

## Appendix E

### Opinion of Prof. Robert Wilson

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To: Market Surveillance Unit, California ISO

From: Robert Wilson, Consultant

RE: Summary Report on RMR Procedures

1. RMR operations are purchased by the ISO to enhance grid reliability. The byproduct is an energy supply (not matched with any demand load) that the ISO purchases under the existing provisions of long-term contracts with generators. If this energy surplus spills over into the real-time market then the ISO must, in effect, resell this energy in the real-time balancing market.

The basic organizing principle of the ISO's charter is that it manages the grid independently of the energy markets. This principle is implemented by accepting only balanced schedules from participating Scheduling Coordinators. In particular, the aggregate of the day-ahead schedules should be balanced.

This principle implies that the energy acquired from RMR purchases, to the extent known and called before the PX day-ahead market opens at 7 AM, should be offered as must-take supplies in the PX. (The PX is the relevant energy market since it is the only one that is fully transparent.) If this is not done then the aggregate of the Scheduling Coordinators' balanced schedules and the unsold RMR energy is unbalanced – and in effect, the ISO is thereby participating in the energy markets, contrary to the basic market design that separates the ISO's grid management from the energy markets.

The RMR energy is must-take because there is no prospect of reducing its supply due to price considerations; i.e., like all other must-take supplies its opportunity cost is zero even though the variable cost of generation is positive.

2. RMR operations provide the public good of grid reliability for which the ISO is responsible. RMR operations and the energy byproduct are purchased outside the market, via contracts, because otherwise the local monopoly power of the generators would often enable them to demand prices above the market price that the ISO would be forced to accept to ensure grid reliability.

The important principle to guide the contract specifications is that the ISO must obtain the requisite RMR reliability services without impairing the competitiveness of the general market for energy. That is, the ISO's RMR purchases of operations and energy must decouple reliability management from the equalization of demand and supply in the much-

larger competitive part of the energy market.

The Market Surveillance Unit's proposed contracts show that this can be accomplished if the RMR energy passes through the PX market as must-take. The must-take provision is required because otherwise the absence of any part of the RMR energy in the day-ahead market and its spillover into later markets would tend to raise day-ahead prices and lower real-time prices, which can be corrected only by elaborate arbitrage – such as UDC's withholding demands from the day-ahead market to real-time market – which would undermine the key design of the California markets in which most transactions are to be accomplished via balanced day-ahead schedules, and the real-time market is reserved for intra-zonal balancing (at the ISO's expense!).

3. Regardless of the strength of the present evidence pro or con that RMR contractors might be withholding RMR energy from the day-ahead markets to influence the market price obtained by other units in their portfolios, or to obtain the greater of the RMR price and the market price, the fact remains that the incentive to withhold poses a long-term risk of severe proportions that cannot be ignored. Eliminating this incentive by requiring called RMR energy to pass through the PX market as must-take is necessary to ensure decoupling of grid reliability operations from the competitive energy markets, and thereby to ensure the continued competitiveness of the energy markets. The Market Surveillance Unit's proposal to allow the RMR contractors to obtain the maximum of the market price and the RMR payment provides assurance that no RMR contractor is disadvantaged.

Claims are reportedly made that treating RMR energy as must-take could lower the day-ahead price and thereby reduce the profitability of other units in an RMR contractor's portfolio. If this were true it would reflect incomplete arbitrage between the day-ahead and real-time prices, in which case the contractor could preserve its profitability by withholding some energy from the day-ahead market in order to obtain higher expected prices in the subsequent real-time market. The evidence is strong, however, that there is no systematic difference between the day-ahead and real-time prices, and there is no indication that any future scenario would entail a systematic divergence in prices. Therefore, I see no convincing evidence that contractors' profits on their other units will be reduced by the MSU's proposals.

