



EPM was able to plug the Ancillary Diversion Gallery (ADG), where the contingency at Hidroituango originated

- This is a milestone for the stability of the work and mitigation of the risks to communities downstream from the future power generation plant
- After the contingency began in 2018, the ADG was naturally plugged upstream from the auxiliary floodgates
- The ADG was definitively shut down with 23-meter long and 14-meter-tall concrete plugs

Hidroituango work site, Ituango, Antioquia, Wednesday, May 4, 2022 | EPM achieved one of the most significant technical milestones at Hidroituango: definitively plugging the Ancillary Diversion Gallery (ADG), where the contingency began on April 28, 2018.

“We were able to shut down the ADG with high-level engineering work. “In this way, we have been able to mitigate a risk to the communities downstream from the reservoir and taken a new step towards our goal of generating power with the first two units in the second semester of 2022,” stated Jorge Andrés Carrillo Cardoso, CEO of EPM.

On his part, William Giraldo Jiménez, EPM’s Vice President of Power Generation Projects, indicated that, “plugging this tunnel gives us peace of mind. This is the structure that collapsed and caused the contingency downstream from the dam. Definitively shutting it down is great news for the communities and the stability of Hidroituango.”

The Works

Shutting down the ADG was not an easy task, since it was naturally plugged, and there was a risk of it unplugging naturally at any point. The 300 ton



floodgates were lowered for each branch in 2019, which allowed for a previous plug. Despite this barrier, at least 8 m³ of water continued flowing through a direct discharge system installed on the top of the floodgates every second. This was a considerable amount, which made it impossible for machinery and personnel to safely access the site.

A bypass maneuver was carried out to solve the situation. It consisted of installing a piping system that allowed diverting the water entering through the ADG to the intermediate discharge and, from there, to the spillway's bowl, to rejoin the normal watercourse of the Cauca River downstream.

At the beginning of 2022, since this part of the ADG was dry, they were able to access the auxiliary floodgates (right and left) to build two concrete plugs 23 meters long and 14 meters high. This work took four months due to its environmental management, precision, and weather conditions, in order for the concrete to set well. Throughout this time, it required the effort and dedication of approximately 600 workers, among EPM employees and contractors.

What is the ADG and why was it built?

The ADG was built to divert the Cauca River during the technical and definitive plugging of the two original diversion tunnels. These two tunnels achieved their purpose for close to four years: from February 2014, when the Cauca River was diverted, until the end of 2017 and beginning of 2018, when work was begun for their definitive plugging. The river was diverted through the ADG at that moment.

The ADG began construction in October 2015 and was commissioned in September 2017. At that time, it operated in parallel with the right diversion tunnel. This allowed for the technical and definitive plugging of the left diversion tunnel. In March 2018, when the pre-plugging process began for the right tunnel, the Cauca River's water continued flowing only through the Ancillary Diversion Gallery (ADG).



This auxiliary tunnel was therefore designed and built for temporary use. It was only foreseen to be operated from September 2017 to July 2018, when the reservoir was set to be filled. As of then, it would be shut down definitively. Its operation was interrupted as of April 28, 2018, when it was naturally obstructed and cleared several times, which caused sudden swells downstream and the destruction of floodgates that had already been installed at that point.

The ADG was the tunnel that originated the contingency - a work front that generated high risk considering natural unplugging. Definitively shutting it down while the reservoir exists was a significant challenge to EPM. It greatly reduces risks to the communities downstream and is very positive news for Hidroituango's technical progress and the commissioning of its first two power generation units this year.