

A dozen reasons why the Rocky Flats National Wildlife Refuge should remain closed to the public

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After completion of the “cleanup” of the 6,500-acre site of the defunct Rocky Flats nuclear bomb plant, about three-fourths of the site (roughly 7 square miles) was transferred from the Department of Energy to U.S. Fish & Wildlife Service to operate as a wildlife refuge. DOE retained 1,300 more contaminated acres (about 2 square miles) surrounded by the FWS land.

1. Long-term danger of plutonium, the contaminant of concern

Plutonium 239, the contaminant of principal concern at Rocky Flats, has a half-life of 24,110 years. It remains dangerously radioactive for more than a quarter-million years. Any quantity left in the environment poses an essentially permanent danger.

2. Plutonium’s lethal quality

The alpha radiation emitted by plutonium cannot penetrate skin. But tiny particles inhaled, ingested, or taken into the body through an open wound may lodge in the lungs or migrate to bone. For as long as it resides in the body it bombards surrounding tissue with radiation. The result may be cancer, harm to the immune system or genetic abnormalities.

3. Hazardous in very small amounts

Plutonium particles of 10 microns or smaller can be inhaled. One micron is 1/millionth of a meter, a meter being 39.37 inches or slightly longer than a yard. For further comparison, the average diameter of a human hair is about 50 microns. Meteorologist W. Gale Biggs found that airborne particles at Rocky Flats “are probably smaller than 0.01 microns.” Researchers at Columbia University demonstrated that a single plutonium particle induces mutations in mammal cells. Cells receiving very low doses were more likely to be damaged than destroyed. Replication of these damaged cells constitutes genetic harm that can become cancer, and more such harm per unit dose occurs at very low doses than would occur with higher doses.

4. Extent of contamination at Rocky Flats unknown

Fires, accidents, routine operations, and random dumping during production years released plutonium particles to the environment. The prevailing wind heads east and southeast, but it blows in all directions some of the time. Hence, plutonium was scattered across the whole of the nearly 10 square-mile site. No one knows the full extent of the contamination because this was not determined. The methods used to locate plutonium could have missed hot spots.

5. The difference between the cleanup the public sought and what it got

In 1995 the single most widely supported cleanup recommendation from the public called for eventual cleanup to average background radiation levels, with initial cleanup to go as far in this direction as current technology allows while making the site a lab for development of technology to do better. Neither happened. Instead, the cleanup finally agreed to by DOE, EPA and CDPHE in 2003 allowed in the top 3 feet of soil a quantity of plutonium up to 1,250 times average background levels, with much more allowed at 3 to 6 feet below the surface and no limit on the quantity of plutonium allowed at a depth of 6 feet or more.

6. Dollars and date, not public health, drove the cleanup

DOE and its contractor, Kaiser-Hill, made a secret deal with Congress to close Rocky Flats by a fixed date for a fixed sum. Tailoring the cleanup to fit these limits, they rejected appeals from some in the public that they seek more funds to do a better job. Of the \$7 billion allotted to close the site by December 2006, no more than \$473 million (about 7%) could be spent on actual remediation of the environment. Kaiser-Hill received \$560 million for its work.

7. Local people rejected both the cleanup and recreation at the wildlife refuge

Of the individuals and organizations that commented on the final Rocky Flats Cleanup Agreement adopted in June 2003, 85.6% rejected the plan as inadequate, due mainly to the plutonium being left behind. 81% of those who commented on FWS plans to open the wildlife refuge to public recreation opposed the idea. These comments are part of the public record.

8. Plutonium not stable in the environment

EPA and CDPHE claim that there is no pathway by which plutonium left in soil at Rocky Flats can reach human subjects. This is refuted by a 1996 study in which ecologist Shawn Smallwood shows that 18 species of burrowing animals present at Rocky Flats that dig down to as much as 16 feet constantly redistribute soil and its contents. In a wholly random way they will bring buried plutonium to the surface where tiny particles can be transported near and far by wind and made available to be internalized by unwitting humans. In any given year burrowing animals disturb as much as 10 to 12% of surface soil on the site. Though this study was done in 1996 EPA and CDPHE ignored it when in 2003 they approved the final cleanup plan for Rocky Flats.

9. The cleanup does not protect the most vulnerable, especially children

The “risk-based cleanup” at Rocky Flats was calculated to protect a wildlife refuge worker, that is, a physically active adult in good health. The cleanup was not designed to protect the very young, the very old, the infirm. FWS expects children to visit the wildlife refuge. The human child, without question, is the most vulnerable to plutonium exposure of all creatures, because a child is likely to stir up dust, to eat dirt, to breathe in gasps, or to scrape a knee or elbow, all ways of taking plutonium into the body. Once internalized, the material integrates with the child’s tissue development and wreaks havoc within the child’s body for the duration of her or his life. Playing with plutonium is a dangerous proposition.

10. EPA and CDPHE mislead the public when they say Rocky Flats is “safe”

The National Academy of Sciences report on *Health Risks from Exposure to Low Levels of Ionizing Radiation* (2006) affirms that exposure to any level of ionizing radiation is potentially harmful. In 2004 British researchers concluded that cancer risk from exposure to very low doses of plutonium may be ten or more times more dangerous than allowed by existing official standards for permissible exposure.

11. The same agencies oppose informed consent for visitors to the wildlife refuge

State Representative Wes McKinley was foreman of the grand jury that spent nearly 3 years reviewing evidence of alleged environmental lawbreaking at Rocky Flats collected by the FBI in its 1989 raid on the plant. 65 cartons of documents from this investigation remain sealed in the Denver federal courthouse; they were never examined by EPA and CDPHE, regulators of the Rocky Flats cleanup. McKinley is under court order not to reveal what he learned about conditions at Rocky Flats, but he objects to opening the wildlife refuge to the public. His efforts to get informed consent regarding risk at the refuge for potential refuge visitors have been opposed by the very agencies that made no effort to determine whether the 65 cartons in the federal courthouse contain data pertinent to the Rocky Flats cleanup.

12. Genetic effects of plutonium on wildlife are poorly understood

Genetic effects on a given species may be so subtle that they cannot be easily detected until generations later when harm is irreversible. Any harm to wildlife at Rocky Flats will not be confined to the bounds of the site. Deer from the site have been shown to have plutonium in their bodies.

For documentation, see *Plutonium and People Don’t Mix* at <http://www.rockyflatsnuclearguardianship.org/index.html> and http://www.rmpjc.org/rf_critique