

APPENDIX 3-2

INDIAN ORCHARD PROJECT

Mode of Operation

The Indian Orchard Project is operated in a limited pond-and-release mode, utilizing the storage capacity (35 acre-feet) afforded by a 0.5 foot drawdown year round.¹³ The station is operated automatically by float controls. The operating mode of the Indian Orchard project does not change during dry, mean or high water years. As flows vary at the Project, the number of turbines operating and the duration of operation changes, increasing and decreasing the amount of generation realized.

The exemption required a continuous minimum flow release of 247 cfs, or inflow if less, at the project dam to the bypass reach. The exemption also limits pond drawdowns to six inches below the top of the flashboards from April to June and one foot for the remainder of the year.

The amount of minimum flow and drawdown from the top of the flashboards at Indian Orchard Project have been impacted by changes made to operations at the Putts Bridge Project. During a June 22, 1999 meeting, FWS requested evidence that operation of the Putts Bridge Project does not impact the minimum flow release at the downstream Indian Orchard Project. In response to FWS concerns, CEEI filed on December 6, 1999, calculation tables on pond fluctuations permitted by the exemptions. Based on the results, it appears that the pond level control at the Indian Orchard Project should be set at 6 inches during the spring period. This measure would provide sufficient storage to permit the continuous discharge of the minimum flow at the Indian Orchard Project. Therefore, CEEI indicated in a December 6, 1999 letter, that it plans to operate the upgraded units within the head pond restrictions such that the total outflow from the Putts Bridge Project (i.e., the turbine discharge plus the 25 cfs minimum flow) is adequate to maintain the 247 cfs minimum flow requirement at the Indian Orchard Project.

On January 27, 2000, FWS requested evidence that the reduced flow to the bypass reach at Putts Bridge would not also create unacceptable water quality at Putts Bridge. To that end, FWS required that a water quality study be performed in order to verify that a flow of 25 cfs will protect water quality in the bypass reach. FWS also conditioned its approval on the study taking place during the summer. On June 7, 2000, after incorporating comments from FWS, MDFW and MDEP, CEEI released its Putts Bridge Bypass Water Quality Study Plan. Over a sixty-day period (between July 7 and September 6, 2000), the water was sampled at three points downstream of the dam. Data collected during the water quality monitoring plan indicated that D.O. concentrations and water temperatures in the Putts Bridge bypass reach exceeded MDEP Class B water quality standards.¹⁴ As such, it was concluded that the minimum flows at Putts

¹³ Although the Project has a one-foot drawdown for the non-spring periods of the year, the Project operates year-round with a six-inch drawdown.

¹⁴ According to the MDEP, the Chicopee River is classified as class B water and is listed as a warm water fishery. This classification requires that dissolved oxygen levels shall not be less than 5.0 mg/L and that levels of dissolved

Bridge, as released by the electronically operated skimmer gate at the dam, are sufficient for maintaining adequate water quality in the Putts Bridge bypass reach. In addition, since then CEEI operates the Indian Orchard Project with a year round drawdown of 6 inches from the top of the flashboards and with a minimum flow of 247 cfs or inflow, if less.

oxygen shall not be lower than 60 percent in warm water fisheries. Water temperature shall also not exceed 28.3°C in warm water fisheries.