

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: May 21, 2014

Re: Briefing on the 2014 Summer Loads and Resources Assessment

This memorandum does not require Board action.

INTRODUCTION

The attached 2014 Summer Loads and Resources Assessment presents the expected supply and demand conditions for the 2014 summer peak demand period. This assessment helps the ISO, industry participants, and other key stakeholders in planning and preparing for the upcoming summer season. The assessment includes the following:

- Discussion of the impact of the California drought on summer power supply;
- Discussion of the local reliability impact due to the retirement of the San Onofre Nuclear Generating Station (SONGS);
- Forecasts of ISO peak demand, taking into account scenario forecasts of future economic conditions;
- Projections of generation and imports over a range of predictable operating conditions as well as specific operating scenarios;
- Assessment of risk to the ISO system and the individual northern and southern regions (NP26 and SP26 zones) under diverse operating conditions and scenarios; and
- Discussion of any potential for firm load interruptions based upon the range of probable outcomes for various potential summer operating conditions.

This year all of the analyses provided in the report are based on assumptions for reduced generating capability of hydroelectric generating resources in the ISO due to the ongoing drought in California.

SUMMARY OF KEY FINDINGS

Even with the drought concerns, the summer assessment projects adequate supply for meeting 2014 summer peak demand for the ISO grid at the system wide level and for the NP26 and SP26 regions when considered independently. However, the unusually dry conditions across the state do create a heightened risk of wildfires, which could impact the use of major transmission lines during periods of critical summer peak demand. Thus, major wildfires could create grid reliability challenges over the summer, particularly in southern Orange County and San Diego where there is a risk of localized customer outages as a result of the retirement of SONGS.

This projection is based on examining the operating reserve margins under normal and extreme scenarios.

Key findings in this year's assessment include:

- ISO total hydro net qualifying capacity in August is 7,666 MW. This is the maximum capacity eligible and available for meeting the CPUC resource adequacy requirement. However, as a result of the drought, the ISO has determined that a hydro derate in the amount of 1,370 MW under expected conditions and a derate of 1,669 MW under more extreme summer weather conditions should be applied to the net qualifying capacity of 7,666 MW.
- There is only 44 MW of net qualifying capacity hydro generation located in San Diego and Orange Counties and the majority of this generation is pumped storage. Consequently, drought conditions will have little impact on local resource adequacy in the San Diego and Orange County areas.
- The ISO is following the potential impact of thermal units being out of service due to water supply curtailments. Among the 260 thermal power plants greater than 20 MW, three facilities in Northern California totaling 1,150 MW have been identified to be at risk of having water supply curtailments. The ISO will continue to work with state and local agencies to monitor these facilities through the summer.
- As of April 29, 2014, Northwest River Forecast Center projected April to August reservoir storage in Columbia - Dalles Dam to be 107% of average. The Pacific Northwest hydro surplus energy sales into the ISO are anticipated to be in the normal to above normal range for 2014 to make up for some of California's low hydro generation.
- As compared to last summer, a net increase of 3,243 MW of available generation is expected by June 1, 2014. This consists of 3,555 MW of new generation that has already reached commercial operation since last summer, an additional 338 MW that is expected to enter commercial operation by June 1, 2014, and the retirement of the 650 MW Morro Bay power plant. Of the 3,243 MW, 61% is solar, 32% is natural gas, and 7% is in other categories. This will help to offset the anticipated hydro derate in 2014.

- The permanent retirement of the San Onofre Nuclear Generating Station was announced on June 7, 2013. The steps taken in 2012 to prepare the system for the summer of 2013 included the completion of several transmission and voltage support enhancements in the LA Basin area. While additional approved mitigations are expected to begin coming into service for the summer of 2015, no additional transmission measures are available for the summer of 2014. With continued modest load growth, local reliability conditions in the south Orange and San Diego counties are likely to be marginally more challenging this summer compared to last.
- The ISO 1-in-2 peak demand forecast of 47,351 MW for 2014 is 1.4% above the 2013 weather normalized peak demand of 46,705 MW. The increase in the ISO peak demand forecast is a result of a projected moderate economic recovery forecast for 2014.
- The ISO system-wide planning reserve margin for summer 2014 is projected to be significantly greater than the California Public Utilities Commission's 15% resource adequacy requirements. Operating reserve margins are expected to be more than adequate as well.

The slowly improving economy, which resulted in moderate peak demand growth, combined with the availability of new power generation since June 2013, result in an overall adequate summer supply outlook for 2014 to meet a broad range of operating conditions. Although the risk of power supply shortages increases under extreme load conditions, coupled with more extreme unavailability of hydro generation, the net increase of 3,243 MW of available generation since last summer and out-of-state imports will help to moderate these risks. As a whole, the main impact from the drought during the 2014 summer will be an increase in natural gas generation, which could result in an increase in energy prices and increased greenhouse gas emissions. Additionally, unusually dry conditions across the state do create a heightened risk of wildfires, which could impact the use of major transmission lines during periods of critical summer peak demand.

Producing this report and publicizing its results is one of many activities the ISO undertakes each year to prepare for summer operations. Other activities include coordinating summer preparedness with the Western Electricity Coordinating Council, Cal Fire, natural gas providers and neighboring balancing authorities. The ISO's ongoing relationships with these entities help ensure everyone is prepared during times of system stress.