**PRR 1181 – Master File Changes**

Submitted by Mark Smith, Calpine

Calpine acknowledges the need for the CAISO to have an understanding of the basis of changes to the Master File. We accept and appreciate the fact that the Master File should reasonably represent the physical capabilities of the resource. But we object to the specific changes proposed in this PRR as they create an ambiguous, potentially unachievable and unreasonable burden on both the CAISO and the resource owner.

Attached, for your consideration are two mark-ups to the CAISO’s proposed revisions. The first includes only comments to the CAISO draft. The second “accepts” all of the CAISO edits, then revises them consistent with the comments below.

But initially, we describe our objections.

First, the proposed edits require that changes to the Master File would *only be approved* if the request is based on changes to the “design capabilities” of the resource.

The explanation should include details about how the resource’s design capabilities have changed and how those changes in turn justify changes to the existing data element values

If this condition were rigorously enforced, virtually no modifications to Master Files would be allowed because once built, the “design capabilities” of a resource generally do not change. In our experience, most Master File changes are based on the evolving needs of the CAISO load shape – not changes to the “design capabilities”. Consider, for example a combined-cycle resource. These resources were “designed” to be intermediate generation resources, essentially running at baseload with minimal cycling and minimal ramping within configuration.

However, the development of zero-marginal-cost resources has caused CCGTs to operate very differently. A significant amount of operational experience and professional judgement has allowed them to be increasingly used as flexible peaking resources, cycling daily or more often and ramping rather dramatically within configurations. Calpine continues to gain knowledge of the flexibility of these resources – and the related cost consequences – when operating these complex machines in a manner very, very different that their design. The CAISO should not discourage this transformation by unreasonably restrictive requirements on Master File changes.

In this environment of responding to the changing load shape and learning, Calpine recommends that the CAISO allow “conditional” or “reversible” changes to the Master File. That is, once reasonably justified, a resource owner should be able to reverse a change to the Master File if unanticipated operational outcomes arise. Such reasoned and controlled operational experimentation could benefit both the owner and the CAISO.

This option would allow confidence that if an owner was to test the limits of operation, that such a change would not be “locked in” when proposed. Calpine is fearful that operational changes that increase operational flexibility would be enthusiastically accepted, but reversals would be denied – even in the face of deleterious outcomes.

Second, the proposed revisions would require that in addition to an explanation of the changes that the resource owner “must also include” supporting materials.

The request must also include appropriate supporting materials (test results, manufacturer recommendations, historical data, resource operating procedures, engineering studies, etc.) with citations to specific page numbers or section numbers to allow the ISO to validate that the new values reflect the design capabilities of the resource.

Calpine believes that the drafted requirement is overly broad and ambiguous. For example, if a resource owner wants to change a ramp rate by 1 MW / minute, exactly what information “must” be included? An operational adjustment such as this, while allowed within a reasonable range of ramp rates identified in original design, is certainly not specified in an operating or design manual. For many values there is not a unique, specific, objective, unquestionable value. Simply put, some degree of professional judgement must be allowed.

An analogy might illuminate this point. An automobile will generally have lower transmission gears in addition to the automatic “drive” position. The car certainly has a “design capability” of operating continuously in “low”. Doing so is likely not prohibited by the glovebox operating manual. However, driving continuously in “low” gear will negatively affect gas mileage, maintenance cost and possibly place the driver in an unsafe condition. So even while the car’s “design capability” would allow continuous operation in “low”, most drivers use better judgement.

Calpine can and will provide data when specifically sought and where available, but would prefer the CAISO to implement a three-step evaluation process.

* First, a change to a Master File would include an explanation of the change and how the change continues to reasonably reflect the physical capabilities of the resource. The resource owner can, if it deems helpful, provide supporting data.
* Upon review, if the CAISO requires more specific information, it could request such and deny approval of the changes until information is provided.
* Finally, if the CAISO continues to have concerns, there should be the opportunity to bring in a third-party technical review.

Nonetheless, there may be circumstances where the data referenced in the draft BPM is simply not available.

* In many cases, the characteristics included in a Master File may not be specifically identified in manufacturer specifications, recommendations or operating manuals. There may, and in many cases are not “page numbers or section numbers” to reference.
* Some generators are decades old, have idiosyncratic operation and OEM guidance is irrelevant, outdated or not useful to the operating profile demanded by current conditions.
* Even if OEM manuals are helpful, they may contain information that the OEM considers as intellectual property. Obtaining consents for release of such intellectual property are time-consuming, burdensome and costly.
* Finally, air and other permit restrictions can be drivers which limit operational characteristics in ways that may not be readily included in opportunity costs.

Thank you