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United States Government

Weston 8129 PA.11

Department of Energy

memorandum

JUN 4 1992

DATE:

REPLY TO ATTN OF: EM-421 (W. A. Williams, 903-8149)

SUBJECT: Authority Determination -- Former C. H. Schnoor & Company facility, Springdale, Pennsylvania

TO: The File

The attached review documents the basis for determining whether DOE has authority for taking remedial action at the former C. H. Schnoor & Company facility in Springdale, Pennsylvania, under the Formerly Utilized Sites Remedial Action Program (FUSRAP). The facility was used for the shaping of uranium by the Manhattan Engineer District (MED) during the Second World War. The following factors are significant in reaching a decision and are discussed in more detail in the attached authority review:

- The C. H. Schnoor & Company was likely to have been closely controlled by the Manhattan Engineer District directly through the approval of contracts and purchase orders or indirectly through prime contractors;
- There were significant security requirements in all activities involving uranium during this time period;
- The uranium residues at the site are clearly the result of the uranium metal machining;
- The uranium metal was furnished by the government;
- The MED retained responsibility for health and safety protection;
- In all likelihood, the contractor had no knowledge of the nature of hazards associated with the handling of uranium metal; and
- An authority review in 1985 found that DOE had authority for remedial action at this and other metal fabrication sites.

A draft copy of the attached authority review was furnished to the Office of General Counsel, which had no comments.

06/04/92

FILE COPY

After review of the available original records and the authority review, I have determined that the Department of Energy has authority to conduct remedial action at the former C. H. Schnoor & Company facility in Springdale, Pennsylvania.

W. Alexander Williams, PhD
Designation and Certification Manager
Division of Off-Site Programs
Office of Eastern Area Programs
Office of Environmental Restoration

Attachment

cc:
S. Miller, GC-11

06/04/92

bcc:
Weston

Distribution:
EM-40 (2)
EM-42 (3)
Williams Reader

EM-421:wagoner:djn:903-8145:6/4/92:schnoorl.rev

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Authority Review for the
C. H. Schnoor & Company
in Springdale, Pennsylvania

1. INTRODUCTION

As part of the Formerly Utilized Sites Remedial Action Program (FUSRAP), the U.S. Department of Energy (DOE) has reviewed available information on the former C. H. Schnoor & Company site in Springdale, Pennsylvania. This site is being investigated as a candidate for inclusion in the FUSRAP, which includes certain sites that were previously involved with activities of the Manhattan Engineering District (MED) or U.S. Atomic Energy Commission (AEC), both DOE predecessors. Such sites may require remedial action, if they have residual contamination from those previous activities. This review is conducted to determine whether DOE would have the authority to conduct remedial action at the former C. H. Schnoor & Company site.

The site is located at 644 Garfield Street in Springdale, Pennsylvania. Apparently in 1943, the same location was referred to as 643 Railroad Street (Christensen 1943; Wallo 1980). During the mid-1940s, the property was owned by C.H. Schnoor and Company and was used to machine uranium metal rods to produce slugs to be used as feed material for MED production reactors. Schnoor was one of several commercial firms involved in the MED uranium slug procurement program under the direction of the University of Chicago and I. E. du Pont de Nemours and Company (Du Pont), MED prime contractors. The period of interest is late 1943 through 1944.

The remainder of this review consists of the following sections:

2. Operational History
3. Current Conditions
4. Authority Analysis
5. Discussion and Conclusions
6. Copies of References

The information presented in these sections is in summary form. Pertinent references are identified in the text and provided in Section 6 for further use.

2. OPERATIONAL HISTORY

C.H. Schnoor & Company provided metal fabrication services in support of MED operations as early as 1943. A November 1943 teletype record (Christensen 1943) indicated that Schnoor provided cast iron sleeves to Hanford. DuPont placed Purchase Order RPG-4018 1/2 with this firm in May 1944 to machine unbonded slugs from uranium metal rod. This priority task in support of the overall project known as Project 1553 was accomplished on a 24-hour-per-day schedule and was completed by the end of July 1944. Judging from cost data contained in the history, Schnoor machined about half of the total 48,000 slug requirement (Whitman 1985).

As indicated above, C.H. Schnoor & Company was one of several commercial metal fabrication firms that participated in the MED slug procurement program under purchase orders and subcontracts with the University of Chicago and Du Pont. The following summary of conditions that prevailed during the period is significant to a basic understanding of the manner in which this procurement program was conducted (Whitman 1985).

a. Metal fabrication and other services were procured through subcontracts and/or purchase orders initiated by the University of Chicago and Du Pont and approved by a government contracting officer. In most instances, information on the services purchased reflected on purchase orders and subcontracts were limited, probably to prevent classification of the document. In at least one instance, uranium metal was identified only as "special metal" and in other instances as metal rods or tubes.

b. Equipment and facilities used were contractor owned and operated. And, in most instances, contractual arrangements were for the use of manpower and equipment to perform work specified under the direction and control of the MED or its agent.

c. During the initial phase of the program in the early 1940's, contractors or site operators had little or no knowledge of the materials processed or the potential hazards associated with the handling or working with the radioactive materials. The MED was responsible for identification of the hazards, monitoring the work place and health of workers in the contractor's plants, and making specific recommendations for measures to protect the workers against the hazards of handling radioactive materials.

d. Radioactive material furnished the contractors or site operators were government owned. Both finished product and scrap (residue) remained the property of the government. Accountability was such that every effort was made to balance the amount of metal delivered to the contractors with the finished product and the scrap recovered.

At the time the metal fabrication work was done for the MED, the site consisted of a concrete block building and a loading dock. During the uranium machining period, materials were reportedly received through the Garfield Street entrance and stored near the loading dock. Over the years this building has been enlarged and a new loading dock added. (Foley et al 1991)

The property was sold in the spring of 1951 to a manufacturer of toys and coat hangers. In 1967, the property was acquired by the Unity Railway Supply Company, who founded the Premier Manufacturing Company and used the site to manufacture journal lubricators for railroad cars. Conviber, Inc. now owns the property.

3. CURRENT CONDITIONS

In October 1980, a radiological scanning survey of the site was conducted by the DOE Headquarters and Argonne National Laboratory (ANL) staffs (Shipp 1980). The only anomaly noted in this survey was a "hot spot" measuring about 300 micro Roentgen per hour (μR/h) on contact [20 μR/h at ~1 m (3 ft)] with an associated beta-gamma measurement of 4000 counts per minute (cpm) per 61 cm^2. At that time, the concrete block building housed a manufacturing operation, and these measurements were taken on the lunchroom floor. The survey noted that this room was part of the old building and was located near the site of the former uranium machining activities and that the elevated measurements were near what appeared to be an asphalt-covered drain. The contaminated area was described as small (~0.1 m^2 or ~1 ft^2). However, it was noted that much of the floor was not accessible to the survey team.

As a result, DOE directed another survey to be performed. On June 6, 1989, and June 21, 1990, Oak Ridge National Laboratory (ORNL) performed a more comprehensive radiological survey. (Foley et al 1991) Although outdoor soil samples demonstrated near-background for radium-226 and thorium-232, some showed concentrations of uranium-238 up within the typical range of site-specific uranium guidelines for similar DOE FUSRAP sites of 35 to 150 picoCuries per gram. Direct beta-gamma measurements taken inside the building and on the roof were within DOE guidelines (U.S. Department of Energy Guidelines for Residual Radioactive Material at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites. Revision 2, March 1987).

However, there was one elevated surface gamma measurement of 20 μR/h taken on the floor inside the concrete block building. A sample of concrete chips was taken at this site. When the radionuclide analysis of this sample failed to determine the source of radiation, the ORNL survey team returned to the site and core drilled through the concrete floor to a depth of ~64 cm (25 in) at this indoor location. Gamma measurements and eight soil samples drawn through a core in the concrete floor yielded gamma levels ranging from 52,000 to 480,000 counts per minute and uranium-238 concentrations ranging from 90 to 20,000 picoCuries per gram, which is well above the typical site-specific uranium guidelines for use without radiological restrictions. Thus, remedial action is required to remove the radioactive contamination.

4.0 AUTHORITY ANALYSIS

The authority determination is made according to the FUSRAP protocol by considering the answers to five questions based on available records. The answers to these questions from a review of available information, including the results of the radiation surveys are provided below.

4.1 Was the site/operation owned by a DOE predecessor or did a DOE predecessor have significant control over the operations or site?

No. A DOE predecessor never owned the site. Although information pertaining to operations at the site during the time metal fabrication services were performed for the MED is limited, it is likely that the MED and/or its agents exercised significant control over the operations, including the handling and control of the uranium metal during the fabrication process.

4.2 Was a DOE predecessor agency responsible for maintaining or ensuring the environmental integrity of the site (i.e., was it responsible for cleanup)?

No records addressing environmental integrity have been located. However, at other metal fabrication sites during the era, DOE predecessors were responsible for health and safety during the fabrication process.

4.3 Is the waste or radioactive material on the site the result of DOE predecessor related operations?

Yes. No information has been discovered that would indicate the presence of radioactive material on the site except for the uranium metal that was processed for the MED.

4.4 Is the site in need of further cleanup and was the site left in non-acceptable condition as a result of DOE predecessor related activities?

Yes. The radioactive contaminant found on the site is uranium-238 in soil below a concrete floor. It is present in concentrations exceeding the site-specific guidelines developed for other sites containing similar contaminants for use without radiological restrictions. The radioactive contamination found on the site is most likely contaminants the result of metal fabrication services performed on uranium metal for the MED in 1944.

4.5 Did the present owner accept responsibility for the site with knowledge of its contaminated condition and that additional remedial measures are necessary before the site is acceptable for use without radiological restrictions?

There is no indication that the present owner was aware of the radioactive contamination on the site prior to its discovery by DOE.

5. DISCUSSION AND CONCLUSIONS

Surveys of the former Schnoor site indicate uranium contamination, attributed to machining of uranium for the MED.

Based upon the results of the surveys, interviews with the current site owner, and information contained in a previous authority review that addressed metal fabrication services performed under purchase order or subcontract with MED or its agent by a number of commercial firms during the period, there is sufficient evidence to indicate authority for remedial action at the former Schnoor site under the Atomic Energy Act through FUSRAP.

6. COPIES OF REFERENCES

The following is the list of references that are provided in this section.

a. Argonne National Laboratory (ANL), 1984: Notes and Comments, Premier Manufacturing, Springdale, Pennsylvania (formerly Schnoor). August 17.

b. Christensen, C.A., 1943 (estimated). MED teletype regarding shipment of iron sleeves from Schnoor to Hanford.

c. Foley, R.D., W.D. Cottrell, and J.W. Crutcher, 1991: Results of the Radiological Survey at Conviber, Inc., 644 Garfield Street, Springdale, Pennsylvania (CVP001). ORNL/RASA-89/18, Oak Ridge National Laboratory, Oak Ridge, Tennessee. October.

d. MED undated. Summary of shipments including 160-pound x metal bars from Schnoor.

e. Shipp, B.D., 1980: Premier Manufacturing-Springdale, Pennsylvania. DOE memo to Mott. October 21.

f. Wallo, A., 1980: New Site Investigation for the former Schnoor & Company. Aerospace letter to Mott, DOE. September 29.

g. Whitman, A., 1985, DOE letter to A. Wallo: Authority decision for a number of sites (including Schnoor). Attached authority recommendation from C. Young to A. Whitman, Authority Review - Metal Fabrication Contractor Sites, September 1985. October 28.