



FACT SHEET

AIR FORCE TECHNICAL APPLICATIONS CENTER

Mission

The Air Force Technical Applications Center provides national authorities quality technical measurements to monitor nuclear treaty compliance and develops advanced proliferation monitoring technologies to preserve our nation's security. It is the sole organization in the federal government whose mission is to detect and report technical data from foreign nuclear explosions.

Consisting of more than 3,600 sensors worldwide, AFTAC operates and maintains a global network of nuclear event detection equipment called the U.S. Atomic Energy Detection Systems (USAEDS), the largest sensor network in the U.S. Air Force. Once a disturbance is detected underground, underwater, in the atmosphere or in space, the event is analyzed for nuclear identification, and the findings are reported to national command authorities.



AFTAC's nuclear event detection mission is directly linked to its nuclear treaty monitoring mission. AFTAC monitors signatory countries' compliance with the 1963 Limited Test Ban Treaty. This treaty prohibits nuclear testing anywhere but underground and prohibits the venting of nuclear debris or radiation from those tests into the atmosphere outside the country's national borders. AFTAC also monitors the Threshold Test Ban Treaty of 1974 and the Peaceful Nuclear Explosion Treaty of 1976. The 1974 treaty limits the size of underground nuclear tests to 150 kilotons, while the 1976 treaty prohibits the testing of nuclear devices outside of agreed treaty sites.

AFTAC is on the leading edge of technological research and the evaluation of verification technologies for current and future treaties involving weapons of mass destruction which threaten our national security. In 2014, AFTAC supplemented its extensive network of contracted laboratories by opening its state-of-the-art Ciambone Radiochemistry Lab to analyze and assess compliance with nuclear weapons testing in support of USAEDS and AFTAC's Nuclear Debris Collection and Analysis Program. The 38,000 square foot lab filled a void created when the center's central laboratory at McClellan AFB, Calif. closed after the 1995 Base Realignment and Closure actions.

People

AFTAC employs more than 1,000 personnel and boasts a highly educated force possessing 193 associate degrees, 176 bachelor's degrees, 261 master's degrees and 67 doctorate degrees.

Organization

AFTAC is a surveillance organization subordinate to 25th Air Force, an Air Combat Command Numbered Air Force, located at Lackland AFB, Texas. AFTAC is located at Patrick AFB on Florida's east coast, less than 30 miles south of the Kennedy Space Center. AFTAC includes nine detachments, four operating locations and more than 60 unmanned equipment locations around the world supporting AFTAC's long range nuclear detection mission. In addition, AFTAC manages 11 world-class laboratories to assist the International Atomic Energy Agency with the promotion of safe, secure and peaceful use of nuclear technologies. In 2015, AFTAC became a wing equivalent within the Air Force, and in April 2018, AFTAC added two new groups and nine new squadrons after its organizational change request became a reality. The new structure establishes clear responsibilities with common skills that allow commanders to develop the workforce more effectively.

History

Soon after the end of World War II, Gen. Dwight D. Eisenhower recognized the need to monitor nuclear testing programs. In 1947 he directed the Army Air Forces to develop technologies capable of detecting

“atomic explosions anywhere in the world.” In 1949, a particulate sampler aboard an Air Weather Service modified B-29 flying between Alaska and Japan detected debris from the first Russian atomic test – an event experts predicted could not happen until the mid-1950s.

As the Air Force activated AFTAC in 1959 to prepare to monitor compliance with the Limited Test Ban Treaty, AFTAC assumed some responsibilities for the USAEDS and the advancement of Long Range Detection capabilities. Over time, AFTAC’s various programs evolved into a unique resource system monitoring compliance with nuclear treaties; supporting our nation’s space program; and helping to protect citizens during emergencies involving nuclear materials.

Over the years, the Air Force tasked the nuclear treaty monitoring center to conduct short-notice collection operations. In April 1986, AFTAC responded to the Ukrainian nuclear accident at the Chernobyl Nuclear Power Plant in the former Soviet Union. In total, AFTAC flew 55 sorties compiling 502 flying hours, and AFTAC’s McClellan Central Laboratory processed 354 samples and logged more than 2,500 manhours.

In October 2006, AFTAC detected an event associated with North Korea’s claim of a nuclear test and later provided verification of the nuclear event to national authorities.

More recently, the center supported Operation Tomodachi, the U.S. government’s response to the 9.0 earthquake and subsequent tsunami that hit Japan. The Fukushima Daiichi Nuclear Power Plant experienced a nuclear meltdown in three of the plant’s six nuclear reactors. AFTAC personnel flew nine nuclear debris collection sorties, processing 342 seismic events, and analyzed 660 samples from the affected Pacific peninsula.

In the summer of 2015, AFTAC led the removal of 10 Radioactive Thermoelectric Generators, or RTGs, from Alaska, which were no longer required to power AFTAC’s seismic array. This power source was the Air Force’s largest source of sensitive radioactive material. This endeavor safely and successfully removed nuclear radiation from the environment and eliminated a potential source of material for use by terrorists in improvised radiological explosive devices or dirty bombs.

In December 2015, the IAEA released its final assessment on “Past and Present Outstanding Issues” regarding Iran’s nuclear program. AFTAC provided trace forensic analysis of samples supporting the IAEA’s mission to monitor Iranian compliance with the Joint Comprehensive Plan of Action. As a major component of the IAEA’s network of analytical labs, AFTAC’s analysis was foundational to the report.

In January and September 2016, AFTAC sensors detected underground disturbances in the vicinity of North Korea’s reported nuclear tests. The center’s findings were based on seismic activity, which was quickly analyzed, packaged and elevated to national decision makers.

As Hurricane Irma barreled up the Florida peninsula in September 2017, members of the nuclear treaty monitoring center were analyzing and reporting their findings on North Korea’s purported nuclear test that registered a 6.3 on the Richter scale – 10 times more powerful than N. Korea’s detonation in 2016.

AFTAC is also on the forefront of protecting the homeland as it establishes an array of sensors across the United States as part of the National Technical Nuclear Forensics program. This program is designed to collect forensic analysis after detonations to aid the Federal Bureau of Investigation in attributing attacks on U.S. soil to foreign governments or terrorist entities to swiftly bring those responsible to justice. AFTAC’s efforts are making the Department of Defense’s vision to protect U.S. personnel and interests from the threat of a domestic nuclear detonation a reality.

Today, AFTAC continues to improve the USAEDS. As the nation’s caretaker of USAEDS, AFTAC works closely with the Comprehensive Test Ban Treaty Organization in Vienna, Austria. Together, both parties are significantly improving the International Monitoring System. In fact, AFTAC now contributes six of its U.S.-based USAEDS seismic monitoring stations to the IMS.

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