

EPA-1015

"Sharyn Cunningham"  
<sharyn@bresnan.net>

07/07/2011 01:14 AM

To Reid Rosnick

cc

bcc

Subject Cotter and Heap Leach Processing

Dear Reid,

During our conference in April, heap leach was brought up. I thought you might be interested in knowing that Cotter sent a letter on June 17th to CDPHE announcing that they will be constructing a heap leach operation on top of their Secondary Impoundment. The letter is available here:

<http://www.cdphe.state.co.us/hm/cotter/letterfromcotter/110617strategy.pdf>

Sharyn

~~~~~

Sharyn Cunningham  
CCAT Co-Chair  
RMC Sierra Club Uranium Milling-Mining Specialist

EPA-1156

**Reid Rosnick/DC/USEPA/US**

07/07/2011 07:26 AM

To Susan Stahle

cc

bcc

Subject Stakeholder Conference Call

Hi Sue,

A reminder that I'm hosting the quarterly Subpart W conference call at 11 this morning.

866-299-3188

2023439563

Hope you can make it.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-1391

Reid Rosnick/DC/USEPA/US

To Angelique Diaz

07/07/2011 07:27 AM

cc

bcc

Subject Fw: Cotter and Heap Leach Processing

Hi Angelique,

Interesting letter from Sharyn Cunningham.

Hope you can make the stakeholder conference call this morning, 11 AM EDT.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

----- Forwarded by Reid Rosnick/DC/USEPA/US on 07/07/2011 07:26 AM -----

From: "Sharyn Cunningham" <sharyn@bresnan.net>  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 01:15 AM  
Subject: Cotter and Heap Leach Processing

---

Dear Reid,

During our conference in April, heap leach was brought up. I thought you might be interested in knowing that Cotter sent a letter on June 17th to CDPHE announcing that they will be constructing a heap leach operation on top of their Secondary Impoundment. The letter is available here:

<http://www.cdphe.state.co.us/hm/cotter/letterfromcotter/110617strategy.pdf>

Sharyn

---

Sharyn Cunningham  
CCAT Co-Chair  
RMC Sierra Club Uranium Milling-Mining Specialist

EPA-2020

Reid Rosnick/DC/USEPA/US

To Beth Miller

07/07/2011 09:30 AM

cc

bcc

Subject Re: Additions to web site

Tomorrow is Friday...Will you be in?

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Beth Miller

I am out today sorry can it wait till tom...

07/07/2011 09:09:54 AM

From: Beth Miller/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 09:09 AM  
Subject: Re: Additions to web site

---

I am out today sorry can it wait till tomorrow?

Beth Miller  
202-343-9223

-----Reid Rosnick/DC/USEPA/US wrote: -----

=====  
To: Beth Miller/DC/USEPA/US@EPA  
From: Reid Rosnick/DC/USEPA/US  
Date: 07/07/2011 06:25AM  
Subject: Additions to web site  
=====

Hi Beth I have a couple of items for the web site that I hope you can do this morning.

- 1.Remove "Draft" from the last minutes of the conference call.
2. Add the attached presentation to "presentations,"

Thanks

Reid

---

Reid J. Rosnick

Radiation Protection Division (6608J)

U.S. Environmental Protection Agency

1200 Pennsylvania Ave., NW

Washington, DC 20460

202.343.9563

rosnick.reid@epa.gov

[attachment(s) "Rosnick NMA Uranium Recovery 2011.pptx" removed by Beth Miller/DC/USEPA/US]

EPA-1397

**Reid Rosnick/DC/USEPA/US**

07/07/2011 09:52 AM

To Albion Carlson, Andrea Cherepy, Angelique Diaz, Barry Elman, CharlesA Hooper, Charlie Garlow, Davis Zhen, George Brozowski, Kenneth Distler, Marilyn Ginsberg, Robert Duraski, Robert Dye, Stephen Hoffman, Stuart Walker, Susan Stahle, Tim Benner, Tom Peake, Valentine Anoma

cc

bcc Bridgid Curry

Subject Options Selection Follow-Up

Hello,

Thank you all for your participation and timely comments during the run-up to the options selection briefing. I am in the process of writing a "Decisions Memo" documenting the options discussed, decisions made and agreed upon follow-up actions. This will be for my AA's signature, and I will circulate the draft to you for comments before it is finalized.

Try as I might, I don't believe I got all of the attendees written down. If you would kindly send me the list of attendees from your Office/Region I would appreciate it. Thanks again.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
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1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-2221

Reid Rosnick/DC/USEPA/US

07/07/2011 09:54 AM

To "Sharyn Cunningham"

cc

bcc

Subject Re: Cotter and Heap Leach Processing

Dear Sharyn,

Thank you for this information. It does throw a new twist into the process. I will follow-up with the Regional office to make sure they are aware of this.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

"Sharyn Cunningham"

Dear Reid, During our conferen...

07/07/2011 01:15:17 AM

From: "Sharyn Cunningham" <sharyn@bresnan.net>  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 01:15 AM  
Subject: Cotter and Heap Leach Processing

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Sharyn

---

Sharyn Cunningham  
CCAT Co-Chair  
RMC Sierra Club Uranium Milling-Mining Specialist

EPA-2505

Reid Rosnick/DC/USEPA/US

To Beth Miller

07/07/2011 09:57 AM

cc

bcc

Subject Re: Additions to web site

Can you do this from home?

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Beth Miller

From: Beth Miller/DC/USEPA/US To: R...

07/07/2011 09:56:12 AM

From: Beth Miller/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 09:56 AM  
Subject: Re: Additions to web site

Work from home tomorrow

Beth Miller  
202-343-9223

-----Reid Rosnick/DC/USEPA/US wrote: -----

=====  
To: Beth Miller/DC/USEPA/US@EPA  
From: Reid Rosnick/DC/USEPA/US  
Date: 07/07/2011 09:30AM  
Subject: Re: Additions to web site  
=====

Tomorrow is Friday...Will you be in?

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

From: Beth Miller/DC/USEPA/US



To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 09:09 AM  
Subject: Re: Additions to web site

I am out today sorry can it wait till tomorrow?

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202-343-9223

-----Reid Rosnick/DC/USEPA/US wrote: -----

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From: Reid Rosnick/DC/USEPA/US  
Date: 07/07/2011 06:25AM  
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2. Add the attached presentation to "presentations,"

Thanks

Reid

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Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov  
[attachment(s) "Rosnick NMA Uranium Recovery 2011.pptx" removed by Beth Miller/DC/USEPA/US]

EPA-1392

Angelique Diaz/R8/USEPA/US

To Reid Rosnick

07/07/2011 10:17 AM

cc

bcc

Subject Re: Fw: Cotter and Heap Leach Processing

Thanks for the reminder. I'll be on the call. It will be interesting to see if a heap leach will ever go in.

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
Denver, CO 80202-1129  
Office: 303.312.6344  
Fax: 303.312.6064  
diaz.angelique@epa.gov

Reid Rosnick

Hi Angelique, Interesting letter from Sh...

07/07/2011 05:27:34 AM

From: Reid Rosnick/DC/USEPA/US  
To: Angelique Diaz/R8/USEPA/US@EPA  
Date: 07/07/2011 05:27 AM  
Subject: Fw: Cotter and Heap Leach Processing

Hi Angelique,

Interesting letter from Sharyn Cunningham.

Hope you can make the stakeholder conference call this morning, 11 AM EDT.

Reid

-----  
Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov  
----- Forwarded by Reid Rosnick/DC/USEPA/US on 07/07/2011 07:26 AM -----

From: "Sharyn Cunningham" <sharyn@bresnan.net>  
To: Reid Rosnick/DC/USEPA/US@EPA  
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Sharyn

~~~~~

Sharyn Cunningham

CCAT Co-Chair

RMC Sierra Club Uranium Milling-Mining Specialist

EPA-2721

"Sharyn Cunningham"  
<sharyn@bresnan.net>  
07/07/2011 12:25 PM

To Reid Rosnick  
cc  
bcc

Subject Re: Cotter and Heap Leach Processing

Reid, I'm sorry that I missed the call this morning. I had to take my brother (cerebral palsy) for a medical procedure at the hospital this morning at 5:30 am. I thought I might get out by 9am, but didn't. I'll look forward to your notes on the call to see what I missed.

Sharyn

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

**From:** [Reid Rosnick](#)  
**To:** [Sharyn Cunningham](#)  
**Sent:** Thursday, July 07, 2011 7:54 AM  
**Subject:** Re: Cotter and Heap Leach Processing

Dear Sharyn,

Thank you for this information. It does throw a new twist into the process. I will follow-up with the Regional office to make sure they are aware of this.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

From: "Sharyn Cunningham" <sharyn@bresnan.net>  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/07/2011 01:15 AM  
Subject: Cotter and Heap Leach Processing

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<http://www.cdphe.state.co.us/hm/cotter/letterfromcotter/110617strategy.pdf>

Sharyn

-----

Sharyn Cunningham

CCAT Co-Chair

RMC Sierra Club Uranium Milling-Mining Specialist

EPA-1858

**Reid Rosnick/DC/USEPA/US**

07/08/2011 09:34 AM

To Tony Nesky

cc

bcc

Subject Potential Public Hearings for Subpart W

Hi Tony,

In preparation for the upcoming proposal of the Subpart W regulations (anticipated for late 2011) I am assuming that we will need to host at least one formal public hearing. I'd like to talk to you about logistics and support for such a hearing. When is a good time for you for us to get together?

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-5426

**Reid Rosnick/DC/USEPA/US**

07/08/2011 09:34 AM

To Tony Nesky

cc

bcc

Subject Potential Public Hearings for Subpart W

Hi Tony,

In preparation for the upcoming proposal of the Subpart W regulations (anticipated for late 2011) I am assuming that we will need to host at least one formal public hearing. I'd like to talk to you about logistics and support for such a hearing. When is a good time for you for us to get together?

Reid

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Radiation Protection Division (6608J)  
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1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-1168

Reid Rosnick/DC/USEPA/US

To Tony Nesky

07/08/2011 10:08 AM

cc

bcc

Subject Re: Potential Public Hearings for Subpart W

I'm free Tuesday through Friday until noon each day.

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Tony Nesky

What does your schedule look like next...

07/08/2011 10:03:05 AM

From: Tony Nesky/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/08/2011 10:03 AM  
Subject: Re: Potential Public Hearings for Subpart W

What does your schedule look like next week?

Tony Nesky  
Center for Radiation Information and Outreach  
Tel: 202-343-9597  
nesky.tony@epa.gov



EPA-5428

Reid Rosnick/DC/USEPA/US

To Tony Nesky

07/08/2011 10:08 AM

cc

bcc

Subject Re: Potential Public Hearings for Subpart W

I'm free Tuesday through Friday until noon each day.

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Tony Nesky

What does your schedule look like next...

07/08/2011 10:03:05 AM

From: Tony Nesky/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/08/2011 10:03 AM  
Subject: Re: Potential Public Hearings for Subpart W

What does your schedule look like next week?

Tony Nesky  
Center for Radiation Information and Outreach  
Tel: 202-343-9597  
nesky.tony@epa.gov

EPA-4823

Susan Stahle/DC/USEPA/US

To Reid Rosnick

07/08/2011 11:12 AM

cc

bcc

Subject Re: Stakeholder Conference Call

Hi - sorry, I was off yesterday. How did it go?

Susan Stahle  
Air and Radiation Law Office (Rm 7502B)  
Office of General Counsel  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)  
Washington, D.C. 20460  
ph: (202) 564-1272  
fax: (202) 564-5603  
stahle.susan@epa.gov

Reid Rosnick

Hi Sue, A reminder that I'm hosting the...

07/07/2011 07:26:06 AM

From: Reid Rosnick/DC/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Date: 07/07/2011 07:26 AM  
Subject: Stakeholder Conference Call

---

Hi Sue,

A reminder that I'm hosting the quarterly Subpart W conference call at 11 this morning.

866-299-3188

2023439563

Hope you can make it.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-2535

Reid Rosnick/DC/USEPA/US

To Susan Stahle

07/08/2011 12:21 PM

cc

bcc

Subject Re: Stakeholder Conference Call

Hi Sue,

About the same as usual. Travis wanted me to tell you that he is not happy with the speed at which documents are placed on the web site. He told me it was "nothing personal" so I immediately assumed the opposite.

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Susan Stahle

Hi - sorry, I was off yesterday. How did...

07/08/2011 11:12:28 AM

From: Susan Stahle/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/08/2011 11:12 AM  
Subject: Re: Stakeholder Conference Call

Hi - sorry, I was off yesterday. How did it go?

Susan Stahle  
Air and Radiation Law Office (Rm 7502B)  
Office of General Counsel  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)  
Washington, D.C. 20460  
ph: (202) 564-1272  
fax: (202) 564-5603  
stahle.susan@epa.gov

Reid Rosnick

Hi Sue, A reminder that I'm hosting the...

07/07/2011 07:26:06 AM

From: Reid Rosnick/DC/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Date: 07/07/2011 07:26 AM  
Subject: Stakeholder Conference Call

Hi Sue,

A reminder that I'm hosting the quarterly Subpart W conference call at 11 this morning.

866-299-3188

2023439563

Hope you can make it.

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
[rosnick.reid@epa.gov](mailto:rosnick.reid@epa.gov)

EPA-5431

**Reid Rosnick/DC/USEPA/US**

07/11/2011 05:16 PM

To Tony Nesky

cc

bcc

Subject Accepted:Discuss public meetings for Subpart W

EPA-2103

Lowell Ralston/DC/USEPA/US

07/12/2011 07:27 AM

To Reid Rosnick

cc

bcc

Subject Re: Request for Assistance

Reid,

Below are the only "errors" I mentioned in the SC&A report. Must be some sort of embedded call for data that didn't work.

As you know, Neal is back and can look at the radon dose and risk modeling in CAPP-88R.

Thanks,  
Lowell

? (p. 23)

The distance and direction to the RMEI were identified in the Agency for Disease Registry's public health assessment (ATSDR 2010) as:

The nearest residence is about 0.25 miles from the mill [ATSDR 2010]

Notice that the **Error! Reference source not found.** SECPOP estimate per 100,000 individuals to Cañon City at a distance of 1 to 2 km in the North, West, and South. Through analysis using CAP88 the RMEI was found to be located 1 to 2 miles from the mill. For the RMEI dose and risk for this study, the **Error! Reference source not found.** and directions were used, since the public health assessment did not specify the nearest resident.

### 2.3.2 Meteorology

---

Lowell G. Ralston, PhD  
Radiation Protection Division  
Office of Radiation and Indoor Air  
U.S. Environmental Protection Agency  
Washington, DC 20460

202-343-9831 voice  
202-343-2305 fax  
ralston.lowell@epa.gov

Reid Rosnick

Jerry, As part of the NESHAP Subpart...

07/08/2011 09:22:30 AM

From: Reid Rosnick/DC/USEPA/US  
To: Jerome Puskin/DC/USEPA/US@EPA  
Cc: Tom Peake/DC/USEPA/US@EPA, Lowell Ralston/DC/USEPA/US@EPA  
Date: 07/08/2011 09:22 AM  
Subject: Request for Assistance

---

Jerry,

As part of the NESHAP Subpart W revision, earlier this year we asked our contractor to revise the risk assessment originally performed in 1989. At the time, AIRDOS was used to determine risk at uranium mill tailings impoundments. This time around, the contractor used CAP88 PC for the determination. The result is that the current flux standard of 20 pCi/m<sup>2</sup>/sec still remains protective.

Historically, EPA has defined products subject to peer review in terms of having "major impact." The scientific and/or technical work products that support many of the Agency's major rulemakings, policy and guidance documents of general applicability would be designated "influential" because of their far-reaching impacts. Influential scientific information may be novel or innovative, precedential, controversial or cutting edge. On the other hand, a scientific assessment that is based on an application of an existing, adequately peer-reviewed methodology or model to a situation that does not depart significantly from the situation it was originally designed to address may not require another round of peer review. The assessment performed for the review and revision of Subpart W meets the requirements of such an assessment. The assessment used a model that was based on the code(s) used in the 1989 assessment, and has been peer reviewed and is currently used by owners and operators of rad-NESHAP facilities as a compliance tool. The input values used by the contractor are similar to the inputs used in the 1989 risk assessment, with one exception. The 1989 assessment used radon values that were calculated using the assumption that 1 pCi/g of radium-226 in the tailings produced 1 pCi/m<sup>2</sup>/sec of radon flux, while the radon values used by the contractor for the most recent assessment were actual data values based on the available documentation for each site. If anything, they are more representative (hence possibly more realistic) of the actual radon flux from each facility because they are actual values. Because this difference would not meet the standard of a significant departure from the original intent of the model, it would not meet the definition of a "highly influential scientific assessment" as defined in the OMB Bulletin. However, it would be prudent for all the input values used in the assessment to be reviewed by a subject matter expert to determine if the values used are proper. For example, a determination could be made regarding whether the proper meteorological station was used for a particular facility, or whether the proper radon data was input into the code. This review could be performed in-house by someone familiar with the CAP88 code.

I have spoken with Lowell about this, and he advises that he could perform the review, subject to your approval. I have attached the report for your information. Please let me know if you have any questions. Thank you.

Reid

[attachment "Risk Assessment.pdf" deleted by Lowell Ralston/DC/USEPA/US]

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov





EPA-1738

**Reid Rosnick/DC/USEPA/US**

07/12/2011 09:09 AM

To Lisa Price

cc

bcc

Subject Subpart W Options Selection

Hi Lisa,

Can you tell me who represented Region 6 at the meeting on June 30? I'm writing up the minutes and I just want to make sure I included everyone. Thanks!

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-1602

Reid Rosnick/DC/USEPA/US

To Lisa Price

07/12/2011 11:00 AM

cc

bcc

Subject Re: Subpart W Options Selection

Thanks!

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Lisa Price

Reid - It was me and Wren Stenger on t...

07/12/2011 10:25:47 AM

---

From: Lisa Price/R6/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 07/12/2011 10:25 AM  
Subject: Re: Subpart W Options Selection

Reid -

It was me and Wren Stenger on the phone from Region 6.

Lisa Marie Price  
Grants Mining District Coordinator  
EPA Region 6  
214-665-6744  
price.lisa@epa.gov

Reid Rosnick

Hi Lisa, Can you tell me who represent...

07/12/2011 08:09:53 AM

---

From: Reid Rosnick/DC/USEPA/US  
To: Lisa Price/R6/USEPA/US@EPA  
Date: 07/12/2011 08:09 AM  
Subject: Subpart W Options Selection

Hi Lisa,

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1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563

rosnick.reid@epa.gov

EPA-1379

**Tom Peake/DC/USEPA/US**

07/14/2011 09:30 AM

To Reid Rosnick

cc

bcc

Subject Re: Subpart W Decision Memo

Reid,

On the cover memo, you should add a background paragraph, e.g., The Office of A & R is revising 40 CFR Part 61, Subpart W. On June 30, 2011 we met to discuss option selection for Subpart W....Option 1 is...Option 2....

2nd paragraph would begin with what is your current first sentence "Attached please..."

Put in your contact info after your name.

Thanks.

Also, the Trinity WP is with Alan now.

Tom Peake  
Director  
Center for Waste Management and Regulations  
US EPA (6608J)  
1200 Pennsylvania Ave, NW  
Washington, DC 20460  
phone: 202-343-9765

Physical Location and for deliveries:

Room 529  
1310 L St, NW  
Washington, DC 20005

EPA-6367

Marilyn  
Ginsberg/DC/USEPA/US  
07/22/2011 05:56 PM

To Reid Rosnick  
cc  
bcc

Subject Re: Draft Subpart W Preamble and Rule

Hi Reid,

I dutifully, skimmed the entire draft looking for any OW issues. There don't appear to be any; ground-water contamination is "prevented", as is overtopping of containment structures. I would have been surprised if any issues had arisen after the recent briefing. So my comment is "no comments".

Regards,  
Marilyn

Reid Rosnick

[Hello All, Attached you will find the first...](#)

07/22/2011 01:34:56 PM

From: Reid Rosnick/DC/USEPA/US  
To: Albion Carlson/R8/USEPA/US@EPA, Andrea Cherepy/DC/USEPA/US@EPA, Angelique Diaz/R8/USEPA/US@EPA, Barry Elman/DC/USEPA/US@EPA, CharlesA Hooper/R7/USEPA/US@EPA, Charlie Garlow/DC/USEPA/US@EPA, Davis Zhen/R10/USEPA/US@EPA, George Brozowski/R6/USEPA/US@EPA, Kenneth Distler/R8/USEPA/US@EPA, Marilyn Ginsberg/DC/USEPA/US@EPA, Robert Duraski/R8/USEPA/US@EPA, Robert Dye/R7/USEPA/US@EPA, Stephen Hoffman/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Tim Benner/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA, Valentine Anoma/DC/USEPA/US@EPA  
Cc: Jonathan Edwards/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA  
Date: 07/22/2011 01:34 PM  
Subject: Draft Subpart W Preamble and Rule

Hello All,

Attached you will find the first draft of the Subpart W preamble and rule language. I would appreciate your review and comment. Because of the length if you could get comments back to me by Wednesday, August 3 I would appreciate it. Also, please feel free to use the review section in MS Word and submit comments or language changes directly onto the document, and please be as specific as possible. If you feel that language should be changed or reworded please do so. This way I can see everyone's comments side-by-side, and it should be easier to address them. Please let me know if you have any questions, and again, thank you for your participation in the workgroup.

Reid

[attachment "Draft Outline FR Proposal for Revision of Subpart W.docx" deleted by Marilyn Ginsberg/DC/USEPA/US]

-----  
Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

EPA-2609

Reid Rosnick/DC/USEPA/US

To Raymond Lee

08/04/2011 01:02 PM

cc

bcc

Subject Re: FAR Meeting for Subpart W

Hi Ray,

I'm out of the office today, too, but there is no way we'll meet the 8/17 date. I hope to be in tomorrow, can we discuss it then? Thanks

Reid

---

-----  
Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

-----Raymond Lee/DC/USEPA/US wrote: -----

To: rosnick.reid@epa.gov  
From: Raymond Lee/DC/USEPA/US  
Date: 08/04/2011 11:43AM  
Subject: FAR Meeting for Subpart W

Hi Reid,

I'm out of the office today, but wanted to follow-up on a reg. item for our SCOUT mtg this afternoon. We have in the system a 8/17 date for FAR on Subpart W, but the meeting hasn't been scheduled yet. Is this still up to date or do I need to revise it?

Thanks!

Ray

EPA-2440

Reid Rosnick/DC/USEPA/US

To Raymond Lee

08/09/2011 09:53 AM

cc

bcc

Subject Re: FAR Meeting for Subpart W

Hi Ray,

If you're in today, please let me know and we can discuss the FAR meeting date. Thanks

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Raymond Lee

Hi Reid, Let me know how far you wan...

08/08/2011 03:20:59 PM

From: Raymond Lee/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 08/08/2011 03:20 PM  
Subject: Re: FAR Meeting for Subpart W

Hi Reid,

Let me know how far you want me to push the FAR meeting date (and any other issues you might have) and I'll go ahead and update the system.

Thanks!

Ray

Ray Lee | Center for Radiation Information and Outreach (CRIO) | US EPA | Phone 202.343.9463 | Fax 202.343.2305 | lee.raymond@epa.gov

Reid Rosnick

Hi Ray,

08/04/2011 01:02:49 PM

From: Reid Rosnick/DC/USEPA/US  
To: Raymond Lee/DC/USEPA/US@EPA  
Date: 08/04/2011 01:02 PM  
Subject: Re: FAR Meeting for Subpart W

Hi Ray,

I'm out of the office today, too, but there is no way we'll meet the 8/17 date. I hope to be in tomorrow, can we discuss it then? Thanks

Reid

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
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Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

-----Raymond Lee/DC/USEPA/US wrote: -----

To: rosnick.reid@epa.gov  
From: Raymond Lee/DC/USEPA/US  
Date: 08/04/2011 11:43AM  
Subject: FAR Meeting for Subpart W

Hi Reid,

I'm out of the office today, but wanted to follow-up on a reg. item for our SCOUT mtg this afternoon. We have in the system a 8/17 date for FAR on Subpart W, but the meeting hasn't been scheduled yet. Is this still up to date or do I need to revise it?

Thanks!

Ray



EPA-1146

**Reid Rosnick/DC/USEPA/US**

08/10/2011 01:34 PM

To Albion Carlson, Andrea Cherepy, Angelique Diaz, Barry Elman, CharlesA Hooper, Charlie Garlow, Davis Zhen, George Brozowski, Kenneth Distler, Marilyn Ginsberg, Robert Duraski, Robert Dye, Stephen Hoffman, Stuart Walker, Susan Stahle, Tim Benner, Tom Peake, Valentine Anoma

cc

bcc

Subject Comments on Subpart W Draft Preamble and Rule

Hello,

To those of you who have provided comments on the Subpart W draft preamble and rule, thank you. I would like to keep the action moving, so for those of you who have not submitted comments, if you could get them to me by the end of the week I would appreciate it. If you think you will need more time to submit, please let me know so that I can plan accordingly. As in the Option Selection process, I need about 3-4 weeks to schedule a FAR meeting and package, and prior to that a workgroup meeting to make certain that we are all in agreement that the action can proceed to FAR. As always, thank you for your continued participation, and please contact me with any questions or comments.

Reid

---

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202.343.9563  
rosnick.reid@epa.gov

EPA-5504

Mike Flynn/DC/USEPA/US

08/11/2011 02:51 PM

To Jonathan Edwards

cc Alan Perrin, Daniel Schultheisz, Tom Peake

bcc

Subject Re: Updated Reg Schedules

jon/alan, please add the title of the rule to these attachments, thanks

Mike Flynn, Director  
Office of Radiation and Indoor Air (MC-6601-J)  
U.S. Environmental Protection Agency  
Phone: (202) 343-9320  
Fax: (202) 343-2395

Jonathan Edwards

Mike--- We only had to adjust the S...

08/11/2011 01:50:47 PM

From: Jonathan Edwards/DC/USEPA/US  
To: Mike Flynn/DC/USEPA/US@EPA  
Cc: Alan Perrin/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA, Daniel Schultheisz/DC/USEPA/US@EPA  
Date: 08/11/2011 01:50 PM  
Subject: Updated Reg Schedules

---

[attachment "40-CFR-192\_7-11.docx" deleted by Mike Flynn/DC/USEPA/US] [attachment "Subpart W Deliverable Datesv2.docx" deleted by Mike Flynn/DC/USEPA/US]

Mike--- We only had to adjust the Subpart W file--shifted the FAR back one month as well as the two steps after that ----but did not shift the final FR Proposal goal which is end of calendar year. The 192 file did not change. Thanks---Jon

PS Most immediate key date to emphasize is FAR date for subpart W.

EPA-2261

Reid Rosnick/DC/USEPA/US

To: Angelique Diaz

08/17/2011 02:05 PM

cc

bcc

Subject: Re: Fw: Subpart W Preamble - R8 Comments

Great idea, thanks!

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
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1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Angelique Diaz

Hi, Sue. I understand you haven't yet...

08/17/2011 01:56:00 PM

From: Angelique Diaz/R8/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA, Sara Laumann/R8/USEPA/US@EPA  
Date: 08/17/2011 01:56 PM  
Subject: Fw: Subpart W Preamble - R8 Comments

Hi, Sue.

I understand you haven't yet commented on the Subpart W FR Proposal from Reid. Deb and I were talking and thought that it would be easiest for Reid if you added your comments to those we submitted to him (attached). Also, this would allow you to let Reid know if any of our comments do not make sense from a legal point of view. Just a suggestion we are putting out there.

Thank you,  
Angelique

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
Denver, CO 80202-1129  
Office: 303.312.6344  
Fax: 303.312.6064  
diaz.angelique@epa.gov

----- Forwarded by Angelique Diaz/R8/USEPA/US on 08/17/2011 11:45 AM -----

From: Angelique Diaz/R8/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA  
Date: 08/11/2011 12:36 PM  
Subject: Subpart W Preamble - R8 Comments

Reid, here are the Region 8 comments. Deb and I both reviewed at it and provided input. Let me know if you have any questions and when you think we will see the next iteration of the document. I'm telecommuting tomorrow (Friday is my telecommute day) and can be reached at (303) 985-9163.

[attachment "Draft Outline FR Proposal for Revision of Subpart W\_R8Comments.docx" deleted by Reid Rosnick/DC/USEPA/US]

Thank you,  
Angelique

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
Denver, CO 80202-1129  
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[diaz.angelique@epa.gov](mailto:diaz.angelique@epa.gov)

EPA-1963

Susan Stahle/DC/USEPA/US

08/17/2011 06:34 PM

To Angelique Diaz

cc Deborah Lebow-Aal, Reid Rosnick, Sara Laumann

bcc

Subject Re: Fw: Subpart W Preamble - R8 Comments

Thanks. Whatever makes this easier for Reid I am happy to do. If that works for Reid, I can certainly add my comments into your document.

Reid?

Susan Stahle

Air and Radiation Law Office (Rm 7502B)

Office of General Counsel

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW (ARN: MC 2344A)

Washington, D.C. 20460

ph: (202) 564-1272

fax: (202) 564-5603

stahle.susan@epa.gov

Angelique Diaz

Hi, Sue. I understand you haven't yet...

08/17/2011 01:55:59 PM

From: Angelique Diaz/R8/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA, Sara Laumann/R8/USEPA/US@EPA  
Date: 08/17/2011 01:55 PM  
Subject: Fw: Subpart W Preamble - R8 Comments

---

Hi, Sue.

I understand you haven't yet commented on the Subpart W FR Proposal from Reid. Deb and I were talking and thought that it would be easiest for Reid if you added your comments to those we submitted to him (attached). Also, this would allow you to let Reid know if any of our comments do not make sense from a legal point of view. Just a suggestion we are putting out there.

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Office: 303.312.6344  
Fax: 303.312.6064  
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----- Forwarded by Angelique Diaz/R8/USEPA/US on 08/17/2011 11:45 AM -----

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Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA  
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Subject: Subpart W Preamble - R8 Comments

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[attachment "Draft Outline FR Proposal for Revision of Subpart W\_R8Comments.docx" deleted by Susan Stahle/DC/USEPA/US]

Thank you,  
Angelique

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
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Fax: 303.312.6064  
diaz.angelique@epa.gov

EPA-4828

Susan Stahle/DC/USEPA/US

08/17/2011 06:34 PM

To Angelique Diaz

cc Deborah Lebow-Aal, Reid Rosnick, Sara Laumann

bcc

Subject Re: Fw: Subpart W Preamble - R8 Comments

Thanks. Whatever makes this easier for Reid I am happy to do. If that works for Reid, I can certainly add my comments into your document.

Reid?

Susan Stahle

Air and Radiation Law Office (Rm 7502B)

Office of General Counsel

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW (ARN: MC 2344A)

Washington, D.C. 20460

ph: (202) 564-1272

fax: (202) 564-5603

stahle.susan@epa.gov

Angelique Diaz

Hi, Sue. I understand you haven't yet...

08/17/2011 01:55:59 PM

From: Angelique Diaz/R8/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA, Sara Laumann/R8/USEPA/US@EPA  
Date: 08/17/2011 01:55 PM  
Subject: Fw: Subpart W Preamble - R8 Comments

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----- Forwarded by Angelique Diaz/R8/USEPA/US on 08/17/2011 11:45 AM -----

From: Angelique Diaz/R8/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA  
Date: 08/11/2011 12:36 PM  
Subject: Subpart W Preamble - R8 Comments

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[attachment "Draft Outline FR Proposal for Revision of Subpart W\_R8Comments.docx" deleted by Susan Stahle/DC/USEPA/US]

Thank you,  
Angelique

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
Denver, CO 80202-1129  
Office: 303.312.6344  
Fax: 303.312.6064  
diaz.angelique@epa.gov



EPA-1964

Reid Rosnick/DC/USEPA/US

08/17/2011 09:46 PM

To Susan Stahle

cc Angelique Diaz, Deborah Lebow-Aal, Sara Laumann  
bcc

Subject Re: Fw: Subpart W Preamble - R8 Comments

Sure, that works for me. Thanks to all.

-----  
-----  
Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

-----Susan Stahle/DC/USEPA/US wrote: -----

To: Angelique Diaz/R8/USEPA/US@EPA  
From: Susan Stahle/DC/USEPA/US  
Date: 08/17/2011 06:34PM  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA, Sara Laumann/R8/USEPA/US@EPA  
Subject: Re: Fw: Subpart W Preamble - R8 Comments

Thanks. Whatever makes this easier for Reid I am happy to do. If that works for Reid, I can certainly add my comments into your document.

Reid?

Susan Stahle  
Air and Radiation Law Office (Rm 7502B)  
Office of General Counsel  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)  
Washington, D.C. 20460  
ph: (202) 564-1272  
fax: (202) 564-5603  
stahle.susan@epa.gov

Angelique Diaz---08/17/2011 01:55:59 PM---Hi, Sue. I understand you haven't yet commented on the Subpart W FR Proposal from Reid. Deb and I

From: Angelique Diaz/R8/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA, Sara Laumann/R8/USEPA/US@EPA  
Date: 08/17/2011 01:55 PM

Subject: Fw: Subpart W Preamble - R8 Comments

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Thank you,  
Angelique

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Fax: 303.312.6064  
diaz.angelique@epa.gov

----- Forwarded by Angelique Diaz/R8/USEPA/US on 08/17/2011 11:45 AM -----

From: Angelique Diaz/R8/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Cc: Deborah Lebow-Aal/R8/USEPA/US@EPA  
Date: 08/11/2011 12:36 PM  
Subject: Subpart W Preamble - R8 Comments

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[attachment "Draft Outline FR Proposal for Revision of Subpart W\_R8Comments.docx" deleted by Susan Stahle/DC/USEPA/US]

Thank you,  
Angelique

Angelique D. Diaz, Ph.D.  
Environmental Engineer  
Air Program, USEPA/Region 8  
1595 Wynkoop Street (8P-AR)  
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Fax: 303.312.6064  
diaz.angelique@epa.gov

EPA-2408

Reid Rosnick/DC/USEPA/US

To Emily Atkinson

08/30/2011 09:59 AM

cc

bcc

Subject Re: New draft of option selection notes

Thanks!

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Emily Atkinson

I have just now printed them and will pu...

08/30/2011 09:52:34 AM

---

From: Emily Atkinson/DC/USEPA/US  
To: Reid Rosnick/DC/USEPA/US@EPA  
Date: 08/30/2011 09:52 AM  
Subject: Re: New draft of option selection notes

I have just now printed them and will put the package in Jon's office for approval.

Reid Rosnick

Hi Emily, Attached is the revised notes...

08/29/2011 09:05:39 AM

---

From: Reid Rosnick/DC/USEPA/US  
To: Emily Atkinson/DC/USEPA/US@EPA  
Date: 08/29/2011 09:05 AM  
Subject: New draft of option selection notes

Hi Emily,

Attached is the revised notes from the options selection meeting of June 30, 2011. This version reflects comments Mike had with the earlier version. Would you please put the package together again, and I believe this time it will go. Thanks!

Reid

[attachment "Notes from Subpart W Options Selection Meeting.docx" deleted by Emily Atkinson/DC/USEPA/US]

---

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rosnick.reid@epa.gov

EPA-3506

**Daniel  
Schultheisz/DC/USEPA/US**  
09/01/2011 09:36 AM

To Reid Rosnick  
cc Andrea Cherepy, Tom Peake  
bcc  
Subject Re: Subpart W Presentation

I will take this and add a few additional slides.

Reid Rosnick

Attached is the portion of the presentati...

09/01/2011 09:31:45 AM

From: Reid Rosnick/DC/USEPA/US  
To: Tom Peake/DC/USEPA/US@EPA, Daniel Schultheisz/DC/USEPA/US@EPA  
Cc: Andrea Cherepy/DC/USEPA/US@EPA  
Date: 09/01/2011 09:31 AM  
Subject: Subpart W Presentation

---

Attached is the portion of the presentation related to Subpart W. I have included a title page and outline page, but I assume you will probably add to that once the 192 stuff is in. I have not included notes, because the diagrams are self-explanatory, and the bullet points should be obvious to anyone in the Division.

[attachment "Fodder.pptx" deleted by Daniel Schultheisz/DC/USEPA/US]

-----  
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EPA-3558

**Daniel  
Schultheisz/DC/USEPA/US**  
09/01/2011 03:40 PM

To Reid Rosnick  
cc Andrea Cherepy, Tom Peake  
bcc  
Subject Re: Subpart W Presentation

I'm confused. Slide 8 doesn't say anything about groundwater. It's the internal review process on Subpart W ("AA will provide direction" etc.).

And in keeping with the theme, perhaps we could replace the "footer" with "fodder". Oh, the whimsy!

Reid Rosnick I'm OK with keeping or losing slide 8, ot... 09/01/2011 03:30:52 PM

From: Reid Rosnick/DC/USEPA/US  
To: Daniel Schultheisz/DC/USEPA/US@EPA  
Cc: Andrea Cherepy/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA  
Date: 09/01/2011 03:30 PM  
Subject: Re: Subpart W Presentation

I'm OK with keeping or losing slide 8, other than that it looks OK to me (with the recurring exception of using "groundwater") ;-)

-----  
Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

-----Daniel Schultheisz/DC/USEPA/US wrote: -----

To: Reid Rosnick/DC/USEPA/US@EPA  
From: Daniel Schultheisz/DC/USEPA/US  
Date: 09/01/2011 02:07PM  
Cc: Andrea Cherepy/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA  
Subject: Re: Subpart W Presentation

Revised presentation with new slides on 192 (taken mostly from Andrea's NMA presentation and the SAB presentation). A couple of edits to Reid's slides. Also notes on some of the slides. There are still some formatting inconsistencies, and it can probably be prettied up a bit. And I'm not sure we need slide 8 (the second Subpart W slide).

Tom, now it's your turn.

*(See attached file: More Fodder.pptx)*

Reid Rosnick---09/01/2011 09:31:45 AM---Attached is the portion of the presentation related to Subpart W. I have included a title page and o

From: Reid Rosnick/DC/USEPA/US  
To: Tom Peake/DC/USEPA/US@EPA, Daniel Schultheisz/DC/USEPA/US@EPA

Cc: Andrea Cherepy/DC/USEPA/US@EPA  
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[attachment "Fodder.pptx" deleted by Daniel Schultheisz/DC/USEPA/US]

---

Reid J. Rosnick  
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1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

[attachment "More Fodder.pptx" removed by Reid Rosnick/DC/USEPA/US]

EPA-4562

**Daniel Schultheisz/DC/USEPA/US**  
09/01/2011 03:40 PM

To Reid Rosnick  
cc Andrea Cherepy, Tom Peake  
bcc  
Subject Re: Subpart W Presentation

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To: Daniel Schultheisz/DC/USEPA/US@EPA  
Cc: Andrea Cherepy/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA  
Date: 09/01/2011 03:30 PM  
Subject: Re: Subpart W Presentation

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U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

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Tom, now it's your turn.

*(See attached file: More Fodder.pptx)*

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Cc: Andrea Cherepy/DC/USEPA/US@EPA  
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[attachment "Fodder.pptx" deleted by Daniel Schultheisz/DC/USEPA/US]

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[attachment "More Fodder.pptx" removed by Reid Rosnick/DC/USEPA/US]



EPA-3542

**Daniel Schultheisz/DC/USEPA/US**  
09/01/2011 03:51 PM

To Reid Rosnick  
cc Andrea Cherepy, Tom Peake  
bcc  
Subject Re: Subpart W Presentation

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EPA-4436

**Daniel Schultheisz/DC/USEPA/US**  
09/01/2011 03:51 PM

To Reid Rosnick  
cc Andrea Cherepy, Tom Peake  
bcc  
Subject Re: Subpart W Presentation

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[attachment "More Fodder.pptx" removed by Reid Rosnick/DC/USEPA/US]

EPA-1220

**Reid Rosnick/DC/USEPA/US**

09/06/2011 01:35 PM

To Ray Lee

cc Tom Peake

bcc

Subject FAR Date

Hi Ray,

Apparently I didn't add enough time to my prediction of when the FAR for the Subpart W proposal would occur. Would you please change the date in RAPIDS to November 15, 2011. Thanks.

I also need to talk with you about who we would contact in OP regarding the possibility of briefing OMB in order to hopefully speed up their review time. Thanks

Reid

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Washington, DC 20460  
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rosnick.reid@epa.gov

EPA-2278

**Raymond Lee/DC/USEPA/US**

09/07/2011 12:03 PM

To Reid Rosnick

cc Tom Peake

bcc

Subject Re: Fw: FAR Date

Hi Reid,

The FAR date has been updated! :)

Also, my recommendation for a contact person in OP would be Bill Nickerson (nickerson.william@epa.gov). I know he has been in charge of reviewing our ORIA items in the reg. agenda, so he would be the best bet. If not, he should be able to give you the names of other folks to get in touch with.

Thanks,

Ray

Ray Lee | Center for Radiation Information and Outreach (CRIO) | US EPA | Phone 202.343.9463 | Fax 202.343.2305 | lee.raymond@epa.

Ray Lee

----- Forwarded by Ray Lee/DC/USEPA...

09/06/2011 01:54:31 PM

From: Ray Lee/DC/USEPA/US  
To: Raymond Lee/DC/USEPA/US@EPA  
Date: 09/06/2011 01:54 PM  
Subject: Fw: FAR Date

----- Forwarded by Ray Lee/DC/USEPA/US on 09/06/2011 01:54 PM -----

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To: Ray Lee/DC/USEPA/US@EPA  
Cc: Tom Peake/DC/USEPA/US@EPA  
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202.343.9563



rosnick.reid@epa.gov

EPA-1064

"Paulson, Oscar (CCC)"  
<Oscar.Paulson@riotinto.com  
>

09/12/2011 07:03 PM

To Reid Rosnick

cc "Sweeney,Katie", oscar.paulson

bcc

Subject S Cohen and Associates Report

Reid Rosnick:

When will the S. Cohen and Associates report be available for review? I have not seen it yet on the 40 CFR Part 61 Subpart W web site.

Oscar Paulson

Facility Supervisor  
Kennecott Uranium Company  
Sweetwater Uranium Project  
P.O. Box 1500  
42 Miles Northwest of Rawlins  
Rawlins, Wyoming 82301-1500

Telephone: (307)-324-4924

Fax: (307)-324-4925

Cellular: (307)-320-8758

E-mail: [oscar.paulson@riotinto.com](mailto:oscar.paulson@riotinto.com)

EPA-2347

Reid Rosnick/DC/USEPA/US

09/13/2011 07:21 AM

To "Paulson, Oscar (CCC)"

cc "Sweeney,Katie", oscar.paulson

bcc

Subject Re: S Cohen and Associates Report

Hello Oscar,

The report is still undergoing internal peer review. Unfortunately, our lead reviewer has been out of the office for several weeks because of a surgical procedure, and that has slowed the pace of the review. I hope to have something from him in the next couple of weeks.

Reid

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"Paulson, Oscar (CCC)"

Reid Rosnick:

09/12/2011 07:03:32 PM

From: "Paulson, Oscar (CCC)" <Oscar.Paulson@riotinto.com>  
To: Reid Rosnick/DC/USEPA/US@EPA  
Cc: "Sweeney,Katie" <KSweeney@nma.org>, <oscar.paulson@bresnan.net>  
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EPA-2734

"Paulson, Oscar (CCC)"  
<Oscar.Paulson@riotinto.com>

09/13/2011 09:25 AM

To Reid Rosnick

cc "Sweeney,Katie", oscar.paulson

bcc

Subject RE: S Cohen and Associates Report

Reid:

Thank you very much for your prompt reply. I hope that the lead reviewer is feeling better.

Oscar

---

**From:** Rosnick.Reid@epamail.epa.gov [mailto:Rosnick.Reid@epamail.epa.gov]

**Sent:** Tuesday, September 13, 2011 5:21 AM

**To:** Paulson, Oscar (CCC)

**Cc:** Sweeney,Katie; oscar.paulson@bresnan.net

**Subject:** Re: S Cohen and Associates Report

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From: "Paulson, Oscar (CCC)" <Oscar.Paulson@riotinto.com>

To: Reid Rosnick/DC/USEPA/US@EPA

Cc: "Sweeney,Katie" <KSweeney@nma.org>, <oscar.paulson@bresnan.net>

Date: 09/12/2011 07:03 PM

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EPA-2092

**Raymond Lee/DC/USEPA/US**

09/14/2011 12:01 PM

To Alan Perrin

cc Reid Rosnick

bcc

Subject Current dates for Subpart W

Hi Alan,

As you requested, here's what we have in RAPIDS (that will feed into SCOUT):

- Final Agency Review: **11/15/11**
- Package to OP for OMB Review: **12/9/11**
- Package to OP for Admin. Signature: **1/20/12**
- Admin. Signature: **1/30/12**
- Package to FR Office for Publication: **2/3/12**

Let me know if you want me to adjust any of these dates. The latter dates were pushed from the original schedule after the FAR meeting was re-scheduled.

Thanks,

Ray

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EPA-1901

Reid Rosnick/DC/USEPA/US

To Raymond Lee

09/14/2011 12:03 PM

cc Alan Perrin

bcc

Subject Re: Current dates for Subpart W

Hi Ray,

Should we add more time for OMB review? I think we normally add 90 days for their review.

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Raymond Lee

[Hi Alan, As you requested, here's what...](#)

09/14/2011 12:01:41 PM

From: Raymond Lee/DC/USEPA/US  
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Cc: Reid Rosnick/DC/USEPA/US@EPA  
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EPA-1490

Raymond Lee/DC/USEPA/US

To Reid Rosnick

09/14/2011 12:37 PM

cc Alan Perrin

bcc

Subject Re: Current dates for Subpart W

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Reid Rosnick

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09/14/2011 12:03:58 PM

From: Reid Rosnick/DC/USEPA/US  
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EPA-1491

Reid Rosnick/DC/USEPA/US

To Raymond Lee

09/14/2011 12:38 PM

cc Alan Perrin

bcc

Subject Re: Current dates for Subpart W

Thanks, Ray,

I think we should leave that decision to management.

---

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Raymond Lee

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09/14/2011 12:37:06 PM

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EPA-2486

**Tom Peake/DC/USEPA/US**

09/15/2011 12:44 PM

To Susan Stahle

cc Reid Rosnick, Brian Littleton, Jonathan Edwards, Alan Perrin,  
Daniel Schultheisz

bcc

Subject Subpart W and 40 CFR 190 ANPR review

Hi Sue!

I understand that you are done with your brief so now you have gobs of time for other stuff!

We have Subpart W with you for your review and preamble development we and will be sending the 190 ANPR to you soon. I just wanted let you know that the priority for us is Subpart W, though we hope that you will be able to move quickly to the ANPR, which we plan to send to you around the middle to end of next week.

Let me know if you have any concerns or questions.

Thanks.

Tom Peake  
Director  
Center for Waste Management and Regulations  
US EPA (6608J)  
1200 Pennsylvania Ave, NW  
Washington, DC 20460  
phone: 202-343-9765

Physical Location and for deliveries:  
Room 529  
1310 L St, NW  
Washington, DC 20005

EPA-4830

Susan Stahle/DC/USEPA/US

09/16/2011 10:11 AM

To Tom Peake

cc Alan Perrin, Brian Littleton, Daniel Schultheisz, Jonathan Edwards, Reid Rosnick

bcc

Subject Re: Subpart W and 40 CFR 190 ANPR review

Hi Tom --

Yes, we filed our brief on Tuesday and that means I now am able to turn to my significant backlog and start digging myself out from under that pile.

My priority projects are a refineries rulemaking package and the subpart W proposed rule. Once I receive the Part 190 ANPR I'll work that into the list as well.

I appreciate ORIA's patience and will work hard to get ORIA's projects completed and back to you so you may move them forward.

Susan Stahle  
Air and Radiation Law Office (Rm 7502B)  
Office of General Counsel  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)  
Washington, D.C. 20460  
ph: (202) 564-1272  
fax: (202) 564-5603  
stahle.susan@epa.gov

Tom Peake

Hi Sue! I understand that you are done...

09/15/2011 12:44:29 PM

From: Tom Peake/DC/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Cc: Reid Rosnick/DC/USEPA/US@EPA, Brian Littleton/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Daniel Schultheisz/DC/USEPA/US@EPA  
Date: 09/15/2011 12:44 PM  
Subject: Subpart W and 40 CFR 190 ANPR review

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Washington, DC 20460  
phone: 202-343-9765

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1310 L St, NW  
Washington, DC 20005

EPA-4811

**Susan Stahle/DC/USEPA/US**

To Tom Peake

09/16/2011 10:16 AM

cc

bcc

Subject Re: Subpart W and 40 CFR 190 ANPR review

You too!

Susan Stahle  
Air and Radiation Law Office (Rm 7502B)  
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fax: (202) 564-5603  
stahle.susan@epa.gov

Tom Peake

Sue, Thanks.

09/16/2011 10:14:10 AM

From: Tom Peake/DC/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
Date: 09/16/2011 10:14 AM  
Subject: Re: Subpart W and 40 CFR 190 ANPR review

---

Sue,  
Thanks.  
Have a great Friday and weekend!  
Tom

Susan Stahle

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

**From:** Susan Stahle  
**Sent:** 09/16/2011 10:11 AM EDT  
**To:** Tom Peake  
**Cc:** Alan Perrin; Brian Littleton; Daniel Schultheisz; Jonathan Edwards;  
Reid Rosnick  
**Subject:** Re: Subpart W and 40 CFR 190 ANPR review  
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09/15/2011 12:44:29 PM

From: Tom Peake/DC/USEPA/US  
To: Susan Stahle/DC/USEPA/US@EPA  
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Date: 09/15/2011 12:44 PM  
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Washington, DC 20005

EPA-2386

Reid Rosnick/DC/USEPA/US

To Tom Peake

09/22/2011 10:47 AM

cc

bcc

Subject Re: I have my weekly with Jon at 11 am today. Can you provide me status updates on your regs?

Tom,

I got nothing...Still waiting for OGC review of the preamble. Still reviewing the BID. Quarterly conference call is on October 6.

---

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Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
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Washington, DC 20460  
202.343.9563  
rosnick.reid@epa.gov

Tom Peake

Hi, For my meeting with Jon at 11 am,...

09/22/2011 10:19:33 AM

---

From: Tom Peake/DC/USEPA/US  
To: Andrea Cherepy/DC/USEPA/US@EPA, Reid Rosnick/DC/USEPA/US@EPA  
Cc: Daniel Schultheisz/DC/USEPA/US@EPA  
Date: 09/22/2011 10:19 AM  
Subject: I have my weekly with Jon at 11 am today. Can you provide me status updates on your regs?

Hi,

For my meeting with Jon at 11 am, please give me an update on the status of 192 and Subpart W activities that I can share.

Thanks.

Tom Peake  
Director  
Center for Waste Management and Regulations  
US EPA (6608J)  
1200 Pennsylvania Ave, NW  
Washington, DC 20460  
phone: 202-343-9765

Physical Location and for deliveries:  
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1310 L St, NW  
Washington, DC 20005

EPA-2090

Reid Rosnick/DC/USEPA/US

09/27/2011 06:41 AM

To Tom Peake, Daniel Schultheisz

cc

bcc

Subject Fw: GAO Reports About Energy

FYI

---

Reid J. Rosnick  
Radiation Protection Division (6608J)  
U.S. Environmental Protection Agency  
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Washington, DC 20460  
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rosnick.reid@epa.gov

----- Forwarded by Reid Rosnick/DC/USEPA/US on 09/27/2011 06:41 AM -----

From: GAO Webmaster <webmaster@GAO.GOV>  
To: ENERGY-S@LISTSERV.GAO.GOV  
Date: 09/26/2011 03:19 PM  
Subject: GAO Reports About Energy

---

September 26, 2011

The Government Accountability Office (GAO) today released the following reports, testimony, and correspondence:

LETTER REPORT

Excess Uranium Inventories: Clarifying DOE's Disposition Options Could Help Avoid Further Legal Violations, GAO-11-846, September 26 (62 pages)  
<http://www.gao.gov/products/GAO-11-846>  
Highlights - <http://www.gao.gov/highlights/d11846high.pdf>

These and other GAO products are available from the "Reports and Testimonies" section of GAO's Internet site, <http://www.gao.gov>.

Help with viewing PDF files is available from the "Help" section of <http://www.gao.gov>.  
Check the information in the section titled, "Help with Reading Portable Document Format Files" if you have difficulty.

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unsubscribe energy-s

in the message body.

Information on ordering printed copies at:

<http://www.gao.gov/ordering.htm>

Members of the press may request copies from the Office of Public Affairs, 202-512-4800.

=====  
This list is produced by the Government Accountability Office to provide timely information about GAO Reports and Testimonies related to Energy. You may visit GAO on the web at  
<http://www.gao.gov>

EPA-1713

**Reid Rosnick/DC/USEPA/US**

09/28/2011 09:17 AM

To hjp46

cc Neal Nelson

bcc

Subject Data Sets for Risk Assessment

Hi Harry,

Dr. Neal Nelson in RPD is performing an in-house peer review of the Subpart W risk assessment that SC&A submitted earlier this year. In order to complete the review he would like to see the data sets SC&A used to run the CAP88 code to get the radon-222 outputs used in the document. Would you please have the data sets sent to him at [nelson.neal@epa.gov](mailto:nelson.neal@epa.gov). I believe Steve Marschke was in charge of the effort, but if you could forward this to him I'd appreciate it. Thanks.

Reid

---

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EPA-1677

**Reid Rosnick/DC/USEPA/US**

To Beth Miller

07/07/2011 06:25 AM

cc

bcc

Subject Additions to web site

Hi Beth I have a couple of items for the web site that I hope you can do this morning.

- 1.Remove "Draft" from the last minutes of the conference call.
2. Add the attached presentation to "presentations,"

Thanks

Reid



Rosnick NMA Uranium Recovery 2011.pptx

---

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# ***U.S. EPA NESHAP Subpart W Revisions Update***

---

Reid J. Rosnick

Radiation Protection Division

NRC/NMA Uranium Recovery Workshop

May 26, 2011

# Purpose of Presentation

- Provide background and status update on 40 CFR 61, Subpart W (National Emission Standard for Radon Emissions from Operating Mill Tailings under Clean Air Act)





## 40 CFR 61 Subpart W Summary

- Applies to radon emissions from operating uranium mill tailings
  - Radon emissions flux standard: 20 pCi/m<sup>2</sup>-sec
- After 12/15/1989, new impoundments were required to meet one of two new work practices
  - ✓ Phased disposal – Impoundment size(2)  $\leq$  40 acres
  - ✓ Continuous disposal – dewatered tailings with no more than 10 acres uncovered
  - ✓ Both must meet design, construction, ground-water monitoring standards at 40 CFR 192.32(a)
- Work practices were designed to achieve at least equivalent risk reductions as obtained by the numerical standard



# Review of Subpart W

- Review began after receiving Notice of Intent to Sue (NOI) by two Colorado environmental groups
  - ✓ Based on EPA's alleged failure to review & revise regulation within ten years after enactment of Clean Air Act Amendments of 1990 (11/15/2000)
  - ✓ Plaintiffs filed suit against EPA
  - ✓ Settlement agreement reached November 2009
  
- EPA is currently revising Subpart W, projected proposal, late this year



# Subpart W, continued

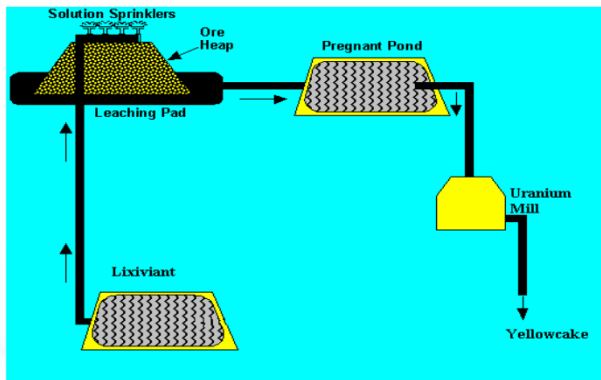
- In Situ Leach/Recovery (ISL/ISR) extraction has become more commonplace since original promulgation and does not generate significant tailings, but wastes containing uranium byproduct material are placed in evaporation ponds/impoundments
- ISL/ISR, conventional mill, heap leach operations expected
- Regulatory Reviews
  - ✓ of the current standard
  - ✓ of the original EPA radon risk assessment



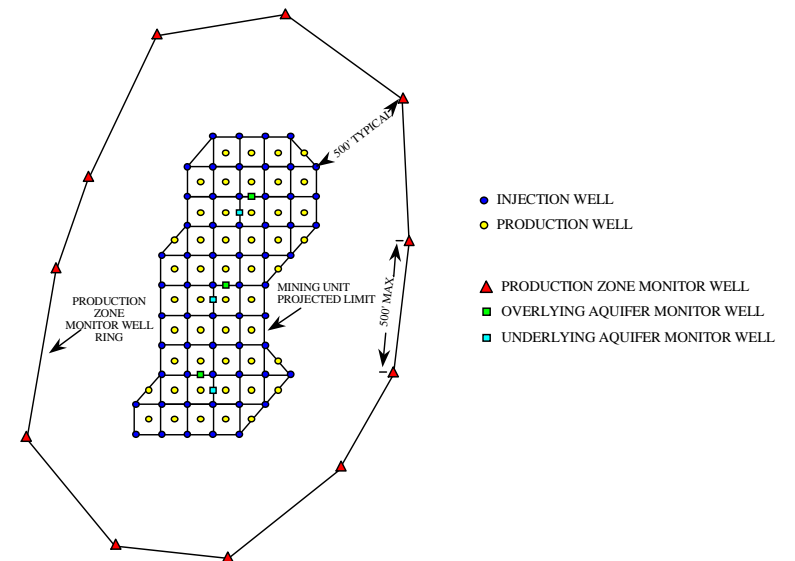
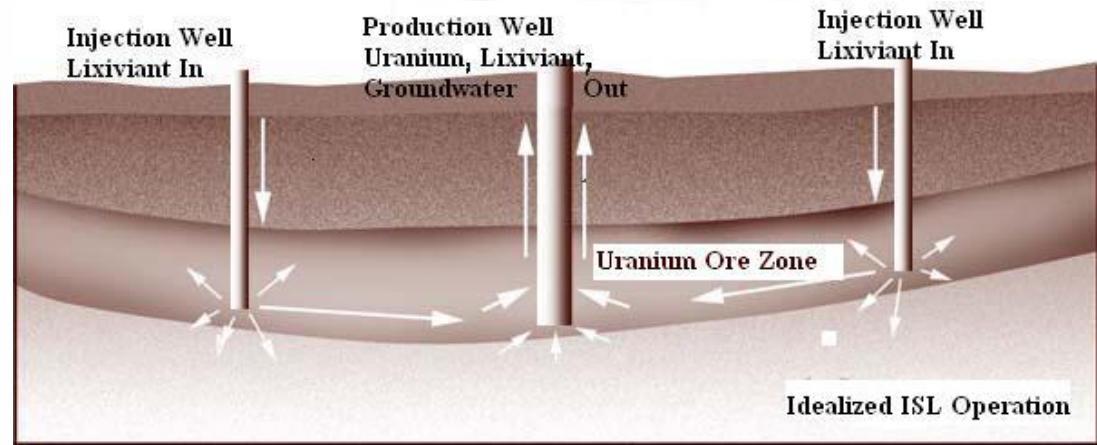
# Background



Conventional Surface mill



Heap leaching



## Subpart W, Scientific Data/Research

- Review and compile a list of existing & proposed U mill tailing facilities & the containment technologies being used, as well as proposed
- Compare & contrast those technologies with the engineering requirements of RCRA Subtitle C land disposal facilities, which are used as the design basis for existing uranium byproduct material impoundments
  - ✓ Review regulatory history of Rad-NESHAPS and Subpart W, Tailings impoundment technologies, and radon measurement method
  - ✓ Comparison of 1989 risk assessment with current risk assessment approaches (adequacy and appropriateness)



# Status of 40 CFR Part 61, Subpart W

- Regulation is under formal review
- Work has reached deliberative phase, EPA workgroup is preparing options for regulation revision to Assistant Administrator.
- AA will provide direction on which options to include in preamble of proposal
- Focus has been:
  - ✓ External -- Public information meetings to address settlement agreement requirements
  - ✓ Internal -- Technical review



# Communications Plan

- ✓ EPA is committed to maintaining an open and transparent rulemaking process
- ✓ Objectives:
  - Inform stakeholders of potential changes in EPA's Subpart W requirements
  - Give stakeholders an opportunity to provide feedback
- ✓ Audiences:
  - Tribes
  - States
  - Offices/Regions within EPA
  - Other Federal Agencies
  - Mining companies



# Outreach

- ✓ Established a dedicated web site to act as an information outlet
- ✓ <http://www.epa.gov/radiation/neshaps/subpartw/rulemaking-activity.html>
- ✓ Site contains current and historical rulemaking documents, presentations, contact information, useful links





# Outreach

- ✓ Quarterly conference calls to answer stakeholder questions
- ✓ Next call – July 7, 2011 – 11:00 AM EDT
- ✓ Call in number is 1-866-299-3188. You will be prompted for a conference code, which will be 2023439563. After entering the conference code press the # key and you will then be placed into the conference call
- ✓ Public participation by e-mail:
  - [subpartw@epa.gov](mailto:subpartw@epa.gov)



# Thank You



EPA-2036

**Reid Rosnick/DC/USEPA/US**

07/14/2011 09:27 AM

To Beth Miller

cc

bcc

Subject Website

Beth,

Please let me know when you're in, I have an addition to the Subpart W website.



SubpartW\_7-7-2011\_QuarterlyConfCall\_ADD.docx

---

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rosnick.reid@epa.gov

**Subpart W Quarterly Conference Call**  
July 7, 2011, 11:00 am – 12:00 pm  
1310 L Street NW, Room 502, Washington, DC

**[DRAFT] Conference Call Notes**

**Meeting Participants:**

EPA HQ: Reid Rosnick, Emily Atkinson  
EPA Regions: Angelique Diaz (Region 8)  
CCAT: Lynn Holtz Minasi, Anita Minton, Paul Carestia  
Industry: Oscar Paulson (Kennecott), Wayne Heili, John Cash (UR Energy), Mike Newton (Neutron Energy), Miriam Wetly (Chemical), Rita Meyer, Jim Cain (Cotter Corporation), Richard Blubaugh(Powertech), Toby Wright (Titan Uranium)  
Other: Travis Stills (Energy Minerals Law Center), Andrew Maylor, Jennifer Hanston (Sheep Mountain Alliance)

**Status Update on Action Items from Last Call**

R. Rosnick: I don't have a great deal of information right now. We have been having some IT issues here. I made a presentation on May 26 to the NRC/NMA Uranium Recovery Workshop and that presentation has not made it up to the website yet, but we are working to get it posted as soon as possible.

T. Stills: A key component of the settlement is to have the website available and the staff resources must be put towards updating it in a timely manner

R. Rosnick: I will tell you that I am still working on it.

The other thing I want to tell you about is we are progressing very well on drafting the options and preamble to a draft regulation and language. We have received direction from all of the assistant administrators and regional administrators. The preamble and draft language is being worked on now. Since these are internal discussions, I am not at liberty to tell you what we are discussing in the work group, because it is internal and deliberative.

As far as process at the Agency, we expect to have the final draft by the end of August. The final agency review will then happen where the senior management will then have its opportunity to provide input prior to the draft rule being sent to the Office of Management and Budget.

Office of Management and Budget then reviews it for up to 90 days, when it will provide comments back to us. After this review we will address any comments received by OMB. After that the rule will then go to Gina McCarthy (Assistant Administrator for the Office of Air and Radiation)

for her review, signature and then be published in the federal register. We are shooting to have this all completed by December 2011.

O. Paulson: You have a contractor involved in this project related to the review. I thought they would put together a report and then it would be reviewed by the EPA. Has the report been put together?

R. Rosnick: Yes, the report has been put together and it is being reviewed by the EPA staff. When it is finalized, it will then be posted on the website. I would expect it to be completed in the next two months.

O. Paulson: The internal review should be available first before the draft regulations are actually put together? The comments from the public should be considered before the regulation is written.

R. Rosnick: The work group has seen it and commented on it.

O. Paulson: I understand you cannot discuss the draft regulations at this time, but can you tell us what is in the report?

R. Rosnick: I can try. Back in 1989, the EPA used risk modeling called AIRDOS to determine the risk levels from radon for receptors out to 80 km. At the time, I believe and I am not absolutely certain on this number, the risk average numbers were around  $10^{-5}$ , I would have to go back to look at that.

So what we have done on this current rulemaking is use the most recent version of AIRDOS, now known as CAP88 version 3. We went to the existing facilities and used CAP88 version 3 to see if risk levels changed. The code performs the calculations with data from the facilities, with metrological data and various assumptions used. The report describes all of this. The work group had comments and corrections and the contractor made them. Now our independent review by internal EPA employees is being conducted. We expect to have their comments within a month.

O. Paulson: How are the references listed?

R. Rosnick: The data sources should be easily determined to be complete and applicable.

O. Paulson: We would want to be sure that site specific data is used.

R. Rosnick: Once we have the final review, I am sure you will be able to comment on it and let us know if other data sources should be used.

T. Wright: Is there going to be timely public comment on the potential rulemaking?

- R. Rosnick: One component on this is the proposed regulation is that it is just that – a proposal. With a 60 day review process when comments can come in. There is always an opportunity to provide comments to us before the regulation goes final.
- M. Newman: Can you provide any indication on whether or not the report substantially alters the risk assessment model?
- R. Rosnick: Our office of general council representative is not on the line, so I cannot ask her if I can answer that question. The way the question was asked, it is requesting me to discuss whether or not our modeling guidelines would change. I am not at liberty to discuss it at this time.
- T. Stills: I think this is an example of EPA not sharing data as they should. Data should be shared immediately, not just when it is a result you like.
- R. Rosnick: Do we have any other questions?
- No other questions?
- T. Stills: What we agreed to in the settlement is not being adhered to. Your functions seem to be a gatekeeper to keep us out rather than to keep information flowing to stakeholders. Please pass that along to your superiors because I would like your role to change.
- Have you been collecting data at the Cotter Facility?
- R. Rosnick: The data collection there has been sent to the Colorado Department of Public Health and Environment.
- T. Stills: Do you know that their data collection has serious flaws because of laboratory errors? That is a source of important data and I don't see EPA holding the facility to its reporting responsibilities.
- R. Rosnick: I will pass that along to OGC.
- Ambiguity is in the definition of operation.
- T. Stills: For purposes of rulemaking this is something that should be taken care of. It is a serious concern that should be changes.
- R. Rosnick: Operation is defined as “accepting new tailing” according to the current rule. That is something we are looking at in this current revision.

O. Paulson: Subpart W applies to an operating impoundments, but once they start closure, and then under milestone requirements radon flux tests only are required when the barrier goes in.

T. Stills: I think the Cotter Facility may not be in compliance with their milestones because if they are not then they need to go back to monitoring.

A. Diaz: The regulatory authority during closure of the impoundments is the state and EPA does not have authority to step in.

T. Stills: So current regulations allow for staff to ignore the rules?

Should we expect an environmental analysis when the rulemaking is released later this year? Any other types of analysis – ground water, soil – outside of the risk assessment?

R. Rosnick: We have done assessments of radon release to the air and its impact from a risk standpoint to receptors. Since this is a Clean Air Act rule, we are really focusing on the air analysis right now. In terms of a technical analysis, that has been performed.

I thank you all for attending. Our next call will be on October 6, 2011.

Send me an email or give me a call if anything comes up between now and then.

EPA-4093

**Daniel  
Schultheisz/DC/USEPA/US**  
08/11/2011 02:48 PM

To Reid Rosnick, Andrea Cherepy  
cc  
bcc  
Subject Fw: Updated Reg Schedules

FYI

----- Forwarded by Daniel Schultheisz/DC/USEPA/US on 08/11/2011 02:47 PM -----

From: Jonathan Edwards/DC/USEPA/US  
To: Mike Flynn/DC/USEPA/US@EPA  
Cc: Alan Perrin/DC/USEPA/US@EPA, Tom Peake/DC/USEPA/US@EPA, Daniel  
Schultheisz/DC/USEPA/US@EPA  
Date: 08/11/2011 01:50 PM  
Subject: Updated Reg Schedules

---



40-CFR-192\_7-11.docx Subpart W Deliverable Datesv2.docx

Mike--- We only had to adjust the Subpart W file--shifted the FAR back one month as well as the two steps after that ----but did not shift the final FR Proposal goal which is end of calendar year. The 192 file did not change. Thanks---Jon

PS Most immediate key date to emphasize is FAR date for subpart W.



## 40 CFR Part 192

### Deliverable Dates for Major Milestones

Fiscal Yr:	Deliverable Product:	Date Due:
	2nd review of draft Post-Closure Monitoring Report from Contractor	June 2011
	Package to SAB: <ul style="list-style-type: none"> <li>• Final Charge to SAB (Mike Flynn signatory)</li> <li>• Draft Post-Closure Monitoring Report to SAB</li> <li>• Background materials</li> </ul>	June 2011
	EPA prepares TENORM website to hold draft Post-Closure Monitoring Report and all background documents	June 2011
	EPA posts draft Post-Closure Monitoring Report to website ( <a href="http://www.epa.gov/radiation/tenorm/pubs.html">http://www.epa.gov/radiation/tenorm/pubs.html</a> )	June 2011
	SAB posts Federal Register Notice, Charge, and link to draft Post-Closure Monitoring Report	June 2011
	Submit Task Order for Peer Review of Risk Assessment	June 2011
	Workgroup Meeting	End June 2011
2011 Q4	Conference Call with SAB	July 12, 2011
	SAB Face-to-Face Meeting	July 18-19, 2011
	Draft Risk Assessment from Contractor	July 2011
	Workgroup Meeting(s)	TBD
	Economic Analysis	August 2011
2012 Q1	Workgroup Meeting(s)	TBD
	Peer Review of Risk Assessment	October 2011
	Peer Review of Post-Closure Monitoring Report	October 2011
	Options Selection	November 2011
	Distribute FAR package to participating AAs and RAs	December 2011
2012 Q2	Final Agency Review	January, 2012
	Transmit final package to OPEI	February 2012
	OMB Review	February 2012
2012 Q3	Proposed Rule to the Office of Federal Register	May 2012

## 40 CFR Part 61 Subpart W Deliverable Dates

### Major Milestones & Intermediate Steps

Quarterly calls with stakeholders per consent agreement	Jan, April, Aug, Dec
Finalize work assignments for next contract period	March 2011
Risk Assessment (finalize)	March, 2011
Economic Analyses (should have limited impact on Subpart W)	June 30, 2011
Begin drafting rule/revisions	Ongoing
Options Selection (6 months before signature)	June, 2011
Develop package for FAR: <ul style="list-style-type: none"> <li>• FAR announcement memo from lead RSC representative</li> <li>• Draft action memorandum</li> <li>• Current workgroup membership list</li> <li>• Draft action</li> <li>• Draft preamble that addresses statues and EOs, if any, and text of the action</li> <li>• Draft Regulatory Impact Analysis (RIA), or other appropriate economic and scientific supporting analysis (if required)</li> <li>• Draft information collection request (if required)</li> <li>• Draft communications strategy</li> </ul>	ASAP
Peer review of economics analyses (not critical for Subpart W)	July, 2011
Distribute FAR package to participating AAs and RAs (at least 15 working days prior to Final Agency Review)	
Final Agency Review	September, 2011
Develop final package for OPEI and OMB: <ul style="list-style-type: none"> <li>• Draft action memorandum (2 copies)</li> <li>• Copy of the preamble and rule</li> <li>• Copy of FAR memos addressing substantive comments and non-concurrences (this will not go to OMB)</li> <li>• Copy of the EO 12866 form (SF 83)</li> <li>• Electronic version of the preamble and rule</li> </ul>	ASAP
Transmit final package to OPEI	October, 2011
OMB Review	October, 2011
Proposed Rule to the Office of Federal Register	December, 2011

EPA-2034

**Reid Rosnick/DC/USEPA/US**

09/01/2011 09:31 AM

To Tom Peake, Daniel Schultheisz

cc Andrea Cherepy

bcc

Subject Subpart W Presentation

Attached is the portion of the presentation related to Subpart W. I have included a title page and outline page, but I assume you will probably add to that once the 192 stuff is in. I have not included notes, because the diagrams are self-explanatory, and the bullet points should be obvious to anyone in the Division.



Fodder.pptx

---

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# Environmental Protection Uranium Recovery Issues in the United States

*September, 2011*

*Presented by:*  
*U.S. Environmental Protection Agency*  
Office of Radiation and Indoor Air  
Radiation Protection Division

# OUTLINE

- EPA's Roles and Responsibilities
- Introduction to Uranium in the United States
- 40 CFR Part 61, Subpart W
- 40 CFR Part 192



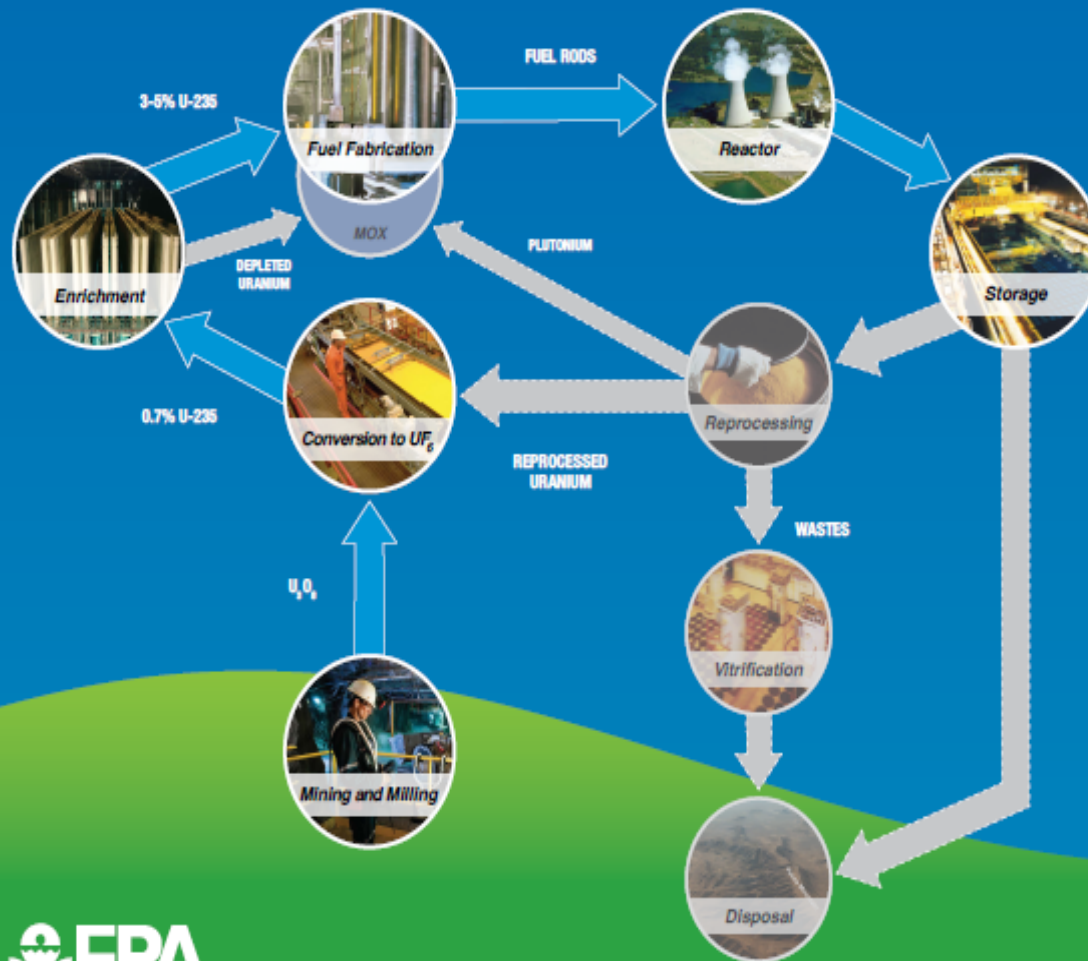
# EPA's Role and Responsibilities in New Nuclear Energy: NEPA and Beyond.

## EPA'S ROLE:

Ensuring the protection of public health and the environment, EPA is neither an advocate nor opponent of nuclear energy.

## UNDERSTANDING THE NUCLEAR ENERGY FUEL CYCLE:

In order for nuclear power plants to produce power, they need fuel. EPA is involved in every step of the nuclear energy fuel cycle outlined below.



## EPA'S RESPONSIBILITIES:

### National Environmental Policy Act (NEPA)

EPA reviews and comments on National NEPA documents prepared by the Nuclear Regulatory Commission (NRC) in accordance with EPA's authority under the Clean Air Act. NEPA requires NRC to assess the environmental impacts of actions such as issuing permits, spending federal money, or taking actions on federal land.

The consideration and public disclosure of environmental impacts is also required. Since new nuclear power plants present significant environmental impacts, a detailed statement, known as an Environmental Impact Statement (EIS), is required. The EIS analyzes all potential environmental impacts.

### During this process, EPA specifically:

1. Prepares scoping comments on Environmental Impact Statements (EISs) related to NRCs licensing of new nuclear power plants;
2. Considers those issues most appropriate to the specific type of nuclear reactor presented in an EIS;
3. Determines the adequacy of the EIS.

Section 309 of the Clean Air Act directs EPA to review and comment on, among other things, newly authorized federal projects for construction and other major federal actions. Section 309 also requires EPA to provide environmental expertise to other federal agencies so those agencies are able to give adequate consideration to environmental factors. EPA has developed guidance to assist Agency reviewers fulfilling these requirements.

## ADDITIONAL EPA RESPONSIBILITIES:

In addition to NEPA requirements, EPA has developed applicable regulations under the Atomic Energy Act and the Clean Air Act:

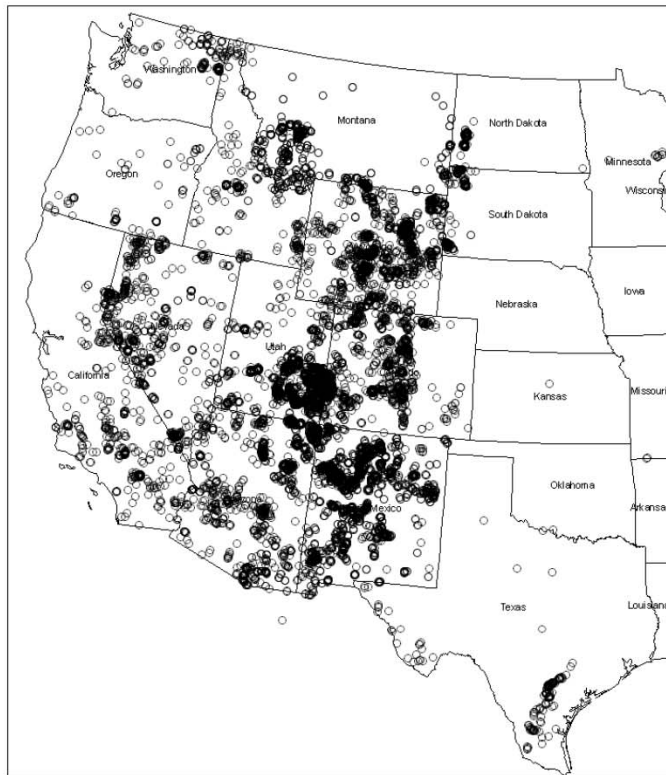
- 40 CFR 190- Nuclear Power Operations – Sets dose standards for public protection from radiological impacts of nuclear power operations, as well as overall curie limits for certain radionuclides.
- 40 CFR 191- Management and Storage of Spent Fuel, High Level and Transuranic Wastes – Sets dose standards for public protection from radiological impacts of spent fuel, high level and transuranic wastes for management and storage operations, for disposal facilities, and for groundwater protection.
- 40 CFR 192- Uranium and Thorium Mill Tailings – Sets dose and emission standards for public protection from radiological impacts of residual radioactivity from Uranium mining, cleanup of land and buildings contaminated with residual radioactivity from uranium processing, supplemental standards and standards for uranium and thorium byproduct management.
- 40 CFR 193- Public Health and Environmental Radiation Protection Standards for Yucca Mountain – Sets disposal standards for spent fuel and high level wastes at Yucca Mountain.
- 40 CFR 61- Radiological National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for DOE and non-NRC facilities (subparts H & I) – Sets air emission release limits for radiological emissions from specific facilities.

### Other EPA Regulations

- Clean Water Act (CWA) NPDES Discharge Limits:** Implementing agency (state) sets discharge limits for process water discharges.
- Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage and Management Requirements:** Sets management practices and requirements for storage of hazardous wastes.
- Technical Considerations:**
  - Sensitive Ecosystems (both aquatic and terrestrial)
  - Long Term Water Use Impacts (Impact on available water resources)
  - Water Quality Impacts
  - Cumulative Impact of Process Radiological Releases
  - Anticipated Impact of Radiological Accidents
  - Long term impacts of waste disposal.
- Emergency Response:** EPA regularly participates in emergency response trainings and exercises with other Federal and State agencies to help ensure preparedness in the event of a nuclear power plant emergency.



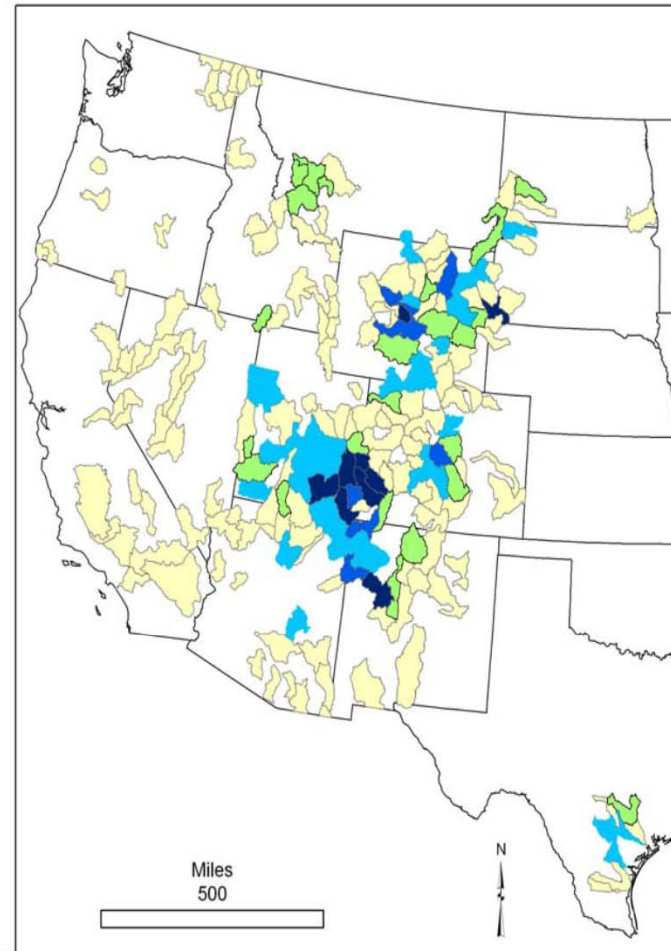
# Where is the Uranium?



## Legend

○ EPA Identified Uranium Locations

Miles  
0 75 150 300 450



## Western Uranium Mine Density By Hydrologic Unit Code

### Legend

- HUCs >100 U mines
- HUCs 51-100 U mines
- HUCs 11-50 U mines
- HUCs 6-10 U mines
- HUCs 1-5 U mines

In the MAS/MILS Database the Upper Dolores (CO), San Miguel (CO), and Lower Dolores (CO) Hydrologic Unit Codes (HUCs) Each Have > 300 Uranium Mines



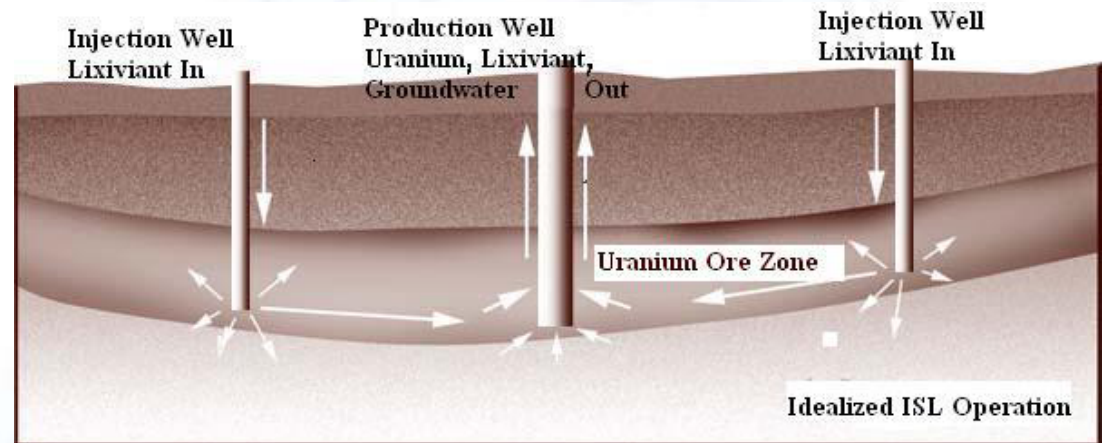
# Types of Uranium Recovery Facilities

## Conventional method – Surface mill

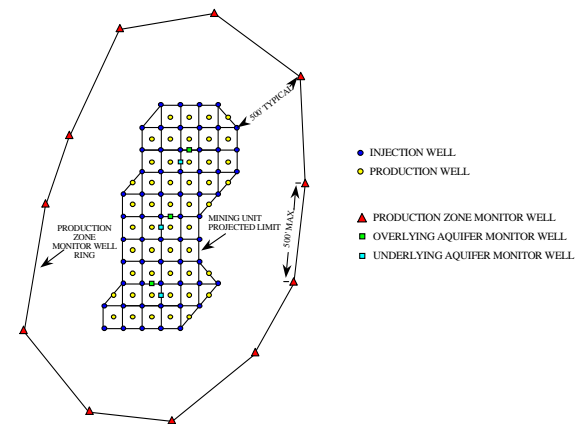
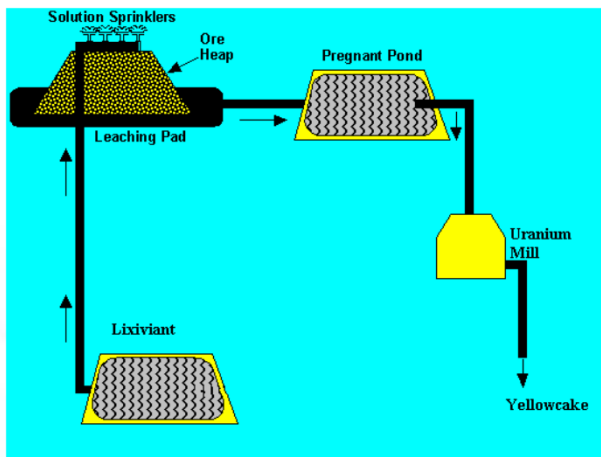


Rio Algom Ambrosia Lake mill, New Mexico, USA (1958-1985)

## Alternative method-- In Situ Leaching (ISL)



## Alternative method-- Heap leaching





# Background

In Situ Leach (ISL) extraction is becoming more commonplace and does not generate significant tailings, but wastes containing uranium byproduct material are placed in evaporation ponds/impoundments

- Currently 2 conventional mills and 4 ISL facilities operating
- Approximately 30 ISL operations expected



# 40 CFR Part 61 Subpart W (Clean Air Act)

Applies to radon emissions from operating uranium mill tailings

- Radon emissions flux standard: 20 pCi/m<sup>2</sup>-sec

After 12/15/1989, new impoundments were required to meet one of two new work practices

- Phased disposal – Impoundment size(2)  $\leq$  40 acres
- Continuous disposal – dewatered tailings with no more than 10 acres uncovered
- Both must meet design, construction, ground-water monitoring standards at 40 CFR 192.32(a)

Work practices were designed to achieve at least equivalent risk reductions as obtained by the numerical standard



## Subpart W, cont.

- Regulation is under formal review (proposal late winter)
- Work has reached deliberative phase, EPA workgroup is preparing proposed regulation revision to Assistant Administrator.
- AA will provide direction on preamble of proposal and proposed rule language

### Focus has been:

- External -- Public information meetings to address settlement agreement requirements
- Internal -- Technical review



EPA-5625

**Tony Nesky**

To

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Subject UPLoad

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### **EPA Review of Standards for Uranium and Thorium Milling Facilities @ 40 CFR Parts 61 and 192.**

#### **Comments by Steven H Brown, CHP Revised November 7, 2010**

I am Steven Brown from Centennial Colorado. I appreciate the opportunity to provide these comments for EPA's consideration regards to review of EPA standards for Uranium and Thorium Milling Facilities @ 40 CFR Parts 61 and 192.

I have been a practicing health physicist for over 40 years. I am certified by the American Board of Health Physics and a Diplomat of the American Academy of Health Physics. I am a past president of Central Rocky Mountain Chapter of the Health Physics Society.

The Health Physics Society, formed in 1956, is a scientific organization of professionals who specialize in radiation safety. Its mission is to support its members in the practice of their profession and to promote excellence in the science and practice of radiation safety. Today its nearly 6,000 members represent all scientific and technical areas related to radiation safety including academia, government, medicine, research and development, analytical services, consulting, and industry in all 50 states and the District of Columbia.

I would like to provide EPA with some broad scientific perspectives related to the adequacy of existing public exposure standards for uranium mills and in situ recovery facilities that are promulgated in 40 CFR Parts 61, 190 and 192. Specifically, these are the 20 picocuries per meter squared per second (pCi / m<sup>2</sup>-sec) radon flux criteria for uranium mill tailings impoundments specified in Part 61 Subpart W and Part 192, Subpart D as well as the 25 mrem /year public exposure standard in Part 190 as referenced in Part 192.

My remarks will address the following seven questions:

1. Are the existing radiation dose limits in the regulations (Federal and Agreement States) for uranium milling facilities (including in situ recovery plants) adequate to protect the public from additional radiation exposure above our natural background exposure?
2. Is the existing 20 picocuries per meter squared per second ( $\text{pCi}/\text{meter}^2 - \text{sec}$ ) radon flux (emission) standard in 40 CFR Parts 61, Subpart W and 192, Subpart D adequate to protect the public from additional radiation exposure above our natural background exposure?
3. What do we know about radon releases from water impoundments?
4. What do we know about radon emissions from ISRs?
5. What are current practices and results in estimating doses to the public from uranium recovery facilities?
6. What is known about the potential health effects to populations living in the vicinity of uranium mines and mills?
7. What is known about the health impacts (e.g., lung cancer) to many uranium miners who worked underground in the 1950s and 1960s?

**1. Are the existing regulations (Federal or USNRC Agreement States) for uranium milling facilities (including in situ recovery plants) adequate to protect the public from additional radiation exposure above our natural background exposure?**

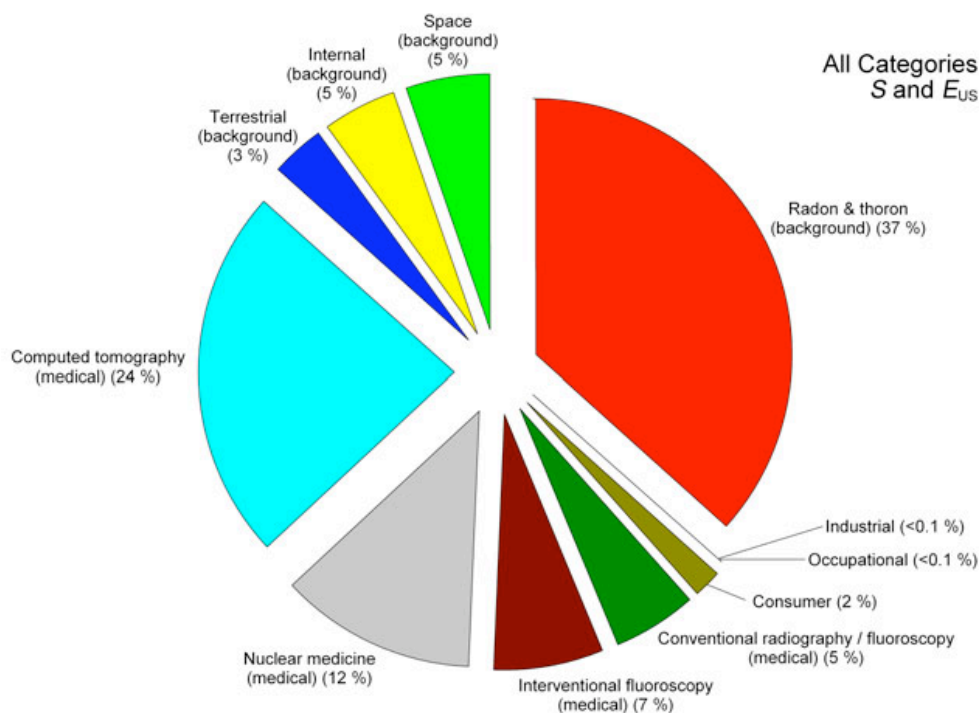
Our lifestyles, where we choose to live, what we eat and drink, has a much larger impact on our radiation exposure than exposure at current regulatory limits. The basic regulatory limits that operating uranium mills and ISRs must comply with are 100 millirem\* per year from all sources including radon and 25 millirem / year excluding radon\*\* (US Nuclear Regulatory Commission: 10 CFR 20 and 10 CFR 40 Appendix A; US Environmental Protection Agency: 40 CFR 190; Texas Department of State Health Services, Title 30 of the Texas Administrative Code, Chapter 336; Colorado Department Health of Public and Environment, 6 CCR 1007 - 1, Part 4)

\*NOTE: a millirem is a unit of effective radiation dose. It is related to the amount of energy absorbed by human tissue and other factors. 1,000 millirem = one rem.

\*\* Radon is a naturally occurring radioactive gas, which is released into the atmosphere at the Earth's surface from the decay of radium. Both radium and radon are daughter products of uranium.

Now lets compare these numbers to the annual radiation doses we receive as citizens of planet Earth. Figure 1 below depicts the typical components of human exposure in the US to ionizing radiation.





**Figure 1: Percent contribution of various sources of exposure to the total radiation dose of a typical resident in the US. Reproduced from National Council on Radiation Protection and Measurements. Report No. 160, *Ionizing Radiation Exposure of the Population in the United States*. 2009.**

As can be seen from figure 1, background radiation exposure is about 50% of the total exposure; the other 50% is primarily from medical exposures. Consumer products we use everyday that contain radioactive materials (e.g., smoke detectors, luminous watches, etc) contribute about 2 % of our dose. Other man made sources of radiation, including the nuclear industry, contribute < 0.1% of our annual dose.

Natural background can vary considerable from place to place across the United States or over relatively small areas within a region. This is due to effects of elevation (higher cosmic radiation exposure at higher elevations), greater levels of naturally occurring radioactive elements in soil and water in mineralized areas (e.g., igneous formations in Rocky Mountains) and other factors like local geology and chemistry. This is depicted in Table 1, which compares average annual background radiation exposure for the US, all of Colorado and Leadville, CO. (high elevation and in mineralized area) as contrasted to coastal areas like Virginia and Oregon. This table shows the major components of natural background radiation including terrestrial radiation (uranium, radium, thorium and a naturally radioactive form of potassium in soil, rocks and water), cosmic radiation (high energy particles and rays from space) and internal radiation (from food, water and radon gas from

natural uranium decaying in the ground).

The data in Table 1 demonstrates that the differences in annual background exposure based on where one chooses to live, what one chooses to eat and drink have a much greater impact on public exposure than the regulatory dose limits we discussed above.

Source	US Avg. <sup>1</sup>	Colorado <sup>2</sup>	Leadville, CO. <sup>2</sup>	Virginia <sup>3</sup>	Oregon <sup>3</sup>
Cosmic Radiation	31	50	85	28	28
Terrestrial Radiation	19	49	97	20	27
Radon and Other Internal	260	301	344	182	102
Totals	310	400	526	230	157

**TABLE 1: Comparison of average radiation backgrounds in US (units of millirem / yr)**

<sup>1</sup> National Council on Radiation Protection and Measurements. Report No. 160, *Ionizing Radiation Exposure of the Population in the United States*. 2009.

<sup>2</sup> Moeller D, Sun LSC. *Comparison of Natural Background Dose Rates for Residents of the Amargosa Valley, NV, to those in Leadville, CO, and the States of Colorado and Nevada*. Health Physics 91:338-353; 2006

<sup>3</sup> USEPA. *Assessment of Variations in Radiation Exposure in the United States*. Contract Number EP-D-05-002 (Revision 1). Washington, DC. 2006

Because background radiation varies significantly across the U.S., it follows that population exposure varies accordingly. As indicated in Table 1, if for example, one chooses to live in Colorado vs. Oregon, the difference in his or her annual radiation dose is more than 240 mrem /yr which is more than twice the Federal public exposure limit for uranium mills of 100 mrem /yr. In other words, if you are a resident of Colorado and leave to visit your sister for a month in Oregon, you could “save” 20 – 30 mrem of exposure, which is about equal to the EPA 40 CFR 190 limit of 25 mrem /year excluding radon.

## **2. Is the existing 20 picocurie/meter<sup>2</sup> – second (pCi/m<sup>2</sup>-sec) radon flux /emission standard in 40 CFR Parts 61, Subpart W and 192, Subpart D adequate to protect the public from additional radiation exposure above our natural background exposure ?**

Specifically regarding natural background exposure to radon, note that Figure 1 and Table 1 demonstrate that radon can contribute much more than 50 % of our total background exposure and almost 300 mrem / yr in the Rocky Mountain States (due to higher levels of natural uranium and radium in the soil and rocks than, e.g., the coastal plains of the US).

It is recognized that EPA’s public exposure criteria for radon in 40 CFR 61, Subpart W and Part 192, Subpart D is expressed as a “flux” (emission rate from a surface) of 20 pCi/m<sup>2</sup>-





sec. This limit however includes natural background, which is typically 1-2 pCi/m<sup>2</sup>-sec almost anywhere on the earth's surface and can be several times higher than this in mineralized areas. So in some places, the EPA radon flux limit could be just a few times the existing background rate.

It is also recognized that 40 CFR Subpart W also imposes work practice requirements @ 61.252(b)(1) limiting the operator to two tailings impoundments of no more than 40 acres each. Accordingly, if it is assumed that the entire 80- acres are emitting radon at the limit of 20pCi/m<sup>2</sup> -sec, the annual "source term" can be directly calculated to be about 200 Curies. This is approximately equal to the "source term" from 2-3 square miles of the earth, almost anywhere, at a typical planet wide background flux of 1 - 2 pCi/m<sup>2</sup>- sec.

However, the quantity or emission rate of a radionuclide from a source within the restricted area of a licensed facility is not the primary criteria for public radiation protection. This is routinely achieved by demonstrating compliance with the fundamental public dose limit of 100 mrem /year including radon (e.g., @ 10 CFR 20.1301 and commensurate sections of Agreement State regulations) and in demonstrating compliance to concentrations of radionuclides permitted to be released to unrestricted areas (e.g., at the site boundary) specified in 10 CFR 20, Appendix B, Table 2 (for radon =  $1 \times 10^{-8}$  uCi/ml w/o progeny;  $1 \times 10^{-10}$  with progeny).

It is at the site boundary and/or locations where people actually live, not at a somewhat arbitrary\* location within the restricted area inaccessible to the public, that public radiation protection criteria should be applied. Although the historical need is understood for establishment of the radon flux criteria to limit radiological impact to a future public who may have access to formerly decommissioned uranium tailings sites, for licensed operating facilities, other mature regulatory controls as referenced here provide much greater assurances that exposure of the public is maintained ALARA in support of optimizing the risk vs. benefit relationship.

\* "Arbitrary" relative to the most likely pathways of exposure to a member of the public including considerations of local meteorology and demography

### **3. What Do We Know About Radon Releases from Water Impoundments?**

In response to concerns regards to radon releases from the decay of its radium parent contained in water impoundments (e.g., evaporation ponds) associated with uranium recovery facilities, two recent reports provide some valuable insight:

(1) SENES Consultants Ltd, *Evaporation Pond Radon Flux Analysis, Piñon Ridge Mill Project, Montrose County, Colorado*. August 2010 for Energy Fuels Resources Corporation; included as Appendix D of Energy Fuels' *Application for Approval for Construction, Pinon Ridge Mill, Montrose County, Colorado* as submitted to US EPA Region VIII, Denver, Colorado August 31 2010. This report is posted along with the complete application on the EPA Subpart W web



site under “Applications”, *Pinon Ridge Mill: Application for Approval of Construction of Tailings Facility*.

This study provided estimates of radon flux from and concentrations above proposed water impoundments (evaporation ponds containing raffinate solution) with a specified radium concentration and compared results to other existing models. Conservative estimates of radon flux indicates that the emissions are low and less than or similar to the pre-operational average background radon flux of  $1.7 \text{ pCi m}^{-2} \text{ s}^{-1}$  observed at various locations within the proposed tailings areas on the site. The estimated radon flux levels from the evaporation ponds is also a small fraction (less than 10%) of the  $20 \text{ pCi m}^{-2} \text{ s}^{-1}$  limit for pre-1989 uranium tailings that has been assumed here for context. This conservative estimate was based on the Nielson and Rogers model \*.

\* Nielson, K.K. and V.C. Rogers 1986. *Surface Water Hydrology Considerations in Predicting Radon Releases from Water-Covered Areas of Uranium Tailings Ponds*. Proc. Eighth Annual Symposium on Geotechnical & Hydrological Aspects of Waste Management, Geotechnical Engineering Program, Colorado State University & A.A. Balkema, Fort Collins, CO, USA, February 507, PP:215-222.

The model assumes that the emission rates are enhanced by the turbulence at the top layer of the water column where all the radon in the top one-meter of water is assumed to be released to air instantaneously. For comparison purposes, the same parameters were used to estimate the radon emissions using an on-line program that is available on the World Information Services on Energy (WISE) website. The on-line model, which is attributed to the Rogers and Nielson model, produced identical results.

The results of this assessment also indicated that the radon emissions associated with the evaporation of the raffinate solution and the emissions due to the operation of sprinkler systems are extremely low and insignificant compared to the radon flux from the ponds due to diffusional and turbulence processes.

Finally, the calculations indicated that the incremental air concentration due to the emission of radon from the evaporation ponds is very small (on the order of 3%) relative to the assumed background radon concentration.

(2) K.R. Baker and A.D. Cox 2010. *Radon Flux from Evaporation Ponds*. Presented at National Mining Association (NMA) / Nuclear Regulatory Commission (NRC) Uranium Recovery Workshop 2010, Denver, CO, May 26-27.

A presentation by Baker and Cox at the most recent NMA/NRC workshop in Denver (May 2010) and subsequently at the National Health Physics Society Annual Meeting in Salt Lake City (June 2010) considers the situation where appreciable concentrations of radon are present in the ponded water, as may arise for example from elevated levels of Ra-226 dissolved in the pond water. Baker and Cox, reporting on a stagnant film model and some



measurement data\*, suggest a radon flux of the order of  $1 \text{ pCi m}^{-2} \text{ s}^{-1}$  per 100 pCi/L of dissolved radon in the ponded water.

\* A modified version of EPA Method 115 was used to measure radon flux from the pond surface

#### 4. What do we know About Radon Emissions from ISRs?

Regarding radon evolution from in situ uranium recovery facilities, the majority of radon, which is released at the surface is not (as at a conventional mill) a result of on-surface decay of radium over time in tailings impoundments since ISRs do not generate conventional tailings as a radon source. At ISRs, the radon is brought to the surface dynamically, dissolved in the lixiviant returning from underground. Just as dynamically, that portion of the total dissolved radon that is above the solution's saturation value is released when encountering atmospheric pressures and temperatures.

Modern ISR uranium recovery processes are operated under “closed loop” conditions. The circulating lixiviant goes directly from well field header houses through the ion exchange process and is then reconstituted and returned directly to the well field as an essentially closed system. Atmospheric conditions are initially encountered during resin transfer at the shaker screens. Accordingly, the vast majority of the “radon source term” for these facilities is associated with small releases from the well heads and header houses in the well fields and from the IX - resin - elution system interface where the process is first opened to atmospheric pressure. For facilities that have water retention ponds at the back end of the process (barren lixiviant bleeds, restoration wastes, etc), only a small percentage of the radon originally dissolved in the pregnant lixiviant initially returning from the well fields would be expected to remain. ISRs in Texas are currently operating without these “surge ponds” and send liquid wastes directly to a permitted deep disposal well.\*

\* For general discussions of the radiological characteristics of ISRs, including mechanisms of radon evolution, see: National Mining Association. *Generic Environmental Report in Support of the Nuclear Regulatory Commission's Generic Environmental Impact Statement for In Situ Uranium Recovery Facilities*, K Sweeney, NMA to L Camper, USNRC November 30, 2007; Brown, S. *The New Generation of Uranium In Situ Recovery Facilities: Design Improvements Should Reduce Radiological Impacts Relative to First Generation Uranium Solution Mining Plants*. Proceedings of the 2008 Waste Management Symposium, Phoenix. ASME Press, New York, NY, ISBN # 978160560422. 2008.

For more on mechanisms of ISR radon source terms see: Brown, S. and Smith, R., 1982. *A Model for Determining the Radon Loss (Source) Term for a Commercial In Situ Leach Uranium Facility*. In: M. Gomez (Editor), *Radiation Hazards in Mining-Control, Measurement, and Medical Aspects*. Soc. Min. Eng., pp. 794—800; Marple, M.L and Dziuk, T, Texas Department of Health, Bureau of Radiation Control. *Radon Source Terms at In Situ Uranium Extraction Facilities in Texas*. Proceedings of the Sixth Annual Uranium Seminar, South Texas Minerals Section of AIME. Corpus Christi. September 11-14, 1982



## 5. What are Current Practices and Results in Estimating Doses to the Public from Uranium Recovery Facilities?

Calculations performed in accordance with existing NRC guidance are used to estimate source terms and calculate off-site dose to the public. For example, USNRC Regulatory Guide 3.59, Section 2.6 provides methods acceptable to NRC for estimating the radon source term during ISR operations. Additionally, USNRC NUREG 1569, Appendix D, provides the MILDOS – AREA computer code methodology acceptable to the NRC, which includes expressions for calculating the annual Rn-222 source terms from various aspects of ISR operations which is then used by MILDOS to calculate off-site public dose and demonstrate compliance with dose limits of 10 CFR 20.1301.

See e.g.: U.S. Nuclear Regulatory Commission, NUREG-1569, *Standard Review Plan for In Situ Leach Uranium Extraction License Applications*, June 2003. Yuan, Y.C., J.H.C. Wang and A. Zielen. 1989. *MILDOS-AREA: An Enhanced Version of MILDOS for Large-area Sources*. Argonne National Laboratory (ANL) report ANL/ES-161. June 1989; U.S. Nuclear Regulatory Commission (NRC), 1987. *Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations*. Regulatory Guide 3.59.

Regards to historical estimates of offsite radon concentrations and public dose from ISRs as reported by its licensees, the U.S. Nuclear Regulatory Commission, in NUREG-1910, *Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities (2009)*, Chapter 4.2 indicates:

- Quarterly and biannual measurements of downwind concentrations of radon at an operational ISR facility boundary from 1991 to early 2007 were below 74 Bq/m<sup>3</sup> [2.0 pCi/liter] with a majority of measurements below 37 Bq/m<sup>3</sup> [1 pCi/liter]. For comparison, these measured values are well below the NRC effluent limit for radon at 10 CFR Part 20, Appendix B of 370 Bq/m<sup>3</sup> [10 pCi/liter] and in fact, are probably just background values.
- Argonne National Laboratory's MILDOS-AREA computer code (Argonne National Laboratory, 1989 – see above) is typically used to calculate radiation doses to individuals and populations from releases occurring at operating uranium recovery facilities. The code is capable of modeling airborne radiological effluent releases applicable to both conventional mills and ISR facilities (including radon gas from well fields and processing facilities and yellowcake particulates from thermal drying operations)
- All reported doses have been well within the 10 CFR Part 20 annual radiation dose limit for the public of 1 mSv [100 mrem/yr] including dose from radon and its progeny and within the EPA fuel cycle annual limit (40 CFR 190) of 0.25 mSv [25 mrem], which does not include dose due to radon and its progeny.

## 6. What is known about the potential health effects to populations living in the vicinity of uranium mines and mills?

Uranium is a heavy metal and acts similarly to other heavy metals in the body (like molybdenum, lead, mercury). Accordingly, for natural uranium, national and international human exposure standards are based on the possible *chemical toxicity* of uranium (e.g., effect on kidney—nephrotoxicity), not on radiation and possible “cancer effects” (radiotoxicity). However, there has never been a death or permanent injury to a human from uranium poisoning\*.

\* See e.g.: (1) U.S. Nuclear Regulatory Commission. *Standards for Protection Against Radiation*; 10 CFR 20, Appendix B., Table 1. 1992. (2) International Commission on Radiological Protection. *Limits for Intakes of Radionuclides by Workers*. ICRP Publication 30, 1979. (3) US Dept. of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. *Toxicological Profile for Uranium*. 1999. (4) *Acute Chemical Toxicity of Uranium*. Kathryn, RL and Burkin, RK. *Health Physics*, 94(2), pp 170-179, February 2008)

Regarding ionizing radiation in general, the health effects are well understood. No health effects have been observed in human populations at the exposure levels within the range and variability of natural background exposures in the US. An official position of the National Health Physics Society is that below 5,000 – 10,000 millirem (which includes the range of both occupational and environmental exposures), risks of health effects are either too small to be observed or non-existent (see *Radiation Risks in Perspective* @hps.org/hpspublications/positionstatements). International and national authorities that establish exposure standards for workers and the public rely on the work of scientific committees of the highest professional standing for their evaluations of the scientific information on the health effects of ionizing radiation. These scientific committees include the United Nations Scientific Committee on the Effects of Ionizing Radiation (UNSCEAR); the International Commission on Radiological Protection (ICRP); the National Academy of Science’s Biological Effects of Ionizing Radiation (BEIR) Committee, the National Council on Radiation Protection and Measurements (NCRP) and others.

But what about the specific concerns regarding health effects to populations living close to uranium recovery facilities? Despite much confusion and misunderstanding, possible health effects in populations living near uranium mines and mills have been well studied. No additional effects have been observed when compared to the health status of other similar populations not living nearby. A few sources providing the scientific evidence that supports this conclusion include:

- US Department of Health and Human Services, Public Health Services, Agency for Toxic Substance and Disease Registry, *Toxicological Profile for Uranium*, 1999. Chapter 1: Public Health Statement for Uranium, Section 1.5: How Can Uranium Effect My Health? – “No human cancer of any type has ever been seen as a result of exposure to natural or depleted uranium” (Available at:



<http://www.atsdr.cdc.gov/toxprofiles/tp150.html>)

- *Cancer and Noncancer Mortality in Populations Living Near Uranium and Vanadium Mining and Milling Operations in Montrose County, Colorado, 1950 -2000.* Boice, JD, Mumma, MT et al. International Epidemiology Institute, Rockville, MD and Vanderbilt University, Vanderbilt-Ingram Cancer Center, Nashville, TN. *Journal of Radiation Research*, 167:711-726; 2007: “ The absence of elevated mortality rates of cancer in Montrose County over a period of 51 years suggests that the historical milling and mining operations did not adversely affect the health of Montrose County residents”
- *Cancer Mortality in a Texas County with Prior Uranium Mining and Milling Activities, 1950 – 2001.* Boice, JD, Mumma, M et al. International Epidemiology Institute, Rockville, MD and Vanderbilt University, Vanderbilt-Ingram Cancer Center, Nashville, TN *Journal of Radiological Protection*, 23:247 – 262; 2003 – “No unusual patterns of cancer mortality could be seen in Karnes County over a period of 50 years suggesting that the uranium mining and milling operations had not increased cancer rates among residents”.
- *Cancer Incidence and Mortality in Populations Living Near Uranium Milling and Mining Operations in Grants, New Mexico, 1950–2004.* Boice, JD, Mumma, M et al. International Epidemiology Institute, Rockville, MD and Vanderbilt University, Vanderbilt-Ingram Cancer Center, Nashville, TN. *Journal of Radiation Research*, 174, 624–636. 2010 – “With the exception of male lung cancer (*in former underground miners*), this study provides no clear or consistent evidence that the operation of uranium mills and mines adversely affected cancer incidence or mortality of county residents”.

### **7. But what about the known health impacts (e.g., lung cancer) to many uranium miners who worked underground in the 1950s and 1960s?**

These miners worked in conditions that by today’s standards we would consider unacceptable. They were exposed to very high levels of radon progeny (which are decay products of uranium) in poorly ventilated underground mines. Many of these miners also had severe smoking habits, which enhanced the ability of the radon daughters to deliver radiation dose to the lung. Follow up of 68,000 former miners over many years indicated the occurrence of about 2700 lung cancers in this population; much higher than the expected incidence. This is an incidence rate of about 4%. As a point of comparison, the baseline incident rate of lung cancer in non-smoker, Caucasian males today is about 0.4 % (Dr. John Boice, International Epidemiology Institute, Vanderbilt University – personal communication)

These conditions existed before we had Federal Agencies (Occupational Safety and Health



Administration - OSHA, Mine Safety and Health Administration - MSHA, US Nuclear Regulatory Commission - NRC) and laws to better protect workers throughout American industry (construction, manufacturing, farming, mining, etc). Based on the best scientific information available, we consider as safe the occupational exposure standards we have today as enforced by these agencies. The level of exposure of some of these early uranium miners was 100 – 1000 times higher than our current Federal standards.

As just one of many possible historical comparisons regards to working conditions in American industry decades ago, it is of note that almost 100 men died from construction and related accidents in the building of the Hoover Dam in the 1920s, long before Federal regulations were in place to protect workers. These circumstances would of course also be unacceptable today

**Conclusions:**

(1) The existing public radiation exposure criteria for uranium mills and in situ recovery facilities in 40 CFR Parts 61, 190 and 192 are adequately protective since they represent small fractions of the natural radiation background variation across the US. Our lifestyles, where we choose to live, what we eat and drink, has a much larger impact on our radiation exposure than exposure at these very low regulatory limits.

(2) Regarding ionizing radiation in general, the health effects are well understood. No health effects have been observed in human populations at the exposure levels within the range and variability of natural background exposures in the US.

(3) Radon emission rates ( flux) from water impoundments (evaporation ponds) at licensed conventional mills and ISRs are not expected to be significantly different than that from typical background radon emission associated with land surfaces almost anywhere due to the very poor diffusion of radon through water.

(4) Historical environmental measurements made in the vicinity of uranium recovery facilities and public dose assessment performed and reported to the USNRC indicate radon concentrations at site boundary locations and doses to the public are consistently well below Federal limits.

(5) The possibility of health effects in populations living near uranium mines and mills over 50 years have been well studied by national scientific bodies of the highest professional standing. No additional effects have been observed when compared to the health status of other similar populations not living nearby.

(6) However, given that 40 CFR 192 was released in 1983, changes and updates have been made in the basic dosimetry models and science we use today to estimate radiological doses and risks. Accordingly, EPA should consider reassessing exposure terminology and criteria (e.g., as used in 40 CFR 190) to be consistent with current national and international methods and models, e.g., (1) International Commission on Radiological



Protection, 2008. "Publication 103 Recommendations of the ICRP, Annals of the ICRP."  
2008 and (2) National Research Council, 2006. "Health Risks for Exposure to Low Levels of  
Ionizing Radiation; BEIR VII, Phase II."





EPA-2555

**uranium\_conf**  
Sent by: Lilia Dignan

09/15/2011 04:05 PM

To Lilia Dignan

cc

bcc Reid Rosnick

Subject Nov 8-10, 2011 Uranium Contamination Stakeholder  
Workshop - Register Today!

2 attachments



FINAL - UCSW Flyer 9\_11.pdf 11 UCSW Conference Registration Form.docx

Good Afternoon!

Attached is the Flier and Registration Form for the 2011 Navajo Uranium Contamination Stakeholder Workshop November 8-10, 2011. The conference will be held at The Farmington Inn & Suites (to be The Red Lion Inn in November), 700 Scott Avenue, Farmington, NM 87401. A summary of main topics and their respective dates is included on the registration form. A more detailed agenda will follow. Please contact Lilia Dignan at (415) 972-3779 or Alejandro Diaz at (415) 972-3242 or e-mail [uranium\\_conf@epa.gov](mailto:uranium_conf@epa.gov) for more information.

Hope to see you at the conference!



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 REGION IX  
 75 Hawthorne Street  
 San Francisco, CA 94105



## Uranium Contamination Stakeholder Workshop November 8<sup>th</sup>, 9<sup>th</sup> & 10<sup>th</sup> 2011

### Registration Form

#### Instructions



Email registration to:  
**uranium\_conf@epa.gov**  
 Or Fax: **415-947-3528**

Complete **one** form per person.  
 Phone registrations accepted;

Please register no later than  
**October 21<sup>st</sup>, 2011**

If you have any questions,  
 please contact:

**Lilia Dignan** at  
 Dignan.lilia@epa.gov  
 415-972-3779 (phone)  
 - or -  
**Alejandro Díaz** at  
 diaz.alejandro@epa.gov  
 415-972-3242 (phone)

#### Conference Hotel:



**Farmington Inn & Suites**  
**(The Red Lion in November)**  
 700 Scott Avenue  
 Farmington, NM 87401  
 Phone: 505-327-5221  
 Fax: 505-327-1565

\_\_\_\_\_

Name

\_\_\_\_\_

Agency/Company/Organization

\_\_\_\_\_

Email Address

#### Please indicate the Day(s) you would like to attend:

- Day 1: Tues, November 8th** \_\_\_\_\_
- Keynote Address
  - Plenary Session – 5 Year Plan Update
  - Contaminated Structures
  - Uranium Permits and Licensing
  - Cleanup Update
  - Contaminated Water Sources
  - Enforcement
  - Abandoned Uranium Mines

- Day 2: Wed, November 9th** \_\_\_\_\_
- Morning – Health Research & Outreach
  - Afternoon – Community Involvement

- Day 3: Thurs, November 10th** \_\_\_\_\_
- Tour of nearby Projects



# Uranium Contamination Stakeholder Workshop



## November 8, 9 & 10, 2011

**Farmington Inn & Suites** *(The Red Lion in November)*  
700 Scott Avenue  
Farmington, NM 87401  
Phone: 505-327-5221  
Fax: 505-327-1565

*“To collaborate with stakeholders on the multi-agency Five-Year Plan to find effective solutions to uranium contamination on the Navajo Nation.”*

**Keynote Address to begin promptly at 8:30 a.m. on November 8<sup>th</sup>.**

### Workshops:

- Contaminated Water Sources
- Contaminated Structures Enforcement
- Mine Cleanup Update
- Uranium Permits & Licensing
- Abandoned Uranium Mine Investigations

### Health Education & Research

*- Introduction to the DiNéh Project (Navajo Birth Cohort Study)*

### Community Involvement

Site Tour (Thursday Morning)

**A more detailed agenda will follow.**



April 12, 2011 - 4,000 gallon water trucks deliver drinking water to western Leupp area residents

Please RSVP with registration page by October 21<sup>st</sup>\* to: [uranium\\_conf@epa.gov](mailto:uranium_conf@epa.gov)

The one page registration sheet is available on the website or by calling/emailing the contact below

*\*Late and day-of registration OK*

For more information contact Alejandro Diaz (415) 972-3242

For more information about the multi-agency Five-Year Plan: <http://www.epa.gov/region9/superfund/navajo-nation>

Speakers and sessions may be video-taped and/or photographed