Emergency Response: Siphon Bypass Provides Reservoir Relief During Record Setting Snowmelt

PROJECT SCOPE

Amid record setting snowmelt, large siphon bypass system required to help utility company mitigate operational challenges with their existing aqueduct system.

INDUSTRY SEGMENT

Municipal / Emergency Response

EQUIPMENT

- 4,800 LF - 30" HDPE for 14 siphon lines
- Valves and misc. fittings
- 1 - 6" DV150B SD FT4 Pump

BACKGROUND

Inyo County, CA - Due to high levels of snow from rain events during the first half of 2023, record setting levels of snowfall accumulated in the mountain ranges of California. As the heat of summer came on, the resulting snowmelt began flowing down into catch reservoirs.

Within the Tinemaha Reservoir where water levels were already very high, the arrival of record setting snowmelt presented potential containment issues. The utility company managing the site required a discharge option that would not include releasing excess water onto their earthen spillway as that would create a sharp increase in downstream turbidity which would then be passed on to their main filter plant.

OUTCOME & HIGHLIGHTS

The utility company selected Rain for Rent to design a temporary bypass solution that would provide a clean way to supplement the capacity of their existing outlet structure and mitigate operational challenges with their existing aqueduct system.

Given that an emergency response solution was in order and many of the local Rain for Rent branches' large pumps were already in use combating flooded sites in California, Rain for Rent's Bakersfield branch prepared a siphon bypass system utilizing 14 30-inch HDPE lines to divert water from the reservoir into a nearby river, protecting the integrity of the spillway and creating space within the reservoir for the incoming snowmelt. The overall flow averaged 1,600 CFS; 700 CFS was handled by the temporary siphon system and the remainder was handled by the existing dam outlet structure.

The siphon system was installed within two weeks and successfully operated as designed without incident.