishment, and ensures that SCE has the right to dispatch the facility when needed for the next ten years.

6. The Ellwood Contracts together meet the Santa Barbara/Goleta area need at a reasonable cost, while adding storage capacity.

SCE's Phase 2 testimony reconfirms that the Ellwood Refurbishment Contract "is reasonable, cost-effective, and provides substantial value."[73] The Independent Evaluator that oversaw the LCR RFO agreed that the costs associated with the Ellwood Refurbishment Contract "are modest when compared with the benefits offers by the combined offer," referring to the associated storage contract.[74] In terms of cost competitiveness, there is no current opportunity for new gas-fired resources to provide greater value than the Ellwood Refurbishment Contract, and a new gas-fired resource would not be cost competitive when an existing resource like the Ellwood Generating Station is available to be refurbished.[75] Further, the limited need for a peaking resource in the Santa Barbara/Goleta, which occurs only during periods when prices will be very high, does not warrant the expense required to purchase capacity from a new peaking resource.[76]

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[72] Exhibit SCE-15 (Southern California Edison's Response to Sierra Club Data Request A.14-11-016 LCR RFO-Sierra Club-SCE-003, Question 01) at Exhibit 2 (showing a greater number of entries in the data base program used by plant operators to enter plant performance and event data associated with "Forced" outage events in 2016 (39) and 2015 (24), than in 2014 (10) and 2013 (3). *See also* Exhibit ORA-12 (Response to Data Request NRG-002, Part 1(a)) (summarizing the major forced outage issues for the Ellwood Generating Station in 2015 and 2016, which accounted for 3220.7 forced outage hours, and explaining that the top three issues – Free Turbine Overhauls, A Fuel Control, and A Mod Valve – are very unusual and expensive repairs).

[73] Exhibit SCE-11 (Sekhon) at 15:4-5.

[74] Exhibit SCE-11 (Sekhon) at 15:9-11.

[75] Exhibit SCE-11 (Sekhon) at 15:17-20.

[76] Exhibit SCE-11 (Sekhon) at 15:22 through 16:4.

The two Ellwood Contracts together provide SCE with: (1) critical local capacity; (2) full rights to all energy and ancillary services (and the associated right to receive revenues for those products in the CAISO markets);[77] (3) refurbishment of an existing resource that enhances its reliability; and (4) incremental storage capacity. All of these benefits are provided through contracts that were the most cost competitive in the LCR RFO for reliability in the Santa Clara/Goleta area, and at a price that is consistent with the CAISO's backstop capacity procurement price:

> We assessed this contract based on its bid against other contracts that we have for the Goleta area, and this was the most competitive offer we received for that Goleta reliability. One thing I would add here is that these prices are very in line with the CAISO's backstop pricing mechanism which that's set at $6.31 a kilowatt-month right now. And that would be the alternative if the CAISO deemed that a backstop was necessary for these types of resources. That's the type of pricing they could get.[78]

7. Approval of the Ellwood Contracts will not prevent the development of new preferred resources in the region.

The Commission's approval of the Ellwood Refurbishment Contract would provide a helpful insurance policy to ensure reliability without interfering with development of new DERs in the local area. SCE's strategy for meeting the 105 MW resiliency target in the Santa Barbara/Goleta area already includes development of new cost effective local DERs to meet

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[77] RT, Vol. 5 (SCE/Sekhon) at 949:28 through 950:26 ("So recognize that the contract that we had with Ellwood is a tolling contract. So we are paying a fixed capacity payment to have that resource under contract. And SCE owns the dispatch rights. Those dispatch rights are owned on behalf of all customers. So when the resource is dispatched into the market because the CAISO has a price spike, the only reason that Ellwood would be dispatched would be that it's recovering its fuel costs, its variable O&M costs from the market and make it a proper -- it's an economic dispatch. And so there wouldn't be necessarily a cost that would be shared with all the customers. It would probably be a revenue stream because the only reason that asset would get turned on and dispatched in the CAISO market is if it was making money." "SCE holds the tolling rights to the contract. Those dollars would come back to SCE, and those dollars would flow back to customers.").

[78] RT, Vol. 5 (SCE/Sekhon) at 967:23 through 968:3 (as corrected in SCE's Motion to Correct Transcript Errors, submitted on November 21, 2015).

some of the forecasted customer load that will be unserved in the Santa Barbara/Goleta area following the loss of the Goleta-Santa Clara transmission lines.[79] Continued operation of the 54 MW Ellwood Generating Station does not meet all of the forecasted peak load under those circumstances, and SCE intends to pursue development of additional local capacity as well as potential transmission upgrades.[80] Approval of the Ellwood Refurbishment Contract would not foreclose or crowd out new preferred resources. To the contrary, continued operation of the Ellwood Generating Station is compatible with the new resources, and is appropriately characterized as a reliability backstop mechanism that would help ensure local reliability during an emergency.

C. SCE Already Selected the Ellwood Contracts in an RFO, and a Second RFO is Unlikely to Yield Lower Cost Alternatives That Meet the Unique Local Reliability Need.

The Commission should not require the Ellwood Contracts to be resubmitted in a new RFO. SCE already conducted an RFO as required in D.13-02-015, and selected both Ellwood Contracts as winning offers following a thorough and extensive solicitation and bid evaluation process.

ORA argues that a new RFO will result in cheaper preferred resources, citing bids in SCE's 2014 and 2015 Renewable Portfolio Standard solicitations, but SCE has explained that those prices were for large-scale solar resources, sited far from a population center, and are not representative of prices for projects that could be sited in the Santa Barbara/Goleta area.[81] There is no direct evidence that small scale distributed energy projects sited in Santa Barbara/Goleta area will be available at a comparable cost, and SCE has not observed significant price decreases

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79 Exhibit SCE-11 (Chinn) at 13:5-18.

80 SCE has announced plans for a Goleta Area RFO to solicit behind-the-meter and in-front-of-meter DERs, and is holding a Goleta Area RFO Collaboration Workshop on December 13, 2016: https://scegarfo.accionpower.com/_scega_1601/home.asp

81 Exhibit SCE-12 (Sekhon) at 10:11-16.

in smaller scale distributed energy projects.[82] Also, SCE signed 100% of the Goleta solar capacity that was offered in its 2013 LCR RFO, which suggests that the potential for large amounts of price competitive distributed solar energy projects is not likely to be present.[83]

ORA also asserts that storage projects in a second RFO could be lower than the Ellwood Contracts, but SCE explained that ORA's "comparison is flawed for a number of reasons."[84] ORA cites offers in SCE's 2014 Energy Storage RFO, but SCE pointed out that those offers were for resource adequacy ("RA") only products, whereas the Ellwood Storage Contract provides both RA and energy rights.[85] "This means that the benefits for SCE's 2014 Energy Storage RFO offers are limited to RA, while the Ellwood storage contract will also provide energy and ancillary services benefits."[86] In addition, "RA-only products can be cheaper in price than those that also provide energy since the counterparty to an RA-only transaction will be able to collect energy and ancillary services revenues as well as capacity payments."[87] "Therefore, a comparison of the capacity price between the two types of offers is not apples-to-apples."[88] Additionally, the projects in SCE's 2014 Energy Storage RFO were not located in the Santa Barbara/Goleta area.[89] The Ellwood Storage Contract was a winning offer in the 2013 LCR RFO, and the "only existing evidence of pricing for Santa Barbara/Goleta area energy storage projects is the offers received in SCE's LCR RFO."[90] ORA"s assertion that a future energy

82 Exhibit SCE-12 (Sekhon) at 10:15-17.

83 Exhibit SCE-12 (Sekhon) at 10:17-19.

84 Exhibit SCE-12 (Sekhon) at 10:20-23.

85 Exhibit SCE-12 (Sekhon) at 10:20 through 11:2.

86 Exhibit SCE-12 (Sekhon) at 11:2-3.

87 Exhibit SCE-12 (Sekhon) at 11:3-6.

88 Exhibit SCE-12 (Sekhon) at 11:6-7.

89 Exhibit SCE-12 (Sekhon) at 11:7-8.

90 Exhibit SCE-12 (Sekhon) at 11:8-12.

storage solicitation or a solicitation that includes energy storage will produce a lower cost solution to the Santa Barbara/Goleta resiliency need is purely speculative.[91]

World Business Academy ("WBA") asserts that large amounts of distributed solar and storage resources could be developed and sited in the Santa Barbara/Goleta area, but these claims were shown to be overstated and speculative. Under cross examination, WBA's witness Mr. Perry acknowledged that he found the potential for approximately 25 to 30 MW of distributed solar generating capacity in the local area,[92] but that amount, even if feasible, would not be sufficient to meet the 105 MW resiliency goal in lieu of the Ellwood Refurbishment Contract. Further, SCE's expert witness explained that the study methodology underlying Mr. Perry's estimated 25 to 30 MW of potential solar capacity has been shown to overstate potential capacity, as demonstrated in the Orange County area.[93] There, a technical study showed a potential for 90 MW of solar on household roofs, plus 50 to 60 MW on car parks, but when SCE conducted a solicitation it received only 5 MW of bids.[94] Thus, it is likely that WBA's estimate of 25 to 30 MW of potential solar capacity is similarly overstated.

Furthermore, any potential solar and storage resources that can be developed in the Santa Barbara/Goleta area will be solicited by SCE in its proposed RFO for DERs. Those new resources can be developed and built in conjunction with and as a complement to the Ellwood Contracts, to serve some or all of the remaining 51 MW local resiliency target. Thus, rather than reject the Ellwood Refurbishment Contract, the Commission should approve it and also approve SCE's recommended multi-pronged strategy, which is designed to encourage development of the types of DERs that WBA believes can be built in the local region.

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91 Exhibit SCE-12 (Sekhon) at 11:12-14.

92 RT, Vol. 5 (WBA/Perry) at 918:4-23.

93 RT, Vol. 5 (SCE/Sekhon) at 942:2 through 943:25.

94 RT, Vol. 5 (SCE/Sekhon) at 942:16 through 943:25.

III. CONCLUSION

For the reasons explained above, the Commission should approve both Ellwood Contracts expeditiously. Expeditious approval is necessary to allow the refurbishment work at the Ellwood Generating Station to occur in time for the contract start date of June 2018.

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Respectfully submitted,

/s/ Lisa A. Cottle

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