



August 6, 2004

Attn: Parties of R.04-04-003

RE: Docket # R.04-04-003- Order Instituting Rulemaking to Promote Policy and Program
Coordination and Integration in Electric Utility Resource Planning

Dear Parties:

Enclosed please find an original and five copies of the Opening Testimony of Philip Pettingill
Regarding the Long Term Procurement Plan of the Investor Owned Utilities on Behalf of the
California Independent System Operator in the above-referenced docket.

Thank you.

Sincerely,

A handwritten signature in black ink that reads "Gene Waas". The signature is written in a cursive style with a large, sweeping initial "G".

Gene Waas
Regulatory Counsel

Exhibit No.: _____

Commissioner: Peevy

Administrative Law Judges: Wetzell and Gottstein

Witness: Philip Pettingill

**BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Promote
Policy and Program Coordination and
Integration in Electric Utility Resource
Planning

R.04-04-003

**OPENING TESTIMONY OF PHILIP PETTINGILL REGARDING THE LONG TERM
PROCUREMENT PLANS OF THE INVESTOR OWNED UTILITIES ON BEHALF OF
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

Submitted by the California Independent System Operator

August 6, 2004

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1 **BEFORE THE PUBLIC UTILITIES COMMISSION OF**
2 **THE STATE OF CALIFORNIA**

3 Order Instituting Rulemaking to Promote
4 Policy and Program Coordination and
5 Integration in Electric Utility Resource
6 Planning

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7 **OPENING TESTIMONY OF PHILIP PETTINGILL REGARDING THE LONG TERM**
8 **PROCUREMENT PLANS OF THE INVESTOR OWNED UTILITIES ON BEHALF OF**
9 **THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

10 **Submitted by the California Independent System Operator**

11 Q. Please state your name and business address.

12 A. My name is Philip Pettingill, Manager of Policy Development in the Regulatory Policy
13 Department of the California Independent System Operator Corporation (CA ISO).

14 Q. Please state your professional qualifications for providing this testimony.

15 A. Attachment 1 to this testimony contains my professional qualifications as a witness.

16 Q. On whose behalf are you presenting this testimony?

17 A. I am submitting this testimony on behalf of the CA ISO.

18 **I. Summary and Introduction**

19 Q. What is the purpose of your testimony?

20 A. The purpose of my testimony is to set forth the CA ISO's recommendations and comments
21 regarding the Long-Term Procurement Plans (LTPP) of the Investor Owned Utilities (IOUs or utilities)
22 with respect to the following topics:
23

- 24 • The adoption and enforcement by the California Public Utilities Commission
25 (Commission or CPUC) of an obligation on the IOUs to procure, in advance, sufficient
26 resources to meet their customers' needs; and
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28

- Issues surrounding the locational nature of resource requirements.

Q. Would you please summarize the analysis and conclusions that you reach in your testimony?

A. Yes. As the policy witness for the CA ISO, my review of the IOU long-term procurement plans has focused on the fundamental elements that must be addressed in their plans in order to ensure the CA ISO is able to reliably operate the electric transmission system. In short, I have read the respective plans for each IOU and provided references to such plans herein where appropriate. My principal conclusions are applicable for all three IOUs. First, it is essential that these long-term plans be filed every two years, as the Commission has previously ruled. Second, there are specific resource adequacy requirements that will need to be considered during this proceeding. Third, locational requirements are an essential element of any long-term planning effort to ensure that adequate resources and/or transmission has been specified to serve the load behind transmission constraints. Finally, the CA ISO has specific concerns about the use of RMR contracts as reflected in the IOU plans.

II. The Biennial Filing of Procurement Plans is Appropriate

Q. What does the CA ISO understand the purpose of this proceeding to be?

A. The CA ISO understands this proceeding to be the mechanism by which the CPUC will ensure that the utilities it regulates procure adequate resources to meet their customers' load. The CPUC provided guidance in its Assigned Commissioners Ruling¹ and subsequent rulings regarding the assumptions the utilities should use in developing their forecasts and their corresponding plans. For example, one assumption was as an accelerated phase-in of the 15%-17% planning reserve margin by June 1, 2006.²

The CA ISO supports a periodic long-term review to assess resource adequacy, such as the ten-year review the CPUC has required in this docket. Such a long-term review, along with the related studies and evaluations, is appropriate from a strategic planning perspective and will bring to light

¹ Assigned Commissioner's Ruling and Scoping Memo, R04-01-003, June 4, 2004

1 potential (and important) trade-offs not only between generation, transmission and load, but also within
2 resource categories. For example, a longer-term vision would enable policymakers to examine whether
3 investment in one 500 kV transmission facility would be more appropriate than investment in two 230
4 kV lines or local demand/generation resources, or whether forty year old generators should be
5 repowered, retired or replaced. In essence, a long-term review gives policymakers the opportunity to
6 fashion a vision of the future and to structure a regulatory framework that best comports with and
7 supports that vision.

8
9 Finally, although the CA ISO acknowledges that the general resource adequacy requirements are
10 being addressed in a different portion of the proceeding,³ the CA ISO believes it is essential that the
11 Commission recognize that the fundamental intent behind those requirements must be applied to the
12 utilities' long-term plans during this proceeding. The major resource adequacy issues include important
13 topics such as load forecasting, counting of resources, full application of demand programs. However,
14 the CA ISO is most concerned about the effective application of deliverability requirements. Only if an
15 appropriate deliverability standard is in place will the Commission know whether internal resources and
16 imports can feasibly be used to serve the utilities' loads simultaneously. In addition, adoption of a
17 deliverability obligation that requires utilities and other LSEs to procure sufficient resources in load
18 pockets will ensure that load located behind transmission constraints will receive a level of reliable
19 service comparable to load that is not so constrained. This issue is discussed further in the testimony of
20 Robert Sparks.

21
22
23 Q. Should the utilities be required to update the long-term plans every two years?

24 A. Yes. The CA ISO applauds the Commission's decision that the utilities be required to update
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27 ² ACR 6/4/04, Attachment A, pg. 4

28 ³ ACR 04-04-003, "I do not expect that it will be possible, or even desirable, to require the utilities to re-file their long-term procurement plans based on the outcome of that decision. Rather, the decision will determine RAR policy on a going forward basis."

1 their long-term plans every two years.⁴ The CA ISO anticipates that the utilities will be able to provide
2 specific information regarding their progress in implementing the near-term (*i.e.*, less than five years)
3 elements, such as transmission permitting and construction. In this way, it will be possible for the
4 Commission to confirm that elements of the long-term plan that were approved to meet customer needs
5 in a particular year are on schedule. Moreover, any necessary changes to the long-term plan can be
6 identified in advance and corrections made as more information becomes available and certainty is
7 achieved.
8

9 Regarding the later years of the plan, *i.e.*, beyond year five, it is inevitable that there will be less
10 certainty as to the plan's elements. For example, utilities could propose to meet customer needs in years
11 five and six with new generation that is not yet under construction, provided such plants have filed for
12 their permits before the California Energy Commission (CEC). An update process every two years
13 would also provide the CA ISO and other interested parties with current information regarding the
14 utilities' procurement activities. This will help ensure that utilities remain on track to obtain necessary
15 resources to serve their load in future years. In addition, any adjustments can be made ahead of time
16 once it is determined that the scheduled availability of resources that a utility was relying on has
17 changed. However, these benefits can be accomplished only if the utility plans provide the necessary
18 details.
19

20 Q. Are there specific benefits for these plans being updated every two years?
21

22 A. Yes, the CA ISO the believes the biennial update will help mitigate concerns in two ways:
23

- 24 1) There is a large degree of uncertainty regarding many of the resources that the utilities
25 indicate they will rely on to meet customer loads. For example, if utilities indicate that
26 load in a particular year will be met through distributed generation or new power plants,
27 it is important to show that progress has been made towards making the "plans" a reality.
28

⁴D 04-01-050, pg. 175 biennial cycle for filings

1 If the schedule has changed, steps must be taken to identify alternatives to satisfy load
2 requirements. To some degree, such uncertainty is inevitable unless the utilities are
3 required to procure in the first year all of the resources needed to meet their projected
4 load in the last year of their plan. Annual updates, along with a monthly reliability
5 obligation, will provide for flexibility for utilities to take advantage of more cost
6 effective opportunities, while ensuring that the necessary resources are in place when
7 they are needed.
8

9 2) The current resource adequacy framework only requires the LSEs to make a showing of
10 that they have procured 90% of their summer period (May-September) capacity
11 obligations a year in advance.⁵ This does not constitute a sufficient long-term
12 commitment to have adequate infrastructure (generation or transmission) development in
13 California. Therefore, a mechanism needs to be developed to translate the approval of
14 these long-term plans into actual commitment for new infrastructure to serve California
15 loads.
16

17 **III. The Role of Resource Adequacy in the LTPP of the IOU**

18 Q. Does the CA ISO support the concept of placing an obligation on the Load Serving Entities
19 (LSEs) to ensure that adequate electrical resources are procured to meet peak loads?
20

21 A. Yes. The CA ISO strongly supports defining and placing upon all LSEs an obligation to ensure
22 that an adequate quantity of electrical resources (generation, transmission and demand-side programs)
23 has been procured in advance and is available to meet their anticipated peak load and reserve
24 requirements. This means that LSEs should procure sufficient and appropriate resources (both
25 systemwide and locationally) to satisfy their customers' needs.
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⁵ D 04-01-050, pg. 184 “adopt a 90% level of forward contracting for summer peaking needs”

1 From the CA ISO’s perspective, there are two temporally distinct objectives of resource
2 adequacy. First, on a long-term basis, a resource adequacy mechanism would provide a platform for
3 future investment in California’s electric infrastructure, thereby ensuring that, in the future, there will be
4 sufficient resources available to serve load. Such a mechanism, if properly designed, would provide
5 incentives for the LSEs (in this instance the IOUs) to enter into long-term contractual arrangements with
6 suppliers to satisfy their capacity obligations. Such a mechanism would provide benefits to both
7 consumers and suppliers. Consumers would benefit because sufficient resources would be available to
8 serve load, and their exposure to volatile spot market prices could be reduced. Suppliers would also
9 benefit by having a steady revenue source to finance their capital investments.
10

11 The second objective of resource adequacy is to support reliable system operations. While
12 maintaining reliable system operations on a day-to-day basis is the statutory responsibility of the CA
13 ISO, the CPUC’s policies – especially those regarding resource adequacy - can affect that objective. As
14 such, it is important that the CPUC adopt policies that will place on the LSEs the responsibility to
15 procure resources in a manner that enables the CA ISO to carry out its day-to-day responsibilities. The
16 concept of “resource adequacy”, and the measure of success of any resource adequacy program, are
17 driven by the need to serve load in real time. The CA ISO’s ability to serve load in real-time is
18 dependent on having adequate resources available to it in real time to serve such load and to meet any
19 locational requirements. In particular, this means that available resources must be deliverable.
20

21 Q. Is it necessary that all of the individual activities related to resource adequacy that an IOU
22 undertakes work together within an integrated program? What are the benefits of such a plan?
23

24 A. Yes. All activities related to resource adequacy – from 10-year plans to real-time emergency
25 procedures – must form an integrated program whose ultimate purpose is to serve load in real-time. For
26 example, if the reliability standard is the traditional “no more than one day [of involuntary load
27 curtailment] in ten years,” the resource adequacy program must start with an assessment of what is
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1 needed to achieve and maintain that standard day-in and day-out, and then develop policies that will
2 ensure that those needs are met. Because reliable real-time operation of the transmission grid is central
3 to the CA ISO's mission, my testimony will focus on, and propose mechanisms to ensure, the
4 development of long-term resource adequacy requirements and activities that will support the CA ISO's
5 real-time operating requirements and provide for load to be served in real-time.
6

7 There are additional benefits to establishing a resource adequacy requirement. By procuring
8 adequate capacity (without necessarily forward purchasing the energy from all such capacity), the
9 utilities would support the emergence of a competitive spot energy market, thereby resulting in lower
10 spot energy prices. Furthermore, by purchasing such capacity on a forward basis – three to five years in
11 advance of the need – LSEs can mitigate the exercise of market power. For example, the LSEs' advance
12 purchase of capacity allows them to effectively retain the option to buy from available or offered
13 resources or to build the capacity themselves. Such options practically limit the ability of suppliers to
14 demand an unreasonably high price for supply.
15

16 Q. Must all resources be deliverable to load?

17 A. Yes. Deliverability is an essential element of any resource adequacy requirement. Stated
18 differently, the obligation to procure sufficient capacity should include a concomitant obligation to
19 ensure that such resources are deliverable to load when needed. Otherwise, such resources are of little,
20 if any, value for purposes of serving load. Therefore, when procuring resources to satisfy a resource
21 adequacy obligation, the IOUs should consider the impact of major transmission constraints on the
22 deliverability of resources. As a result, the IOU procurement plans must identify the (dependent)
23 transmission facilities that are necessary to fully serve their load. By acknowledging the operating and
24 physical constraints of the system, the CPUC will ensure that there are adequate resources to serve load.
25 This will assist the CA ISO in its efforts to operate the grid reliably.
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1 Q. Can the electrical system in California be operated reliably without placing a resource adequacy
2 obligation on the LSE?

3 A. No. The CA ISO firmly believes that imposing a resource adequacy obligation on LSEs (in
4 this proceeding the utilities) is necessary to support reliable operation of the transmission system. The
5 CA ISO's primary responsibility is to operate that system reliably. However, for the CA ISO to perform
6 its responsibilities effectively, LSEs must have an obligation to procure resources that are made available
7 to the CA ISO for commitment or dispatch. This obligation should include a clear responsibility for the
8 utilities to procure, in the forward market, the resources necessary to serve their forecast load. This
9 obligation should be implemented and enforced by the CPUC on an ongoing basis.
10

11 It is necessary that the utilities provide sufficient details regarding their long-term procurement
12 plans. Currently, they have performed the necessary analysis to identify the quantity and time frame in
13 which they will have a need for additional resources. However, they have not provided sufficient
14 specificity to allow one to determine where the resources will be required. Thus, the CA ISO is unable
15 to assess the effectiveness of the plan from a deliverability perspective. As the parties discovered during
16 the Resource Adequacy workshops, resources whose locations are not physically identified cannot be
17 evaluated as to their ability to serve load, especially when other resources are simultaneously being
18 depended upon to serve load. Robert Sparks discusses more specifics on this issue in his testimony.
19

20 **IV. The Locational Nature of Resource Requirements**

21 Q. Please discuss the concept of deliverability as a part of the IOUs' LTPPs and how it is impacted
22 by the locational nature of the resource.
23

24 A. In order for resources proposed to serve load to actually be able to meet utility customer needs,
25 the resources must be deliverable. Thus, the utilities must demonstrate the deliverability of the
26 resources identified in their procurement plans. As discussed in the testimony of Robert Sparks, the CA
27 ISO is unable to complete an evaluation of the utility procurement plans because insufficient details
28

1 have been provided to demonstrate the deliverability of resources. For example, little or no information
2 has been provided regarding the location of new resources in future procurement scenarios, and little or
3 no analysis has been provided regarding the adequacy of resources in load pockets.

4 The deliverability of a resource can be satisfied in a number of ways. In the context of
5 traditional integrated planning, utilities satisfied this requirement by either building generation close to
6 load centers or by building sufficient transmission to transmit the power from remote generating stations
7 to the load centers. In the context of this proceeding, to the extent that a utility proposes to meet loads
8 within transmission-constrained areas (Load Reliability Areas, *i.e.*, LRAs, or load pockets) from
9 resources that are located within the area, deliverability issues are minimal. However, the capacity
10 requirements for these areas need to be defined and met by the LSEs serving load in these areas. In
11 cases where the utilities intend to meet loads in an LRA from resources that are located outside of the
12 area, the utilities must be able to show that the resources are not constrained by the transmission system
13 between the generation interconnection point and the LRA.

14 The utilities should be required to provide evidence in the form of transmission studies
15 demonstrating that their resources are deliverable. The testimony of CA ISO witness, Robert Sparks,
16 underscores this point. Furthermore, the utilities should be required to identify the location of the
17 resources that they intend to rely on to meet their needs with sufficient specificity to allow the CA ISO
18 to perform an accurate assessment of transmission needs for the CA ISO Controlled Grid in its annual
19 grid planning process.⁶

20 Therefore, the CA ISO believes that the CPUC should expeditiously issue a final order on its
21 overall resource adequacy policy that includes a locational resource adequacy requirement that will
22 maximize the deliverability of resources necessary to serve load. This requirement should include clear
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28 ⁶ The CA ISO realizes that it may be necessary to maintain the confidentiality of certain information and is willing to work with the Commission and the utilities to address this question.

1 specification of transmission constrained areas and the individual designation of sufficient resources to
2 meet load and provide reserves within the area.

3 **V. The CA ISO's Concerns Regarding RMR And Locational Capacity Contracts**

4 Q. What concerns does the CA ISO have with respect to the specific locations on the grid at which
5 capacity is added?

6
7 A. The CAISO agrees with the characterization of the roles of the CA ISO and LSEs as set forth in
8 the Commission's July 8th Order Regarding Electricity Reliability Issues.⁷ In particular, the CAISO
9 agrees that it has the responsibility to ensure and maintain grid reliability on a day-to-day basis and that
10 LSEs have the responsibility to procure and schedule resources in a manner that enables the CAISO to
11 reasonably carry out its responsibilities. The CAISO is fully committed to working collaboratively with
12 the utilities to facilitate their compliance with the order and any future order establishing a locational
13 capacity requirement. This includes providing guidance, as appropriate within the confines of the CA
14 ISO Tariff. The CAISO also is committed to providing any information and data necessary to permit the
15 CPUC to monitor effectively the utilities' compliance with any final CPUC order. Finally, the CAISO
16 believes that any final CPUC order should provide further clarification and guidance regarding cost
17 recovery such that the utilities may be permitted to recover all of their prudently incurred reliability
18 costs.
19

20 Q. Is the CA ISO trying to effectuate a fundamental shift in its responsibilities vis-à-vis the IOUs?

21
22 A. No. The utilities have suggested that ISO is attempting to effectuate a fundamental shift in the
23 respective roles and responsibilities the CA ISO and the utilities. For example: SCE has stated that the
24 "ISO has sought to make IOU's responsible for grid reliability through its focus on local reliability
25
26

27 ⁷ Interim Order Regarding Electricity Reliability Issues, 04-04-003, July 8, 2004, pg. 8, "To be clear, it is our view that while
28 the CAISO has the responsibility to ensure and maintain reliable grid operations, it is the LSEs responsibility to have
sufficient and appropriate resources to make that reasonably possible."

1 requirements.”⁸ In its comments filed on July 1, 2004, the CA ISO responded to these notions by
2 stating:

3 The CA ISO agrees with the Draft Decision’s conclusion that:

4 The CA ISO has the authority, experience, knowledge,
5 tools, process and ability to fulfill its responsibility to
6 assure reliable grid operations. Procurement, however,
7 is not part of CA ISO’s core functions.
8

9
10 Stated differently, the CA ISO has the responsibility to ensure and maintain
11 reliable grid operations, and LSEs have the responsibility to procure sufficient and
12 appropriate resources to make that reasonably possible. The CA ISO’s
13 procurement authority should be a “backstop reliability tool” only.
14

15 Further, the CPUC has indicated elsewhere its desire to minimize the use of and reliance upon
16 RMR contracts.⁹ The CA ISO agrees that RMR contracts should be a “backstop” measure in the long-
17 term reliability equation. It should be noted that RMR contracts play a significant role by providing a
18 mechanism to limit the potential market power of resources within transmission constrained areas of the
19 grid. However, the CA ISO has generally taken the position that it is not the supplier of last resort.
20 Rather, it is the responsibility of all LSEs to procure sufficient resources to serve their load and to make
21 those resources available to the CA ISO so it may reliably operate the grid. Therefore, with the
22 implementation of a resource adequacy program that effectively addresses locational capacity
23 requirements, the CA ISO believes that it will be able to phase-out the quantity of RMR contracts it
24 executes. This effort is supported by PG&E’s Long-term plan¹⁰ where it’s reliance on 500MW s of
25 RMR condition 2 contracts will be replaced after 2006 due to transmission projects or bilateral contracts.
26
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28 ⁸ SCE Long Term plan at pg. 7, line 15

⁹CPUC D.04-10-050

1 While PG&E discusses the reduction of Condition 2 RMR, it does not indicate the same commitment to
2 the remaining portion of RMR contracts, nor do they specifically identify the necessary transmission
3 projects that will be accomplished by the 2006 time frame.

4 Q: What does the CAISO envision as the role for RMR contracts in the future?

5 A: RMR units are Generating units located within transmission constrained areas that, because of
6 their location and the configuration of the transmission system, must run at certain times to maintain the
7 reliability of the CA ISO-controlled transmission grid. In the long term, there are advantages to having
8 RMR Agreements between the CA ISO and RMR Owners replaced with a combination of bilateral
9 capacity contracts between the utilities and RMR Owners and/or other contractual or appropriate
10 mechanisms that will preserve the CA ISO's ability to maintain local area reliability. There are two
11 advantages of having the utilities enter into agreements that replace the RMR Agreements between the
12 CA ISO and RMR generating unit owners:
13

14 1) Utilities have the ability to enter into multi-year long-term contracts, whereas the *pro forma*
15 RMR Agreement is a one-year agreement that can be extended annually by the CA ISO. The utilities, in
16 the course of developing long-term procurement plans, can review local area reliability needs on a
17 longer term basis, thereby potentially adopting alternatives that will reduce local area reliability needs
18 over the long term. This will help ensure the development of an adequate infrastructure to reliably serve
19 the utilities' customers.
20

21 2) The utilities as load serving entities have capacity and energy requirements to meet the
22 resource needs of their customers, apart from needs that arise from local area reliability requirements. If
23 the utilities procure the services needed to meet local area reliability needs, these requirements can be
24 assessed in the context of more general capacity and energy needs. Potentially, utilities could enter into
25 long-term contracts that satisfy both local area reliability needs and more general capacity and energy
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¹⁰ PG&E Long Term plan @ pg. 4-60

1 requirements at a lower cost than buying these two types of services separately.

2 Q. Does this conclude your opening testimony?

3 A. Yes. It does.

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QUALIFICATIONS OF PHILIP D. PETTINGILL

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3 Q. Please state your name and business address.

4 A. My name is Philip D. Pettingill. My business address is California Independent System
5 Operator (CA ISO), 151 Blue Ravine Road, Folsom, CA 95630

6 Q. Briefly describe your responsibilities at the CA ISO.

7 A. I am the Manager of Policy Development in the Regulatory Policy Department. My
8 responsibilities in this position include managing activities and staff responsible for development and
9 implementation of corporate policies that support CA ISO core functions. In addition, I oversee major
10 strategic decision-making efforts and communication of corporate policies, programs and initiatives
11 related to a wide range of national, state and local issues. My daily activities include analyzing energy
12 issues and proposing CA ISO positions in written papers, testimony and regulatory comments. In
13 addition, I have represented the CA ISO before the California state House and Senate on matters related
14 to resource adequacy.

15
16 Q. Please summarize your educational and professional background.

17 A. I received a Masters degree in Business Administration from Saint Mary's College of California
18 in 1996. I received my Bachelor of Science in Electrical and Electronic Engineering from California
19 State University at Sacramento in 1983. I am a licensed Electrical Engineer in the State of California. I
20 have 19 years of experience in electric transmission engineering and operations. After graduation in
21 1983 from California State University, I began work for Pacific Gas & Electric Company as a substation
22 design engineer and held positions of increasing responsibility until 1997. In 1997, I joined the CA ISO
23 as the Manager of Transmission Facilities where I managed the development and enforcement of the
24 CAISO transmission maintenance standards. In late 2001, I joined the Regulatory Policy Department in
25 my current position. In that capacity, I have been involved in CA ISO filings with this Commission and
26 the FERC. I have provided representation at technical conferences related to FERC policy on the
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1 interconnection of new generation to the transmission system. I have testified in the most recent
2 proceedings before this Commission regarding the IOU long-term procurement plans. In addition, I
3 have participated as the CA ISO policy witness in the CPUC workshops on resource adequacy.

4 Q. Does this conclude your statement of qualifications?

5 A. Yes.

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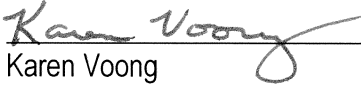
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CERTIFICATE OF SERVICE

I hereby certify that I have served, by electronic mail, a copy of the foregoing Opening Testimony of Philip Pettingill Regarding the Long Term Procurement Plan of the Investor Owned Utilities on Behalf of the California Independent System Operator to each party in Docket No. R.04-04-003.

Executed on August 6, 2004, at Folsom, California.



Karen Voong
An Employee of the California
Independent System Operator