

WATER VALVE SAFETY

STATUS OF AIR VACUUM AIR RELEASE VALVES ON THE SOUTH COAST CONDUIT

INTRODUCTION

The 2015-2016 Santa Barbara County Grand Jury (Jury) has completed an investigation of the United States Bureau of Reclamation's (USBR) water delivery system from Lake Cachuma through the Tecolote Tunnel into the South Coast Conduit (SCC) which delivers approximately 85 percent of the water to the South Coast. This 26 mile water delivery conduit has 26 air vacuum valves located between the intake valve at the Cater Water Treatment Plant and the Carpinteria Reservoir. The USBR owns the SCC which is contracted to be operated and maintained by the Cachuma Operations and Maintenance Board (COMB), a California Joint Powers Agency formed in 1956 pursuant to an agreement with the USBR. COMB is responsible for the distribution of water to the communities of the South Coast of Santa Barbara County through the Tecolote Tunnel and operation and maintenance of the SCC pipeline. COMB also operates and maintains the flow control valves, meters, and instrumentation¹.

BACKGROUND

Air vacuum air release (AVAR) and combination valves maintain the flow of water forward in the conduit. When AVAR valves are below the surface, existing pressure in the conduit prevents untreated water from entering the line. The USBR inspected the SCC in 2012 and found all 26 AVAR valves to be deficient and in need of replacement. The USBR issued a demand for a Corrective Action Plan (CAP) to COMB which required that repairs be completed. The USBR recommended repairs be completed in low water demand months to minimize the impact on users in case of a shut-down.

METHODOLOGY

The Jury interviewed area water department officials and staff, as well as certified drinking water quality specialists, and engineers. The Jury visited the Cater Water Treatment Plant and viewed satellite and street view images of the locations of the six air valve vaults that have not yet been repaired.

¹ <http://www.cachuma-board.org/aboutus/history.htm>

OBSERVATIONS

The Jury found 20 of the 26 AVARs were replaced as recommended. The remaining AVARs, located in Montecito and Carpinteria, are on the project work agenda. The project is presently ahead of schedule with the last phase scheduled for completion in 2017-2018. The last six valves are in especially difficult areas to reach. Some are in vaults below ground and some are buried in the middle of Highway 192. The municipal water districts test the water quality weekly at many points along the conduit and at its end point in Carpinteria Reservoir. No contamination has been found. Replacement of the six remaining valves will require a section of the conduit to be shut down and the water drained. This will require coordination with CalTrans as the roadway may be closed for an unknown amount of time while the valves are moved and repairs made.

The Jury was informed that although the last six valve replacements are not scheduled to be completed until 2017-2018, work has not started for several reasons. The process of saving and diverting the water drained from the conduit requires substantial planning and agency cooperation. Drought conditions have added to the challenges of replacing the valves because current low groundwater levels may not be sufficient to meet customer needs during the shutdown. If the repairs are done before the drought ends, the work may result in water customers beyond the repair areas to be without water service while the conduit is shut down. Lastly, draining the conduit could result in extra concern for firefighters in obtaining the necessary water in the event of a fire.

CONCLUSION

The 2015-2016 Santa Barbara County Grand Jury found that 20 of the recommended 26 air vacuum air release valves on the South Coast Conduit have been replaced as recommended and ahead of schedule. Six of these air vacuum air release valves have not been replaced, but are on the project work agenda to be completed by 2017-2018. Although the project is currently ahead of schedule, the challenging valve locations as well as the current drought conditions make it an inopportune time to replace these valves. All the water quality specialists, engineers, and officers interviewed unanimously agreed there is no current threat of contamination because the constant high water pressure within the conduit prevents infiltrates from entering the conduit. All the experts agreed there will be contamination only if a breach of the conduit occurs due to an earthquake or other catastrophic event.

Under *California Penal Code Section 933.05* this report does not require a response.