

FAQ: What is the USPS® Biohazard Detection System?

The United States Postal Service® is committed to keeping its employees and customers safe. To help counter the threat of anthrax in the mail, the Postal Service™ has developed a Biohazard Detection System (BDS) that will detect anthrax in the mail. The system is designed for the highest possible level of detection.

Within days of discovering that anthrax had been found in the mail system, the Postal Service commissioned the first ever, rapid test for biohazards in the mail system. Extensive research and testing resulted in a combination of the latest technologies.

The BDS - Biohazard Detection System - employs proven technology and was designed exclusively for the Postal Service.

- The BDS uses sophisticated DNA matching to detect the presence of anthrax (*Bacillus anthracis*) in the mail.
 - It continuously collects air samples from mail canceling equipment while it is operating.
- Northrop Grumman, Smiths Detection of Edgewood, MD, and other team members designed the BDS system that has been in operation in the Baltimore processing and distribution center since June of 2002. The other team members are Cepheid Inc. of Sunnyvale, CA, and MRI - Midwest Research Inc. / Sceptor Industries of Kansas City, MO.
- In December 2002, the Postal Service awarded Northrop Grumman and the other team members a pre-production contract to expand and continue testing the system.
 - A contract for the initial purchase of 742 units was awarded in May of 2003.
 - The annual expenses associated with the devices were between \$75 million to \$100 million.
 - Installation was finished in 2006.

Since the deployment of the BDS at all 321* Postal plants in the nation, there have been no positive alerts for anthrax. (*current number)

How Does the Biohazard Detection System Function?

The Biohazard Detection System (BDS) equipment collects samples of air as the mail moves through a canceling machine.

1. The BDS absorbs the airborne particles into a sterile water base. This creates a liquid sample that can be tested.
2. The liquid sample is injected into a cartridge, and the automated test for a DNA match is performed.

Note: All the BDS processes are automated.

The BDS unit consists of an air-collection hood, a cabinet where the collection and analysis devices are housed, a local computer network connection, and a site controller – a networked computer.

• Why is the BDS Needed?

- o The BDS will enable early identification of anthrax providing for a rapid response.
- o BDS helps us maintain our commitment to keep employees and customers safe.

• What is the Science Behind the Biohazard Detection System?

The core of the system is polymerase chain reaction (PCR). It is a process that essentially “photocopies” the genes of a sample and compares the sample to a template for the anthrax DNA sequence to see if there is a match.

• When is a BDS Test Complete?

- o After approximately 90 minutes – one hour for the air collection process and 30 minutes to test the air sample.
- o Since air sample collections are continuous, test results will be known every hour after the initial test.

• How Many Air Samples Are Taken During the Day?

Continuous air collection will take place while the mail canceling operation is underway. There are no gaps.

- How Do You Find Out if There is a Positive Match?
 - o If there is a DNA match, the BDS computer network conveys that information to the site controller computer.
 - o The red stack-light and horn at the BDS cabinet alerts personnel of a positive result.
- Can the BDS Equipment Test for Other Biohazards?
 - o For purposes of nationwide deployment, the system is fully capable of testing for anthrax.
 - o The system is “expandable,” so – in the future – it could be adapted to test for other biological threats.

What is the Biohazard System’s Impact on Mail Processing?

- The Biohazard Detection System (BDS) does not slow down mail processing equipment.
- If the BDS tests positive for anthrax, mail will be retained at the impacted facility until it is safe for delivery.
- If operations are suspended at a facility, new mail will be diverted to other mail processing facilities and delivery operations will proceed from there.

What is the Procedure if a Biohazard is Detected?

- What Happens When the Alarm Goes Off?
 1. If test results indicate the presence of a biohazard, the Biohazard Detection System (BDS) alerts designated site personnel through automated procedures and the red stack-light and horn at the BDS cabinet will sound.
 2. Designated site personnel will then activate the emergency action plan.
 3. Employees and customers will be evacuated from the building.
 - Once the Postal Employees are Outside the Building, What Will Be Done for Their Safety?
 1. Supervisors will call the roll and make sure everyone in the building has been evacuated.
 2. They will explain the nature of the incident, and everyone will wait for direction from community emergency response personnel.
 - Will Medication Be Offered?

Local public health officials will determine the need for medication based on results of additional tests of the positive BDS sample by the designated local public health lab.
 - When Will an Outside Lab Result be Available?
 - o Results of the initial test, verifying the positive sample, will be available approximately eight hours after the BDS alert.
 - o Results of the second test, a plate culture test, will be available usually within 24 to 48 hours after the BDS alert.
- Note: The Department of Homeland Security will also be notified of a positive test result.