



Use-Limit Resource Guide Book Standard

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REVISION HISTORY

VERSION NO.	DATE	DESCRIPTION
1.0	12-12-2007	Initial Draft Release
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3.0	10-12-2010	Version 3
4.0	10-1-2011	Version 4 – updating Guidebook owner and content.
5.0	3-9-2016	Updated Use-Limited Resources template information, registration, document requirement, submission, change of status and contacts.
6.0	4-5-2016	Clarify solar and wind ULPDT submission requirement in section 2.1.2. and added item c to section 2.3.1 under #7. LIMITATION.
7.0	11-23-2016	Update section 2.1., 2.4., 3.0 and added Appendix A.
8.0	2-2-2017	Update Registrations of Use-Limited Resources section 2.1.2 and Table 2-1 to include NGR and DERA.
9.0	6-14-2018	Version 9 – Update Guide Book to conform to <i>Commitment Costs Enhancements Phase 3</i> policies.
10.0	6-20-2018	Version 10 – Adds eligibility for Use-Limited Resource status for qualifying Non-Generating Resources.
11.0	07/05/2021	Revised the body based on feedback from SCs. Added Appendix B ULPDT example.

12	08/07/2018	Identified sentence that should have been deleted from version 9 to version 10 to reflect eligibility for Non-Generating Resources.
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 California ISO	[ISO Division]		
Use-Limit Resource Guide Book Standard			

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1.0 PURPOSE

This guide book, developed by California Independent System Operator Corporation, provides guidelines to Market Participants in requesting Use-Limited status for resources and requesting updates to their registered use limitations, including use limitation plans and information about the template Scheduling Coordinators must use for submitting Use-Limited resource requests. In addition, this document contains reference information related to requirements of Use-Limited Resources.

2.0 USE-LIMITED RESOURCES

As per Section 30.4.1.1.6 and Appendix A of the CAISO Tariff, a Use-Limited Resource is defined as a resource that:

- Has one or more limitation affecting its number of starts, run-hours, or energy output due to design considerations, environmental restrictions on operations, or qualifying contractual limitations.
- Cannot reflect the limitation within the market optimization horizon (e.g. monthly limitations that extend beyond the day-ahead market 24 hour horizon).
- Resource's ability to select hours of operation is not dependent on an energy source outside of the resource's control.

Examples of Use-Limited Resources are hydro-electric resources with limited reservoir storage and gas turbine resources with emissions limitations.

Use-Limited Resource status results in the following CAISO processes or procedures being available to the SC to manage these resources:

- Exempts Resource Adequacy Capacity of a Use-Limited Resource from bid generation under Section 40.6.8(e).
- Access to the Annual Use Limit Reached, Monthly Use Limit Reached, Other Use Limit Reached, Short Term Use Limit Reached nature of work outage cards. See Outage Management BPM for more information on the definition of these nature of works and Reliability Requirement BPM for more information on the substitution requirements and resulting Resource Adequacy Availability Incentive Mechanism (RAAIM) exposure for each card.
- Ability to seek to establish an opportunity cost adder to its start-up, transition, minimum load bid caps or to a default energy bid with the following exceptions:
 - Resources with use limitations that are applicable on a daily basis based on the GRANULARITY='DAILY' registration are not eligible for any opportunity cost adders.

- Condition 2 Reliability Must Run units, Reliability Demand Response Resources, Regulatory Must-Take capacity are not eligible for any opportunity cost adders.
- Resources under the LMP option for the default energy bid are not eligible for an opportunity cost adder due to eligible energy output limitations.

Scheduling Coordinator must provide sufficient documentation to support it has an eligible use limitation that meets the Use-Limited Resource Criteria defined in Section 30.4.1.1.6.1.1 to gain use limit status and access to the Use-Limited Resource features described above. For Proxy Demand Response and Reliability Demand Response Resources, PDR and RDRR should submit request to be registered as Use-Limited Resources based on their California Public Utility Commission demand response program contracts to be eligible for CAISO processes or procedures available to Use-Limited Resources.

2.1 Requesting Use-Limited Resource Status

To register a resource as a use-limited resource, the scheduling coordinator must open an Inquiry Ticket via the Customer Inquiry Dispute and Information (CIDI) tool with the subject, “Use Limited Registration”. The CIDI Ticket must include specific operating data for the unit and supporting documentation similar to those described above. The inquiry ticket should include, but not be limited to:

- Use Limit Plan Data Template
- A detailed explanation of why the unit is subject to operating limitations.
- Documentation, such as environmental permits or operating manuals, as well as page numbers or section numbers in the supporting documentation, substantiating the detailed explanation of why the unit is subject to operating limitations.
- Limitation Translation Templates that describe the methodology, including input values and formulas where possible, to translate limitations into the use limit types, granularity, and limitation values submitted in the ULPDT. If a formulaic translation cannot be provided, provide a detailed explanation of how the type, granularity, and limitation value was translated based on supporting documentation including page numbers or section numbers in the supporting documentation.
- If limitation type cannot be translated into a standard use limit type of ‘START’, ‘RUNHOURS’, or ‘ENERGY’, a detailed explanation of why the limitation could not be translated.
- If limitation granularity cannot be translated into a standard use limit type of ‘MONTHLY’, ‘ANNUALLY’, or ‘ROLL_12’, a detailed explanation of why the limitation could not be translated.
- Explanation stating whether the resource’s operation is dependent on an energy source outside of the resource’s control being available during select hours. For example, SOLAR, WIND, WATER, and GEOTHERMAL resources that are dependent on intermittent energy sources will need to provide detailed explanation of the design features that allow it to operate in any hour similar to resources with prime movers that are not based on intermittent energy resources.

- Any additional data in order for CAISO to understand the operating characteristics of the unit.

If SC is requesting Use-Limited Resource Status for multiple resources based on the same supporting documentation, SC should submit a single CIDI ticket for the use limit plan and its supporting documentation and provide a list of all resources that are limited based on the attached documentation. This can be done by attaching the ULPDT with records for each resource or configuration limited based on the attached documentation. For example a Demand Response Provider may have contracted with a LSE to participate in a demand response program where it has multiple Proxy Demand Response (PDR) providers under the same LSE DR program, should submit a CIDI request for Use-Limited Resource status for resources under the LSE DR program, attach the DR program documents, and submit ULPDT with records for each resources under that LSE DR program. Additional examples are provided in the next section.

The CAISO will respond to the scheduling coordinator initially to confirm receipt of the use limit status request and pending completion of the validation of the use limit plan.

2.2 Determining Status Eligibility

Resources are ineligible under Use-Limited Resource Criteria for Use-Limited Resource Status if:

- The applicability of the limitation is shorter than the resource's appropriate commitment process in CAISO market. For example, an extremely long start or long start resource (highest startup time registered is greater than 300 minutes), that has use limitations on starts and/or output that apply on a daily granularity will not be eligible for Use-Limited Status since this resource can only be committed in the day-ahead market which can support daily energy limitations and start limitations.
- The resource is dependent on an intermittent source that is outside of the resource's control. Resources with the fuel type of GEOTHERMAL, SOLAR, WATER, or WIND will be required to submit documentation supporting the resource's ability to be dispatchable and not dependent on an intermittent source of energy. For example, a WATER fuel type will need to provide an explanation that it is a part of a linked system, or is backed by a reservoir providing water storage to allow it to manage its prime mover input otherwise the CAISO will not be able to distinguish between run-of-river systems or hydro systems capable of managing "fuel" equivalent input.
- Resource cannot provide sufficient supporting documentation to show that the resource is subject to operating limitations that affect the number of starts, runhours, or energy output due to design considerations, environmental restrictions, or qualifying contractual limitations.

The following table describes a non-exhaustive list of acceptable limitations and examples of supporting documentation needed for the CAISO to validate whether the resource's request for Use-Limited Resource Status meets the Tariff criteria.

Table 2-1: Non-exhaustive List of Acceptable Limitations and Supporting Documentation Examples

Acceptable Limitation and Supporting Documentation	Source	Examples
Yes	Statutes, regulations, other ordinances, or court order: <ul style="list-style-type: none"> - Air Quality Management Districts - California Energy Commission - Local Regulatory Authorities 	<ul style="list-style-type: none"> - Environmental – Air Permit - Wildlife Restrictions - Natural Resource Management
	Design	<ul style="list-style-type: none"> - Limited reservoir storage capacity described in Energy Revenue Recovery Account filings. - Original Equipment Manufacturer recommendations or bulletins - Warranties - Demand Response Program Limitations
Yes – limited	Contractual	<ul style="list-style-type: none"> - Contracts approved through regulatory process that are reviewed and approved by a Local Regulatory Authority on or before January 1, 2015, or were pending approval by a Local Regulatory Authority on or before January 1, 2015 and were later approved; and (ii) were evaluated by the Local Regulatory Authority for the overall cost-benefit of those contracts taking into consideration the overall benefits and burdens, including the limitations on such resources’ numbers of starts, numbers of run-hours, or Energy

		output. Effective November 1, 2021, no contractual limitations will constitute qualifying contractual limitations.
No	Contractual	- Limitations based on power purchasing or tolling agreements not meeting provisional grandfathering criteria
	Economic	- To reduce wear and tear - Staffing constraints or lack of investment - Avoid purchasing more compliance instruments (credits, allowances, etc.) to manage emissions
	Prime mover intermittency	- Intermittent resources that cannot control their operation based on prime mover being outside of their control - CAISO assumes that wind, solar, and geothermal resources with modular enhancements and non-linked run-of-river hydro resources fall under this category

If the supporting documentation does not explicitly state the use limitation as either a ‘START’, ‘RUNHOUR’, or ‘ENERGY’ limit type, the SC must attempt to translate the limitation based on the documentation into either the ‘START’, ‘RUNHOUR’, or ‘ENERGY’. If the supporting documentation does not explicitly state the granularity as either ‘DAILY’, ‘MONTHLY’, ‘ANNUAL’, or ‘ROLL_12’ granularity, the SC must attempt to translate the limitation based on the documentation into either the ‘DAILY’, ‘MONTHLY’, ‘ANNUAL’, or ‘ROLL_12’. The SC must submit a written explanation of this translation methodology including formulas so the ISO can validate the submitted ULPDT against the supporting documentation.

If the SC cannot translate the non-standard limitation type or granularity, then the SC should register in the appropriate field the ‘OTHER’ value. The CAISO will notify the scheduling coordinator of the need to enter a consultation to determine the USE LIMIT TYPE, GRANULARITY, PLAN STRT DT TM, PLAN END DT TM, and LIMITATION values that will best allow the ISO to respect the use limitations of these resources. Following the consultation, the ISO will provide the SC a written report based on the consultation for use in a revised use limit resource status request.

2.2.1 Eligibility based on Air Permit Limitations

Resources may seek Use Limit Resource status based on emission limitations from air permit restrictions that are imposed on the operations of the unit on a 24 hour or longer applicability horizon. The daily limitations will only be accepted for resources with a cold start-up time of 300 minutes or less.

The ISO anticipates that many air permits impose operational conditions on the units to not exceed a certain number of fired starts or fired engine hours of operation by the turbine or for the combined turbines of the plant. The SC should register its limitation and granularity based on the specified number of engine starts or run hours listed in the air permit. SC must provide, in its supporting documentation, the section and page number where the specified operation condition per granularity is listed. For example, if the permit provides a limitation on the number of run hours per turbine per year, then the MSG resource would need to register an MSG configuration-level limitation in the ULPDT along with the corresponding implied starts associated with each configuration in the GRDT. If the permit provides a limitation on the number of hours of operation for all the configurations, the MSG resource would register a MSG plant-level limitation on the run hours with the applicable granularity.

ISO anticipates that the air permit may differentiate between the limitation on run hours during start-ups and/or limitation on run hours from start-up through its run time and shut-down. The SC can request multiple use limit types based on the limitations documented in the permit. For the former, a limitation on the run hours during start-up, the SC may be able to translate this to a limitation on the number of starts. For the latter, a resource with a limitation on the number of run hours from start-up through its run time, the SC will register this as a limitation on the number of run hours of the resource. The SC must document the section and page number of the air permit page where the limitation is documented along with applicable documentation supporting the translation to the limitation requested in the ULPDT.

While less expected, the ISO understands that some air permits may not explicitly state the operational condition on starts, run hours, or energy output in order to provide more flexibility to the plant operator. In that event, the ISO anticipates the air permit would explicitly list the pollutants and emission limits that the resource is subject to and over what period of time along with a limitation on the heat input of the plant based on MMbtu per day and per year. The SC must submit an excel document that shows the emission limitations, heat input limitations, and the proposed methodology for translating the heat input limitations into 'START', 'RUNHOURS' or 'OUTPUT' limitation. The ISO will ask for additional information such as capacity factor of the unit and SC's expectations of emission rates at various operating levels efficiency (e.g. heat rates). The limitation methodology may translate the emission limitations into starts, runhours, or energy based on likely use of the plant and the operational use needing to be better optimized.

For resources with fuel-switching capabilities where the limitations may differentiate between multiple modes of operation, the SC must register the limitation for the operating mode that provides more operational flexibility if it does not want to enter into a negotiation for opportunity costs if approved. The more complex nature of multiple operating modes being subject to multiple limitations on the same use limit type that is conditional on type of mode is more appropriate to be determined through a negotiation. The SC could register the complex

limitation of its resource as 'OTHER' if it wants to be considered for negotiations and document the reason as multiple operating modes with different use limitations depending on its use of that mode.

2.2.2 Eligibility based on Demand Response Program Limitations

Dispatchable Demand Response, Proxy Demand Response (PDR) Resources or Reliability Demand Response Resources (RDRR) may be considered for eligibility for Use Limit Resource status. Demand Response Resources include both load curtailment and storage-backed demand response providers. Demand Response Resources have design limitations due to programmatic limitations that refer to the maximum events or hours per a deliverability period for which customers are expected to be willing to curtail or deploy state of charge when called upon. For each DR resource, SC must identify the name of the entity that is the Load Serving Entity or Electric Service Providers and Community Choice Aggregators acting as the Load Serving Entity [DR Buyer] that the DR is under contract with, the name of the demand response program, the associated program description, and the contracts. SC should attach to submission:

- Use Limit Plan Data Template to include each resource under a participating program
- Spreadsheet that details the name of the entity that is the Load Serving Entity or Electric Service Providers and Community Choice Aggregators acting as the Load Serving Entity [DR Buyer] that the DR is under contract with, the name of the demand response program, contract name, and the resource ID.
- Demand Response Program Documents and Description
- Demand Response Program Contracts

If the demand response resource is a storage-backed resource and has a design limitation more limiting than the program limitation, the DR should identify the storage-backed resources that should have use limitations based on their manufacturer warranty specifications (e.g. battery storage devices).

2.2.3 Eligibility based on Non-Generating Resource Limitations

Non-generating resource (NGR) is a resource that has a continuous operating range from a negative to a positive power injection; i.e., it can operate continuously by either consuming energy or providing energy, and it can seamlessly switch between generating and consuming electrical energy. An NGR functions like a generation resource and can provide energy and AS services. There are two types of resources that fall under the Non-Generating Resource umbrella: Dispatchable Demand Response (DDR) and Limited Energy Storage Resource (LESR).

The DDR or LESR should submit Use-Limited Resource registration requests with an attached UPDT that includes record for the limitation that specifies the use limit type, granularity,

effective dates, and limitation amount and attach the supporting documentation. The SC must identify in its submission what section and page of the supporting documentation that includes the details for the use limitation.

For LESR, the ISO will accept storage manufacturer warranty specifications as supporting documentation. For DDR, the ISO anticipates supporting documentation associated with the demand response program. Any documentation that reflects an externally imposed limitation either based on design or regulatory restrictions (per Tariff) will be reviewed and evaluated for meeting the criteria.

2.2.4 Eligibility based on Limited Storage Capability

Resources seeking Use Limit Resource status based on limited reservoir storage capability described in a filing at a state or federal regulatory agency that does not explicitly list the limitation values will be required to designate the USE LIMIT TYPE as 'OTHER' in the attached Use Limit Plan Data template. For example, Energy Revenue Recovery Account filings allow a SC to submit under a regulatory proceeding its modelling of its resources and description of the need to manage to ensure end-of-year or end-of-season storage inventory targets are met to meet load requirements in the future. These filings are expected to describe at a high-level a need to be treated as use-limited based on limited reservoir storage capacity but are sufficiently complex that the limitation will need a consultation to ensure the values registered are consistent with filing. SC should submit the request and attach the filing documents, public and non-public, in their entirety.

Resources seeking Use Limit Resource status based on limited storage reservoir capability that can be supported by design documentation should submit the design documentation to the registration request. The SC must attach a translation methodology for translating the storage capability into start, runhours, or energy output limitations and specify its storage inventory levels that it needs to maintain in its storage inventory based on external obligations such as providing reliability needs during peak conditions. If SC is unable to provide a translation methodology, designate the USE LIMIT TYPE as 'OTHER' in the attached Use Limit Plan Data template.

CAISO will notify the scheduling coordinator with the 'OTHER' use limit type of the need to enter a consultation to determine the USE LIMIT TYPE, GRANULARITY, PLAN STRT DT TM, PLAN END DT TM, and LIMITATION values that will best allow the ISO to respect the use limitations of these resources. Following the consultation, the ISO will provide the SC a written report based on the consultation for use in a revised use limit resource status request as additional supporting documentation.

2.2.5 Eligibility based on Grandfathered Bilateral Contracts approved by LRA

Resources seeking Use Limit Resource status based on qualifying bilateral contractual limitations are only eligible to seek Use Limit Status until 3 years after the Commitment Cost Enhancements Phase 3 project is in effect. Qualifying bilateral contractual limitations are new-build long-term contracts that were reviewed and approved by a Local Reliability Authority (LRA) that explicitly states a limitation on starts, runhours, or energy output. ISO will require

that the contract and the order approving the contract be submitted as supporting documentation. If the contract was non-public, the contract can be provided under a non-disclosure agreement.

2.2.6 Eligibility based on Technical Standards Operating Limitations

Resources may seek Use Limit Resource status based on submitting a standard for that technology's operation (e.g. IEEE/ANSI C50.10-1977 - American National Standard General Requirements for Synchronous Machines). The SC should provide the technology-specific standard, OEM recommendation containing the lifecycle of the plant, and the template that translates the lifecycle limitation on starts and/or runhours into an available annual start and/or run-hour limitation(s).

The ISO expects the standard will either establish a number of starts or number of runhours across the lifecycle of the unit or it will further refine the lifecycle limitation by an annual limitation. The annual limitation would be more limiting and would effectively ration the lifecycle uses so the SC should establish the limitation at the annual value. If the standard establishes a lifecycle limitation, the SC will be required to translate the lifecycle limitation into an annual limitation by dividing the remaining available uses out of the lifecycle limitation into annual profiles.

For example, if the standard says that the technology should be limited to 50,000 runhours across the 30 year lifecycle of the unit based on OEM recommendation, and the unit has already operated for 20,000 runhours and is 15 years old, then the available use is 30,000 runhours across the remaining 15 years of the lifecycle. ISO will require the SC to register the limitation assuming that the use will be rationed equally across the remainder of the lifecycle. For this resource this would be 2000 runhours on an annual granularity ($=30,000$ runhours available/ 15 years remaining). If the standard says that a synchronous machine should not start more than 10,000 starts for its lifecycle and no more than 500 starts per year, the SC would register the design-based limitation at 500 starts per year.

2.2.7 Eligibility based on Other Supporting Documents

Resources seeking Use Limit Resource status based on supporting documentation not detailed above should submit the Use Limit Resource status request with provided supporting documentation and identify the submission contains new supporting documentation. The SC must submit a written explanation of where in the supporting documentation the use limit type and the granularity of the use limitations can be found by page number. The CAISO may identify a need to enter a consultation to discuss more details about the supporting documentation. The CAISO will notify the SC if a consultation is needed.

2.3 Registering Use Limitation Plan

If the CAISO determines the resource is ineligible to be use-limited based on not meeting the criteria of Use-Limited Resource, the CAISO will notify the scheduling coordinator that the resource is ineligible for use limit status. If the CAISO does not have sufficient information to

make the determination, the CAISO will notify the scheduling coordinator and the scheduling coordinator can resubmit the request with additional information or revise the ULPDT values consistent with what can be validated.

If the CAISO agrees that the resource is eligible to be use-limited and the ULPDT can be validated based on supporting documentation, the CAISO will revise the USE_LIMIT flag to 'Y' and notify the scheduling coordinator of the effective date in Master File. As soon as the date that the USE_LIMIT flag = 'Y' becomes effective in the Master File, the scheduling coordinators can then submit the Use-Limited Plan Data Template (ULPDT) into the Upload tab of the Master File portal with the CIDI Ticket number in the batch comment field.

Figure 2-1: Use Limit Plan Data Template Master File UI

The screenshot shows the 'Upload' tab of the Master File UI. At the top right, there is a red circle around the 'Upload' button. Below this, the 'File Name' field is followed by a 'Browse...' button. The 'Upload Type' section has three radio buttons: 'RDT Generator', 'RDT Inter...', and 'ULPDT'. The 'ULPDT' radio button is selected and circled in red. Below the radio buttons is a 'Comments' text area, and a red callout bubble points to it with the text 'CIDI Ticket #'. At the bottom left of the form area, there is an 'Upload' button.

2.3.1 Submitting Use-Limited Plan Data Template

The use limit flag has to be set and approved by the CAISO before the scheduling coordinator can submit the ULPDT through the Master File UI. All supporting documentation must be submitted through the CIDI tool.

- CIDI tool can be found on the market participant portal at:
 - https://portal.caiso.com/MPP_files/MPPApps.html
- In the subject line of the CIDI ticket, specify if the documentation is for ULR renewal of the use limitation status or ULR registration for a new resource.
- See Table 2-1 for supporting documentation requirements.

The scheduling coordinator may provide a projected annual use limitation for each Use-Limited Resource. The scheduling coordinator may re-submit ULPDT previously validated through the ULR registration or ULR renewal process during the effective period of the use limitation as defined by the plan start and plan end dates to revise the projected limitation values based on most recent available information and conforming to the approach approved in the registration process.

The scheduling coordinator is able to make monthly updates to the projections made in the ULPDT values registered prior to first day of the calendar year. All updates must be submitted through the Master File UI, and the CIDI Ticket number for the registered use limitation that provided the supporting documentation must be included in the batch comment field. See sections 2.3.2 on how to complete the ULPDT.

2.3.2 Completing the Use-Limited Plan Data Template

SC must submit a ULPDT for the upcoming calendar year in October of the current year based on their qualifying limitations. The registered values may be based on projected limitations as approved through the registration process. The use limitation is defined by the plan start date, plan end date, use limit type, use limit granularity, and supporting documentation. The limitation values may be static for the effectiveness of the use limitation or they may vary based on updated projections, most relevant to hydro Use-Limited Resources.

If the ULPDT reflects that the qualifying limitation submitted under the Use-Limit Registration request, where the supporting documentation shows a need to revise limitation values during the plan effective dates, the CAISO will allow updates to the limitation field. If the nature of the use limitation or if the supporting documentation for the qualifying limitation has changed, then scheduling coordinators are required to resubmit the ULPDT through CIDI to re-register the resource as Use-Limited Resource based on the changed use limitation and its supporting documentation.

Figure 2-2: Use Limit Plan Data Template

	A	B	C	D	E	F	G	H	I	J	K
1	SC_ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
2	SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_START_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
3	SCID	Existing, active resource provisioned to the SC uploading the ULPDT	Configuration ID associated to MSG Resource	START, RUNHOURS, ENERGY, OTHER	DAILY, MONTHLY, ANNUALLY, ROLL_12, OTHER	Date this use limitation becomes effective (MMDDYYYY)	Date this use limitation expires. This date must be provided. (MMDDYYYY)	The number or amount of the limitation for the granularity period (e.g. number of starts for the year)	Minimum capacity level for which the limitation applies (optional)	Maximum capacity level for which the limitation applies (optional)	Documentation name, page number, CIDI Ticket # State "Not required" if no documentation is required.

1. SC_ID

- Enter the Scheduling Coordinator ID of the Scheduling Coordinator that is provisioned to the resource when the Use Limit Plan is to become effective.

2. RES_ID

- Enter the Resource ID assigned by the CAISO to the resource.

3. CONFIG_ID

- Enter the Configuration ID of the MSG resource only if the use limitation is applicable to the configuration ID.
- If the use limitation applies at the plant level only of the MSG resource, leave Configuration ID blank.

4. USE_LIMIT_TYPE

- Enter the nature of the use limitation. Possible types are 'START', 'RUNHOURS', 'ENERGY', or 'OTHER'.
- SC must register 'START', 'RUNHOURS', or 'ENERGY' use limit type if it is

possible to translate their use limitations into these types. 'OTHER' type must only be used when SC cannot translate the limitation into either a 'START', 'RUNHOURS', or 'ENERGY' use limit type.

5. GRANULARITY

- a. Enter the period of use limitation based on the Use Limit Type. Possible granularities are 'DAILY', 'MONTHLY', 'ANNUALLY', 'ROLL_12', or 'OTHER'
- b. SC must register 'DAILY', 'MONTHLY', 'ANNUALLY', or 'ROLL_12' use limit granularity if it is possible to translate their use limitations into these granularities. 'OTHER' granularity must only be used when SC cannot translate the limitation into either a 'START', 'RUNHOURS', or 'ENERGY' use limit type. Only the 'DAILY' granularity can have an effective range shorter than one calendar month.

6. PLAN_START_DT_TM

- a. Enter the date that this use limitation becomes effective. Format type must be MM/DD/YYYY. For example, if a resource has a use limitation that has a daily granularity where the daily limitation will be in effect for the entire upcoming calendar year, the SC would set the PLAN_START_DT_TM at 01/01/2019.
- b. For 'MONTHLY', 'ANNUALLY', 'ROLL_12', or 'OTHER' granularities, the effective start date must occur on the first date of the month.
- c. For 'DAILY' granularity, the effective start date can occur within a month.

7. PLAN_END_DT_TM

- a. Enter the effective end date that this use limitation expires. Format type must be MM/DD/YYYY. For example, if a resource has a use limitation that has a daily granularity where the daily limitation will be in effect for the entire upcoming calendar year, the SC would set the PLAN_END_DT_TM at 12/31/2019.
- b. End date will default with a timestamp of 23:59:59.
- c. For 'MONTHLY', 'ANNUALLY', 'ROLL_12', or 'OTHER' granularities, the effective end date must occur on the last date of the month.
- d. For 'DAILY' granularity, the effective end date can occur within a month.
- e. UPLDTs will not be accepted if the effective end date is in the past.

8. LIMITATION

- a. Enter the number of limitations for the GRANULARITY period. For example figure 2-3 shows RES A has 300 starts annually.

- b. Limitation must be > 0.

If the number of limitations is a translation from another operating limitation that is established in the supporting documentation, a description of the methodology for translating that limitation into starts, run-hours, etc., must be attached to the CIDI ticket.

Figure 2-3: Sample of ULPDT

Resource with annual limitation that begins in January every year with fixed limitation values										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_B		START	ANNUALLY	1/1/2018	12/31/2018	300			CIDI #0002890 Air quality management

9. MIN_USE_LIMIT

- a. Enter the minimum capacity level for which the limitation applies. This is the same as the PMin (MIN_GEN).
- b. This field is Optional.

10. MAX_USE_LIMIT

- a. Enter the maximum capacity level for which the limitation applies. This is the same as the PMax (MAX_GEN).
- b. This field is Optional.

11. DOC_NAME

- a. Enter the supporting documentation name, page number reflecting limitation cited, and CIDI ticket #.
- b. The ULPDT must specify the CIDI ticket number in the documentation name column. See Section 2.2 for documentation requirement by use limitation. The character string used to specify the CIDI ticket number must be the exact string: "CIDI ticket ".
- c. If supporting documentation has changed then scheduling coordinators are required to resubmit the ULPDT through CIDI to re-register the resource as Use-Limited Resource based on the changed use limitation and its supporting documentation.

Note: Delete Row 3 (see [Figure 2-2](#)) prior to uploading the template to the Master File UI.

3.0 CHANGE OF USE-LIMITED STATUS

Use-Limited Resources are required to submit annual ULPDTs to maintain their Use-Limited Resource status. The Use-Limited Resource status will terminate 12 months after the plan start date. SC must re-submit request to be registered as Use-Limited Resource based on qualifying limitation. If the limitation and its supporting documentation has not changed, SC can submit with its annual registration request in future years an affidavit attesting that the use limitation and all supporting documentation has not changed and continues to qualify the resource. If the limitation or its supporting documentation has changed, the SC must submit the annual registration request as if it is a new Use-Limited Resource request.

4.0 IMPLIED STARTS REGISTRATION

4.1 Implied Start Characteristic

The IMPLIED_STRTS fields contained in the MSG_CONFIG tab of the Generator Resource Data Template (GRDT) is for Multi-Stage Generator (MSG) resources with start limitations to register the number of starts associated with moving a resource from offline to online or from online to a higher configuration that is implied by the use limitation plan's supporting documentation. The DOC_NAME including the CIDI ticket number for the approved ULPDT will provide support for the values registered in these fields.

Only use limited MSG resources with start limitation(s) can have implied starts greater than 1. Implied starts for non-MSG resources are assumed to be 1. The number of implied starts for an MSG configuration shall be measured from the MSG resource being entirely off to being started directly to that configuration. MSG resources have to include an implied start value in the MSG_CONFIG tab of the GRDT for every configuration of the MSG resource. An implied start for the configuration can be set to zero for a configuration.

For MSG resources that submit use limitations that are for use limit types of 'RUNHOURS', 'ENERGY', or 'OTHER', the SC should not submit values in the IMPLIED_STRTS field. The IMPLIED_STRTS field will be defaulted to NULL in the GRDT.

For MSG resources, the limitation on the number of starts in the use limitation plan is the number of implied starts to be determined based on the supporting documentation for the use limitation request. The supporting documentation provided during the use-limit registration process should describe how the plan implies that a usage of its start limitation should be measured. Each implied start will contribute to the usage of the start limitation on file in the ULPDT in the 'LIMITATION' field. Implied starts registered in the GRDT should be the same resolution level on which the MSG configuration will submit the use-limit limitation of number of starts. The following examples will explain to what "resolution level" refers.

4.2 MSG Use Limit Plan Scenarios

The following table shows the likely scenarios of use plan limitations, and consequently how to register the implied starts for each of these scenarios. The first column, 'Scenario', shows a short name for the next column describing the 'Use Plan Limitation Type.' If the MSG resource's limitations fall under these implied start types, the SC should register the

IMPLIED_STRTS in the MSG_CONFIG tab of the GRDT as shown in the examples. The transition implied starts will be derived by the CAISO from the configuration implied starts based on the type of use limitation and supporting documentation.

Scenario	Use Plan Limitation Type
PLANT_A	<ul style="list-style-type: none"> • Plant level¹ limitation that does not consider a transition a “start” where each start=1. • ULPDT limitation registered at MSG resource level not configuration level. • Supporting Documentation considers ISO startup commitment of any configuration in the plant a use of the limit. • SC registers IMPLIED_STRT for each configuration as 1. • Transition IMPLIED_STRT will be derived as the difference between IMPLIED_STRT of ‘To Configuration’ and IMPLIED_STRT of ‘From Configuration’. Derived transition IMPLIED_STRT should be equal to 0 for this limitation type.
PLANT_B	<ul style="list-style-type: none"> • Plant level limitation that does not consider a transition a “start” where each start=number of engine (e.g., CT) starts. • ULPDT limitation registered at MSG resource level not configuration level. • Supporting Documentation considers fired turbine starts from offline a use of the limit. • SC registers IMPLIED_STRT for each configuration as the number of fired turbines associated with starting up the configuration from offline to that configuration. • Transition IMPLIED_STRT will be derived as the difference between IMPLIED_STRT of ‘To Configuration’ and IMPLIED_STRT of ‘From Configuration’. The derived transition implied start will not be equal to the transition implied starts appropriate for this type of limitation (derived transition IMPLIED_STRT = 0). • Functionality does not support ability to model opportunity cost for this type of plant level limitation. SC needs to identify the derived transitions are not compatible with plan. CAISO will negotiate an opportunity cost adder.
PLANT_C	<ul style="list-style-type: none"> • Plant level limitation that does consider a transition a “start”

¹ Non-MSG resources, resource level limitations and MSG resources plant-level limitations are treated similarly. A MSG resource level limitation is the same as a MSG plant-level limitation.

	<p>where each start or transition=number of CT starts.</p> <ul style="list-style-type: none"> • ULPDT limitation registered at MSG resource level not configuration level. • Supporting Documentation considers starts or transitions (fired turbines) a use of the limit. • SC registers IMPLIED_STRT for each configuration as the fired turbines associated with starting up the configuration from offline to that configuration. • Transition IMPLIED_STRT will be derived as the difference between IMPLIED_STRT of 'To Configuration' and IMPLIED_STRT of 'From Configuration'.
CONFIG_A	<ul style="list-style-type: none"> • Configuration level limitation that does consider a transition a "start" where each start or transition=number of CT starts. • ULPDT limitation registered at MSG configuration level not plant level. • Supporting Documentation considers starts or transitions (fired turbines) a use of the limit. • SC registers IMPLIED_STRT for each configuration as the fired turbines associated with starting up the configuration from offline to that configuration. • Transition IMPLIED_STRT will be derived as the difference between IMPLIED_STRT of 'To Configuration' and IMPLIED_STRT of 'From Configuration'.
CONFIG_B	<ul style="list-style-type: none"> • Configuration level limitation that does consider a transition a "start" where each start or transition=1 (E.G. C3 Limitation). • ULPDT limitation registered at MSG configuration level not plant level. • Supporting Documentation considers ISO startup commitment or ISO transition instruction of the configuration a use of the limit. • SC registers IMPLIED_STRT for the configuration as 1. • Transition IMPLIED_STRT will be derived as the difference between IMPLIED_STRT of 'To Configuration' and IMPLIED_STRT of 'From Configuration'. The derived transition implied start will not be equal to the transition implied starts appropriate for this type of limitation. Transition IMPLIED_STRT must be set to 1 for every transition into the configuration. • Functionality does not support ability to model opportunity cost for this type of plant level limitation. SC needs to identify the

	derived transitions are not compatible with plan. CAISO will negotiate an opportunity cost adder.
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The next table relates the anticipated scenarios for MSG use limitation types to the values to be submitted by SC in the MSG_CONFIG tab for IMPLIED_STRT to the configuration and the values that will be set for the feasible transitions.

For each Scenario, the first 3 blue columns represent the possible movements of the MSG resource from offline to online into each configuration. These values are to be submitted in the MSG_Config tab of the GRDT at the CONFIG_ID level. For example, the value registered for Configuration 1 is the IMPLIED_STRT from offline to Configuration 1 (i.e. $S_{0,1}$). The same pattern follows for each configuration of the MSG resource.

The next 3 orange columns will be values set by the ISO through the approval of the ULPDT and its valid implied starts. ISO will set the IMPLIED_STRTS used downstream in internal ISO systems as shown based on the scenarios. The columns represent the number of starts that count towards the start limitation as the result of a transition from a 'From Configuration' to a 'To Configuration', for example a transition from Configuration 1 to Configuration 2 is denoted as $T_{1,2}$. The same pattern follows for all feasible transitions.

Supported Y/N	Scenario	Use Plan Limitation Type	$S_{0,1}$	$S_{0,2}$	$S_{0,3}$	$T_{1,2}$	$T_{1,3}$	$T_{2,3}$
Y	PLANT_A	Plant level limitation that does not consider a transition a "start" where each start=1	1	1	1	0	0	0
N Notify ISO MSG needs negotiation	PLANT_B	Plant level limitation that does not consider a transition a "start" where each start=number of CT starts	1	2	3	0	0	0
Y	PLANT_C	Plant level limitation that does consider a transition a "start" where each start or transition=number of CT starts	1	2	3	1	2	1
Y	CONFIG_A	Configuration level limitation that does consider a transition a "start" where each start or transition=number of	1	2	3	1	2	1

		CT starts						
N Notify ISO MSG needs negotiation	CONFIG_B	Configuration level limitation that does consider a transition a “start” where each start or transition=1 (E.G. C3 Limitation)	0	0	1	0	1	1

The following table illustrates the scenarios of MSG use limitation plans that imply a combination of plant-level and configuration-level limitations. Of the anticipated combinations of the plant or configuration scenarios described above, only one of the combinations can be accurately registered and modelled. The combination of PLANT_C and CONFIG_A can be registered with a USE_LIMIT_TYPE of ‘START’ with its associated configuration implied starts. The other combinations should be registered as USE_LIMIT_TYPE equal to ‘OTHER’ so the CAISO can initiate further discussions on registering limitations or negotiating opportunity costs.

Plant and Configuration Combination – Modelled (‘START’) or Negotiated (‘OTHER’)

Plant & Configuration Combinations that can be modelled	CONFIG_A	CONFIG_B
PLANT_A	‘OTHER’	‘OTHER’
PLANT_B	‘OTHER’	‘OTHER’
PLANT_C	‘START’	‘OTHER’

4.3 Examples of implied start registrations

The following sections provide examples for most of the anticipated MSG use limitation scenarios. Section 4.3.1 provides examples for scenarios in which the MSG resource either has a plant level or configuration level limitation. Section 4.3.2 provides examples for the scenarios in which the MSG has a combination of both plant and configuration level limitations.

4.3.1 Plant or Configuration Limitation Scenarios

The Scenarios PLANT_A and PLANT_C are the scenarios that the ISO considers more likely to be registered, and examples provided for these below. Note – any use limitations with supporting documentation that implies limitations under scenario PLANT_B and CONFIG_B cannot be accurately registered. The SC will need to register the USE_LIMIT_TYPE of the limitation as ‘OTHER’ so it can be evaluated for a negotiated opportunity cost.

Example 1: Plant level limitation that does not consider a transition a “start” where each start=1 (PLANT_A)

The resource is limited to 300 starts per year where transitions are not considered a start that counts against the resource’s annual start limitation. SC of the resource will fill out the use-limited plan data template to reflect the annual start limitation as shown below. The SC would input an implied start of one per configuration to reflect that transitions are not considered a “start” against the limitation. The resulting implied starts for each transition will then be calculated by the ISO as zero (Implied start “to-configuration” minus implied start “from-configuration”).

ULPDT

SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION
SC_1	RES_A		START	ANNUALLY	1/1/2018	12/31/2018	300

Implied Starts in GRDT

CONFIG_1	CONFIG_2	CONFIG_3
1	1	1

ISO derives transition implied starts based on configuration implied starts data, which is shown below for each feasible transition.

Implied Starts by Transition

From Config	To Config	GRDT Tab	Mechanism	Implied Starts
Offline	CONFIG_1	MSG_CONFIG	SC registers	1
Offline	CONFIG_2	MSG_CONFIG	SC registers	1
Offline	CONFIG_3	MSG_CONFIG	SC registers	1
CONFIG_1	CONFIG_2	TRANSITION	ISO derives	0
CONFIG_1	CONFIG_3	TRANSITION	ISO derives	0
CONFIG_2	CONFIG_3	TRANSITION	ISO derives	0
CONFIG_1	Offline	TRANSITION	ISO derives	0
CONFIG_2	Offline	TRANSITION	ISO derives	0
CONFIG_3	Offline	TRANSITION	ISO derives	0

Example 2: Plant level limitation that does consider a transition a “start” where each start or transition=number of CT starts (PLANT_C)

The resource is limited to 300 starts per year where transitions are considered a start that

counts against the resource’s annual start limitation. The following implied starts indicate that if the resource is directly started into configuration 2, it uses up 2 of the fired turbine starts it is allowed during the year. Furthermore, if it then transitions into configuration 3, one additional fired turbine start is used. The resulting implied starts for each transition will then be calculated by the ISO as 1 (Implied start “to-configuration” minus implied start “from-configuration”).

ULPDT

SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION
SC_1	RES_A		START	ANNUALLY	1/1/2018	12/31/2018	300

Implied Starts in GRDT

CONFIG_1	CONFIG_2	CONFIG_3
1	2	3

ISO derives transition implied starts based on configuration implied starts data, which is shown below for each feasible transition.

Implied Starts by Transition

From Config	To Config	GRDT Tab	Mechanism	Implied Starts
Offline	CONFIG_1	MSG_CONFIG	SC registers	1
Offline	CONFIG_2	MSG_CONFIG	SC registers	2
Offline	CONFIG_3	MSG_CONFIG	SC registers	3
CONFIG_1	CONFIG_2	TRANSITION	ISO derives	1
CONFIG_1	CONFIG_3	TRANSITION	ISO derives	2
CONFIG_2	CONFIG_3	TRANSITION	ISO derives	1
CONFIG_1	Offline	TRANSITION	ISO derives	0
CONFIG_2	Offline	TRANSITION	ISO derives	0
CONFIG_3	Offline	TRANSITION	ISO derives	0

Example 3: Configuration level limitation that does consider a transition a “start” where each start or transition=number of CT starts (CONFIG_A)

Configuration 3 can only be started 50 times a year based on the number of turbine starts. The implied starts indicate that C3 can only start turbines 50 times per year. The configuration level limitation is based on number of turbine starts, which impacts either starts or transitions. For example, if the resource was started from offline to C1 and then transitioned to C3 that should be considered as number of additional turbines needed to be started to transition to the

higher C3 configuration.

ULPDT

SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION
SC_1	RES_A	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50

Implied Starts in GRDT

CONFIG_1	CONFIG_2	CONFIG_3
1	2	3

ISO derives transition implied starts based on configuration implied starts data, which is shown below for each feasible transition.

Implied Starts by Transition

From Config	To Config	GRDT Tab	Mechanism	Implied Starts
Offline	CONFIG_1	MSG_CONFIG	SC registers	0
Offline	CONFIG_2	MSG_CONFIG	SC registers	0
Offline	CONFIG_3	MSG_CONFIG	SC registers	3
CONFIG_1	CONFIG_2	TRANSITION	ISO derives	0
CONFIG_1	CONFIG_3	TRANSITION	ISO derives	2
CONFIG_2	CONFIG_3	TRANSITION	ISO derives	1
CONFIG_1	Offline	TRANSITION	ISO derives	0
CONFIG_2	Offline	TRANSITION	ISO derives	0
CONFIG_3	Offline	TRANSITION	ISO derives	0

Example 4: Configuration level limitation that does consider a transition a “start” where each start or transition=1 (CONFIG_B)

Configuration 3 can only be started 50 times a year based on number of actual starts or transitions. The second limitation implied starts indicate that C3 can only be actually started or transitioned into 50 times per year. The configuration level limitation is based on actual starts or transitions and not the turbine starts. For example, if the resource were started from offline to C1 and then transitioned to C3 that should only be considered one start against the limit on C3.

ULPDT

SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION
SC_1	RES_A	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50

Implied Starts in GRDT

CONFIG_1	CONFIG_2	CONFIG_3
1	1	1

ISO derives transition implied starts based on configuration implied starts data, which is shown below for each feasible transition.

Implied Starts by Transition

From Config	To Config	GRDT Tab	Mechanism	Implied Starts
Offline	CONFIG_1	MSG_CONFIG	SC registers	0
Offline	CONFIG_2	MSG_CONFIG	SC registers	0
Offline	CONFIG_3	MSG_CONFIG	SC registers	1
CONFIG_1	CONFIG_2	TRANSITION	ISO derives	0
CONFIG_1	CONFIG_3	TRANSITION	ISO derives	1
CONFIG_2	CONFIG_3	TRANSITION	ISO derives	1
CONFIG_1	Offline	TRANSITION	ISO derives	0
CONFIG_2	Offline	TRANSITION	ISO derives	0
CONFIG_3	Offline	TRANSITION	ISO derives	0

Because the transition IMPLIED_STRTS need to be set at different values than the functionality will calculate based on the difference of the 'To Configuration' and 'From Configuration' implied starts, CONFIG_B cannot be registered accurately. SC will need to register the USE_LIMIT_TYPE of the limitation as 'OTHER' so it can be evaluated for a negotiated opportunity cost.

4.3.2 Plant and Configuration Limitation Scenarios

If MSG resource has start limitations on both plant and configuration levels that require different implied start counts for each configuration based on the plant and configuration(s) limitation(s), the ISO cannot support multiple IMPLIED_STRTS value per MSG resource or configuration so cannot model these types of combined plant and configuration(s) limitations. The SC should register the MSG resource or MSG configuration(s) limitations as the USE_LIMIT_TYPE='OTHER' and the IMPLIED_STRTS should be NULL.

If an MSG resource has plant level and configuration level start limits that are the same for each configuration based on the plant and configuration(s) limitations, the SC should register the IMPLIED_STRTS values by configuration and the same value will be used to count number of starts that count towards the plant or the configuration(s) limitations.

Example 5: PLANT_A and CONFIG_B Combination

Example 5 is an example of plant and configuration level limitations that cannot be modelled either as a combination or separately since CONFIG_B’s transition implied starts would not be derived correctly. The combination of limitations on this MSG resource are:

- The resource is limited to 300 ISO start-up instructions per year limitation where transitions do not count against the resource’s annual start limitation.
- Configuration 3 can be started or transitioned 50 times a year based on number of ISO start-up instruction or transition instructions.
-

ULPDT

SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION
SC_1	RES_A		START	ANNUALLY	1/1/2018	12/31/2018	300
SC_1	RES_A	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50

SC would register the IMPLIED_STRTS for each configuration as follows.

Implied Starts in GRDT

CONFIG_1	CONFIG_2	CONFIG_3
1	1	1

ISO derives transition implied starts based on configuration implied starts data, which is shown below for each feasible transition. The ISO would determine the transitions shown in orange for the PLANT_A limitation. The transition implied starts shown for CONFIG_B are the implied starts based on the plan documentation, which current functionality cannot correctly derive.

Implied Starts by Transition

From Config	To Config	Mechanism	Implied Starts – PLANT_A	Implied Starts – CONFIG_B
Offline	CONFIG_1	SC registers	1	0
Offline	CONFIG_2	SC registers	1	0
Offline	CONFIG_3	SC registers	1	1
CONFIG_1	CONFIG_2	ISO derives	0	0

CONFIG_1	CONFIG_3	ISO derives	0	1
CONFIG_2	CONFIG_3	ISO derives	0	1
CONFIG_1	Offline	ISO derives	0	0
CONFIG_2	Offline	ISO derives	0	0
CONFIG_3	Offline	ISO derives	0	0

Because the IMPLIED_STRTS for a given configuration need to be different to represent accurately the limitations, this combination cannot be registered accurately. SC will need to register the USE_LIMIT_TYPE of the limitation as 'OTHER' so it can be evaluated for a negotiated opportunity cost.

Example 6: PLANT_A and CONFIG_A Combination

Example 6 is an example of plant and configuration level limitations that cannot be modelled as a combination since the configuration implied starts are not the same for the plant and configuration level limitations. The combination of limitations on this MSG resource are:

- The resource is limited to 300 ISO start-up instructions per year limitation where transitions do not count against the resource's annual start limitation.
- Configuration 3 can be started or transitioned 50 times a year based on the number of turbine starts.

SC would register the IMPLIED_STRTS for each configuration as follows and the ISO would derive the transition implied starts shown in orange.

Implied Starts by Transition

From Config	To Config	Mechanism	Implied Starts – PLANT_A	Implied Starts – CONFIG_A
Offline	CONFIG_1	SC registers	1	1
Offline	CONFIG_2	SC registers	1	2
Offline	CONFIG_3	SC registers	1	3
CONFIG_1	CONFIG_2	ISO derives	0	1
CONFIG_1	CONFIG_3	ISO derives	0	2
CONFIG_2	CONFIG_3	ISO derives	0	1
CONFIG_1	Offline	ISO derives	0	0
CONFIG_2	Offline	ISO derives	0	0
CONFIG_3	Offline	ISO derives	0	0

Because the IMPLIED_STRTS for a given configuration need to be different to represent accurately the limitations, this combination cannot be registered accurately. SC will need to register the USE_LIMIT_TYPE of the limitation as 'OTHER' so it can be evaluated for a negotiated opportunity cost.

Example 7: PLANT_C and CONFIG_B Combination

Example 7 is an example of plant and configuration level limitations that cannot be modelled as a combination since the configuration implied starts are not the same for the plant and configuration level limitations. The combination of limitations on this MSG resource are:

- The resource is limited to 300 turbine starts per year limitation where transitions count against the resource’s annual start limitation.
- Configuration 3 can be started or transition 50 times a year based on number of ISO start-up instructions or transition instructions.

SC would register the IMPLIED_STRTS for each configuration as follows and the ISO would determine the transitions shown in orange.

Implied Starts by Transition

From Config	To Config	Mechanism	Implied Starts – PLANT_C	Implied Starts – CONFIG_B
Offline	CONFIG_1	SC registers	1	0
Offline	CONFIG_2	SC registers	2	0
Offline	CONFIG_3	SC registers	3	1
CONFIG_1	CONFIG_2	ISO derives	1	0
CONFIG_1	CONFIG_3	ISO derives	2	1
CONFIG_2	CONFIG_3	ISO derives	1	1
CONFIG_1	Offline	ISO derives	0	0
CONFIG_2	Offline	ISO derives	0	0
CONFIG_3	Offline	ISO derives	0	0

Because the IMPLIED_STRTS for a given configuration need to be different to represent accurately the limitations, this combination cannot be registered accurately. SC will need to register the USE_LIMIT_TYPE of the limitation as 'OTHER' so it can be evaluated for a negotiated opportunity cost.

Example 8: PLANT_C and CONFIG_A Combination

Example 8 is an example of plant and configuration level limitations that can be modelled as a

combination since the configuration implied starts are the same and the derived transition implied starts are representative of the use limitation plan for both the plant and configuration level limitations. The combination of limitations on this MSG resource are:

- The resource is limited to 300 turbine starts per year limitation where transitions count against the resource’s annual start limitation.
- Configuration 3 can be started or transitioned 50 times a year based on the number of turbine starts.

SC would register the IMPLIED_STRTS for each configuration as follows and the ISO would determine the transitions shown in orange.

Implied Starts by Transition

From Config	To Config	Mechanism	Implied Starts – PLANT_C	Implied Starts – CONFIG_A
Offline	CONFIG_1	SC registers	1	1
Offline	CONFIG_2	SC registers	2	2
Offline	CONFIG_3	SC registers	3	3
CONFIG_1	CONFIG_2	ISO derives	1	1
CONFIG_1	CONFIG_3	ISO derives	2	2
CONFIG_2	CONFIG_3	ISO derives	1	1
CONFIG_1	Offline	ISO derives	0	0
CONFIG_2	Offline	ISO derives	0	0
CONFIG_3	Offline	ISO derives	0	0

Because the IMPLIED_STRTS counts for both PLANT_C and CONFIG_A are the same value for each configuration and transitions, the SC should register both limitations in the ULPDT under the USE_LIMIT_TYPE='START'. PLANT_C limitation would be registered under the MSG resource ID with no configuration ID and CONFIG_A limitation would be registered in ULPDT under the configuration ID for configuration 3. In the GRDT MSG_CONFIG tab the IMPLIED_STRTS would be registered as CONFIG_1=1, CONFIG_2=2, and CONFIG_3=3. The transitions will be derived by ISO as the difference (Implied start “To Configuration” minus implied start “From Configuration”).

5.0 CONTACTS

For questions covered in this standard, please contact *RDT@CAISO.com*.

Appendix A: Frequently Asked Questions

A.1 FAQ

1. **Q:** How will the CAISO plan on using the use limit plan data template (ULPDT)?

A: The use limitation plan data templates will be used to qualify a resource for Use-Limited Resource Status, to compare to the Use Limit Reached outage cards to check that resources are submitting outage cards based on the granularity registered in Master File, and to allow SC to seek an opportunity cost adder if eligible.

2. **Q:** Do SCs have to re-register use limited resources for which a ULPDT already exists?

A: Yes. The previous registration was performed based on ISO definition for Use-Limited Resource prior to the tariff changes made in Commitment Cost Enhancements Phase 3. The tariff language provides a new registration and validation process. Since current Use-Limited Resources were validated based on the type of resource and not the limitation, all Resources seeking new or continued use limited status must register their limitation under the new process to qualify. Otherwise, the Resource will lose its use limit status effective November 1, 2018. Scheduling Coordinators must submit their use limitation plans, and the ISO will validate if the limitation meets the new definition of a qualifying limitation. The resource associated with the qualifying limitation will be eligible for use limit status as long as it meets all three new criteria, including the ability to control hours of operation. The Use Limit Resource Guidebook details these revised eligibility requirements for use limit status.

3. **Q:** Does ISO have a deadline yet for when MPs have to re-register to maintain use-limit status after November 1st?

A: It is recommended that registration is submitted as soon as possible. Since the ISO will process the Use-Limited Resource registration on a first come, first serve basis, resources wishing to guarantee a determination on Use-Limited Resource status in Production beyond November 1, 2018 must have completed their registration with full information attached, all ISO internal processing finished, an active use limit flag in GRDT set to 'Y', and a ULPDT submission via the Master File UI by August 22, 2018.

4. **Q:** What does an SC have to do to “complete the registration”?

A: To complete the registration process, the SC must receive a confirmation from the ISO that the registration request was either accepted or rejected. If accepted, the ISO will provide SC with the effective date that the USE_LIMIT_FF flag in the GRDT of Master File will be set to 'Y' by the ISO. The

SC must then submit the Production ULPDT via the UI to complete the registration process. If rejected, the resource is not eligible for Use-Limited Resource status and the USE_LIMIT_FF flag will be set to or remain 'N'.

5. **Q:** If the SC has existing ULPDTs, what does the ISO expect the SC to change in this re-registration from the prior registration?

A: The ISO expects the SC to review the guidebook and to submit ULPDT records for USE_LIMIT_TYPE, GRANULARITY, LIMITATION, EFFECTIVE_STRT_DT_TM, EFFECTIVE_END_DT_TM that conform to the guidelines provided and are corroborated by the appropriate supporting documentation. The new validation procedure requires the ISO to validate the ULPDT values against the supporting documentation and criteria listed in the revised guidebook (v11). See Section 2.2 of the Use-Limited Resource Guidebook for examples of appropriate supporting documentation. The ULPDT records must confirm that the ULPDT limitations and the supporting documentation conform to the guidelines provided in this section. SCs must submit written descriptions to aid the ISO's review of supporting documentation. These should be included in the body of the CIDI ticket as requested in guidebook Section 2.2. For guidance on how to set the effective dates of the records in the attached ULPDT, see Appendix B of the guide book.

6. **Q:** How should MPs register resources for use-limited status for both the remainder of 2018 and 2019? Are MPs expected to register by 8/22 for 2018 and then *again* in October for 2019?

A: A SC looking to maintain their UL status for 2018 and 2019 can do the following: In submission specify which supporting documents apply to 2018 and 2019 limitations. If supporting documents apply to both 2018 and 2019, please state in submission. The limitation definition is set by the use limitation defining attributes are: effective dates, use limit type, granularity, and fixed or dynamic value. The 2019 limitation definition must be supported by the same supporting documentation used for the 2018 use limitations. As long as there is a second record (i.e. row(s)) in the attached ULPDT with dates that span 2019 and the CIDI case states that the 2019 values are supported by the registration's supporting documents, the registration will be effective through the latest PLAN_END_DT_TM.

7. **Q:** If SC previously submitted our use-limited plans for 2018, and some of our limitations are on an annual basis. If SC re-submit effective November 1, 2018, SC will not have up-to-date dispatch data to accurately reflect the remaining starts, hours, etc. Should SC resubmit all of 2018, or just copy the November/December portion of 2018?

A: You should attach a ULPDT with records for the entirety of 2018 and 2019. Once you receive notification that the Use-Limited Resource registration is complete with all the internal processing. You should submit the approved ULPDT via the UI within 5 business days. If you were notified to make changes to the ULPDT records during the registration, you must submit via the UI the ULPDT records

that match the values agreed upon through the registration process. The records submitted via the UI will be those approved in registration that span 2018 and 2019, where values are available for 2019. If the limitation type is dynamic and the 2019 values are not available, the SC may wait to submit the 2019 records until the projections are available.

8. **Q:** What effective start date and effective end date should MP's submit in their ULPDT for resources with limitations that have 'ANNUALLY', 'ROLL_12', 'MONTHLY', or 'DAILY' granularities?

A: See Appendix B for examples.

9. **Q:** What effective start dates and effective end dates should MP's submit in their ULPDT for limitation records that have an 'OTHER' granularity?

A: Submit CIDI ticket for Use Limit Registration and attach the ULPDT with record for the limitation with 'OTHER' granularity with the effective dates from the first day the plan became effective and the last day the plan is effective. The granularity 'OTHER' time period that the registered limitation number relates to is the effective date range of the record. The ISO may engage SC in consultation to discuss the most appropriate effective ranges during the registration process. The SC should read the guidebook, which details the types of supporting documentation used to support the use limit plan (Section 2.2- Determining Status Eligibility). The SC must confirm that the ULPDT limitations and the supporting documentation conform to the guidelines provided in this section. SC must submit written descriptions of the use limitation to aid the ISO's review of supporting documentation. These should be included in the body of the CIDI ticket as requested in guidebook Section 2.2. See Appendix B for examples of Use Limit Plan Data Template records.

10. **Q:** What if a resource is subject to annual start limitations dictated by a contract which begins in the middle of the year?

A: See Appendix B for examples of limitations with annual granularity that begin in a month other than January.

11. **Q:** Where can SC review examples for multi-stage generators?

A: See Section 4.3 of the Use-Limited Guide Book (Examples of implied start registrations). This section includes MSG Use Limit Plan Data Template records as well. See Appendix B for additional examples.

12. **Q:** PDR resources are constantly being added, removed, and altered... Will SCs be able to register

new and update existing use limitations monthly? How about in the middle of the month?

A: The ISO is asking SCs to register in one CIDI submission the Demand Response program under which the relevant resources are operating. Furthermore, SCs should attach a Use Limit Plan Data Template with records that include all resources participating under those programs. If an SC has resources that participate under multiple programs, the SC should submit a request and attach:

- Use Limit Plan Data Template to include each resource under a participating program
- Spreadsheet that details:
 - The name of the DR buyer (e.g. Load Serving Entity, Electric Service Providers, or Community Choice Aggregator)
 - The name of the demand response program
 - The contract name
 - The Resource ID.
- Demand Response Program Documents and Description
- Demand Response Program Contracts

SCs will be able to register use limitations subject to Master File timelines once internal processing has completed. There are no restrictions on when the ULPDT can be submitted via the UI with the CIDI # in the DOC_NAME field once the registration is approved. Once the limitation is registered, SCs can update the limitation values for use limitations registered as dynamic values subject to Master File timelines (i.e. 5 business day turn-around).

13. **Q:** For contract eligible use-limited resources, does CAISO want the entire PPA contract documentation or just the relevant sections? And how do we submit this documentation under an NDA?

A: ISO is requiring the entire contract to be submitted to support the qualifying contractual limitations. ISO is requesting a written explanation of the limitation within the body of the CIDI ticket used to initiate use-limited registration. This explanation should specify the section and page numbers used to determine the use limit type, granularity, effective range, and limitation type. On request, the ISO will discuss further details on establishing NDA between ISO and SC.

14. **Q:** What is the exact distinction between linked and non-linked run-of-river hydro?

A: The distinction is whether there is any storage available to the run-of-river plant. If there is no water storage, then the plant's energy source is intermittent. If there is storage, then the run-of-river plant would be considered linked to storage.

15. **Q:** Will the use limited reached outage cards prevent the market systems from making any market

awards?

A: The market will treat the use limited reached outage like any other outages that curtails the output of a resource.

16. **Q:** What are the implications of not submitting a use-limit registration renewal request for a resource that has been verified and registered as use-limited once?

A: Use-Limited Resource status terminates 12 months after the plan start date regardless of the granularity of the limitation unless the SC submits a ULR renewal request or a revised ULR registration request. These ULR renewal or ULR registration requests must be submitted annually or else the functionality available to ULR will no longer be available after the plan end date.

17. **Q:** What process is being used by MCI to flag the need to review whether there is a use plan that spans the upcoming year and that the supporting documentation for next year has been re-submitted – Use-Limited Renewal? If SC has a ULPDT that spans the next year but doesn't submit a renewal with the affidavit or supporting documentation, how will ISO identify need to turn the USE_LIMIT_FF to 'N'. If SC doesn't have a ULPDT that starts in January of next year and doesn't submit renewal request, does the process differ at all?

A: All resources seeking use-limited status must register their limitation to qualify for use-limit status. ISO is tracking the resources that are currently flagged with USE_LIMIT = 'Y'. Any resource currently flagged as USE_LIMIT= 'Y' that does not have an approved ULR registration by August 22, 2018 will have the USE_LIMIT flag changed to 'N' effective 11/1/18. The registered use limitations are only valid for 12 months at which time if not renewed will be invalid. The ULPDT will need to remove those records and the USE_LIMIT_FF will need to be set to 'N' if 12 months have elapsed and the renewal request through CIDI is not complete. The ISO is still determining its process for identifying use limitations registered that have not been renewed within 12 months. In the meantime, SC should ensure they complete the new registration for 2018 and 2019 to ensure they are not exposed to risk of failing to maintain status in 2019. In future years, the SC must submit the renewal request with an affidavit attached.

Appendix B: Use Limitation Plan Data Examples

B.1 Annual limitation with fixed values

Annual limitations may only be registered for the current or upcoming calendar year and should specify use limit type, granularity, effective period for the plan, fixed or dynamic limitation, limitation number. Include the fixed or dynamic information in DOC NAME field. The examples below show resources and Multi-Stage Generators with monthly limitations of a fixed or dynamic nature.

The example below shows resource with annual use limitations where the plan documents specify the numbers of the limitation explicitly in the plan. The limitation values will be fixed for the term of the limitation (fixed values), where changes to the limitation value are not supported. If the SC receives a revised use plan that changes the explicit limitation number then the SC must submit a new Use-Limited Resource Registration request.

The examples below show resources with annual use limitation where the plan documents support that the specific limitation values will vary throughout the term of the plan. The limitation value will be dynamic for the term of the limitation (dynamic values), where changes to the limitation values are eligible ULPDT updates. If the SC receives a revised use plan that changes the drivers that the limitation number is a function of then the SC must submit a new Use-Limited Resource Registration request. Otherwise changes in limitation values as supported by the use plan should be reflected through updates to the Use Limit Plan Data Template with the CIDI # included for the approved limitation. Updated values are updated projections on the uses available across the granularity period – a year – based on more accurate, up-to-date information. The value remains the limitation across the period, the ISO processing will account for prior uses. A justification for updates to the ULPDT is needed to explain the change in values.

B.1.1 Resources

Initial submission for RES_A that is defined as a fixed value in documentation where the 12 month increment begins in January as stated in the use plan.

Resource with annual limitation that begins in January every year with fixed limitation values										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_A		START	ANNUALLY	1/1/2018	12/31/2018	300			CIDI #0002890 Air quality management district permit, page 10
SC_A	RES_A		START	ANNUALLY	1/1/2019	12/31/2019	300			CIDI #0002890 Air quality management district permit, page 10

Table 1: Annual Limitation beginning January every year with fixed values

Initial submission for RES_B that is defined as a fixed value in documentation where the 12 month increment begins in March as stated in the use plan. ISO understands annual plans (plans that span 12 months before the use is available) can begin the first day of any month in the calendar year. ISO does not anticipate any will begin on a day different than the first day of a month.

Resource with Annual Limitation that begins in March every year with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_B		START	ANNUALLY	3/1/2017	2/28/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	ANNUALLY	3/1/2018	2/28/2019	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	ANNUALLY	3/1/2019	2/28/2020	300			CIDI #00204555 Air quality management district permit, page 10

Table 2: Annual Limitation beginning March every year with fixed values

Initial submission for RES_C that is defined as a dynamic value in documentation, most likely as a result of a limitation for limited storage capability (gas or hydro). ISO anticipates resource is likely to update values during the effective period of the limitation. Updates should note reason for update.

Resource with Annual Limitation that begins in January every year with dynamic limitation (e.g. changes in storage capability)										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_C		START	ANNUALLY	1/1/2018	12/31/2018	300			CIDI #00444444 Limited storage capability and reliability requirement for load documented in PUC Order, Page 4
SC_A	RES_C		START	ANNUALLY	1/1/2019	12/31/2019				CIDI #00444444 Limited storage capability and reliability requirement for load documented in PUC Order, Page 4

Table 3: Annual Limitation beginning January every year with dynamic values

Update submission during the year for limitations registered as having values that can vary throughout period: SCID ABCD, submits an updated ULPDT for RES_C on 11/1/2018 for the effective period previously registered. This is backdating the effective limitation. Note: Now that the SC has an annual projection for 2019, the ULPDT record for 2019 should be submitted through the Master File UI.

Resource with Annual Limitation that begins in January every year with dynamic limitation (e.g. changes in storage capability)										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_C		START	ANNUALLY	1/1/2018	12/31/2018	250			CIDI #00444444 Limited storage capability and reliability requirement for load documented in PUC Order, Page 4
SC_A	RES_C		START	ANNUALLY	1/1/2019	12/31/2019				CIDI #00444444 Limited storage capability and reliability requirement for load documented in PUC Order, Page 4

Table 4: Update to Annual Limitation beginning January every year with dynamic values

B.1.2 Multi-Stage Generators

Initial submission for MSG_A with a plant level limitation that is defined as a fixed value in documentation where the 12 month increment begins in January as stated in the use plan.

MSG with Annual Limitation on the plant that begins in January every year with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_A		START	ANNUALLY	1/1/2018	12/31/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_A		START	ANNUALLY	1/1/2019	12/31/2019	300			CIDI #00204555 Air quality management district permit, page 10

Table 5: Annual Limitation beginning January every year with fixed values on a MSG

Initial submission for MSG_B where the configuration level limitation on the 3rd configuration is defined as a fixed value in documentation where the 12 month increment begins in March as stated in the use plan. ISO understands annual plans (plans that span

12 months before the use is available) can begin the first day of any month in the calendar year. ISO does not anticipate any will begin on a day different than the first day of a month.

MSG with Annual Limitation on the plant that begins in January every year with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2019	12/31/2019	50			CIDI #00204555 Air quality management district permit, page 10

Table 6: Annual Limitation beginning March every year with fixed values on a MSG

Initial submission for MSG_C that is defined as a fixed value in documentation where the 12 month increment begins in January as stated in the use plan. MSG_C has both a plant level annual limitation and a configuration level annual limitation on its third configuration. Note – Example not intended to imply plant and configuration level combinations on a MSG should be on same granularity.

MSG with Annual Limitation on the plant that begins in January every year with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_C		START	ANNUALLY	1/1/2018	12/31/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_C	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_C		START	ANNUALLY	1/1/2019	12/31/2020	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_C	CONFIG_3	START	ANNUALLY	1/1/2019	12/31/2020	50			CIDI #00204555 Air quality management district permit, page 10

Table 7: Annual Plant and Configuration Annual Limitations with fixed values

Initial submission for MSG_B with a configuration level limitation that is defined as a dynamic value in documentation. The limitation is on the multi-stage generator for a start into its 3rd configuration. See Section 4 for more details examples.

MSG with Annual Limitation on the plant that begins in January every year with dynamic limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2019	12/31/2019				CIDI #00204555 Air quality management district permit, page 10

Table 8: Annual Limitation beginning January every year with dynamic values on a MSG

Update submission during the year for limitations registered as having values that can vary throughout period: SCID ABCD, submits an updated ULPDT for MSG_B on 11/1/2018 for the effective period previously registered. This is backdating the effective limitation. Note: Now that the SC has an annual projection for 2019, the ULPDT record for 2019 should be submitted through the Master File UI.

MSG with Annual Limitation on the plant that begins in January every year with dynamic limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2018	12/31/2018	45			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_B	CONFIG_3	START	ANNUALLY	1/1/2019	12/31/2019	55			CIDI #00204555 Air quality management district permit, page 10

Table 9: Update to Annual Limitation beginning January every year with dynamic values on a MSG

B.2 Rolling 12 limitation

For the ULPDT to attach to the registration request, SC should use the examples in Section

B.1 for Annual Limitations. The effective dates used to submit the production ULPDT in Master File UI may differ from the attachments to the ULPDT. The ISO will update this section with examples after gaining experience validating rolling 12 limitations.

In the Opportunity Cost Calculator, the rolling limitation calculates the difference in profits for next 12 months while limiting prompt month used based on prior 11 usage. For example, if the validated limitation is an annual rolling limitation, the opportunity costs calculated in January 2019 will equal the difference in estimated profits if use-limited resource had one less unit of starts, run-hours, or energy output, whichever is applicable, in the 12 month horizon from Feb. 2019 through Jan. 2020 where the monthly limitation in first month is based on the difference between the limitation and the prior 11 month actual uses. Then when updating the annual opportunity cost value for February 2019, that the calculated opportunity costs will equal difference in estimated profits if use-limited resource had one less unit of starts, run-hours, or energy output, whichever is applicable, in the 12 month horizon from Mar. 2019 through Feb. 2020 where the monthly limitation in first month is based on the difference between the limitation and the prior 11 month actual uses. Note the difference from treatment of annual limitations is that there is a monthly limitation in first month is based on the difference between the limitation and the prior 11 month actual uses and the optimization horizon is always the next 12 months.

B.3 Monthly limitation

Monthly limitations may only be registered for the current or upcoming calendar year and should specify use limit type, granularity, effective period for the plan, fixed or dynamic limitation, limitation number. Include the fixed or dynamic information in DOC NAME field. The examples below show resources and Multi-Stage Generators with monthly limitations of a fixed or dynamic nature.

The fixed examples below show resources with monthly use limitations where the plan documents specify the number of the limitation explicitly in the plan. The limitation values will be fixed for the term of the limitation (fixed values), where changes to the limitation value are not supported. If a SC receives a revised use plan that changes the explicit limitation number then the SC must submit a new Use-Limited Resource Registration request. Monthly limitations may only be registered for the current or upcoming calendar year.

The dynamic examples below show resources with monthly use limitations where the plan documents support that the specific limitation value will vary throughout the term of the plan. The limitation value will be dynamic for the term of the limitation (dynamic values), where changes to the limitation value are eligible ULPDT updates. If the SC receives a revised use plan that changes the drivers that the limitation number is a function of then the SC must submit a new Use-Limited Resource Registration request. Otherwise changes in limitation values as supported by the use plan should be reflected through updates to the Use Limit Plan Data Template with the CIDI # included for the approved limitation. Updated values are updated projections on the uses available across the granularity period – a year – based on more accurate, up-to-date information. The value remains the limitation across the period, the ISO processing will account for prior uses. A justification for updates to the ULPDT is needed to explain the change in values.

B.3.1 Resources

Initial submission for RES_B that is defined as a fixed value in documentation. The SC should submit a single record the year and flag the granularity as 'MONTHLY.' The limitation number will be applied on the same level as the granularity flag. For example, Table 10 shows RES_B with a monthly limitation on its starts where each month from 1/1/2018 through 12/31/2019 is limited to 50 starts per month.

Resource with Monthly Limitation with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_B		START	MONTHLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	MONTHLY	1/1/2019	12/31/2019	50			CIDI #00204555 Air quality management district permit, page 10

Table 10: Monthly Limitation with fixed values

Initial submission for RES_B where the limitation is defined as dynamic (e.g. fluctuations of storage capability). If the SC projects its usage capabilities on a monthly basis based on end-of-month storage inventory targets, these limitations would apply on a granularity level and would likely need to reflect various values for each month. In this case, the SC has the ability to submit the ULPDT records in monthly profiles with the initial projects. The monthly profiles span 2018 and 2019 and reflect prior months ULPDT records effective today and future months projections, if available. If unavailable, attach a ULPDT with blank records for those months.

Resource with Monthly Limitation with dynamic limitation (e.g. changes in storage capability)											
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name	
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME	
SC_A	RES_B		START	MONTHLY	1/1/2018	1/31/2018	50			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	2/1/2018	2/28/2018	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	3/1/2018	3/31/2018	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	4/1/2018	4/30/2018	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	5/1/2018	5/31/2018	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	6/1/2018	6/30/2018	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	7/1/2018	7/31/2018	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	8/1/2018	8/31/2018	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	9/1/2018	9/30/2018	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	10/1/2018	10/31/2018	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	11/1/2018	11/30/2018	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	12/1/2018	12/31/2018	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	1/1/2019	1/31/2019	50			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	2/1/2019	2/28/2019	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	3/1/2019	3/31/2019	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	4/1/2019	4/30/2019	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	5/1/2019	5/31/2019	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	6/1/2019	6/30/2019	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	7/1/2019	7/31/2019	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	8/1/2019	8/31/2019	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	9/1/2019	9/30/2019	20			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	10/1/2019	10/31/2019	30			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	11/1/2019	11/30/2019	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	
SC_A	RES_B		START	MONTHLY	12/1/2019	12/31/2019	40			CIDI #00333333 Limited storage capability documented in Energy Revenue Recovery Account Filing, Page 4	

Table 11: Monthly limitation with dynamic values

B.3.2 Multi-Stage Generators

Initial submission for MSG_A with a plant level limitation that is defined as a fixed value limiting its use per month.

MSG with Monthly Limitation on the plant with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	MSG_A		START	MONTHLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	MSG_A		START	MONTHLY	1/1/2019	12/31/2019	50			CIDI #00204555 Air quality management district permit, page 10

Table 12: Monthly Limitation with fixed values on a MSG

Initial submission for MSG_A with a configuration level limitation on its 3rd configuration that is defined as a fixed value limiting its use per month.

MSG with Monthly Limitation on the 3rd configuration with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_A	CONFIG_3	START	MONTHLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_A	CONFIG_3	START	MONTHLY	1/1/2019	12/31/2019	50			CIDI #00204555 Air quality management district permit, page 10

Table 13: Monthly Configuration Level Limitation with fixed values on MSG

MSG_C has both a plant level monthly limitation and a configuration level monthly limitation on its third configuration. Note – Example not intended to imply plant and configuration level combinations on a MSG should be on same granularity.

MSG with Monthly Limitation on the 3rd configuration with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_A		START	MONTHLY	1/1/2018	12/31/2018	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_A	CONFIG_3	START	MONTHLY	1/1/2018	12/31/2018	10			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_A		START	MONTHLY	1/1/2019	12/31/2020	50			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_A	CONFIG_3	START	MONTHLY	1/1/2019	12/31/2020	10			CIDI #00204555 Air quality management district permit, page 10

Table 14: Annual Plant and Configuration Annual Limitations

B.4 Daily limitation

The day-ahead market time horizon of 24 hours better allows the optimization to recognize daily limitations in the day-ahead. For use limit types of START, RUNHOURS, or ENERGY, resources with binding commitment instructions in the day-ahead time frame will not be eligible to register daily use limitations for use limit types of START or RUNHOURS. SC should utilize the Master File operating characteristic fields to the extent possible for:

- Maximum Daily Transitions
- Maximum Startups per Day
- Pump Maximum Daily Startups
- Maximum Daily On Time
- Maximum On Time (Not Used)

SC should also ensure it can reflect its daily ENERGY use limit type by submitting the maximum daily energy limit bid through SIBR.

For resources that receive their binding commitment instructions as result of real-time market unit commitment processes, the ISO will validate whether the limitations meet the remainder of the Use-Limited Resource criteria. The following example is how the SC should create the

record for daily limitations to attach to the registration request.

Resource with Daily Limitation with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_D		RUNHOURS	DAILY	1/1/2018	12/31/2018	6			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_D		RUNHOURS	DAILY	1/1/2019	12/31/2019	6			CIDI #00204555 Air quality management district permit, page 10

Table 15: Daily limitation for either fixed or dynamic

Regardless of whether the limitation is fixed or dynamic in nature, the SC should create daily records with effective ranges of 12 month increments. The market does not consume the daily limitation values. The SC will need to submit the bid for daily energy limit through SIBR to provide the limitation values for a given day. The value in the ULPDT should be a projected value if the limitation is of a dynamic nature.

REMINDER: Daily limitations are not eligible for Opportunity Cost adders. SC should ensure it registers its operating characteristics in the GRDT and/or bids daily energy limit. If accepted, SC will be exempt from bid generation and have access to short-term use limit reached card to ration uses within the operating day.

B.4 Other limitation

ISO understands that use plans may specify a limitation that is applied on a basis greater than one month but that does not fall into either ANNUALLY or ROLL_12 granularity. The OTHER granularity can be used to submit ULPDT records that provide the granularity of the limitation using the effective start and effective end dates. The limitation value is associated with the entire effective period.

The limitations may only be registered for the current or upcoming calendar year and should specify use limit type, granularity, effective period for the plan, fixed or dynamic limitation, limitation number. Include the fixed or dynamic information in DOC NAME field. The examples below show resources and Multi-Stage Generators with monthly limitations of a fixed or dynamic nature.

The fixed example below shows resource with quarterly use limitation where the plan documents specify the number of the limitation explicitly in the plan. The limitation value will be fixed for the term of the limitation (fixed values), where changes to the limitation value are not supported. If a SC receives a revised use plan that changes the explicit limitation number then the SC must submit a new Use-Limited Resource Registration request. Monthly limitations may only be registered for the current or upcoming calendar year. If the nature of the limitation is dynamic, the limitation would be registered similarly to the other examples of dynamic limitations. The initial submission is based on a projection and updated as up-to-date information is available. The effective period does not change with updates only the limitation number.

Resource with Quarterly Limitation with static limitation										
SC ID	Resource ID	Configuration ID	Use Limit Type	Granularity	Effective Start Date	Effective End Date	Limitation Number	Minimum Capacity Level	Maximum Capacity Level	Documentation Name
SC_ID	RES_ID	CONFIG_ID	USE_LIMIT_TYPE	GRANULARITY	PLAN_STRT_DT_TM	PLAN_END_DT_TM	LIMITATION	MIN_USE_LIMIT	MAX_USE_LIMIT	DOC_NAME
SC_A	RES_B		START	OTHER	1/1/2018	3/31/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	4/1/2018	6/30/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	7/1/2018	9/30/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	10/1/2018	12/31/2018	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	1/1/2019	3/31/2019	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	4/1/2019	6/30/2019	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	7/1/2019	9/30/2019	300			CIDI #00204555 Air quality management district permit, page 10
SC_A	RES_B		START	OTHER	10/1/2019	12/31/2019	300			CIDI #00204555 Air quality management district permit, page 10

Table 16: Other limitation with fixed values where limitation applies on quarterly basis