CRR Allocation:
SCE "Priority" Proposal

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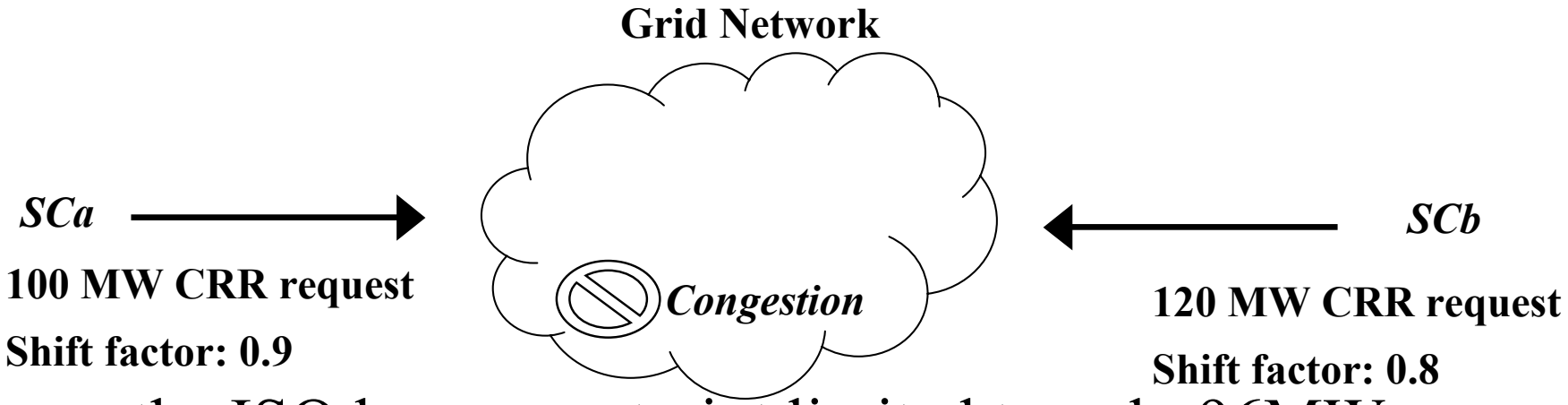
Problems with the ISO's Proposal

- The ISO proposes to allocate CRR using an objective function which maximizes the total quantity of CRRs allocated
- As a result, the ISO proposes to eliminate infeasible CRR requests based on the effectiveness or "shift factor" of each request
  - If there is a binding constraint (congestion) the ISO will eliminate the CRR that most effectively resolves the congestion
- Under this approach participants cannot ***value*** their CRR requests
  - Awards are based on physics without financial considerations
  - Even if a CRR is very desirable it will not be awarded if it is the most electrically effective solution to congestion

SCE's "Priority" Proposal

- SCE proposes to allow participants specify one of four "priorities" with each CRR request
- Participants will place a priority level of 1 through 4 on each CRR request
  - A Priority 1 request = the participant places the highest relative value on that CRR
  - A Priority 4 request = the participant places the lowest relative value on that CRR
- Each priority cannot exceed 25% of a participant's eligible requests
- The ISO CRR allocation will consider the priority of the requests, as well as the "shift factor" and size
- The ISO will attempt to award the high priority requests first, even if these requests have a high shift factors
- This approach allows participants to ***value*** their CRR requests
- Approach is modeled after PJM's previous methodology

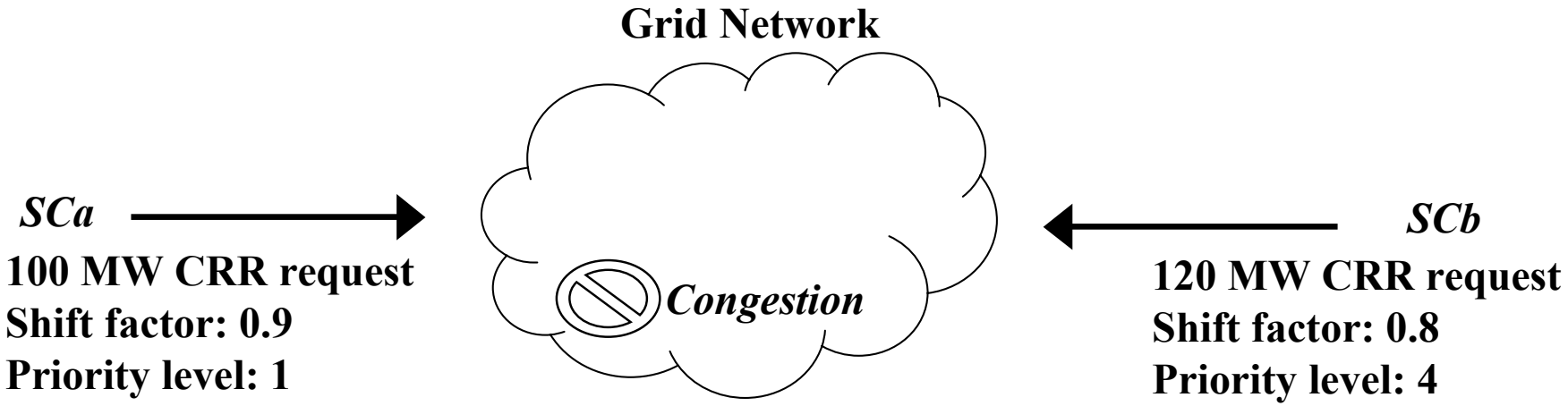
Example: ISO Proposal



Assume the ISO has a constraint limited to only 96MW

- ISO proposes use reduce the CRR request with the most effective shift factor
  - SCa contributes 100MW* 0.9 = 90MW to the constraint
  - SCb contributes 120MW* 0.8 = 96MW to the constraint
  - Total request is 186MW which is infeasible by 90 MW
- Since SCa has a higher shift factor, the ISO will reduce the request of SCa
- Final CRR allocation is:
  - SCa: 0MW -----> NOTE: SCa gets nothing!
  - SCb: 120MW-----> NOTE: SCb gets all of its request!

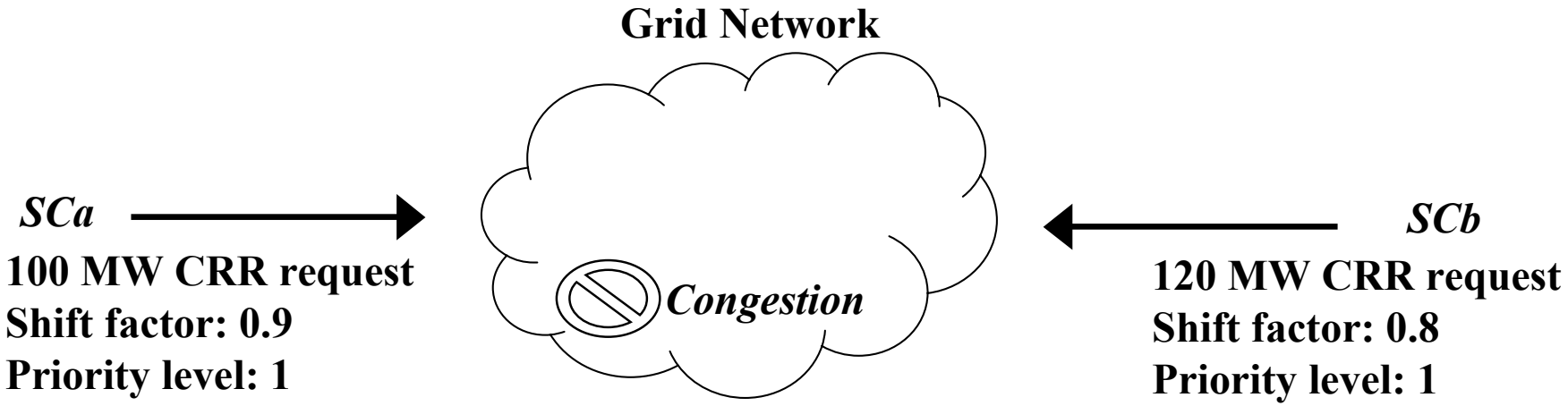
Example: SCE Priority Proposal (1)



Assume the ISO has a constraint limited to only 96MW

- Note that SCa has a Priority 1 request (highest priority) while SCb has Priority 4 request (lowest level)
- The ISO will first allocate the 100 MW CRR to SCa, 100 * .9 = 90MW
- The ISO will the allocate the 6MW remaining in the constraint to SCb
- Based on Priority levels the result of the allocation is
  - **SCa: 100MW** -----> NOTE: SCa gets all of its high priority request!
  - **SCb: 7.5MW** -----> NOTE: SCb still gets 6/.8 = 7.5MW

Example: SCE Priority Proposal (2)



Assume the ISO has a constraint limited to only 96MWs

- Note here that SCa and SCb both have Priority 1 requests
- "PJM" method: Since they are both Priority 1, the highest shift factor is selected (Note the ISO indicated their software can do this)
  - **SCa: 0 MW, SCb: 120 MW**
- SCE method: Prorate based on size of request and shift factors (note the ISO indicated their software ***cannot*** do this)
  - **SCa: 48.67MW, SCb: 65.25MW**

Summary

- The ISO proposes to allocate CRR using an objective function to maximize the total quantity of CRRs allocated; participants cannot value their request
  - This can result in perverse allocations where a lower "quality" CRR displaces a higher quality CRR
- SCE proposes a PJM approach that allows participants to value their requests (1 – 4)
  - This way, participants indicate the importance of the CRR request, rather than simply being victims of grid physics
- SCE proposes to improve on the PJM methodology by considering Priority, shift-factors and request size simultaneously
  - The ISO indicated their software cannot do this, but their software can perform the original PJM method

Appendix: Formulas

SCa	**100**	SCb	**120**
Effectiveness	**0.9**	Effectiveness	**0.8**
Total impact	=B1*B2+D1*D2		
Constraint	96		
Violation	**=B3-B4**		
Reduction on MW			
Cut a	=B8*B1*B2/(D1*D2)		
Cut b	=B5/((B1*B2*B2)/(D1*D2)+D2)		
SCa final	**=B1-B7**		
SCb Final	**=D1-B8**		
Final constraint flow	=B9*B2+B10*D2		

Copy the above formulas into Excel (cell A1) to replicate the results of slide 5 (The SCE proposed methodology)