

# **Baker-Perkins Company, Saginaw, Michigan Technical Basis Document Reviews**

Uranium Refining Atomic Weapons Employers Work Group  
Henry A. Anderson, MD (Chair)  
R. William Field, PhD  
David Kotelchuck, PhD, MPH

Presented to:  
The Advisory Board on Radiation and Worker Health  
Denver, Colorado Meeting  
September 18–20, 2012

# Description of Operations

Over a 5-day period (May 14–16, 1956), Baker-Perkins tested the usefulness of an industrial mixing machine, called a “Ko-Kneader,” for possible use at Fernald for mixing uranium.

# **NIOSH and SC&A Documentation and Work Group Meetings**

- 9/15/2010** SC&A issues review of original Appendix P to TBD-6001
- 2/17/2011** NIOSH replaces Appendix P to TBD-6001 with a stand-alone TBD; i.e., Rev. 0 of the Baker-Perkins TBD
- 11/2/2011** SC&A issues a review of Rev. 0 of the B-P TBD
- 11/21/2011** Work Group meeting held, where NIOSH agrees to prepare an analysis of the events at Baker-Perkins, based on documentation contained in a test report (SRDB #63508) and reports of air sample data (SRDB #9505), pp.17–25
- 12/12/2011** NIOSH issues, “White Paper, Baker-Perkins TBD Review,” prepared in response to SC&A’s site profile review issued 11/2/2011

# **NIOSH and SC&A Documentation and Work Group Meetings**

- 1/17/2012** SC&A issues “SC&A Response to NIOSH White Paper, “Baker-Perkins TBD Review, dated December 12, 2012,” which recommends that all issues have been resolved
- 2/14/2012** Work Group meeting held where SC&A states that all findings have been resolved
- 5/1/2012** NIOSH issues Rev. 1 to the TBD, which provides a more detailed description of the quantity of uranium handled and the time line of events (provided in response to SC&A’s comments)
- 9/7/2012** Work Group meeting (conference call) held where SC&A re-stated that all issues have been resolved, and the Work Group voted to accept SC&A’s recommendation to close all issues

# Technical Issues and How They Were Resolved

## SC&A's Primary Issues:

- Breathing zone (BZ) versus general air (GA) samples
- Use of 50<sup>th</sup> percentile as opposed to 95<sup>th</sup> percentile air sampling data
- External geometry used for external exposures
- Duration of external exposure per day

## Issues Resolution:

NIOSH's Rev. 1 to the TBD explicitly addresses these and other issues by providing a greatly expanded accounting of:

1. The quantities of uranium handled
2. A step-by-step description of the operations
3. Logs of the Ko-Kneader tests, including start and stop times of each test, the times and locations of each air sample, and designation of which air samples were BZ versus GA