

Just the Facts...

Fact Sheet (Update) for Soldiers and Families: Radiation at the Former Tuwaitha Nuclear Research Center, Iraq, is at Safe Levels

Since 2003, U.S. Soldiers have been deployed at or near the Tuwaitha Nuclear Research Center (TNRC) in Iraq; a now inactive site composed of 23,000 acres and located 12.4 miles (20 km) south of Baghdad. To ensure U.S. Soldiers were not exposed to levels of radiation above U.S. regulatory standards, the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) conducted two separate on-site radiation assessments, in 2003 and 2007. This fact sheet summarizes what USACHPPM found during those assessments.

Important facts:

- In 2003, just prior to the invasion of Iraq by Coalition Forces, Saddam Hussein's guards abandoned the TNRC and it was then looted by local Iraqi civilians. Despite widespread damage to the facility, radiation monitoring conducted by U.S. Forces at the time demonstrated that the radiation levels within the site were safe.
- Since 2003, more than 750 Soldiers have been monitored for radiation exposure at TNRC. Roughly 75% of those individuals had no measurable radiation exposure – in other words, a “zero” radiation dose. For those individuals who did receive measurable levels of radiation exposure, their doses were at safe levels (and well under the exposure limits established by U.S. Nuclear Regulatory Commission (NRC)).

What kind of health risk assessments have been done at TNRC?

In 2003, a multidisciplinary team from USACHPPM conducted a comprehensive radiation survey at TNRC since U.S. forces were then securing the facility. Thousands of radiation measurements were taken: Hundreds of environmental samples were collected in and around buildings that were accessible and structurally sound; and the survey team wore monitors on their uniforms (called “personnel dosimeters”) to measure actual radiation exposure and their resulting radiation doses. The survey team also stayed at the encampment site with the Soldiers who provided security in TNRC's main complex, subjecting themselves to the same radiation levels at the site for the duration of their 10-day mission.

The USACHPPM survey team identified a total of 21 buildings/areas with some level of increased radioactivity. Potentially worse-case radiation doses, called the “upper-bound radiation dose estimates,” were then calculated for personnel who may have entered the TNRC unaware of potential radiation sources. An operational health risk assessment was also conducted based on the environmental samples collected.

In 2007, another multidisciplinary team from USACHPPM conducted a follow-up radiation survey at TNRC. Its purpose was to assess if any changes in radiological conditions had occurred outside of the main complex, since several of the radiation sources observed during the 2003 survey had since been removed from TNRC. The 2007 investigative team took air, soil and surface wipe samples, and made hundreds of external radiation measurements focusing on coalition forces patrolling around and living closest to TNRC. Although performed in 2003, sampling of TNRC main complex was not conducted again in 2007, since these buildings were off-limits to coalition forces. However, sample analysis was expanded to include more areas occupied by U.S. personnel in the vicinity of TNRC.

What were the results of the 2003 and the 2007 assessments?

During the 2003 assessment, potential radiation exposures at TNRC should have been the highest for U.S. forces because the site was abandoned, severely looted, and radioactive material had not yet been identified or removed. However, results of the measurements taken at that time clearly show that even the radiation worse-case dose estimates were well within safe limits established by the NRC. Personnel dosimetry results from the USACHPPM survey team, who were actively

looking for radioactive sources and were consequently exposed to radiation, were also well within these safe limits. In spite of rumors and conflicting reports circulating about potential radiation exposure at TNRC since 2003, the follow-on 2007 assessment showed that radiation exposures were also well within safe standards established by the NRC. Personnel dosimetry results were also well within these safe limits. Additionally, environmental samples that were taken at TNRC showed no presence of Depleted Uranium (DU).

Knowing that radiation exposure has been linked to leukemia and other forms of cancer, how do you know for sure that personnel have not been exposed to unsafe levels of radiation at TNRC?

Given the credible link between high levels of radiation exposure and an increased incidence of cancer, it is understandable that Soldiers might be concerned about the potential for radiation exposures at TNRC. However, there are several reasons why USACHPPM is confident that radiation levels at TNRC are safe:

- Even in 2003, when site conditions were at their worst, measured radiation exposure levels were well within safety limits established by U.S. regulatory agencies.
- The radiation doses received by the USACHPPM survey team, who were actively looking for radiation sources at TNRC in both 2003 and 2007, were also well within safety limits. Following the first assessment team's visit in 2003, most radiation sources at TNRC were identified and secured or removed, further reducing any potential for radiation exposure.
- Personnel monitoring of coalition forces since 2003, who have entered and occupied the TNRC, demonstrates that no one has been exposed to unsafe levels of radiation.

Even though evaluation of radiation sources indicates exposure levels are safe, can I still be tested for radiation exposure if I served at TNRC?

Yes. Soldiers can request a urine bioassay test from any supporting medical treatment facility after discussion with their healthcare provider.

For more information:

On Deployment Health Topics:
<http://fhp.osd.mil/factsheets.jsp>

On the 2003 and 2007 Field Surveys and Science Issues: USACHPPM Health Physics:
<http://chppm-www.apgea.army.mil/hp/>

On Ionizing Radiation:
Occupational Safety and Health Administration (OSHA): <http://www.osha.gov/SLTC/radiation/index.html>
U.S. Environmental Protection Agency (USEPA) <http://www.epa.gov/radiation/understand/index.html>

Radiation Protection:
U.S. Nuclear Regulatory Commission (Title 10 CFR Part 20, Dose Limits):
<http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/>
National Council on Radiation Protection and Measurements:
<http://www.ncrponline.org/>
World Health Organization Ionizing Radiation:
http://www.who.int/ionizing_radiation/en/