

From: [Scott Schierman \(USA - Casper\)](#)
To: [Linton, Ron](#)
Cc: [Jon Winter \(USA - Casper\)](#); [Donna Wichers \(USA - Casper\)](#)
Subject: Re: RAI 2b response to include feed rate
Date: Thursday, October 02, 2014 1:55:07 PM
Attachments: [RAI #2b Revision feed rate 10.3.14.docx](#)

Ron

As discussed during our phone conversation please find the revised page to RAI response 2b that includes a specifies the adjustment to feed rate in lbs/hr.

If you have any further questions in regards to this issue please notify Jon or myself.

Regards

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determined that residual organics still exist the temperature will be increased in 100F (38C) increments until a temperature is reached that will produce a yellowcake with acceptable organics. This will confirm the bench scale testing that showed this temperature range to be effective for reducing any residual organics to negligible levels.

3. It is recommended that the residence time in the dryer be operated in a range of 1 – 2 hours. The residence time in the dryer will be initially set at 2 hours which was the maximum time in the test program that showed complete decomposition of organic residuals. Actual laboratory results showed that the decomposition of the organics occurs rapidly and that lower residence times could also give acceptable results for the decomposition of the organics. If the initial drum(s) of Honeymoon yellowcake at the proposed conditions of 300C (~570F) and 2 hours residence time show good results, Uranium One may increase the feed rate (100 lbs/hr increments) to the dryer to reduce the residence time to the dryer, or increase the speed of the dryer rake arm, in 30 minute increments. If the initial test results show that there is still an unacceptable level of organics in the dried yellowcake, Uranium One will increase the residence time to allow the organics to be more fully decomposed.
4. If it is established that the final dried yellowcake product is dried to an undesirable higher uranium oxide state (UO₂), Uranium One will consider lowering the residence times in the dryer to produce the desired UO₃ or U₃O₈ product. This can be achieved by increasing the speed of the dryer rake arm or by increasing the rate of the feed conveyor. The conveyor is equipped with a variable frequency drive that will allow feed rates ranging from 210 lbs/hr up to 1,260 lbs/hr. The optimum design rate of the feed conveyor is 800 lbs/hr.

RAI-2 (c) Response

Uranium One commits to writing SOPs, in accordance with License Condition 9.6, that will describe the optimum drying temperature, and drying time, prior to operation of the Honeymoon yellowcake reprocessing system. Uranium One anticipates the drying temperature and drying time will be a range depending on the final dried yellowcake product desired. The initial confirmation run for the Honeymoon yellowcake will utilize a low temperature with a range of residence times to determine the optimum drying conditions. High temperatures and long residence times will lead to the conversion of the uranyl peroxide to UO₃, U₃O₈ and lower oxide forms. It is not necessary nor desirable to dry the product to a low oxidation state as the conversion facility acceptance criteria allows for all forms of uranyl peroxide, uranium trioxide and U₃O₈ to be acceptable feed.