



Use Limit Registration Clarifications

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Topics

- Use limit eligibility changes
- Difference between generation plans and use limitations
- Scenarios of incomplete submissions cause delay
- Hydro limitations discussion

USE LIMIT ELIGIBILITY CHANGES

Use-Limited Resources – Operating Today

- Current definition: resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, or other non-economic reasons, is unable to operate continuously
- Status gives three functions today:
 - Exempts Resource Adequacy Use-Limited Resource from bid generation (Section 40.6.8(e))
 - Access to Annual Use Limit Reached, Monthly Use Limit Reached, Other Use Limit Reached, Short Term Use Limit Reached cards
 - Access to Registered Cost Option for Commitment Cost
- Bid generation exemption for ULR, NGR, VER, and RMT*
- RAIM exemption for VER & CHP*

*In current practice CHP resources must have regulatory must take MW

Use-Limited Resources – Effective CCE3 Go Live

New Use-Limited Definition (30.4.1.1.6.1)

- Has one or more limitations affecting its number of starts, runhours, or Energy output due to (a) design considerations, (b) environmental restrictions, or (c) qualifying contractual limitations
- Process used to dispatch resource cannot recognize limitation(s)
- Ability to select hours of operation not dependent on energy source being available during such hours being outside of resource's control
- Bid generation exemption for ULR, NGR, VER, hydro, PDR, RDRR, participating load, and RMT*
- RAIM exemption for VER & CHP*

*In current practice CHP resources must have regulatory must take MW

Use-Limited Resources – Effective CCE3 Go Live

Status gives three functions on CCE3 Go Live:

- Retains ability to exempt Resource Adequacy Use-Limited Resource from bid generation (Section 40.6.8(e))
- Retains access to Annual, Monthly, Other, or Short Term Use Limit Reached nature of works for outage cards
- Replaces existing methods for accounting for opportunity cost for use limitations with the ability to seek the opportunity cost for use limitations through a calculation or negotiation based approach
 - Use limit opportunity costs will not be supported in negotiated default energy bid
 - Use limit opportunity costs will be supported through calculated or negotiated OC as adders to either negotiated or variable DEBs
 - No use limit opportunity costs can be accounted for on top of the LMP option

DIFFERENCE BETWEEN GENERATION PLANS AND USE LIMITATIONS

ISO supports SC registering a use limitation where:

- In the use limit registration process, ISO must validate that there is a qualifying limitation imposed on the resource through its design limits or environmental limits (largely regulatory in nature)*.
- SC must provide documents provided by outside party (e.g. FERC, CPUC, Air Quality District, Water Districts) describing the nature of the limitation.
- Limitation values are the amount of starts, runhours, energy output, or other type of limit available across granularity of limit.
- Other types of limits include emission limitations and water elevation requirements.
- CAISO requires SC to attempt to translate limitations into start, runhour, or energy output limitations.

*There is a short-term exception for qualifying contractual limitations approved by LRA prior to 2015.

ISO does not utilize generation plans in determining whether there is a qualifying limit

- ISO has received submissions with generation plan as supporting documentation for limitation values. Generation plans are not inputs to the use limit registration process. These plans seem to be trying to communicate the following and should utilize the appropriate process:
 - **Maintenance plans** need to be provided in the form of outages so ISO operations can perform its outage management obligations.
 - **Expectations in “fuel” input variations** due to forced outages or differing levels of fuel insufficiency need to be reflected in the form of outages so ISO market can consume that firm operational limit.
 - **Resource characteristics** such as max starts per day or Pmin levels need to be contained in the Resource Data Template so the market can effectively consume these firm operational limits.

Difference between generation plan and limitation

- Generation plans seem to be focused on providing information to the ISO for how much forecasted generation a resource will provide.
- Use limitations provide a limit on operations that can be managed over period of time greater than the ISO dispatch process through economic bids
 - E.G. Design Limit: standard states 50,000 runhours across 30 year lifecycle, SC reduces by 20,000 runhours operated to-date with 15 years remaining → runhours available are 30,000 runhours across the remaining 15 years of the lifecycle. Limitation registered as annual runhour limit of 2,000.
 - E.G. Environmental Limit: air permit emission limitation limiting to 2,000 run hours through out year.
 - E.G. Qualifying Contractual Limit: CPUC approved PPA in 2014 for maximum of 40 starts per month for each configuration of a multi-stage generator.

SC registration submission must support it has a qualifying limitation

- Use Limit Registration process requires attaching the Use Limit Plan Data Template to show proposed values for registering use limitations to the request
 - **Attach as supporting documentation:**
 - <http://www.caiso.com/Documents/UseLimitPlanDataTemplate.xls>
- Resource Adequacy Resources obligation under Section 40.6.4.2 Use Plan of tariff is separate from this process
 - **Do not attach as supporting documentation:**
 - http://www.caiso.com/Documents/Registration_UsePlanTemplate_Use-LimitedResources.xls

SCENARIOS OF INCOMPLETE SUBMISSIONS CAUSE DELAY

Scenario 1: No air permit attached when SC seeking to register emission limitations

- Scenario 1:
 - **SC does not attach the plan documentation – the air permit**
 - SC attaches ULPDT with record for the limitation
 - SC attaches translation methodology
- ISO cannot process request until all 3 documents are attached
- ISO is required to validate the inputs to the translation methodology and that the granularity and effective dates in the ULPDT can be referenced directly in the air permit

Scenario 2: No use limit plan data template with the definition of limit seeking registration attached

- Scenario 2:
 - SC attaches supporting documentation (various)
 - **SC does not attach use limit plan data template**
 - SC does not attach translation methodology (if applicable)
- ISO cannot process request until it has all 3 documents (if translation is required)
- SC is seeking registration of the limitation records in the ULPDT without the requested records the validation cannot be done

Scenario 3: No translation methodology attached when SC seeking to register limitations needing translations

- If plan does not specifically state the number of starts, runhours, or energy output the resource is limited to a translation methodology is required. Examples are air permit and limited storage capacity.
- Scenario 3:
 - SC attaches the plan documentation – the air permit
 - SC attaches ULPDT with record for the limitation
 - **SC does not attach translation methodology**
- ISO cannot process request until all 3 documents are attached
- ISO is required to validate the methodology and its inputs

Refer to Use Limit Registration documents for details

- <http://www.caiso.com/Documents/UseLimitRegistrationProcess-Jun262018.pdf>
- <http://www.caiso.com/Documents/UseLimitedResourceGuideBookCE3.docx>
- <http://www.caiso.com/Documents/UseLimitPlanDataTemplate.xls>

HYDRO LIMITATIONS DISCUSSION

Hydro limitations qualify as use limitations

Hydro Documentation	Hydro limitations	Criteria			Qualifying Limit
		1	2	3	
Water operation, FERC licenses, or contracts for water rights to manage reservoir capacity	Storage flexibility for gen >24 hours	Y	Y	Y	Accepted
	Storage flexibility for gen across 24 hours	Y	Y	Y	Accepted
	No storage flexibility for gen; must select hours	Y	N	N	Rejected
Contracts for power from other water right holder's operations	Water right contracts for electric generation with flexibility for gen – pending approval by LRA prior to 2015	Y	Y	Y	Accepted
	Water right contracts for electric generation with flexibility for gen – not filed or pending approval by LRA prior to 2015	N	Y	Y	Rejected

- Criterion 1: Has one or more limitations affecting its number of starts, runhours, or Energy output due to (a) design considerations, (b) environmental restrictions, or (c) qualifying contractual limitations
- Criterion 2: Process used to dispatch resource cannot recognize limitation(s)
- Criterion 3: Ability to select hours of operation not dependent on energy source being available during such hours being outside of resource's control

Storage flexibility to maximize economics of power production for period greater than 24 hours

- Limitation Type - Hydro with storage flexibility for electric generation greater than 24 hours:
 - Design and environmental based limitation for limited storage capacity subject to water use requirements that can be rationed based on energy price signals over period **greater than 24 hours**
 - Operationally energy production is **not solely dependent** on water supply where there is excess stored water acreage available to allow maximizing economic value of gen **over extended period**
 - **Not limited to self-schedule** energy production but can submit energy bids
- For example, water operation manages reservoir elevation levels to meet end-of-month targets and project has pump-back capability to pump water from the afterbay to the forebay to store acreage well above elevation targets where excess amount above targets and water needs can be released in response to high energy prices to maximize the electric generation revenues while respecting water needs

Storage flexibility to maximize economics of energy production for period of 24 hours

- Limitation Type - Hydro with storage flexibility for electric generation across 24 hours:
 - Design and environmental based limitation for limited storage capacity subject to water use requirements that can be rationed based on energy price signals over period **less than 24 hours** (normally over set of hours)
 - Operationally energy production is **not solely dependent** on water requirements where SC can maximize economic value of generation **to a limited extent within a day but not over extended period**
 - **Not limited to self-schedule** energy production but can submit energy bids
- For example, FERC license might establish a water elevation and flow rate requirements that do not allow generating power above given MWh in a day with flexibility to re-accumulate through inflows over following days but does allow flexibility to generate MWh across the 24 hours of the day.

No storage flexibility to maximize economics of energy production instead limited to selecting hours to operate

- Limitation Type - Hydro without storage flexibility for electric generation (EG):
 - Design and environmental based limitation for **no storage** to limited storage capacity with **no storage flexibility** for energy production that cannot be rationed based on energy price signals
 - Operationally energy production is **dependent on water supply** and SC is not able to maximize economic value of EG since solely operating to optimize water use.
 - **Limited to self-schedules** for energy production when must run
- Limitation value methodology: Not applicable
 - Not Eligible for use limit status and no limitation value can be translate since it cannot be rationed based on energy price signals

Example of ULPDT for hydro with flexibility to maximize economics of energy production

- ULPDT use limit type is energy (MWh)
- ULPDT Granularity set by either elevation targets (end-of-month=monthly; end-of-year=annually) or when excess water amount available for electric generation is received from water operations (weekly/daily/monthly)
- ULPDT limitation value determined by methodology translating excess water above water needs available to bid economically in ISO markets over granularity of limitation
 - Excess Water (H_e) = H_{current} + Net Inflows – H_{target}
 - H_{current} = current water elevation
 - Net Inflows = difference forecasted inflows and outflows to support water operations
 - H_{target} = minimum water elevation targets
 - Limitation = excess water (H_e) converted into MWh based on flow rate e.g. csf
- ULPDT effective period should be consistent with granularity if >24 hour flexibility

Q&A



Policy Clarification of Use-Limited Eligibility and Resource Adequacy Requirements

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Use-Limited Eligibility and Resource Adequacy Requirements

Resource Type	Use-Limited Eligible*	RAAIM	RA Bid Insertion	Notes
Gas-fired, biomass, landfill gas, geothermal	Yes	Non-exempt	Non-exempt; unless use-limited	
Hydro w/ storage	Yes	Non-exempt	Exempt	
Hydro w/o storage (run of river)	No	Non-exempt	Exempt	
Participating load (including pumping load)	Yes	Exempt	Exempt	
Proxy demand resource	Yes	Non-exempt, except when using fatigue break outage card even if the resource is non-use limited	Exempt	
Reliability demand response resource	N/A-RDRRs do not go through the opportunity cost process	Non-exempt	Exempt	
Wind and Solar	No	Exempt from local/system; Non-exempt from flexible	Exempt	

*Eligibility does not guarantee ULR status

Use-Limited Eligibility and Resource Adequacy Requirements (cont.)

Resource Type	Use-Limited Eligible*	RAAIM	RA Bid Insertion	Notes
CHP - RMT	Yes- if capacity above RMTmax meets use-limited criteria.	Exempt from local/system; Non-exempt from flexible	Exempt	
CHP – Non RMT	Yes	Exempt from local/system; Non-exempt from flexible	Exempt	Potential tariff gap. Tariff does not specify bid insertion exemption for non-RMT.
NGR	Yes	Non-exempt	Exempt	Reliability Requirements BPM gap in Table 7.1.1 (BPM lists NGR as non-exempt from bid insertion but they are exempt)
Any resource with fixed limitation on particular hours of operation (e.g. business hours) but no limitation on overall number of starts, total hours of operation, or total energy production	No	Non-exempt	Non-exempt	Is there a gap in that we would be inserting bids when resource might be unavailable? Is there an applicable outage category card to manage resource availability?

*Eligibility does not guarantee ULR status