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MEMORANDUM

TO: Fish Passage Advisory Committee

Michele DeHart

FROM: Michele DeHart, FPC

DATE: February 10, 2017

RE: Dworshak Operations FPAC Discussion

The purpose of this memorandum is to provide background and support for the FPAC discussion of Dworshak operations and the FPAC discussion of a potential request to the USACE to provide their data and analyses in advance of FPAC meetings. After reviewing the events that occurred earlier this week it may be prudent for FPAC to discuss and consider:

- An FPAC written correspondence to the COE asking that data and analyses be provided on Monday prior to FPAC and TMT meetings.
- Discuss within FPAC whether or not informal, discussions prior to FPAC and TMT might affect pre-TMT decisions on operations.

At last week's (2/8/2017) Technical Management Team meeting a decision was made by the COE and BPA to maintain operations from Dworshak Dam at the present outflow of near 8.3 Kcfs. This occurred after presentation of graphical data by the COE, and after the COE/BPA caucused to discuss the recommendation proposed by the FPAC member agencies and tribes. The FPAC recommendation was to maintain the Dworshak Reservoir at its current elevation of 1518 feet until the next scheduled TMT (2/15/17).

The FPAC recommendation was developed after reviewing the runoff volume forecast and analyses provided by the Fish Passage Center staff. The COE's final runoff volume forecast for February was 2.54 MAF, which was significantly less than the January forecast of over 3 MAF, and less than what the COE predicted for a mid-month volume. This new runoff volume forecast, and the FPC's modeling of an analog water year, suggested that it is likely that the constrained operation of Dworshak Dam, due to the Unit 3 outage and inability to complete the contracted repairs in the projected timeframe, should not cause TDG levels to exceed the 110% subsequent to the mid-April time frame that had been modeled by the COE. This recommendation aimed to provide both some early season flow augmentation for juvenile spring summer Chinook and steelhead, as well as limit TDG to 110% to protect emerging fall Chinook and other juvenile hatchery releases.

During the TMT meeting the COE provided analyses that were only available through their web presentation. Consequently, FPAC did not have time to review what had been done. Subsequent to the meeting several of the fishery managers spent some time reviewing the analyses and posed questions to the FPC.

The FPC undertook a review of the information after the TMT meeting when the analyses were available from the COE's TMT website, after the Dworshak reservoir operation decision. Upon review, the FPC identified some potential mistakes in the analyses presented that affected the COE's conclusions regarding the likelihood of exceeding 110%. There are significant differences in the inflows to DWR that the COE used from April-June/July and those that the FPC used. In plot #1, the COE used the 1997 inflows, which represented a 4,684 Kaf runoff volume April through July, while the FPC used 2009 inflows which was a 2,531 Kaf runoff volume year. The FPC chose a year very close to the current COE and RFC forecasts. The April-July runoff in 1997 was the second highest in an 88 year record. It is unclear why the COE used 1997 inflows which represent a very large runoff volume (4,684 Kaf), which is outside the 10% exceedance of the current RFC forecast (approx. 3,329 Kaf) and also above the 5% upper bound of the COE February forecast (approx. 3,300 Kaf). It is highly unlikely that 2017 could develop into an April-July runoff volume of 4,684 Kaf given that the current forecast is for 2,540 Kaf.

In plot #2, the COE used the year 1972 for inflows to Dworshak from Apr-July. Similar to 1997, this is a very high Apr-July runoff year, actually similar to 1997 for the second highest of the 88 year record, with a April-July runoff volume of 4,684 Kaf. In both 1997 and 1972, inflows to Dworshak were as high as 50 Kcfs. During the meeting the COE said that 1972 represented a very similar situation to what they were predicting for 2017. However, it must be noted that in water years such as 1997 and 1972, the flood control rule curve in plots 1 and 2 would have been at least 50 feet lower by mid-April (likely to the bottom of the active storage 1,445 ft.), and would have allowed the project to put the high April-July inflows into refilling the project as opposed to releasing outflows of 20 Kcfs during the refill period, as seen in plots 1 and 2.

In plot #3, the COE used 2015 Apr-July inflows, which were the lowest on record (1,081 Kaf), ranked 88th of 88 years. The y-axis scale of this graph for flow is much different than the first two, ranging from 0 to 30 Kcfs rather than 0 to 60 Kcfs in the previous graphs. This made visual interpretation more difficult, which unfortunately was exacerbated by the web presentation where the axes were difficult to read.

Unfortunately, a decision was made by the federal parties partly on the basis of what had been distributed at the last minute during the TMT meeting. They recommended continuing the present operations, rather than to try and maintain a specific reservoir elevation. The COE and BPA cited concerns regarding the potential to exceed the 110% TDG based on the COE analyses.

We understand that these analyses are conducted within short time frames and agencies often have limited personnel available to conduct such analyses and that mistakes can be made. FPAC meets every Tuesday morning to discuss the available information and to develop as common a recommendation as possible amongst the fishery agencies. However, to avoid these situations from occurring during meetings where decisions are reached, it would advantageous to have the COE analyses by COB Monday, so FPAC can consider these analyses during their discussions on Tuesday.