

Memorandum

To: ISO Board of Governors

From: Gary DeShazo, Director of Regional Transmission North
Laura Manz, Vice President of Market & Infrastructure Development

Date: October 20, 2008

Re: *Decision on elimination of the dual fuel requirement for San Diego area starting in 2009*

This memorandum requires Board action.

EXECUTIVE SUMMARY

This memorandum requests that the ISO Board of Governors eliminate the dual fuel requirement as a local area reliability requirement for the San Diego area as of 2009.

The California Independent System Operator Corporation (the ISO) performed a dual fuel study in 1999. Based on that study, the ISO Board of Governors adopted a dual fuel requirement for certain resources in the San Diego area on August 26, 1999.¹ Since 1999, there have been many changes in both the natural gas delivery system and the electric transmission system in San Diego including a 10% increase in the natural gas system capacity into the San Diego area due to expansion of the pipeline north from San Diego in the Rainbow corridor. In addition, a new natural gas interconnection was established in the southern end of the system at Otay Mesa, creating a looped system that provides another source of supply to the San Diego area. At the same time, total natural gas demand is forecasted to decrease due to retirement of old, inefficient generation units and their replacement by new, more environmentally friendly, state of the art, combined-cycle technology with much better efficiency. With regard to the electrical system, the ISO has approved significant infrastructure improvements in San Diego's electric transmission system, allowing increased imports and a much improved voltage profile across the entire San Diego area

In general, the requirement for dual fuel capability stems from winter natural gas curtailment assumptions. The dual fuel study of 1999 assumed that 100% of natural gas supply could be curtailed during winter months. Given the gas infrastructure now in place, while some curtailment of gas delivery is still possible to the extent that actual electric generation gas demand is higher than that forecasted for a once in 10 years (1-in-10 year) cold weather

¹ The Board's August 26, 1999 action also adopted a dual fuel requirement for specific northern California resources.

condition, a “100% curtailment” assumption is no longer valid. Current analysis indicates that the San Diego electric system could sustain a 66% gas curtailment to electric generation customers without the need to utilize a dual fuel resource, since only 550-900 MW (out of 3,000 MW) of electric generation capacity is needed in order to maintain grid reliability at winter peak. The Sunrise Power Link (Sunrise) reduces curtailment exposure to near 0%. Therefore, in consideration of the positive impact these gas and electrical infrastructure improvements have brought to this area of the ISO’s Controlled Grid, Management has concluded it is no longer necessary to maintain the dual fuel requirement for the San Diego area.

MOTION

Moved, that the ISO Board of Governors authorizes the elimination of the dual fuel requirement for San Diego area, starting in year 2009, as described in the memorandum dated October 20, 2008.

BACKGROUND

Gas system improvements since the 1999 Dual Fuel Study

In order to serve core and firm noncore San Diego area natural gas demand in the winter season, the system gas capacity was increased from approximately 550 million cubic feet per day (MMcfd) to 630 MMcfd (excluding 45 MMcfd of capacity reserved for an operating margin) mainly by adding capacity from the north through the Rainbow corridor. In addition, a new gas interconnection has been established in the southern end of the system at Otay Mesa, making this a looped system, while the pre-existing system from the north was fully radial. San Diego Gas & Electric Company (SDG&E) is able to serve its current core and non core customers from these resources and could obtain an additional 50MMcfd from the Otay Mesa connection, if needed.

Future SDG&E long-term gas demand forecast shows that there will be a decrease in total demand in this area, mainly because of electric generation demand decrease. The San Diego area is projected to satisfy most of its internal electricity needs through the use of new, more environmentally friendly, state of the art combined-cycle technology with much better heat rates than the old steam generators due to retire.

Based upon the utility’s gas demand forecast for existing and under-construction plants, the combination of these improvements means that the SDG&E gas system capacity, is expected to be sufficient for the next 10 years. Curtailment of gas delivery, in the winter months, is still possible to the extent actual electric generation gas demand is higher than that forecasted for a 1-in-10 year cold day condition or under Force Majeure events.

It is important to note that all of the above data refers to a 1-in-10 year cold day demand. Previous ISO studies from 1999 used a 1-in-20 year cold day demand in its analysis. However, the gas system forecast standard has changed to a 1-in-35 year cold day demand for core customers and 1-in-10 year cold day demand for core and firm noncore gas customers. Management’s decision to request elimination of the dual fuel capability in the San Diego area is based on the 1-in-10 year cold day demand that includes a forecast for the winter peak day for all core and noncore gas customers including electric generators (for

years beyond 2009). Using that 1-in-10 year cold day demand is consistent with industry practice for this type of analysis.

Electric system improvements since the 1999 Dual Fuel Study

Since 1999, the ISO has approved 18 infrastructure additions to SDG&E's transmission system. These projects have been placed in-service and allow for increases to the import capability of the San Diego transmission system. The situation will significantly improve once the Sunrise transmission project is placed in-service. Adding another 1,000 MW to the San Diego import capability will allow for a reduction in internal generation requirements at winter peak conditions, significantly reducing the gas curtailment exposure across a 1-in-10 year cold day demand horizon.

Consultation with Southern California Gas Company and San Diego Gas & Electric Company

The ISO staff investigated and analyzed the natural gas supply and electric reliability needs for the San Diego areas in consultation with staff of Southern California Gas Company and SDG&E, respectively.

Overall benefits of eliminating the dual fuel requirement in San Diego area

Environmental

Eliminating the dual fuel requirement would eliminate the environmental risks posed by the release of residual oil to the surrounding environment, including ground water and sensitive ecological environments. It would also eliminate the need for extensive emergency response action plans associated with oil fuel use and storage.

New generation development

Elimination of the dual fuel requirement will make possible redevelopment or replacement of existing sites with state of the art combined-cycle facilities, wind and solar or peaker projects, which are much more environmentally friendly than the existing steam power plants, because they will have a much better heat rate, better air quality controls and will not use once-through cooling facilities.

It is expected that a portion of the real-estate at the Encina facility (located under the existing dual fuel tanks) will be used to construct the new Carlsbad Energy Center, a new state of the art combined-cycle facility as a partial re-powering at this site.

Cost saving summary due to the elimination of dual fuel capabilities

The cost to ratepayers of the current dual fuel capability at the Encina and South Bay facilities is bundled into the reliability must-run rates for the South Bay facility and into the power purchase agreement between SDG&E and the generation owner for the Encina facility. The ISO estimates that \$400,000 of ratepayer costs per year can be saved by eliminating dual fuel requirement for these resources. The cost savings do not include costs saved by mitigating the oil spill risk or added value due to the alternative use of the property.

STATUS QUO ALTERNATIVE CONSIDERED

Originally, when the power plants were constructed in the early 1960s, the risk of a full gas system outage was deemed to be substantial. In addition, both facilities burned residual fuel oil for economic reasons. Each facility maintained a large inventory of residual oil on-site and could replenish fuel stock via ocean barge. However, ocean barge delivery of residual oil at both facilities is no longer possible since the associated oil transfer facilities have been removed. As a result, the amount of on-site oil storage has been reduced to the equivalent of two days of full load operation. The use of oil fuel today is only allowed by the local Air Pollution Control District if the ISO declares an emergency during a natural gas curtailment.

Finally, there has never been an instance of 100% natural gas curtailment to electric generators in the SDG&E system. While there were some partial curtailments in the 2000/2001 time frame, given the gas and electrical improvements that have been placed in-service over the last ten years, future curtailments are considered remote.

CONCLUSION

Management recommends that the dual fuel requirement for the San Diego local area be eliminated. This would eliminate the dual fuel requirements for all South Bay and Encina units that are not under an existing black start agreement with the ISO. This change is not projected to adversely impact San Diego's system electric reliability and is expected to save ratepayers an excess of \$400,000 per year. In addition, it would allow for redevelopment and replacement of some of the exiting Encina units with new state of the art resources, with improved environmental and efficiency characteristics.