CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

Chapter 3 presents the analysis conducted and identifies potential effects that could occur as a result of implementation of the interim surplus criteria alternatives under consideration. Section 3.1 describes the: 1) structure of the resource sections in this chapter; 2) role of modeling in the analysis; 3) baseline used for measuring potential effects of the alternatives; 4) general approach used for determining potential effects; and 5) period of analysis.

Section 3.2 presents a general discussion of the geographic area within which potential effects of the interim surplus criteria were analyzed, and Section 3.3 describes the modeling methods and general results of Colorado River system modeling. The remaining sections of Chapter 3 present resource-specific analyses of potential effects using information obtained from the modeling.

3.1.1 STRUCTURE OF RESOURCE SECTIONS

Beginning with Section 3.4, the sections in this chapter each present a general resource category, such as water supply, recreation and aquatic resources. Within each resource category is contained analyses of one or more specific issues identified for consideration, through scoping and internal review. A discussion of the methodology, affected environment and environmental consequences is provided for each issue.

Methodology discussions identify the specific methods used for determining the affected environment and potential environmental consequences of the alternatives. The affected environment discussions then identify the specific context within which the issue being analyzed exists. This includes a discussion of general environmental characteristics associated with each issue, as well as important Colorado River system conditions that may be associated with each issue. Finally, the potential effects of interim surplus criteria compared to baseline conditions (as discussed in more detail below) are presented in the environmental consequences discussion.

3.1.2 USE OF MODELING TO IDENTIFY POTENTIAL FUTURE COLORADO RIVER SYSTEM CONDITIONS

To determine the potential effects of the interim surplus criteria, modeling of the Colorado River system was conducted. (A complete description of the modeling procedure is included in Section 3.3.) Modeling provides projections of potential future Colorado River system conditions (e.g., reservoir surface elevations, river flows, salinity, etc.). The modeling results allow a comparison of potential future

conditions under the various interim surplus criteria and baseline conditions. As such, much of the analyses contained within this DEIS are based upon potential effects of changed flows and water levels within the Colorado River and mainstream reservoirs.

3.1.3 BASELINE CONDITIONS

As discussed in Chapter 2, the No Action Alternative does not provide consistent specific criteria for determining surplus conditions. As such, it is not feasible to model a reasonably certain No Action Alternative. However, in order to provide a projection of potential future system conditions without interim surplus criteria, a reasonable baseline surplus strategy (75R) was developed. This baseline creates a definable surplus criteria based on recent operational decisions. The baseline criteria were then modeled and used for comparison of the alternatives.

3.1.4 IMPACT DETERMINATION

The analysis of potential effects for each issue considered is based primarily upon the results of modeling. Following the identification of conditions important to each issue, the potential effects of various system conditions over the general range of their possible occurrence (as identified by the range of modeling output for various parameters) were identified for each issue. The potential effects of the various interim surplus criteria alternatives are then presented in terms of the incremental differences in probabilities (or projected circumstances associated with a given probability) between baseline conditions and the alternatives.

3.1.5 PERIOD OF ANALYSIS

This DEIS addresses interim surplus criteria that would be in place for a period of 15 years through 2015. Due to the potential for residual effects, the modeling and the impact analysis is extended for an additional 35 years, ending in 2050. It is important to note that modeling output and associated impact analyses become more uncertain over time as a result of increased uncertainty of future system conditions, as well as uncertainty with regard to future operational decisions that will affect circumstances within the Colorado River system.