From: Maria Rea - NOAA Federal <maria.rea@noaa.gov>

Sent:Monday, May 27, 2019 9:33 PMTo:Cathy Marcinkevage - NOAA FederalCc:Howard Brown; Garwin Yip; Barbara Byrne

Subject: Re: "More Water" in Shasta in PA

Thanks, Cathy. I think there are several lines of evidence that show that PA may not have more storage than current conditions. As we discussed today, I support drafting a separate administrative record memo and referring to it in the new Shasta analysis section.

- Maria

Maria Rea

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On Fri, May 24, 2019 at 10:55 AM Cathy Marcinkevage - NOAA Federal <<u>cathy.marcinkevage@noaa.gov</u>> wrote:

A11 --

I'm sensitive to Paul's line that "the PA has more storage" or "the PA has more water to work with". The following tables are from (or calculated from) data in Appendix D of the BA. It is for Shasta storage. Top table shows storages for different months for COS. Bottom table shows the *percent change* in that exceedance storage level given PA ops. You will see that for May, the percent change is actually negative except for very low storage levels. A few percent change compared to 3500+ TAF seems within error of the planning model.

Thanks - Cathy

Probability of Exceedance

| cos | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 10% | 3,218 | 3,252 | 3,335 | 3,621 | 3,875 | 4,229 | 4,552 | 4,552 | 4,500 | 4,011 |
| 20% | 3,036 | 2,926 | 3,309 | 3,539 | 3,744 | 4,127 | 4,544 | 4,552 | 4,402 | 3,789 |
| 30% | 2,903 | 2,807 | 3,266 | 3,397 | 3,649 | 4,046 | 4,475 | 4,552 | 4,288 | 3,622 |
| 40% | 2,771 | 2,709 | 3,027 | 3,318 | 3,529 | 3,980 | 4,389 | 4,486 | 4,101 | 3,466 |
| 50% | 2,677 | 2,579 | 2,793 | 3,247 | 3,477 | 3,875 | 4,265 | 4,347 | 3,909 | 3,380 |
| 60% | 2,547 | 2,500 | 2,656 | 3,032 | 3,358 | 3,724 | 4,144 | 4,225 | 3,800 | 3,149 |
| 70% | 2,294 | 2,305 | 2,426 | 2,836 | 3,252 | 3,513 | 3,971 | 3,960 | 3,450 | 2,883 |
| 80% | 2,033 | 2,102 | 2,233 | 2,544 | 2,948 | 3,348 | 3,619 | 3,344 | 2,986 | 2,509 |
| 90% | 1,553 | 1,409 | 1,720 | 2,061 | 2,314 | 2,593 | 2,749 | 2,579 | 2,276 | 1,947 |
| | | | | | | | | | | |

| % I | Difference |
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|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| (100*(PA-COS)) | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul |
| 10% | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 |
| 20% | 7 | 11 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| 30% | 11 | 16 | 1 | 4 | 2 | 1 | 0 | 0 | -1 | 0 |
| 40% | 8 | 15 | 8 | 3 | 4 | 1 | 1 | 0 | -1 | -1 |
| 50% | 3 | 12 | 16 | 3 | 3 | 2 | 1 | 0 | -1 | -3 |
| 60% | 4 | 9 | 17 | 7 | 4 | 4 | 1 | -2 | -4 | 0 |
| 70% | 10 | 14 | 15 | 5 | 1 | 4 | 3 | -1 | 1 | 1 |
| 80% | 11 | 8 | 8 | 7 | 6 | 2 | 6 | 9 | 6 | 9 |
| 90% | -1 | 2 | 5 | 3 | 13 | 4 | 0 | 14 | 12 | 10 |