On January 13, 2010, at 10:30 p.m., the Governor of Texas, Rick Perry, authorized TX-TF1 to deploy at the request of FEMA to support search and rescue operations in the Caribbean nation of Haiti. Additionally, FEMA also deployed the FEMA US&R IST and the FEMA US&R IST Cache based out of College Station, and requested that TX-TF1 personnel assist with staffing. As a result, the task force began to make immediate preparations for the deployment of equipment and personnel aboard Department of Defense aircraft for the morning of January 14. Task force personnel were assembled at their headquarters in College Station at 6:00 a.m. and all equipment and personnel departed for Ellington Field in Houston at 9:00 a.m. The task force arrived at Ellington Field by 12:00 p.m. ready to deploy directly to Port-au-Prince aboard Department of Defense aircraft. TX-TF1 planned to join other task forces that were already activated from Virginia, California, and Florida.

On January 15, a TX-TF1 IST Structures Specialist flew to Homestead Air Force Base in Florida and joined the remainder of the Red IST. While staged, the Red IST gathered intel and identified planning assumptions based on the information acquired from teams already deployed to Haiti.

TX-TF1 and the Red IST remained on standby until the morning of January 18, when TX-TF1, the Red IST, and all other U.S. teams that were on standby were demobilized by FEMA. FEMA had been notified by the United Nations mission in Haiti that the 28 search and rescue teams in the country were sufficient. The task force returned to College Station, where it re-established the equipment cache to be ready for deployment within 4 hours. This was the first activation for an international deployment since the team was established in 1997.