

April 22, 2014

MEMORANDUM TO: Bill Von Till, Chief
Decommissioning and Uranium Recovery
Licensing Directorate
Uranium Recovery Licensing Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

FROM: Ron Linton, Project Manager */RA/*
Decommissioning and Uranium Recovery
Licensing Directorate
Uranium Recovery Licensing Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

SUBJECT: SUMMARY OF MARCH 13, 2014, MEETING WITH URANIUM
ONE USA, INC. RE-DRYING HONEYMOON DRIED
YELLOWCAKE

On March 13, 2014, U.S. Nuclear Regulatory Commission (NRC) staff met with representatives of Uranium One USA, Inc. to discuss licensing issues related to the Willow Creek ISR Project. The associated meeting notice was issued on February 26, 2014, and is available at NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML14057A797. A summary of the meeting is enclosed.

Docket No: 040-08502

Enclosure: Meeting Summary

cc: Meeting Attendees

CONTACT: Ron Linton, FSME/DWMEP
(301) 415-7777

April 22, 2014

MEMORANDUM TO: Bill Von Till, Chief
Decommissioning and Uranium Recovery
Licensing Directorate
Uranium Recovery Licensing Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

FROM: Ron Linton, Project Manager **/RA/**
Decommissioning and Uranium Recovery
Licensing Directorate
Uranium Recovery Licensing Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

SUBJECT: SUMMARY OF MARCH 13, 2014, MEETING WITH URANIUM
ONE USA, INC. RE-DRYING HONEYMOON DRIED
YELLOWCAKE

On March 13, 2014, U.S. Nuclear Regulatory Commission (NRC) staff met with representatives of Uranium One USA, Inc. to discuss licensing issues related to the Willow Creek ISR Project. The associated meeting notice was issued on February 26, 2014, and is available at NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML14057A797. A summary of the meeting is enclosed.

Docket No: 040-08502

Enclosure: Meeting Summary

cc: Meeting Attendees

CONTACT: Ron Linton, FSME/DWMEP
(301) 415-7777

DISTRIBUTION:
LGersey/RIV REvans/RIV DPersinko

ML14111A002

Office	DWMEP	DWMEP	DWMEP	DWMEP	DWMEP
Name	RLinton	SAchten	TMcLaughlin	JWebb	RLinton
Date	04/21/14	04/20/14	04/22/14	04/22/14	04/22/14

OFFICIAL RECORD COPY

MEETING SUMMARY

DATE: March 13, 2014

TIME: 1:00 p.m. – 3:00 p.m., EDT

PLACE: U.S. Nuclear Regulatory Commission
Two White Flint North, Rockville, Maryland
Room T-8C5

PURPOSE: To discuss the Willow Creek ISR Project license amendment request to re-dry Honeymoon dried yellowcake

ATTENDEES: See Attached Attendee List

BACKGROUND:

The purpose of this meeting was for Uranium One USA, Inc., (Uranium One) and U.S. Nuclear Regulatory Commission (NRC) staff to discuss the Uranium One amendment request to re-dry dried yellowcake, from Honeymoon, Australia, at the Willow Creek Project, Irigaray Central Processing Plant (CPP), Wyoming.

The meeting and teleconference started at 1:00 p.m. Eastern time in room T-8C5. An opening statement was read by Ron Linton, NRC. Participants introduced themselves and attendance was recorded.

DISCUSSION:

NRC staff acknowledged receipt of the license amendment request dated February 28, 2013, which was placed in NRC's Agencywide Documents Access and Management System and can be found at ML14066A112. NRC staff indicated that TAC J00721 would be used to track costs related to this amendment.

Uranium One staff discussed that there are 1032 drums of dried yellowcake that need to be re-dried. The drums are currently located at the Australian Honeymoon facility, the Canadian Blind River facility and the Metropolis, Illinois, ConverDyn facility. Approximately two lots of 60 drums have been shipped from Australia and are in route to the Willow Creek Project.

Uranium One staff stated the Honeymoon dried yellowcake needs to be re-dried due to the high organic content ranging from 0.8% to 7.0% in the yellowcake. Uranium One staff indicated the high organic content is a result of high total dissolved solids in ground water at the Honeymoon facility that requires an extraction process that includes using Iso-Decanol and kerosene instead of the more common extraction with hydrogen peroxide. The Honeymoon facility uses a low-temperature dryer that cannot volatilize and remove the organics. The dryer at Willow Creek is capable of drying the material at high temperature (approximately 1200° F) that would volatilize the organics in the yellowcake.

Enclosure

Uranium One proposes to dry the drums in two batch campaigns, each lasting approximately 60 days. Uranium extraction would continue at the Willow Creek Project during the Honeymoon drum drying campaigns. The Willow Creek Project can store yellowcake slurry in the yellowcake thickener for approximately 60 days.

Uranium One is proposing to add a drum tipper and a tubular conveyer system to transport material from the Irigaray CPP floor to the top of the dryer. Uranium One staff discussed the process and the drum tipper they are proposing to use and provided a tubular conveyer system case study for NRC staff which is included as Attachment 2. Uranium One staff also provided NRC staff with internet links to vendors and equipment it is considering for use. The links are:

http://www.materialtransfer.com/drum_dumper/html/video.html. This link shows the drum dumper video from Material Transfer.com.

<http://hapman.com/products/tubular-drag-conveyor.html>. This link shows an assortment of different videos/materials being conveyed by a tubular drag conveyor.

NRC staff raised concerns about air sampling and containment of the operations. NRC staff asked if this review would be a priority over the Ludeman review. Uranium One staff indicated it would be a priority.

PUBLIC DISCUSSION:

There was no public discussion.

ACTION ITEMS:

The NRC staff will provide a detailed meeting summary of the issues discussed.

The meeting and teleconference ended at approximately 2:30 p.m.

ATTACHMENTS:

1. Attendee List
2. Hapman Case Study



MEETING ATTENDEES

Date: March 13, 2014

Topic: Discuss Uranerz Energy Corp's Willow Creek ISR Project Licensing issues

NAME	AFFILIATION
Ron Linton	NRC
Ron Burrows	NRC
Tom McLaughlin	NRC
Jim Webb	NRC
Bill vonTill	NRC
Linda Gersey	NRC
Robert Evans	NRC
Donna Wichers	Uranium One
Jon Winter	Uranium One
Scott Schierman	Uranium One
Eric Tiepel	Golder & Asso.
Steve Cohen	SENES

Stillwater Mining Improves Smelting Efficiency and Yield, Eliminates Dust with Tubular Drag Conveyor

For nearly 20 years, the Stillwater Mining Company has been extracting, processing, smelting and refining palladium, platinum and associated metals from a geological formation in southern Montana. The company conducts two mining operations as well as a smelter, refinery and laboratory in Columbus, Montana, to further upgrade the concentrate to a platinum group metal-rich filter cake.

Stillwater Mining Company also recovers platinum group metals (PGM) from various recycled materials that contain PGMs, specifically spent automobile catalytic converters and spent petroleum catalysts. These materials are fed to an electric smelting furnace with the mine concentrates to recover the PGMs.

One of these spent petroleum catalyst materials is a carbon dust impregnated with platinum and palladium material. When fed into the smelting furnace, the carbon in the material is burned off to reveal the precious metals, which are then concentrated in the matte produced in the smelting furnace.

All or Nothing Proves Inefficient, Dirty

Stillwater Mining was feeding this recycled material to its electric arc furnace by dumping 2000-pound (900-kilogram) bulk bags into it once every two to three days. The infrequent feed rate resulted in a chemical in-balance in the furnace and subsequent temperature spikes.

"We had a hard time controlling the temperature of the furnace because we were dumping entire bags into it at a time," said Senior Metallurgist Dayle Flynn. "The addition of large quantities of excess carbon to the furnace resulted in temperature spikes, and smelting was not taking place efficiently. This resulted in a loss of some of the precious metals through slag."

When Flynn joined Stillwater's smelting operations, he immediately realized this process could be improved. In addition to issues with maintaining constant temperatures to obtain the greatest amount of precious metals, the process of dumping bulk bags into the furnace was less than hygienic for the operators.

"Our operators came out looking like coal miners," said Flynn. "I knew there had to be a more efficient way of feeding the furnace that was also cleaner."

Flynn began researching alternative methods that could slowly feed the furnace while operating within a fully enclosed system. But not just any solution would work. The spent catalyst materials can be very abrasive and area around the furnace was very congested with piping and structural steel.



Dayle Flynn, Senior Metallurgist with Stillwater Mining Company, in front of Hapman's tubular drag conveyor with PosiPortion™ feeder, as well as an integrated drum drumper.

CUSTOMER

- Stillwater Mining Company

INDUSTRY

- Mining & Processing of Palladium, Platinum and Associated Metals

PRODUCTS

- Tubular Drag Conveyor
- PosiPortion™ Feeder

BUSINESS BENEFITS REALIZED

- Constant feed of material to furnace maintains constant temperature during smelting and retains more of the precious metals being processed.
- Reduces extreme dust created when feeding primary smelting furnace with carbon dust, improving working environment



Carbon dust impregnated with platinum and palladium material is smelted in the furnace leaving behind the precious metals.

HAPMAN CASE STUDY: MINING AND METAL PROCESSING



The 60-foot (18-meter) tubular drag conveyor supplies a consistent amount of catalyst to the smelter.



A drum dumper supplies the PosiPortion feeder with 55-gallon drums (44-gallon/200-liter drums) of carbon dust. The feeder delivers a consistent amount of material to the tubular drag conveyor.

His quest led him to Hapman's tubular drag conveyor and PosiPortion™ feeder.

"Hapman's solutions met our unique requirements," noted Flynn. "They helped integrate a complete fully-enclosed, dust-tight system that provided a consistent feed to the furnace. They even fabricated an air lock I designed to prevent material from surging back in the process and worked with another supplier to incorporate a drum dumper."

Even Temperatures Prevail

When installed, the 60-foot (18-meter) tubular drag conveyor, PosiPortion feeder and other components were successful at producing a metered feed into the smelting furnace without dust.

"Immediately after running the tubular drag conveyor and feeder we couldn't believe we ever worked with the other process," said Flynn. "We went from a dusty, dirty operation to a very clean, simple operation. The furnace temperature doesn't fluctuate with the consistent feed, and we are able to retain more of the precious metals."

Back to the Future

Six months after the system was installed, Stillwater Mining began an expansion of its plant with a second smelting furnace. The expansion required moving the tubular drag conveyor and reverting back to the former process of feeding the furnace.

"Unfortunately, the expansion required us to dismantle the conveyor and feeder solution and store it for about a year before relocating it to feed the furnace in a different location," said Flynn. "People weren't happy when we went back to the old process."

Luckily, the expansion was on-time and the tubular drag conveyor, PosiPortion feeder and other system components were reinstalled with a few adjustments to accommodate the new conveyor path. Currently, the system runs 24/7 two to three weeks out of each month, depending on the supply of petroleum catalyst materials from suppliers.

Additional Enhancements Under Way

Stillwater Mining has been so pleased with the reliable, dust-free performance of the tubular drag conveyor and PosiPortion feeder, it has purchased a second tubular drag system for a new process that will further enhance efficiencies related to recycling spent autocatalyst materials.

ABOUT HAPMAN

Hapman Ideas that move™ include the most technologically advanced powder and bulk handling equipment and systems for food, chemical, pharmaceutical, plastics and other industrial processors. That expertise combined with more than 10,000 global installations and the conveyance of more than 2,600 distinct materials make Hapman an innovation leader.

(800) 427-6260
sales@hapman.com

HAPMAN.
Ideas that move™
www.hapman.com