

Development of Inflow Hydrology For Hells Canyon Complex Studies (E.1-4, Chapter 2) (Appendix A-B)

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I. Introduction

The Weiser gauge was selected by the applicant to provide inflow measurements for the HCC. The Weiser gauge has been in operation since 1910 and is located in a position to monitor the inflow to the Hells Canyon Complex. Normalized hydrographs using historic daily flow data for the period of record at Weiser were prepared. The flow at Weiser is being used for the upstream flows into the study reach for the HCC.

II. Conclusions

1. "The gauge frequently recorded an annual flow in the range of 10 to 15 million acre-feet (maf). The minimum and maximum total annual flows for the 5 recent years selected by IPC to represent the range of flows (1992, 1994, 1995, 1997, and 1999) were approximately 6.1 (1992) and 23.2 maf (1997), respectively. (Page 32, Paragraph 1)

Despite significant development of water resources in the basin, no significant long-term trend is readily apparent. But, the greatest range of extremes in terms of high and low flow has been concentrated in the time period since about 1970. However, the highest peak flow occurred in 1910, the first year of the historic record. (Page 32, Paragraph 1)

Dry periods lasting several years occurred during the 1930s and the late 1980s and early 1990s but no discernable pattern was detected. In the case of the current study on the Snake River, data do not show significant trends or shifts. (Page 33, Paragraph 1)

The average peak flow at Weiser is 46,653 cfs and the standard deviation is 18,227 cfs. The historic hydrograph shows a frequent occurrence of multiple peak flows each year. There tends to be four or more peaks per year which may be related to storm events or to peaks from the various upstream watersheds occurring at different time, through the runoff season. (Page 34, Paragraph 2)

[The rate of recession of the hydrograph is a key factor]. Average rates of flow recession affect survival of vegetation. The average rates for flow recession at the Weiser gauge ranged from 130 to over 3000 cfs per day. For the Snake River at Hells Canyon gauge,

average flow recession ranged from 110 to over 250 cfs per day.” (Page 36, Paragraph 2)

Response: Appendix A-B is a statement of facts. The BLM accepts these facts and accepts the normalization of the hydrograph as presented.

The rate of recession should be presented in terms of Snake River stage height recession per hour. This would provide a better idea of the relationship between normal recession rates for the river and the recession rates caused by hydropower ramping below Hells Canyon Dam.

III. Study Adequacy

The BLM finds the study to be inadequate. The rate of recession should be presented in terms of Snake River stage height recession per hour.

IV. BLM Conclusions and Recommendations

Conclusions

The study provides a basic set of facts for use in developing the inflow model derived from IDWR gage data at Weiser, Idaho.

Recommendations

The Applicant should present recession rates in inches per hour. This would be a meaningful value that could be used when addressing ramping rates.