

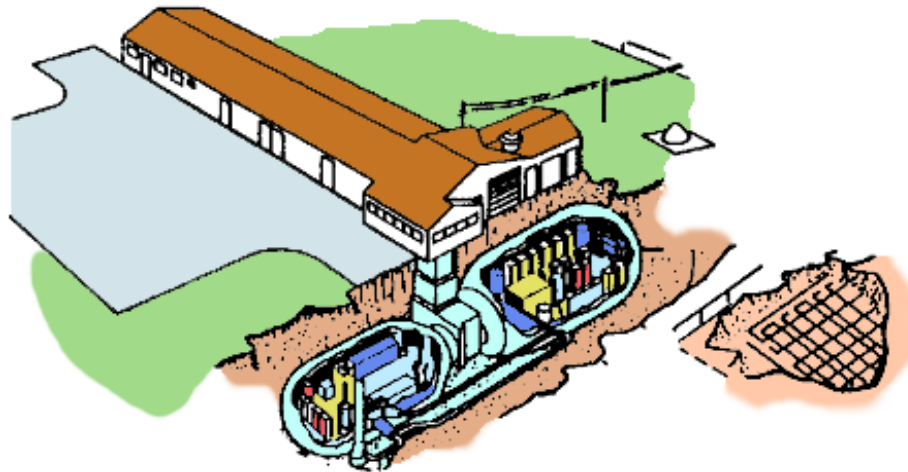
Opinion on 2001 and 2005 Studies on Cancer Cases at Malmstrom AFB, MT

BACKGROUND: Results of the 2001 and 2005 missileer cancer studies at Malmstrom AFB, Montana have been used as the medical and environmental standard influencing decisions made by the US Air Force, the Veterans Administration (VA), and the US Army Public Health Command regarding workplace health and safety. Veterans of the ICBM mission have been and are being denied service connection for toxic exposures that occurred at Malmstrom AFB, MT based on the conclusions of these two studies.

Neither study contains rigorous methodological evaluation to determine whether the study approach was appropriate, thorough, and unbiased. Study conclusions are not statistically significant or reliable. Requirements to obtain an approved study proposal, receive permission from an institutional review board to collect data, and publish findings after a credible/objective peer review were not met in either 2001 or 2005.

2001 STUDY BACKGROUND

- 2001 study efforts and conclusions pertain only to the 564th Missile Squadron (MS) facilities; the 10th, 12th, and 490th MS were not included
 - Study focused on environmental sampling in the 564th MS (officially named WS-133B, Minuteman “Collocated Squadron No. 20”) at P0, Q0, R0, S0 and T0 Launch Control Centers (LCCs)
 - Minuteman Squadron 20 was designed and constructed by the U.S. Army Corps of Engineers, Ballistic Missile Construction Office and the Ralph M. Parsons Company
 - Original electronic equipment fielded in Squadron 20 LCCs was built and installed by Sylvania, achieving operational capability in 1967

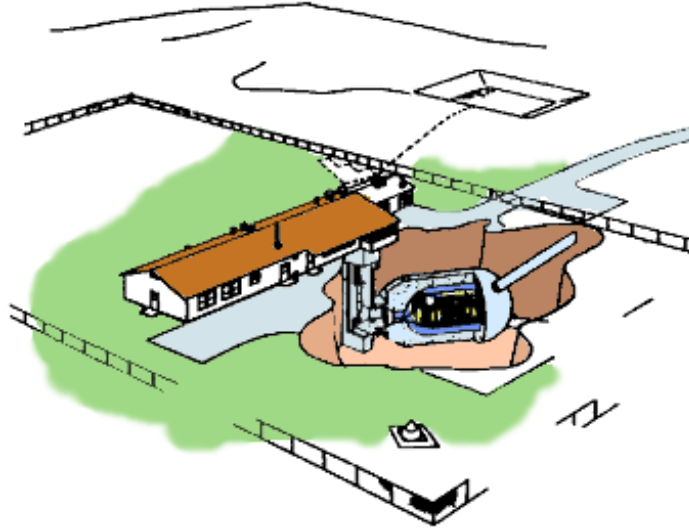


WS-133B Layout (Squad 20, 564th MS, LCCs P0-T0)

- 564th MS underground physical layout, structures, environmental controls, and electronic equipment differed significantly from the 10th, 12th, & 490th MS configurations, including a below-grade Launch Control Equipment Building (LCEB) and Medium Frequency (MF) radio communications system unique to the WS-133B configuration

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- Minuteman Squadrons 01-03 were designed and constructed by the U.S. Army Corps of Engineers, Ballistic Missile Construction Office and the Parsons-Wenzel
- Original electronic equipment fielded in Squadrons 01-03 LCCs was built and installed by Boeing, achieving operational capability in 1962-63



WS-133A/M Layout (Squads 01-03, 10/12/490th MS, LCCs A01-O01)

- No sampling or testing was completed for 10th, 12th, & 490th MS (WS-133A/M Minuteman Squadrons 01-03; LCCs A01-O01) in 2001
- Similarities were introduced with the Rapid Execution and Combat Targeting (REACT) Command & Control (C²) equipment conversion among all four squadrons between 1994-95
 - REACT conversion did not alter the 564th physical layout, environmental controls, unique MF radio communications, and subterranean architecture
- Air sampling for Polychlorinated Biphenyls (PCBs) was not accomplished during this study

2001 STUDY OPINION

- Because of the significant differences in physical configuration, construction, electronics, and environmental control systems, conclusions from sampling in the 564th MS cannot be extended to the 10th, 12th, and 490th MS with any measure of confidence
- The 564th MS was deactivated in 2008, facilities/equipment de-militarized and abandoned as part of the Strategic Arms Reduction Treaty (START) compliance
 - The 2001 study should be disregarded or rescinded as a baseline as this unit no longer exists
 - The 2001 study conclusions should not influence decisions about service connection to work environments for Veterans of the 10th, 12th, and 490th MS



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2005 STUDY BACKGROUND

- The 2005 study team aimed to re-examine the cancer rates at Malmstrom and a possible link to the REACT conversion
 - This study broke no new ground because the Malmstrom LCCs had completed the REACT conversion at least five years before the 2001 study occurred
 - No environmental sampling took place during the 2005 study. The study supported and relied upon the results of the 2001 study and concluded that the missile environment was safe and healthy
 - “We agree with the results of the field investigation conducted by AFIOH (former AFIERA) and from the information gathered, at this time, there is no evidence of an increased number of any adverse health event that could justify further investigation.”

2005 STUDY OPINION

- Study team members did not examine the differences between 564 MS facilities and those of the three other units, the 10 MS, the 12 MS, and the 490 MS; 564 MS facility sampling results cannot and should not be applied to the other three squadrons
- Since the 2005 study draws most of its conclusions from the 2001 study, it is also biased toward the 564th MS facilities which can no longer be studied with modern scientific and environmental monitoring equipment used by USAFSAM in 2023
- The 2005 study, *Review of Cancer in Missileers at Malmstrom AFB, Montana* should be disregarded or rescinded

2023 UPDATES

- The 2023 study by USAF School of Aerospace Medicine (USAFSAM) utilized modern sampling methods and found levels of PCBs at facilities in the 10th, 12th, and 490th MS with values exceeding Environmental Protection Agency (EPA) safety standards at LCCs H01 and I01
- PCB remediation efforts occurring prior to 2023 cannot be assessed for efficacy as baselined data does not exist
- PCB levels prior to 2023 are more likely than not higher than at the time they were detected, based on cleanup activities, replacement of equipment containing PCBs and normal dissolution occurring over time
- PCB and other toxic exposures in 564th MS more likely than not occurred for those performing missile alert duties in these facilities prior to decommissioning in 2008



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FINAL OBSERVATIONS AND RECOMMENDATIONS

- The safety and health of those serving at Minuteman facilities at Malmstrom AFB prior to the 2023 USAFSAM investigations cannot be assured due to previous inadequate testing and the deactivation of the “baseline” unit (564th MS)
 - Toxic exposures in 564th MS cannot be confirmed as the sites are deactivated
 - Such exposures more likely than not occurred at similar rates in the 10th, 12th and 490th MS
- The recent results of PCB sampling during the 2023 Missileer and Cancer study revealed the presence of PCBs, and in some LCCs at Malmstrom, they exceed EPA limits and guidelines (results released publicly in August 2023)
 - Subsequently, monitoring equipment has recently been installed in the 10th, 12th and 490th MS LCCs
- The current AFGSC and USAFSAM study teams should acknowledge the earlier 2001 and 2005 studies are unreliable and not allow them to bias present efforts
 - The squadron used for the “baseline” (564th MS) has since been deactivated
 - 564th MS study conclusions are not valid and reliable measures of the environmental safety and health of the remaining 10th, 12th, and 490th MS
 - Study teams did not investigate or verify PCB levels during the 2001 and 2005 studies leaving the status of personnel exposure to unsafe levels of this potential carcinogen unknown
 - Of note, the 564th MS LCCs did house equipment containing PCBs (Switchboard #2 in the LCC, and power generation/filtering equipment in the Launch Control Equipment Building (LCEB))
- A host of additional toxic hazards besides PCBs are resident in all missile facilities that should be further explored as well as the result of human long-term exposure to all
- Veterans of the Malmstrom missile community with documented toxic exposures and related illnesses should not be blocked by the VA and US Army Public Health Command obtaining service connection for their illnesses based on the invalid conclusions of the 2001 and 2005 studies

REFERENCES:

- [Dec 2001 Exposure Assessment of 564 MS Missile Crew Members](#)
- [Apr 2005 Review of Cancer in Missileers at Malmstrom Air Force Base, Montana](#)