



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
URANIUM RECOVERY FIELD OFFICE
BOX 25325
DENVER, COLORADO 80225

DEC 27 1993

URFO:DCW
Docket No. 40-3453

MEMORANDUM FOR: Docket File No. 40-3453
FROM: Dana C. Ward, Project Manager
SUBJECT: MEETING WITH ATLAS CORPORATION CONCERNING CORRECTIVE ACTIONS
TO BE TAKEN FOR RELEASE OF MATERIALS (CAL 4-93-15)
MEETING DATE: December 16, 1993

Participants:

NRC

Dwight D. Chamberlain, Director, DRSS, RIV
Ramon E. Hall, Director, URFO
Gary F. Sanborn, Enforcement Officer, RIV
Charles A. Hackney, State Liaison Officer, RIV
Joe T. Gilliland, Public Affairs Officer, RIV
Edward F. Hawkins, Deputy Director, URFO
Pete J. Garcia, Senior Project Manager
Dana C. Ward, Atlas Project Manager

STATE OF UTAH

Scott D. Hacking, Engineer, Radiation Control

ATLAS CORPORATION

Steve Manz, President
Richard E. Blubaugh, Vice President of Environmental &
Governmental Affairs

NOEL SAVIGNAC CONSULTANTS

Noel Savignac, President

Summary of Discussions: On December 16, 1993, representatives of Atlas and their consultant, Noel Savignac Consultants, met with the NRC in Denver,

9402220250 931227
PDR ADOCK 04003453
C PDR

DEC 27 1993

Colorado. Initiation of the meeting was in response to the Confirmatory Action Letter sent by the NRC on November 22, 1993. The meeting was held to discuss the status of the materials released from the Atlas site, located near Moab, Utah. Specifically, the efforts by Atlas to identify and retrieve contaminated materials previously released, and the procedures to be taken by Atlas to assure that future materials released from the site meet appropriate radiological standards. This was a public meeting.

Atlas was requested by the Director, DRSS, to submit in writing to the NRC by January 1, 1994, the following items: (1) an updated list of all the brokers that received scrap and equipment from the mill, (2) a statement reaffirming Atlas' commitment to continue to retain materials onsite until authorized for release by the NRC, and (3) a procedure, in final form, for the control and release of radioactive materials from site. Atlas agreed to these requests and to fully cooperate with the NRC in resolving the issues that surround the release of equipment and scrap from the Moab mill.

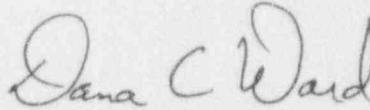
The Vice President, Regulatory & Environmental Affairs (VP), presented a short summary on how items may have left the site contaminated above release criteria. He felt that some items may have been taken off the site clandestinely by a particular subcontractor. He also felt that Atlas could make improvements in the control and release of materials from the site. When questioned about the disposition of the materials released from site, the VP stated that their current information was sketchy, but to the best of their knowledge, approximately 4500 to 5000 tons of materials had been released. The VP estimated that of the total amount released, 3200 to 3500 tons were scrap iron of which the majority had been shipped to Japan and probably already smelted down. The VP further stated that approximately 100 tons of scrap may still be present at a broker near Cleveland, Ohio.

The attending representative from the State of Utah was asked to present the State's findings concerning recent radiological surveys conducted on released equipment. Several items were found at facilities located in Utah that exceeded the average or maximum release criteria for alpha contamination. Attached is the memorandum containing the results of the surveys conducted by the Utah Division of Radiation Control.

Atlas' contractor presented an overview of the procedure that will be implemented to control the release of materials and equipment from the millsite in the future. Several overheads were used to present the 15 steps in the process of releasing items from the restricted area. Special emphasis was placed on the use of eight hold points where items would be detained for survey and possibly not released. Several questions were asked concerning the release procedure, but no major flaws were found. Some minor changes to the

DEC 27 1993

procedure were suggested by the URFO staff at the conclusion of the meeting. The licensee reaffirmed that Atlas would submit the final release procedures by January 1, 1994.



Dana C. Ward
Project Manager

Attachments:

Signature sheet of participants
Memorandum to William J. Sinclair,
Director, Utah Division of Radiation Control

ATLAS

MEETING

DATE 12/16/93

ATTENDEES

NAME (please print)	AFFILIATION	SIGNATURE
DANA WARD	NRC	Dana C Ward
RAMON E HALL	NRC	Ramon E Hall
Steve Maize	Atlas	Steve Maize
Richard Bluberg	ATLAS	Richard Bluberg
NOEL SAVIGNAC	NSC	Noel Savignac
Scott Hackney	State of Utah	Scott D. Hackney
GARY SANBORN	NRC	Gary Sanborn
Charles A. Hackney	NRC Region 10	Charles A. Hackney
Joe Gilliland	NRC	Joe D. Gilliland
DWIGHT CHAMBERLAIN	NRC	Dwight Chamberlain
ED HAWKINS	NRC	Ed Hawkins

MEMORANDUM

TO: William J. Sinclair, Director *BS*
Division of Radiation Control

THROUGH: Dane Finerfrock, Manager *DLF 12/10/93*
Division of Radiation Control

FROM: Philip Griffin and William Craig *PG + WC*
Division of Radiation Control

SUBJECT: Results of Surveys of Facilities Receiving Equipment from the Atlas Uranium Mill

Allegations have arisen involving the release of equipment and materials from the decommissioning of the Atlas Uranium Mill site in Moab that reportedly did not meet the Nuclear Regulatory Commission's (NRC) release criteria. The NRC asked the Division of Radiation Control to assist in conducting surveys of companies in the state that had received equipment or materials from the Atlas site.

All of the surveys were performed with Ludlum model 2220 scalers, a 50 cm² alpha scintillation probe and a 15.5 cm² G-M pancake probe. The serial numbers and calibration dates for the Ludlum 2220 scalers used during all of the four surveys are: s/n 52843, calibration date 11/30/93; s/n 52830, calibration date 11/30/93; s/n 37815, calibration date 12/7/93; and s/n 35644, calibration date 2/3/93. Exposure rate measurements were made with a Bicon μ rem meter, serial number B288K, calibration date 7/93, at Thomas Electric; a Ludlum model 12S micro R meter, serial number 38498, calibration date 3/1/93, at Ute Light; and a Ludlum model 19 micro R meter, serial number 101620, calibration date 6/25/93, at Bookcliff Energy and Western Clay.

The G-M probe was used to do a cursory survey at each site to locate any "hot" areas where we would take an alpha count and an exposure reading. In areas with high readings, swipe tests were performed to check for loose or removable contamination. A Ludlum model 1000 scaler, serial number 9708, calibration date 3/6/91, with an end window probe with a thin window was used to count the swipes.

A brief description of each survey follows and a general summary of all of the surveys.

Thomas Electric

Thomas Electric in Salt Lake City received several electric motors and a few gear boxes from the Atlas site. Prior to the survey conducted by me and Bill Craig of the Division staff, Richard Thomas of Thomas Electric had Edd Johnson of Radiation Safety and Nuclear Products (RSNP) perform a survey of the electric motors. Mr. Thomas assisted in identifying the equipment obtained from the Atlas site.

Some of the motors were located outside and exposed near a wall of a compound across the street from Thomas Electric, and others were in an open shed in the compound. Most of the motors in the shed were identified with a number painted on the motor.

The highest alpha count obtained was 1279 dpm/100 cm² on motor #6717. An exposure measurement of the same spot on #6717 yielded an exposure rate of 14 µrem/hour that was also the highest exposure rate measured. The same spot gave the highest reading on a swipe test (215 dpm) and the highest beta-gamma reading.

Ute Light

The equipment at Ute Light in Wanship consisted of: a roll crusher with two electric motors, a large electric motor, three high voltage supplies, several panels of electric switches, and a large spool of cable. It appeared that the roll crusher and the accompanying electric motors were either in use or were intended for use in the future. Carsten Mortensen of Ute Light assisted in identifying the equipment obtained from the Atlas site.

The highest alpha count obtained was 21,504 dpm/100 cm² near an axle connecting a large flywheel to the crusher. The next highest reading was 2036 dpm/100 cm² on the inside surface of an end plate on the crusher. The highest exposure measurement yielded an exposure rate of 32 µR/hour on a bearing cap near a flywheel. The highest reading on a swipe test was 148 dpm/100 cm², which was from a spot on the inside surface of a flywheel.

Bookcliff Energy

The Bookcliff Energy site in Green River is a refinery that is under construction. An air compressor and steel "I" beams obtained from Atlas are being used to build the refinery. The foreman, Gene Dalton, had observed individuals at the Atlas site washing and surveying the "I" beams. The air compressor did not appear to have been washed.

A maximum fixed alpha reading of 5914 dpm/100 cm² was found on the compressor motor, and an area adjacent to this was only 336 dpm/100 cm². All exposure rate readings were at background levels.

Western Clay

Western Clay in Aurora is a mill that produces clay, bentonite, and other products. Most of the equipment purchased from the Atlas site was found in a salvage area outside the plant. The equipment included: a bag house, three conveyer belts, a roll crusher, a vacuum collection system (three pieces), and two vibrating feeders. Garin Madsen and Fred Mortensen assisted in identifying the equipment obtained from the Atlas site.

The bag house was laying on its side with about half of the old filters still in place, and piles of powder residue were found inside. One pile gave a reading of 10,483 dpm/100 cm² alpha contamination on contact, and measurements of adjacent areas were substantially lower. The exposure rate measurement was 25 µR/hour above background.

A maximum alpha reading of 15,288 dpm/100 cm² was found on the conveyer belts. Surveys of areas immediately adjacent to high readings were less than 1000 dpm/100 cm². The roll crusher had large amounts of soil-like residue over most of the machine and bed plate. The maximum alpha reading of 5107 dpm/100 cm² was found. The highest alpha reading of any of the swipe tests made at either Bookcliff Energy or Western Clay was 76 dpm/100 cm² on the roll crusher.

The vacuum system consisted of two tanks and a blower. One tank and the blower were sealed and no internal readings were made. The maximum alpha reading on the tank with the hand holes was 1176 dpm/100 cm².

The two vibrating feeders were located in the new warehouse area and had large amounts of loose soil residue on them. The maximum alpha reading obtained was 4133 dpm/100 cm². An exposure rate reading of 150 μR/hour was obtained.

SUMMARY:

The criteria set by the NRC for unrestricted release of equipment and materials from the Atlas Uranium Mill was: 5,000 dpm/100 cm² average alpha contamination, 15,000 dpm/100 cm² maximum fixed alpha contamination, and 1000 dpm/100 cm² removable alpha contamination. Most of the equipment at the four sites met the release criteria for average and maximum fixed alpha contamination. None of the equipment surveyed exceeded the release criterion for removable alpha contamination.

The exceptions to the release criteria are as follows.

1. A maximum alpha reading of 21,504 dpm/100 cm² near the axle of the flywheel of the roll crusher at Ute Light was measured, which is greater than the NRC's release limits for maximum fixed alpha contamination.
2. A maximum alpha reading of 15,288 dpm/100 cm² on a conveyer belt at Western Clay was measured, which is greater than the NRC's release limits for maximum fixed alpha contamination.
3. An average alpha reading of 10,483 dpm/100 cm² on a pile of powder residue in a bag house at Western Clay was measured, which is greater than the NRC's release limits for average fixed alpha contamination.

Also, the air compressor motor at Bookcliff Energy and the roll crusher at Western Clay had maximum alpha reading greater than the limits for average fixed alpha contamination, but, in both cases, the adjacent areas around these maximum readings were well below the NRC's criterion for average alpha contamination.

DEC 27 1993

bcc:
 Docket No. 40-3453
 PDR/DCS
 URFO r/f
 DDChamberlain, RIV
 DBSpitzberg, RIV
 GFSanborn, RIV
 CAHackney, RIV
 JTGilliland, RIV
 LLUR Branch, LLWM
 PJGarcia
 DCWard
 O:\DCW\3453PPR.MTG

180093

PM:URFO <i>DCW</i>	PM:URFO <i>[Signature]</i>	DD:URFO <i>[Signature]</i>	D:URFO:RIV	
DCWard/v	PJGarcia	EFHawkins	REHall	
12/22/93	12/21/93	12/21/93	12/23/93	

DF02
111