
From: Ron Linton
Sent: Thursday, April 30, 2009 10:56 AM
To: Sarah Fields
Cc: Bill VonTill; Betty Garrett
Subject: RE: Licensing of IX Columns

Sara:

Nice to speak with you today. I think I answered all your questions in our phone conversation. If you have any others, please contact me.

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-----Original Message-----

From: Sarah Fields [mailto:sarahmfields@earthlink.net]
Sent: Wednesday, April 29, 2009 6:15 PM
To: Ron Linton
Cc: Bill VonTill
Subject: Licensing of IX Columns

Dear Mr. Linton,

I've been reviewing the discussion about the jurisdiction over an IX column at the Mt. Taylor mine by the NRC and Rio Grande Resources Corp on Docket No. 40-9070.

In the past, the NRC included an IX column at a uranium mine in at least one source material license for a uranium mill: the Atlas Mill. The IX column at the Velvet Mine was made part of the license via Amendment 13 to License No. SUA-917 (Docket No. 40-3453) on November 15, 1983 (Accession No. 8312140421).

The amendment reads, in part:

"Based on the above, the staff recommends that SUA-917 be amended to authorize the installation of the IX column at the Velvet Mine by adding Condition No. 55 to read as follows:

55. The installation of an ion exchange column at the Velvet Mine shall be in accordance with pages 17 and 18 of the licensee's submittal dated November 1, 1983, with the exception that sampling for airborne uranium shall be performed at least monthly."

It also states: "Atlas has stated that sampling for airborne uranium, radon daughters, and gamma radiation would initially be performed monthly."

Atlas estimated that stripping of the resin would be required once a month, and the loaded elution would be transported to the Moab Mill and introduced into the regular mill process stream.

After the mill closed either the elution or untreated mine water was disposed of directly in the mill tailing impoundment. Atlas had to stop disposing of the mine water at the mill in 1987.

If the IX column was not licensed by the NRC in association with a mill and the uranium from the mine water was not considered to be ore or 11e(2) byproduct material, then where would the loaded elution be processed to remove the uranium? Where would the spent resins be disposed of?

Would a licensed uranium mill be authorized to receive the elution for processing?
Would it be authorized to receive the spent resins from IX mine water recovery?

The mine water contains uranium that has leached into the water from the uranium ore.

In the past enhanced water was pumped back into uranium mines in New Mexico to dissolve the uranium, and the water was then processed to remove the uranium. This was called "old stope leaching." I don't see the difference between this and ISL recovery, except that it wasn't really regulated.

If an IX needs a New Mexico source material license and would not be associated with a mill, then there must be some federal or state regulations and guidance related to the operation of IX columns and a program to sample airborne uranium, radon, and gamma radiation.

These are some of the questions I have.

Sincerely,

Sarah Fields

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From: Ron Linton <Ron.Linton@nrc.gov>
To: Sarah Fields <sarahmfields@earthlink.net>
CC: Bill VonTill <Bill.VonTill@nrc.gov>, Betty Garrett <Betty.Garrett@nrc.gov>
Date: Thu, 30 Apr 2009 10:55:49 -0400
Subject: RE: Licensing of IX Columns
Thread-Topic: Licensing of IX Columns
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