

Ex Post Power Economic Analysis of Record of Decision Operational Restrictions at Glen Canyon Dam

by

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ABSTRACT

On October 9, 1996, Bruce Babbitt, then-Secretary of the U.S. Department of the Interior signed the Record of Decision (ROD) on operating criteria for the Glen Canyon Dam (GCD). Criteria selected were based on the Modified Low Fluctuating Flow (MLFF) Alternative as described in the *Operation of Glen Canyon Dam, Colorado River Storage Project, Arizona, Final Environmental Impact Statement (EIS)* (Reclamation 1995). These restrictions reduced the operating flexibility of the hydroelectric power plant and therefore its economic value. The EIS provided impact information to support the ROD, including an analysis of operating criteria alternatives on power system economics. This ex post study reevaluates ROD power economic impacts and compares these results to the economic analysis performed prior (ex ante) to the ROD for the MLFF Alternative. On the basis of the methodology used in the ex ante analysis, anticipated annual economic impacts of the ROD were estimated to range from approximately \$15.1 million to \$44.2 million in terms of 1991 dollars (\$1991). This ex post analysis incorporates historical events that took place between 1997 and 2005, including the evolution of power markets in the Western Electricity Coordinating Council as reflected in market prices for capacity and energy. Prompted by ROD operational restrictions, this analysis also incorporates a decision made by the Western Area Power Administration to modify commitments that it made to its customers. Simulated operations of GCD were based on the premise that hourly production patterns would maximize the economic value of the hydropower resource. On the basis of this assumption, it was estimated that economic impacts were on average \$26.3 million in \$1991, or \$39 million in \$2009.

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