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MAD

Site Management Records:
Site Investigations Under
FUSRAP

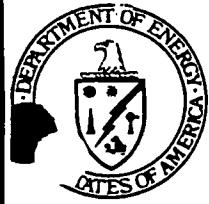
**ADMINISTRATIVE RECORD
FOR THE MADISON SITE
MADISON, ILLINOIS**

Site Management Records-

Site Investigations Under FUSRAP



**US Army Corps
of Engineers**
St. Louis District®



7014

Department of Energy
Washington, DC 20545

C. Young
OTS

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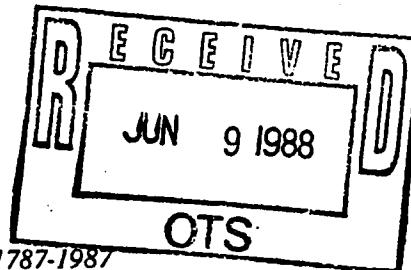
JUN 07 1988

Mr. J. T. Conroy
Plant Manager
Spectrulite Consortium, Inc.
College and Weaver Streets
Madison, Illinois 62060

Dear Mr. Conroy:

As you are aware, the Department of Energy (DOE) is conducting a program to investigate sites formerly used by or for DOE predecessor agencies including the Atomic Energy Commission (AEC) in the development of nuclear energy. The purpose of the investigation is to verify that radiological conditions at these sites or facilities comply with current Federal guidelines and, if they do not, implement remedial action (where DOE has authority to do so) to correct the unacceptable condition.

The typical course of action in a site investigation is to first search historical records to determine if there is potential for site to contain residual radioactive material due to DOE predecessor operations and if there is DOE authority to conduct remedial action should it be necessary. Additional record searches and interviews with cognizant individuals are then conducted to identify information that would either demonstrate the site was radiologically clean with respect to DOE predecessor operations or that there was residual radioactive material remaining on the site in excess of guidelines. If neither can be confirmed through the investigation, a preliminary survey of the site or facility is conducted to verify there is or is not residual radioactive material at the site. The results from the preliminary survey may be used to plan further radiological characterization if it is needed or to make a determination that the site either warrants consideration for remedial action or that there is no residual radioactive material on the site in excess of applicable guidelines.



Celebrating the U.S. Constitution Bicentennial — 1787-1987

Your facility in Madison, Illinois, was previously operated by the DOW Chemical Company. During the late 1950's and early 1960's DOW conducted some experimental extrusion of uranium ingots for the AEC under subcontract to Mallinckrodt Chemical Company. The company also completed some uranium rod straightening under purchase order agreements with Mallinckrodt Chemical Company. The activity was relatively small scale and based on past experience, does not represent a potential for significant radiological contamination. A brief summary of the information that was obtained as a result of the records review is enclosed. We would appreciate any information or comments you can provide to correct, update, or expand on the material in the summary.

NE-23
Wallo ~~COM~~
6/6/88

NE-23
Fiore
6/7/88

Although we believe that there is limited potential for residual radioactive material to be present in excess of guidelines at the site of the extrusion, we have not been able to identify sufficient records to verify the radiological condition of your site and to be sure that the site complies with current radiological guidelines. We are, therefore, including your facility in our radiological survey program and have scheduled a site visit for later this year.

I am enclosing two copies of a consent form for the survey. The signed consent forms and any comments on the enclosed summary should be provided to the Department of Energy, Division of Facility and Site Decommissioning Projects at the above address. One copy will be returned to you once we have signed it. The correspondence should be directed to the attention of Mr. Andrew Wallo, NE-23, of my staff. If you have any questions regarding our program as it relates to your site, please call Mr. Wallo at (301) 353-5439.

NE-23:Wallo:pm:6/6/88
IBM: 158/11

Sincerely,

(JF)

bcc:

W. Cottrell, ORNL
C. Young, OTS
J. Wagoner, NE-23
G. Turi, NE-23

James J. Fiore, Director
Division of Facility and Site
Decommissioning Projects
Office of Nuclear Energy

2 Enclosures

DIST
Subject
Wallo:rdr
NE-23 ref
NE-13 (4)

Spectrulite Consortium Inc.
(Former DOW Chemical Company, Metal Products Division)
College and Weaver Streets
Madison, Illinois

Site Function

The DOW Chemical Company offices and facilities in the St. Louis area were suppliers of materials (Chemicals, induction heating equipment, and magnesium metal products) and services under purchase orders issued during the late 1950's and early 1960's by the Mallinckrodt Chemical Works, a prime AEC contractor. Only one Mallinckrodt subcontract with DOW Chemical Company has been found. Subcontract No. 25034-M dated 15 March 1957 was for "...certain research and development work in gamma phase extrusion of Uranium metal, ...to be done at DOW's Madison, Illinois plant; ..." According to the subcontract, the work was to be performed in monthly work cycles of 28 hours each for 12 consecutive months. The makeup of each work cycle was defined as 6 hours for set-up time, 16 hours for experimentation (extrusion), and 6 hours devoted to cleanup.

In addition to auxiliary equipment and tool design, DOW supplied the use of its press, labor, and plant facilities necessary to perform the work cycles. Mallinckrodt responsibilities defined in the subcontract include: procurement and installation of the auxiliary equipment designed by DOW, and modifications to the dust arresting and other protective equipment required by plant area surveys made from time to time during the course of the work; arrangement for complete survey of breathing zone air quality to be conducted periodically by the AEC Health and Safety Laboratory; establishment of a program for area clearance after each cycle; and supply to DOW the uranium billets allocated for a work cycle (tentatively determined as 20 billets) and pick up the billets or extruded metal at the conclusion of a work cycle.

The only purchase order in the file discovered at the former AEC Weldon Spring Feed Material Plant covering the period July 1957 through November 1965 that involved the processing or handling of radioactive material at the DOW plant in Madison, was issued by the Uranium Division of the Mallinckrodt Chemical Works in March 1960. The purchase order was for straightening of Mallinckrodt supplied Uranium rod. Delivery of the rod to the DOW plant and pickup after the straightening operation was performed by Mallinckrodt personnel. Two rod straightening campaigns were identified in the purchase order. One was completed in December 1959. The other was completed in January 1960. Cleanup of the area after each campaign was identified and costed as a separate and distinct item in the purchase order. The actual periods of performance and the quantities of uranium metal involved in these operations is unknown. However, the total value of the purchase order and the unit cost identified with lot size indicate that the quantity of metal involved was probably small.

No other operation or period of involvement with the processing or handling of radioactive materials at the former DOW Madison plant have been discovered.

Site Description

Madison, Illinois, is located northeast of St. Louis, Missouri, across the Mississippi River. The former DOW Chemical Company plant is located in west Madison at the intersection of College and Weaver Streets (see the attached map). According to a representative of Spectrulite Consortium Inc., the extrusion department of the plant where the work described above was performed is still in use, extruding aluminum and magnesium metal. Documents describing the plant layout during the 1950's and 1960's have not been obtained.

Owner History

The Madison plant was apparently owned and operated by the DOW Metal Products Division of DOW Chemical Company during the 1950's and 1960's. The plant was sold by DOW Chemical in 1969. The current owner and operator of the plant is Spectrulite Consortium Inc.

Radiological History

Both the subcontract and purchase order described above indicate that the Mallinckrodt Chemical Works was responsible for cleanup of the plant facilities after completion of operations involving the processing of uranium metal and health and safety during the operations. However, no records have been found that would indicate the particulars of Mallinckrodt's health and safety program at the plant or the degree of success of the cleanup operation. The subcontract and purchase order indicate that Mallinckrodt retained accountability for the uranium metal through out the operations. They delivered the metal to the plant. And, after completion of the operations, unused and finished product and residues were removed from the plant. Records indicating the configuration and quantities of uranium metal involved in these operation have not been found.

