

**Reliability Must Run (RMR)**  
**Local Area Reliability Service (LARS)**  
**Issues and Criteria Discussion**

Issue #1

“Reliability is needed for the whole system however RMR studies generally focused on 500/230kV transformers and lower voltages which discriminates against 500 kV reliability needs.”

**Existing criteria:**

The RMR contract acts as an insurance policy assuring that the Cal-ISO has undisputable dispatch rights in order to a) reliably serve load in a local area and b) mitigate “Local Market Power” that one or multiple units (with a very limited number of owners) have, because the area in which they are located is constrained in importing power.

As a nondiscriminatory approach, the Cal-ISO Board decided that for RMR purposes a “local area” should be an area that has a relatively low number of generator units and owners. As such the criteria for RMR studies considers that 500 kV path flows (most of which are interzonal boundaries) are a system wide driven problem and should be maintained through markets, since there are large numbers of generators and generation owners that can be called upon to mitigate these flows. The RMR designation can and should be given to units that are needed to mitigate single 500 kV line outages (like Tesla-Metcalf or Imperial Valley-Miguel) and bellow.

This would suggest that if a utility mitigates congestion on a 500 kV path by achieving a higher path rating it could trigger the need for additional RMR contracts. This is, in fact, a true statement. Higher 500 kV path flows will allow generation to be turned off in a certain “local areas” and marginal lower kV problems could possibly be encountered. Since the mitigation of a 500 kV path is market driven (with many generator units and owners - therefore competitive) and the “local area” problem is not (small number of units), some of the units in the local area could become eligible for RMR.

**Possible change:**

Treat 500 kV path flows just like any other constraint and sign RMR contracts to maintain flow below 500 kV path limits.

Pro: equality on reliability problems, higher operational certainty and flexibility, higher revenue assurance for generators

Con: virtually all units in the state are eligible for RMR (to mitigate COI, path 15, path 26, South of Lugo and SCIT), higher to very high RMR costs (especially for Northern PG&E and South of Lugo), all reliability problems are solved through contracts leaving almost no room for “market” functions to mitigate 500kV system constraints.

## Issue #2

“Over the course of a year, our Must-offer Waiver is revoked numerous times, and we are called on Must-offer in order to maintain system and/or local area reliability. Why I am not given an RMR contract?”

### **Existing criteria:**

As with any “insurance policy” the cost vs. coverage was analyzed by the Cal-ISO Board and the decision made was that “local area” RMR contracts should be given for: single line outages, single line and one generator outages and single transformer outages. However, there are times when a system element(s) is taken out of service for maintenance and the operations needs to prepare for the next worst single contingency (N-1-1) to meet the intent of the ISO Planning Standards. In such cases more units may be needed in order to maintain system reliability. These cases were envisioned to be rare or performed at lower load levels when additional generating units would not be required to be on-line. As explained in Issue #1, the 500 kV path flows should be maintained through markets as such, Operations must make sure that enough generation would be available to maintain 500 kV path flows. This process is equivalent to “system energy needs” and the Must-offer was specially designed and adopted by FERC to make sure the “overall system” has sufficient energy during times of need.

Are some units called more on Must-offer than others? The answer to that question is yes as each unit has a certain effectiveness towards mitigating potential “local area” N-1-1 incidents and 500 kV path flows. As a result, if not enough generation is provided through markets the ISO will use the most effective units to mitigate the problem and reduce costs.

### **Possible change:**

1. Treat 500 kV path flows just like any other constraint and sign RMR contracts to maintain flow below 500 kV path ratings. (See pros and cons for Issue #1)
2. Give short-term RMR contracts to units that are needed during maintenance, equipment outage, scheduled clearances etc.

Pro: assured revenue stream for generators, higher operational certainty and flexibility

Con: it takes about 3-5 months to negotiate an RMR contract making the “short-term RMR contract” an impossibility were RMR contracts to be negotiated every time a “clearance” or major “forced outage” occurs. This is inconsistent with the spirit of the intended RMR contract “single contingency with all elements in service” and is impossible to open and close a stakeholder process that will allow all market participants in one area to bid for these new “short-term RMR contracts” making it a discriminatory process.

### Issue #3

“Is Must-offer used in order not to sign RMR contracts? Should the Must-offer be used as the only base for solving all reliability driven concerns and should RMR contracts be eliminated?”

#### **Existing criteria:**

No, the Must-offer is not used in order NOT to sign RMR contracts. All RMR eligible units are considered in the process of assigning contracts per RMR criteria and rules described in the discussion of Issue #1 and Issue #2. In addition, must-offer is currently used as a last resort to maintain “local area reliability” since:

1. FERC is on record stating that RMR type (“local area”) problems should be addressed through contracts.
2. The spirit of the FERC ruling in the enforcement of “must-offer” was meant to be used for system wide energy needs (system wide L&R as well as 500 kV path mitigation).
3. The ISO has the authority to temporarily enforce “must-offer” until FERC decides that the markets are working competitively well in California and the West. As such, this authority can be revoked at any time by FERC leaving the ISO with no mitigation to address “Local Area Market Power” issues.

Today must-offer is used for:

1. System wide energy needs (L&R) and mitigation of 500 kV path flows (also considered system wide – market driven needs).
2. Last resort for “local area” reliability in order to protect for N-1-1 – multiple contingencies, during maintenance, forced outages etc.

#### **Possible change:**

1. Treat 500 kV path flows just like any other constraint and sign RMR contracts to maintain flow bellow 500 kV path ratings. See pros and cons for Issue #1.
2. Give short-term RMR contracts to units needed during maintenance, equipment outage, scheduled clearances etc. See pros and cons for Issue #2.
3. Eliminate RMR and rely on “must-offer” only.

Pro: eliminates RMR contracts and their associated costs.

Con: this is inconsistent with the spirit of existing FERC rulings, higher operational uncertainty and less flexibility, results in a significant increase in real time calls, the ISO could be left without this authority at any time (at FERC’s discretion), unsure revenue stream for generators could lead to substantially more generators being mothballed or retired.

#### Issue #4

“Under the ISO Planning Standards it is permitted to drop load for single contingencies in “Local Area Networks”. The RMR criteria should also allow load drop instead of signing RMR contracts.”

#### **Existing criteria:**

The RMR criteria is a selected subset of the ISO Grid Planning Standards, however load dropping is not considered an acceptable practice in-lieu of an RMR contract. This practice is supported through the intent of the RMR contract whose primary purpose is to make sure load in a “local area” is reliably served during single contingencies.

#### **Possible change:**

Modify the RMR planning standards to allow controlled load shedding as a suitable replacement for an RMR contract were the “installation of SPS and load shedding be the most economic approach” to serving load in a local area.

Pro: would allow load drop in the RMR criteria just as it is allowed by the full ISO Grid Planning Standards, decrease RMR contracts and costs.

Con: is inconsistent with the spirit and purpose of the RMR contract, higher operational uncertainty and less flexibility, unsure revenue stream for generators which could lead to substantial more generators being mothballed or retired, could be used in a discriminatory manner by targeting certain “small RMR areas” vs. bigger more visible RMR areas, could add further complications to the existing multitude of SPS’s in the system.

## Issue #5

“For a certain, historical RMR Local Areas the boundary definition keeps changing. Why?”

### **Existing criteria:**

At the inception of the ISO’s RMR methodology, the ISO Board and stakeholders could only agree that 500 kV path mitigation was considered a “system” problem while all single contingencies and “lower kV problems” (below 500kV) was considered a “local area” problem. To maintain this relationship, certain “local area” boundaries must change as the most stringent RMR problems are eliminated. The new limiting equipment and all generators effective in mitigating this new limit may result in the realignment of the boundaries assigned to that particular local area. And while local area boundaries can change, it should be noted that local areas could be combined were enough RMR constraints mitigated. As such, the “local area” definition is not necessarily geographical or historical in nature, but rather dynamically driven by the most limiting elements within the local area.

### **Possible change:**

Limit the size and definition of a “local area” to geographic or historical area.

Pro: easy to follow from year to year, could lower RMR contracts since effective units outside of an historical “local area” will be considered on-line without having an RMR contract.

Con: is inconsistent with the definition of “local area” as agreed to by the ISO Board and stakeholders, could be used in a discriminatory manner towards units that are outside of this area but just as effective, discourages transmission projects that mitigate limits between historical “local RMR areas” with possible negative impacts to operations, there is no “non-discriminatory” methodology to limit the size of an RMR area (by MW load, MW generation, number of market units or owners).

## Issue #6

“The LA Basin area is too big to be considered one RMR area. It should be subdivided into multiple, independent RMR areas.”

### **Existing criteria:**

At the inception of the ISO’s RMR methodology, the ISO Board and stakeholders could only agree that 500 kV path mitigation was considered a “system” problem while all single contingencies and “lower kV problems” (below 500kV) was considered a “local area” problem. As such the entire LA Basin could be considered as one big RMR area. As explained in Issue #5, the “local area” definition is not geographical or historical in nature, but rather dynamically driven by the most limiting elements within the local area.

### **Possible change:**

Limit the size and definition of a “local area” to geographic or historical area.

Pro: easy to follow from year to year, could lower RMR contracts since effective units outside of an historical “local area” will be considered on-line without having an RMR contract.

Con: is inconsistent with spirit of “local area” as agreed by the ISO Board and stakeholders, could be used in a discriminatory manner towards units that are outside of this area but just as effective, discourages transmission projects that mitigate limits between historical “local RMR areas” with possible negative impacts to operations, there is no “non-discriminatory” methodology to limit the size of an RMR area (by MW load, MW generation, number of market units or owners).

## Issue #7

“Is there any market generation considered to be on-line in this “local area” without requiring an RMR contract?”

### **Existing criteria:**

There is enough market generation on-line in order to maintain all the 500 kV path flows below all applicable path or facility ratings. This market generation is chosen in a manner that maximizes the RMR needs in a certain “local area”, since the ISO has no control over which units will be available through markets in order to maintain the 500 kV path flows within limits. At a minimum market generation that is needed for RMR in an adjacent area is also considered on line. Otherwise no market units are considered on-line without an RMR contract.

### **Possible change:**

Assume that some generation is on-line in the “local area” without an RMR contract.

Pro: reduce RMR contracts and RMR costs.

Con: there is no approved “non-discriminatory” methodology to account for market generation in a certain “local area”, there is a risk that “Local Market Power” could be exercised by units needed to maintain local reliability left without an RMR contract, higher operational uncertainty and less flexibility, will exacerbate the must-offer calls during planned outages.

## Issue #8

“Is the ISO contemplating the use of a “market analysis methodology” to count on some market units being on-line without an RMR contract in a certain local area? Has the ISO ever implemented anything similar?”

### **Existing criteria:**

The ISO has a draft market analysis methodology to account for market units in a certain “local area” as being on-line at time of need without an RMR contract. Incorporating Market Generation and Local Market Power into the RMR Contract Evaluation and Selection Process was used in the 2001 RMR designations in the LA Basin area. It has been discontinued due to market conditions and the financial conditions of the market participants.

The market analysis methodology is based on the historical data regarding market unit availability during the time of need minus the largest supplier that is considered “pivotal” in a certain “local area”. Further developments to this methodology may be used to respond to the following questions: “How many owners are pivotal in a local area?” or “How big an local area can become before it is considered a system problem?”

### **Possible change:**

Finalize and use this market analysis methodology in the following RMR cycle.

Pro: reduce RMR contracts and RMR costs.

Con: additional work needs to be completed before this could be considered an approved “non-discriminatory” market analysis methodology to account for market generation in a certain “local areas”, there is a risk that “Local Market Power” will be exercised by units needed to maintain local reliability left without an RMR contract, may result in higher use of must-offer for “local area problems”, higher operational uncertainty and less flexibility, unsure revenue stream for generators could lead to substantial more generators being mothballed or retired.

## Issue #9

“The RMR criteria approved by the ISO Board is clear and non-discriminatory, however during LARS designations there are a few units designated as RMR units based on an “operational needs” standard that appears to be applied randomly and in a discriminatory manner. As transmission projects are built to eliminate RMR, more and more RMR unit determination seem to fall under “operational needs” standard rather than the approved RMR criteria. The operational needs standard(s) should be clearly stated and uniformly applied across the entire ISO controlled grid or eliminated.”

### **Existing criteria:**

The RMR criteria approved by ISO Board does not include an “operational need” standard(s), however the ISO Tariff (section 5.2) specifically allows the ISO to enter into a RMR contract with a generator as needed for “Black start or Voltage support” as needed to meet local area reliability needs. Currently there are only two cases where “operational needs” are deemed necessary by the ISO to prevent “voltage collapse” for:

- a) High exposure (based on historical data) of G-1-1 in the Humboldt ;local area.
- b) L-2 with no SPS for load drop (same requirement as before deregulation) in the LA Basin local area.

### **Possible change:**

1. Clearly spell out the “operational needs criteria” and assure a non-discriminatory application during the RMR designation process.

Pro: higher certainty and more operational flexibility, sure revenue stream for generators.

Con: more RMR contracts and higher RMR costs, could substantially increase the number of RMR contracts virtually leaving the market without “market units” (uncompetitive).

2. Change the language in the tariff to award contracts only based on the RMR criteria approved by the ISO Board without any additional “operational needs” – these will be achieved through markets and must-offer only.

Pro: less RMR contracts and lower RMR costs.

Con: there is a risk that “Local Market Power” will be exercised by units needed to maintain operational requirements left without an RMR contract, may result in higher use of must-offer for “local area problems”, higher operational uncertainty and less flexibility, unsure revenue stream for generators could lead to more generators being mothballed or retired.

### Issue #10

“Because the LARS process is a yearly one, we can NOT compete effectively since building significant transmission projects takes minimum two to three years.”

#### **Existing criteria:**

The ISO will accept transmission projects two or more years in advance during the LARS process. If the transmission projects are the most economic solution they will be approved however, the number of RMR units under contract will only be reduced in the year when the project is projected to be on-line. At the present time, the ISO Board does not entertain long-term RMR contracts for generation. It is envisioned that the load-serving entities will enter into long-term contracts with generators through their resource adequacy plan and they will give consideration to mitigate “local area problems”.

Currently the Transmission Owners are encouraged to perform long-term RMR studies as part of their annual expansion planning process. If a long lead time transmission project is proposed to mitigate an ongoing local area reliability problem and it is clearly a cost effective solution to the continued use of RMR generation, the ISO could approve the project as part of their annual expansion plan.

#### **Possible change:**

Conduct a multi-year RMR/LARS process to allow all participants the possibility to enter into long-term RMR commitments.

Pro: sure revenue stream for generators.

Con: is inconsistent with the ISO Board’s decision to sign only one year worth of RMR contracts at a time, could have unwanted results in future RMR studies when newer, less expensive and more environmental friendly generation may not be able to bid for RMR services, may interact with TO’s decision on signing long-term contracts for resource adequacy reasons.