

**DOCKETED**

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# 2018 Summer Loads & Resources Assessment

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2018 IEPR Commissioner Workshop on Renewable Integration and Electric System Flexibility, California Energy Commission

June 20, 2018

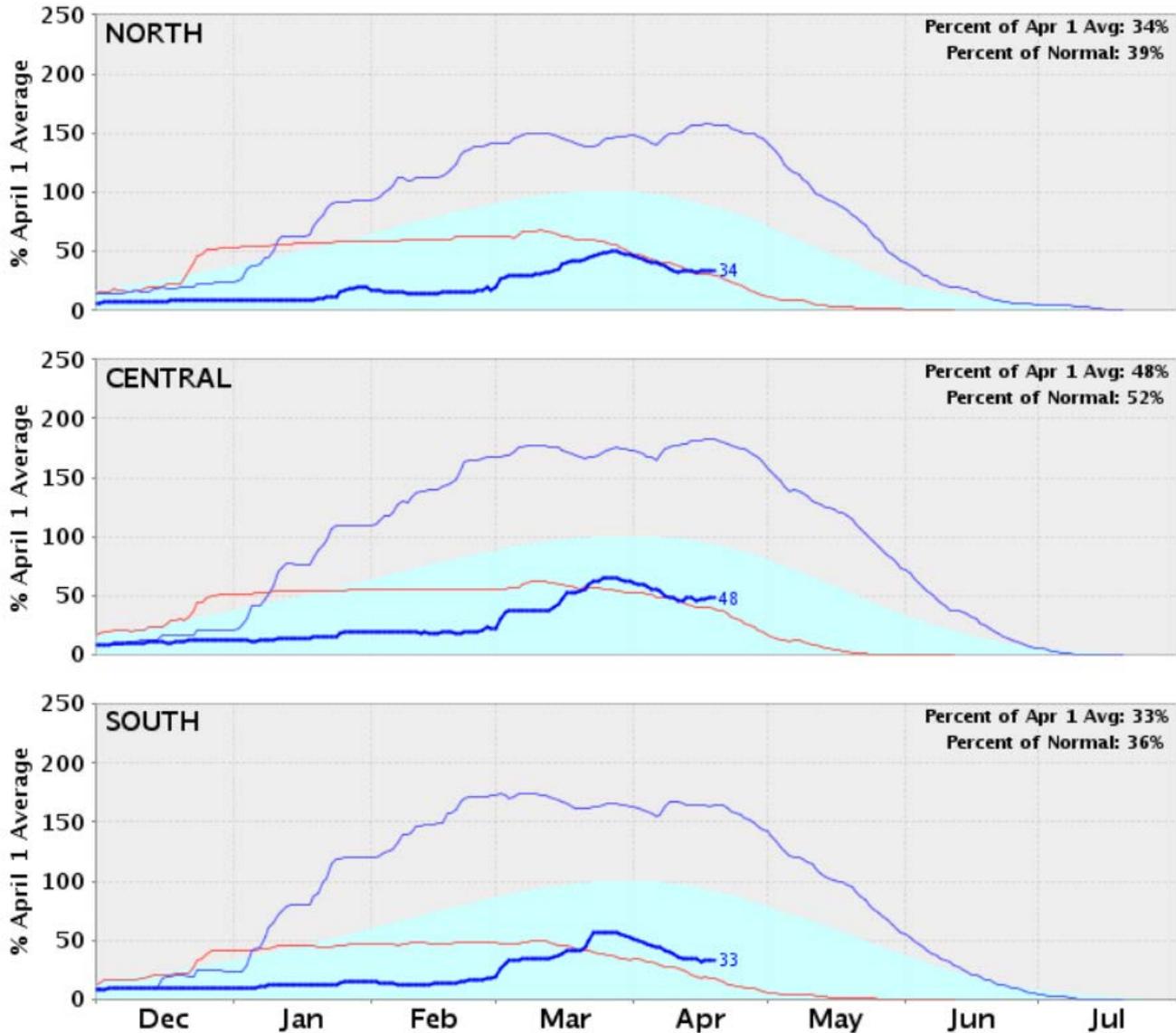
# ISO Summer Assessment – a probabilistic approach

- Models all hours of the summer in 2,000 scenarios
- Models full range of load forecasts
- Considers all resources that qualify as an RA resource
- Uses unit specific forced outage rates, ramp rates, start times and minimum down times
- Designed help ISO operations prepare for operational issues ISO could encounter, including potential extremes

# ISO 2018 Summer Assessment projecting challenging summer conditions

- 50% probability of a stage 2 emergency for at least 1 hour
- ISO peak demand relatively unchanged from 2017
- Hydro below normal
- 789 MW reduction in dispatchable resources due to retirements
- Aliso Canyon related gas restrictions not included in the results, but could result in additional risk

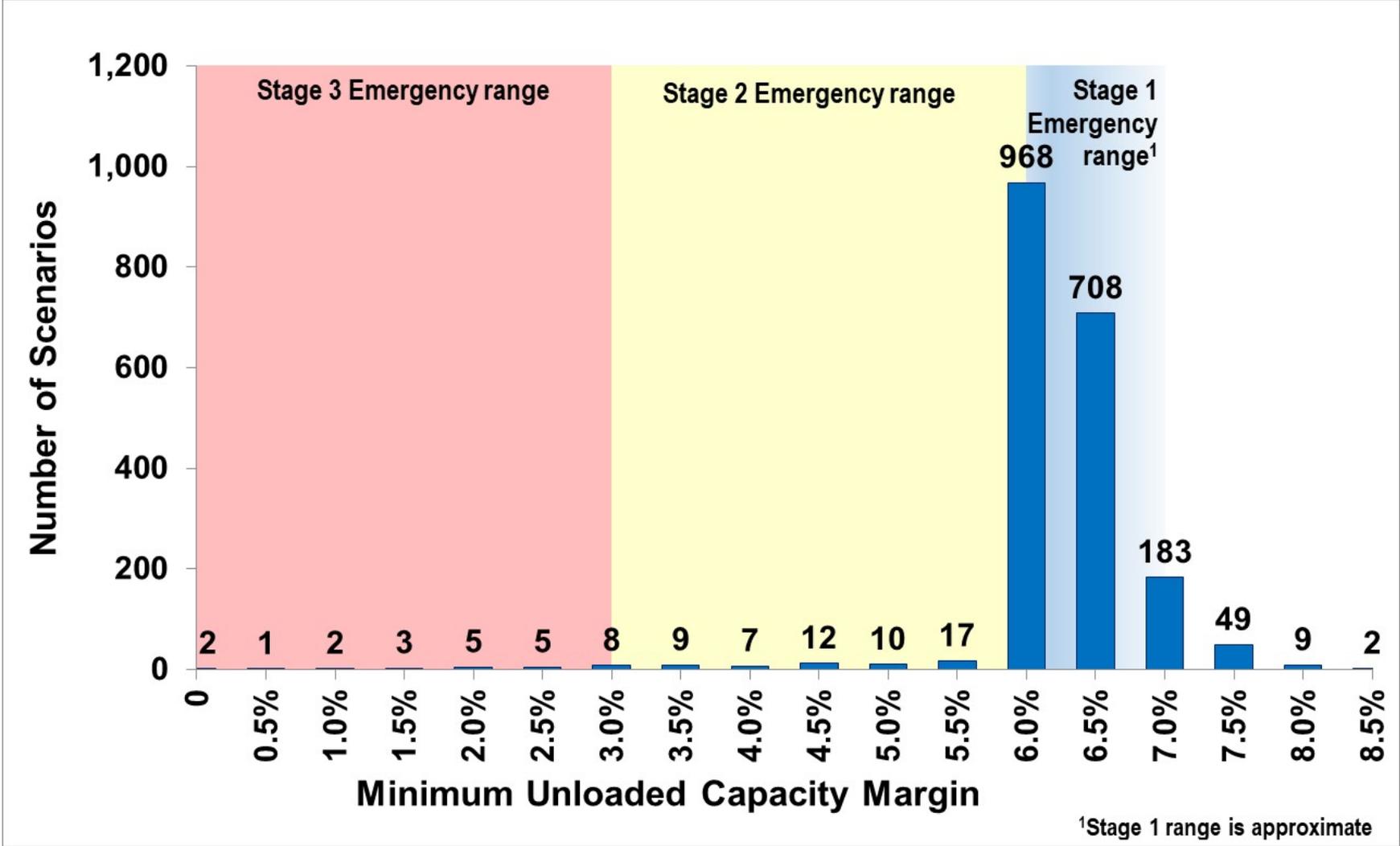
# 2018 hydro is below normal, and significantly below 2017



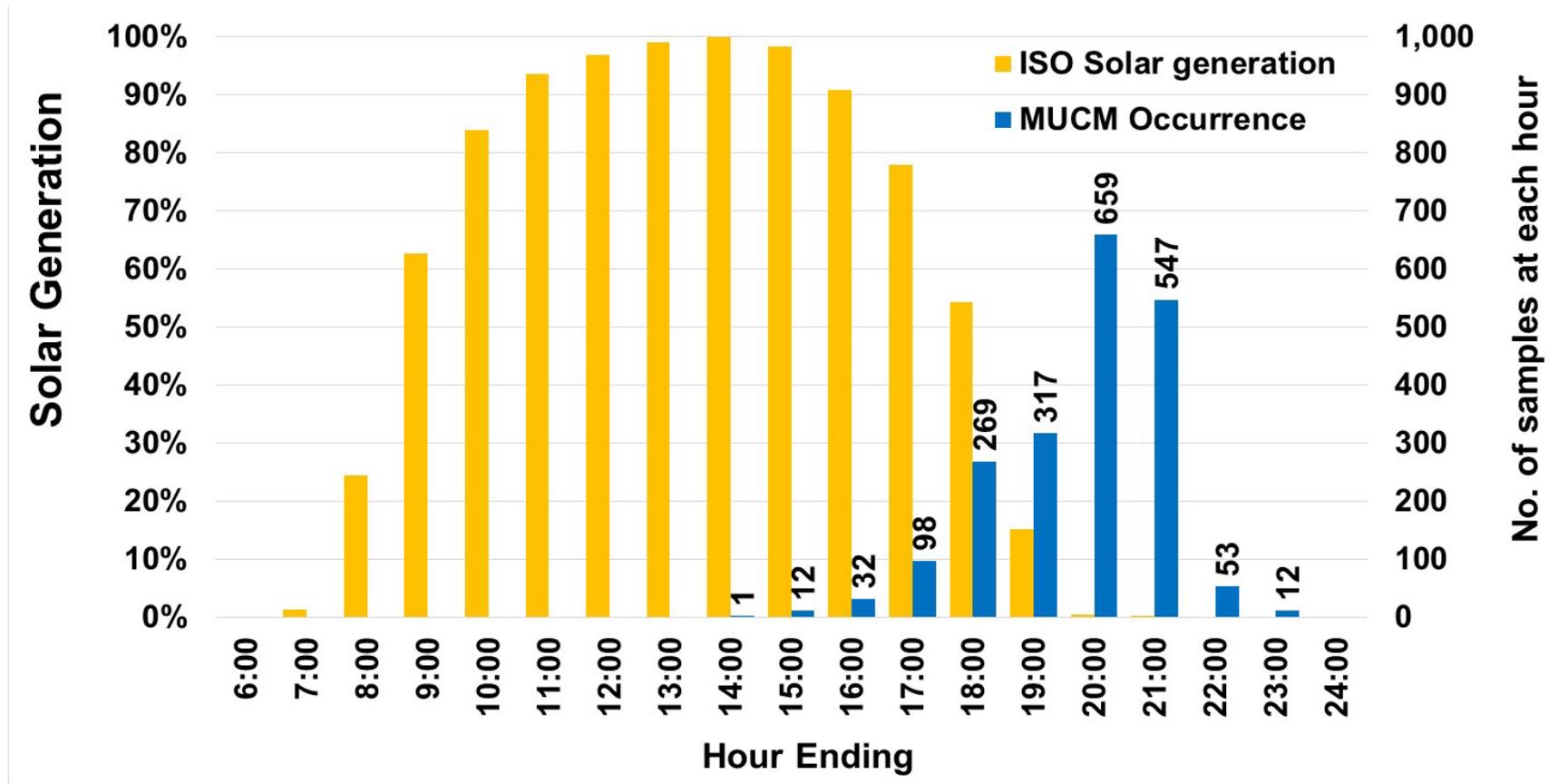
California Snow  
Water Content  
(percent of average  
on April 19, 2018)

|  |                     |
|--|---------------------|
| <span style="color: cyan;">●</span>      | Average             |
| <span style="color: lightblue;">—</span> | 2016-2017           |
| <span style="color: darkblue;">—</span>  | 2017-2018 (Current) |
| <span style="color: red;">—</span>       | 2012-2013           |

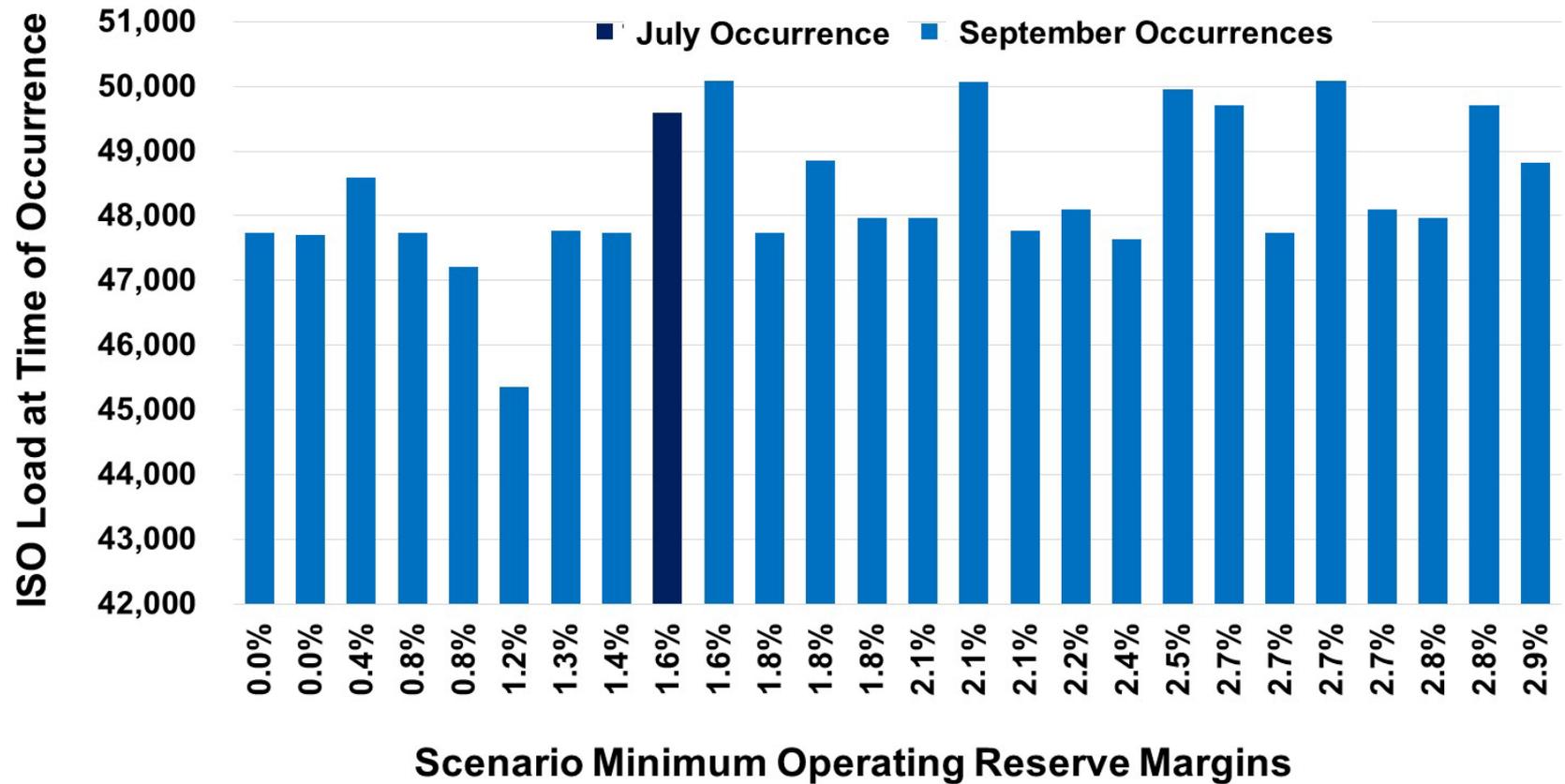
# Distribution of worst-case hour from all 2,000 samples



# 79% of low operating reserve margins occur during low to zero solar generation



# Nearly all operating reserve margins below 3% are in Sept.



# Preparation activities and operational actions

- Outreach performed
  - Governor's office, CPUC, CEC, CA Legislators, FERC, Operations annual summer outlook meeting (ISO LSEs, neighboring BAs, EIM participants, gas suppliers)
  - Raised the potential for significant calls on DR
- Actions ISO will implement if system operating conditions get near or go into the emergency stages
  - Utilization of Flex Alert program
  - Utilization of CAISO Restricted Maintenance program
  - Exceptional dispatch of resources
  - Utilization of Alert/Warning/Emergency program
  - Utilization of Demand Response program at “Warning” stage