

WIPP RADIATION RELEASE
March 5, 2014

SRIC has carefully followed information about the radiation release from the Waste Isolation Pilot Plant (WIPP) that was first identified at approximately 11:30 pm on Friday, February 14, 2014. The release triggered the HEPA filtration system so that the ventilated air would be filtered before it was released into the environment through the exhaust shaft. We have been actively asking questions and gathering additional information about the contamination event, and have responded to numerous requests for information from the public and media.

The Department of Energy (DOE) WIPP website has a special section on the release and recovery. (<http://www.wipp.energy.gov/special.htm>).

What we know with some confidence

1. Apparently, one or more of the 258 contact-handled waste containers underground in Room 7 and Panel 7 (<http://www.wipp.energy.gov/general/GenerateWippStatusReport.pdf>) released radioactive and toxic chemicals. The presumed location of the release is about 1,500 feet from the continuous air monitor that triggered the filtration system. The release spread contaminants through more than 3,000 feet of tunnels, up the exhaust shaft (2,150 feet), into the environment, and to the air monitoring Station #107, approximately 3,000 feet northwest of the exhaust shaft. Thus, the release covered a distance of at least a mile and a half from the area of release to the Station #107.
2. The Station #107 filter was removed on Sunday morning, February 16 at approximately 9:40 am. The Carlsbad Environmental Monitoring and Research Center (CEMRC) laboratory analyzed the filter and on Wednesday, February 19 reported that it found 0.64 becquerels (Bq) per cubic meter of air of Americium-241 and 0.046 Bq per cubic meter of air of Plutonium- 239+240. (<http://www.cemrc.org/2014/02/19/cemrc-detects-trace-amounts-radioactive-particles-air-sampling-station-near-wipp-facility/>). Those measurements were consistent with waste in the WIPP underground. The DOE agrees that there was a release of radioactivity onto the surface.
3. CEMRC retrieved another filter from Station #107 on Tuesday, February 18. The laboratory analysis showed no detection of Plutonium 239+240 and 0.007 Bq of Americium-241. Samples from Station (about 325 feet from the exhaust shaft) found 0.115 Bq of Plutonium 239+240 and 1.3 Bq of Americium-241. (<http://www.cemrc.org/wp-content/uploads/2014/02/CEMRC-Ambient-Air-Sampling-Results-Following-2-14-14-Radiation-Detection-Event.pdf>).
4. CEMRC reported to SRIC that it has received 10 filters from the Station A (exhaust shaft sample prior to HEPA filtration) on Tuesday, February 18. Several filters were received from Station B (exhaust shaft sample after the HEPA filtration system) in the evening on Wednesday, February 19. CEMRC expected to have initial results from those filters in from two to five days after receiving them, but some results were

released on March 5. Station A filter removed on February 15 (the morning after the radiation alarm was triggered) showed 1,365 Bq per cubic meter of Am-241 and 672 Bq per cubic meter of Pu-239+240. 24 hours after the event, the Station A filter measured 130 Bq/m³ of Am-241 and 17 Bq/m³ of Pu-239+240. By 9 am on February 21, the Station A filter was 0.65 Bq/m³ of Am-241 and 0.06 Bq/m³ of Pu-239+240. A Station B filter installed on the morning of February 14 was removed in the afternoon of February 18 and measured 1.81 Bq/m³ of Am-241 and 0.224 Bq/m³ of Pu-239+240. As of the morning of February 21, a Station B filter were “less than 0.12 Bq/m³ of Am-241 and less than 0.012 Bq/m³ of Pu-239+240 being emitted per day from the WIPP underground ventilation system.” <http://www.cemrc.org/2014/03/05/cemrc-radiological-results-air-sampling-wipp-site-following-february-14th-2014-radiation-detection-event-2/>

5. As of mid-day on Thursday, February 20, WIPP Manager Jose Franco reported some amounts of radiation were continuously registered in the continuous air monitors for Panel 7, but that the amounts were three orders of magnitude lower than the highest levels of 4.4 million disintegrations per minute.

6. No workers were underground when the radiation leak was detected and none has been underground since that time. As of Monday, February 24, the expectation is that it could be two to three more weeks before anyone goes underground to investigate the release. In the meantime, plans are being developed for the underground recovery effort and to determine the extent of the above ground contamination. On Thursday, February 27, Farok Sharif, President of Nuclear Waste Partnership (the operating contractor), reported that re-entry and recovery plan(s) had been submitted to DOE, which was reviewing them. After DOE review and approval, the re-entry process would start with two probes being sent down the salt handling shaft. The plan is for workers to re-enter the underground through that shaft and to investigate the situation to try to determine the source of the radiation release.

7. On Wednesday, February 26, the 13 WIPP employees that had been at the WIPP site when the radiation was detected were notified that they had tested positive for internal radiological contamination, “predominantly americium-241.” (http://www.wipp.energy.gov/Special/CBFO_Mgr_Letter.pdf) Those workers will have additional bioassay (urine and fecal) analyses. On March 5, DOE reported that the urine analysis was negative (no radiological contamination). On Thursday, February 27, Farok Sharif stated that other workers that came to work on the morning of February 15 are having bioassay testing, and some additional workers are requesting to be tested. All workers that want to be tested will be tested. All workers that want to have lung and whole body counts at CEMRC also will be allowed to do so. Laboratory analysis of bioassay samples take one to two weeks. Mr. Sharif also stated that as of that date no workers have received chelating agents that could help remove the internal contamination.

8. While Jose Franco of DOE has stated that hundreds of air, soil, and water samples have been taken, results of only 8 preliminary spectrum analyses and only 1 preliminary radiological laboratory have been posted on the WIPP website.

<http://www.wipp.energy.gov/Special/WIPP%20Environmental%20Sampling%20Results.pdf>

What we do not know (among many other things)

1. What caused the release.
2. What was the nature of the release that allowed some contaminants to travel more than a mile and a half.
3. What radionuclides in what amounts and what toxic chemicals in what amounts have been released.
4. What contaminants were released into the environment before the HEPA filtration system was triggered.
5. What contaminants in what amounts have been captured by the HEPA filters.
6. What contaminants in what amounts have not been captured by the HEPA filters.
7. Where all the contaminants that were not captured are, whether inside the WIPP boundary or outside the site area.
8. Whether the amount of the release and the location of all of the containments can be determined.
9. When radiation levels in the WIPP underground air will return to pre-release levels.
10. The amounts of contamination in the WIPP underground.
11. What underground decontamination will be done.
12. What amount of exposure to radiation and toxic chemicals the first workers going underground will receive.
13. What amount of exposure to radiation and toxic chemicals workers going underground will receive in the future.
14. What amount of exposure that workers on the surface have received.
15. What amount of exposure that workers on the surface will receive in the future.
16. What surface decontamination will be done.
17. What changes in the WIPP operation, monitoring, and safety culture will be implemented.