Application of San Diego Gas & Electric Company (U-902-E) for Adoption of an Advanced Metering Infrastructure Deployment Scenario and Associated Cost Recovery and Rate Design.	Application 05-03-015

CHAPTER 26

(REDACTED VERSION)

Prepared Rebuttal Testimony

Of

PAUL PRUSCHKI

SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

SEPTEMBER 7, 2006

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I. Introduction

The purpose of my rebuttal testimony is to respond to several claims and assertions made by the Utility Consumers Action Network (UCAN) and the Division of Ratepayer Advocates (DRA) witnesses in their prepared testimony submitted on August 14, 2006. Specifically, my rebuttal testimony refutes UCAN's argument that SDG&E should wait for further smart grid technology development by showing that current AMI technology delivers on today's AMI requirements and provides a foundation for smart grid. In addition, UCAN's assertion that a broadband technology is required for residential AMI is completely without merit, and SDG&E has found no quantifiable benefit to suggest otherwise.

As a result of several clarifying discussions with DRA, SDG&E has included specific details for our acceptance testing approach [redacted] and presents a detailed warranty analysis and discussion to demonstrate that the warranty provisions are not deficient.

It is surprising that UCAN and DRA can assess the same technology and reach completely opposite conclusions. UCAN asserts that SDG&E's AMI technology selection is behind the times and fails to integrate emerging smart grid technologies, whereas DRA asserts that SDG&E's chosen technology is too advanced with more demanding specifications than currently exist. Neither perception is accurate. In fact, the technologies SDG&E is evaluating provide the necessary foundation for emerging smart grid technologies and are well established technologies. My rebuttal testimony demonstrates that SDG&E's approach to selecting AMI technology is rational, reasonable and sound.

II. Summary of SDG&E Rebuttal to UCAN's Testimony

I will summarize key rebuttal arguments regarding two primary issues raised in UCAN's testimony and identify SDG&E's corresponding rebuttal testimony.

A. UCAN's vision for SDG&E's investment in the electric distribution system is misguided and just plain incorrect.

SDG&E agrees with UCAN's smart grid vision but not their plan for achieving it. The two AMI technologies that SDG&E is evaluating will support the Smart Grid vision. AMI has the ability to provide important load, distribution operations and reliability data that will be utilized in maintaining the grid more efficiently and reliably. Certain advanced grid components and the sensing, metering and measurement devices will send small packets of data to a back office application that will analyze the data and make decisions or recommendations for a particular action. The important point to realize here is that the data throughput requirements of AMI are low and, accordingly, can be accommodated by a low-bandwidth technology. Furthermore, SDG&E verified through the solicitation process that the short-listed AMI technologies possess sufficient communications capability to provide substantial support of smart grid initiatives. These technologies exist today and can readily support and provide data that the smart grid requires for decision making. SDG&E completely rejects UCAN's recommendation that SDG&E wait for new, broadband technologies to emerge.

SDG&E is committed to the process described in Mr. Reguly's Chapter 8 testimony of July 14th (TMR-8:1-11), wherein Mr. Reguly states that SDG&E will continue to monitor technology development. SDG&E firmly believes that the smart grid will be a heterogeneous integration of multiple control, information and communications technologies that will evolve over the next several decades, with AMI being but one of these. The other technologies that UCAN makes reference to may all eventually be integrated within this heterogeneous mix, once commercially available and viable.

B. UCAN's belief that an AMI broadband system is necessary for residential customer benefits to be realized in a Smart Grid proposal is wrong.

The Commission should reject UCAN's recommendation that SDG&E deploy a broadband technology for AMI. Many of the benefits outlined in Mr. Shames' testimony can be realized by deploying SDG&E's current technology choices. As I described in my July 14, 2006 testimony, no quantifiable benefits have been identified that would require real-time (i.e. – broadband) data from the meters.

III. Summary of SDG&E Rebuttal to DRA's Testimony

A. DRA's interpretation of SDG&E's "Buy-as Opposed to Build" approach is incorrect.

Mr. Hadden's testimony contends that SDG&E has based all risk mitigation and benefits realization on the singular assertion of buy-as-opposed-to-build. This is not an accurate representation of SDG&E's filing and the supporting documentation provided to DRA. SDG&E has employed risk mitigation and risk contingency management throughout the process to date. Salient aspects include, but are not limited to:

- Development of risk adjusted total-cost-of-ownership (TCO) models for vendor comparisons (for all vendors that passed the AMI technology RFP evaluation process)
- Assessment of risk mitigation possibilities and their costs for controllable risks, and an assessment of risk contingency costs for non-controllable risks within the AMI program business case. For example, this process led to the adoption of a design, build, run, and transfer option for the AMI technology deployment. With this option, the vendors are fully responsible for planning, deploying, operating and maintaining the AMI system until that system is fully deployed and operating at the performance levels specified by the vendors in their RFP response.
- The development of formal AMI field-tests to validate technical, functional, and performance claims (with respect to the vendors' response to SDG&E's AMI RFP), prior to final selection.

B. DRA's assertion that Acceptance Testing is essential and must be adequately specified in the RFP was based on an assumption that SDG&E has ignored the critical test process.

SDG&E agrees with DRA that formal AMI Technology acceptance tests are essential, and should be part of our solicitation and contracting process. These costs are built into SDG&E's business case.

A well-established practice in the industry is to separate the solicitation process from the negotiations final detailed project plans and conditions. The reasons for this are simple. Based on the final business case analysis and a vendor's capability, technical, functional, and performance contract terms and capabilities become a factor of the final technology selection, and these may be different than those stated in the initial RFP requirements. All vendors know, even if it is not explicitly defined in the solicitation, that the final project plans, terms and conditions will be defined on a milestone basis. There will be multiple phases of formal system acceptance testing accomplished via piloting and/or via a staged deployment schedule. Vendors also know that they will incur all costs associated with the majority of such testing and that financial penalties for non-compliance will be involved (especially in staged deployment).

To suggest that vendors must be explicitly provided formal acceptance test procedures before final functionality and performance requirements are established per the utility's final business case, in order to mitigate vendor pricing risks, has no merit. Furthermore, SDG&E's AMI Technology RFP Section 9 states "The Company may, at its option, conduct technology pilots commencing in mid 2006 and ending mid 2007. Pilots will be conducted to validate functional and performance capabilities of the chosen technology/technologies across a representative sample of the Company's deployment segments." The AMI RFP further states in 9.2 "Bidders selected for pilots will provide sufficient AMI meters, network equipment, as well as an AMI head-end free of charge to the Company." Thus vendors were clearly alerted to at least one initial test phase that would be incurred at their own expense prior to final selection.

SDG&E agrees with Mr. Hadden's recommendation to include in the contract, and I paraphrase here, a test that is defined in a carefully developed Acceptance Test

Procedure (ATP). The ATP specifically sets forth the test sample, the specific test criteria, scope, duration or repetitions and the Acceptance Test Report (ATR) that states and describes recording formats, data requirements and documentation requirements. The ATP must also address witnessing, explicit pass/fail criteria, and recycle/retest allowances for remediation of failed test sequences. A failed acceptance test, after remediation allowances are exhausted, will normally have extreme contractual ramifications.

The formal Field Acceptance Test reaches beyond demonstrating routine system operation. Test performance is specified at extremes of foreseeable operational conditions; to the extent such extremes can reasonably be tested. As examples, this typically involves:

i. Forcing meter data recovery rates to levels that wouldn't be experienced in normal operation.
ii. Showing performance in the presence of interfering noise sources as might be experienced due to lightning or arcing on distribution system insulators

SDG&E has taken Mr. Hadden's recommendation one step further and has included a design, build, run, and transfer deployment plan. This plan requires the AMI Technology vendor to operate the system through-out the deployment period and for a period of up to 6 months post full deployment until full performance and functionally of the system is verified. All costs associated with this have been solicited from the short-listed vendors and included in SDG&E's filing.

C. SDG&E agrees with DRA that the AMI technology performance risk must be managed appropriately and SDG&E will be taking such steps through the field tests and acceptance tests. Mr. Hadden further states (page 8-20, line 13), [redacted]

[redacted]

[redacted] SDG&E's field-tests are designed to stress test the systems well beyond the performance specifications of the RFP in order to ascertain the limits of the potential technologies under consideration.

D. DRA's statement that the residential meter life and warranty provisions are deficient was based on a lack of clarity on how SDG&E is handling this potential issue, and as a result of clarifying discussions with DRA, SDG&E offers the following explanation.

There was an unfortunate inconsistency between the meter specifications and the AMI technology specifications. The meter specifications included in the RFP are SDG&E's existing electric meter and gas module specifications and as such bore the warranty provisions of standard meter purchases. The AMI technology specifications superseded the meter and module specifications and this

clarification was made to vendors during the bidder's conference and subsequent Q&A during the solicitation process.

That being said, SDG&E disagrees with the inconsistency between the 15 year life (actually 17 years in our case) and the 1 year warranty. A warranty speaks to how long a vendor will provide for 100% replacement value should the product fail. This type of warranty is what is defined in SDG&E's meter specification. Life expectancy (or useful life) has to do with the product's design and the material used in the manufacturing process and results from product testing (often referred to as end-of-life testing). To use Mr. Hadden's car analogy, automobile manufacturers sell cars with a useful life of at least 10 years, but the standard (base) warranties typically cover 3-5 years with a maximum mileage provision.

Base and extended warranty pricing were provided by vendors. The following tables show the analysis completed by SDG&E to determine if the extended warranty costs resulted in an overall lower total cost of ownership. [redacted]

[redacted]

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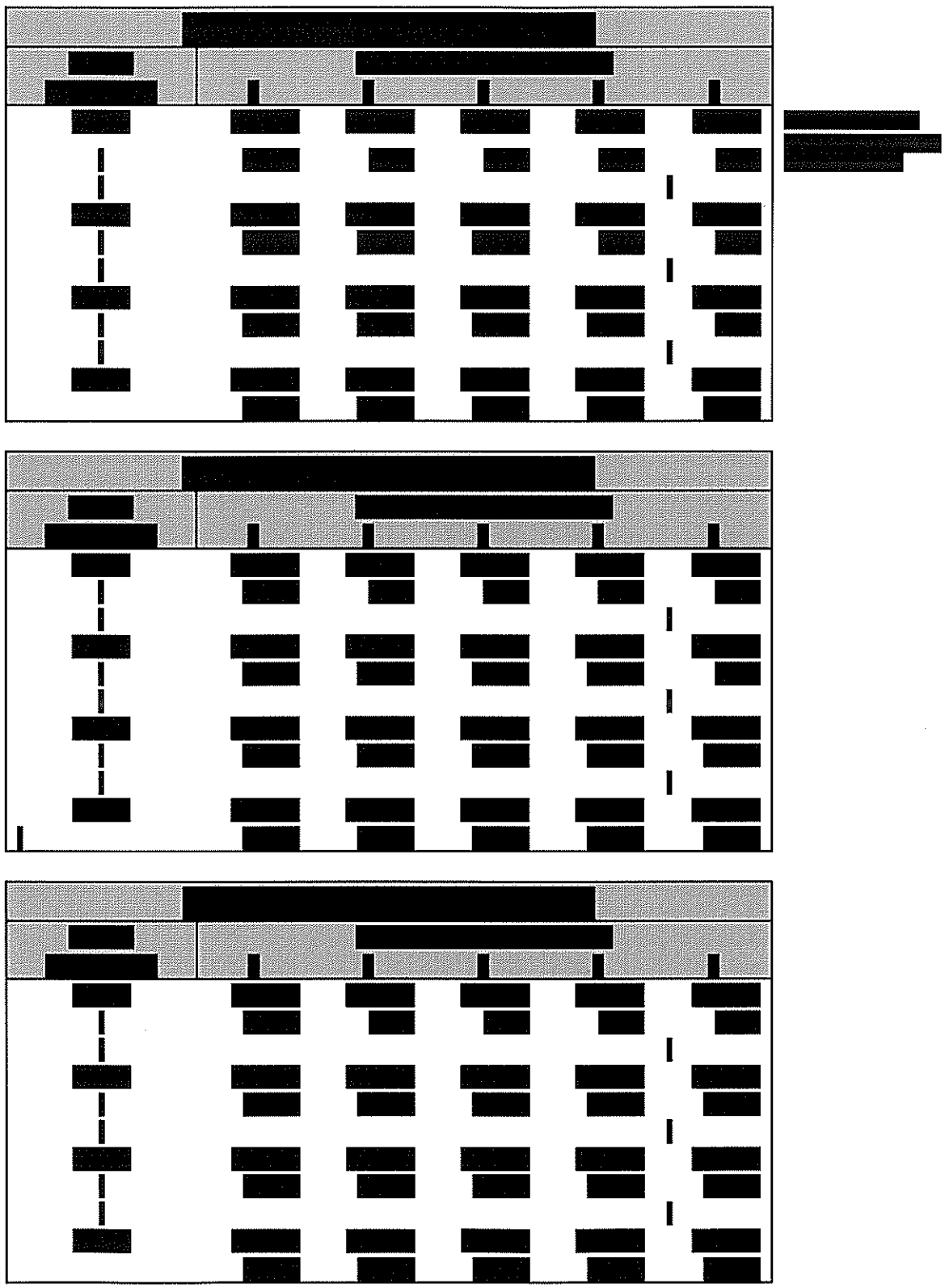

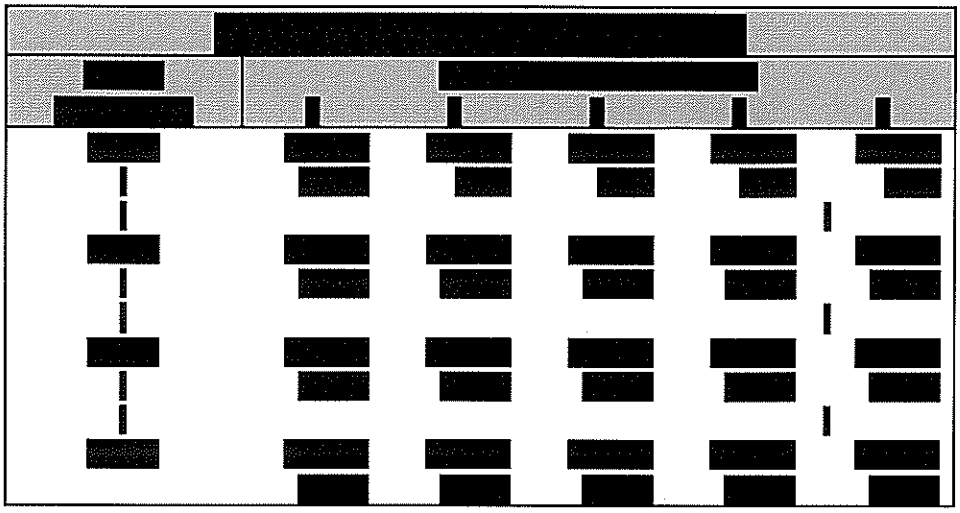

This concludes my prepared rebuttal testimony.