Carborundum EEOICPA Facility Listing

- Listing as revised by DOL in July 2015
  - State: New York Location: Niagara Falls
  - Atomic Weapons Employer (AWE)
    June – September 1943, 1959-1967
  - Residual Radiation
    1943-1958, 1968-1992

EEOICPA Facility Listing

- Carborundum Facility Description:

  In June 1943 the Carborundum Company did experimental centerless grinding of uranium slugs.

  From 1959 through 1967 the company manufactured uranium and plutonium carbide pellets for an AEC research program.

SEC Petition Overview

- Petition received November 19, 2014
- Petitioner requested class definition:

  All employees who worked in any area of the Carborundum Company facility on Buffalo Avenue, Niagara Falls, NY from January 1, 1943 through December 31, 1976

1st AWE Period - 1943

- Location of 1943 AEC work unknown
- Work limited to experimental grinding of uranium metal using a centerless grinder
- Total quantity of uranium at Carborundum:
  10 uranium slugs totaling 30 pounds
- Uranium slugs on site from June through September
- Internal and external doses estimated using TBD-6000

Centerless Grinding
Residual Contamination 1943-1958

- Residual contamination based on estimates of airborne radioactivity using methods described in ORAUT-OTIB-070
- Internal dose based on resuspension of contamination
- External dose from residual contamination based on derived contamination levels and dose coefficients in Federal Guidance Report No. 12

2nd AWE Period 1959 - 1967

- Carborundum was an AEC contractor and a subcontractor (United Nuclear) in the fuel development program
- Did work with uranium and plutonium in modern Research and Development Building (Building 1) that opened in 1953

Second AWE Period, 1959-1967

- Developed methods to synthesize fuels for breeder reactors
- Work in 1959 - 1961 involved synthesis of uranium refractory compounds
- Plutonium laboratory opened in 1961 to synthesize mixed carbide fuel pellets
- Plutonium Laboratory comprised a 555 ft^2 area fully contained and ventilated

Second AWE Period, 1959-1967

- Uranium laboratory produced small batches of monocarbide, mononitride, and uranium silicide, experimenting with methods to form pellets
- Plutonium laboratory was a small facility that developed methods and produced (UPu)C fuel pellets for use in Fermi Fast Breeder Reactor
- Work including studying physical properties of synthesized pellets, including use of X-ray diffraction techniques (XRD)

Second AWE Period, 1959-1967
Monitoring Data

- Internal dose
  - Air samples results are available from uranium work in 1959 and 1961
  - Air samples from plutonium work in 1961 are available
- External dose
  - NIOSH has not identified any dosimetry data or external dose rate measurements

Second AWE Period, 1959-1967
Air Sampling Data

- Uranium: general area air dust samples were taken in November 1959 and April 1961
  - Nine are legible in the documentation
  - All nine air sample results were positive
- Plutonium: sixteen air samples taken in June and April 1961
  - Includes general area and breathing zone samples
  - Nine of the sixteen samples were positive

Second AWE Period, 1959-1967
Internal Dose Estimates

- Air sample data used to estimate intakes from uranium work and from plutonium work
- For uranium, the 95th percentile of the general area air samples used to estimate intakes by support workers, with operator intakes assumed to be double
- For plutonium, both general area and breathing zone sample results are available to estimate intakes
- Plutonium work involved a mixture of uranium and plutonium

Second AWE Period, 1959-1967
External Dose Estimates

- For uranium work, TBD-6000 doses for machining uranium will be used to bound external dose
- For plutonium work in the gloveboxes, external photon and neutron doses modeled with MCNP
- Dose from XRD estimated based on measurements of dose rates from scatter reported from a survey of XRD units in Pennsylvania in 1966

Second Residual Period, 1959 - 1976
Dose Estimates

- Residual contamination based on airborne radioactivity and estimates of surface contamination using methods described in ORAUT-OTIB-070
- Internal dose based on resuspension of contamination
- External dose from residual contamination based on dose coefficients in Federal Guidance Report No. 12