WESTERN NUCLEAR, INC.

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July 25, 2006

United States Nuclear Regulatory Commission
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
Attn: Gary Janosko, Chief
Mail Stop T8A33
Washington, D.C. 20555-0001

RE: Western Nuclear, Inc. Split Rock Mill; Reclamation of Groundwater Corrective Action Ponds - License Condition 74E, License SUA-56

Dear Sirs:

It is anticipated that alternative concentration limits (ACLs) will be granted for the Western Nuclear Split Rock Mill site in the near future. That action will enable the groundwater corrective action program (CAP) to be discontinued. Once the CAP is discontinued, the CAP evaporation ponds can be reclaimed.

License condition 74 E addresses the reclamation of the groundwater corrective action evaporation ponds. The license condition is as follows:

The licensee shall reclaim the groundwater corrective action evaporations ponds in accordance with their February 7, 1994 report titled, "Western Nuclear, Inc. Split Rock Mill, Addendum A (February 7, 1994) to Revision 5 to the June 30, 1987, Uranium Tailings Reclamation Plan" with the following exception:

1. *The preliminary radon attenuation barrier design for the Winter Storage Ponds (Area 2C, Figure 4 Drawing No. 91-225-E53 (Addendum A to Revision 5) consists of 6 inches of Cody Shale and 12 inches of Soil Borrow. This design is considered acceptable for estimating the surety amount. However, once the storage ponds are dismantled the Licensee shall confirm the design and obtain NRC approval prior to placing the radon cover on the ponds. Reclamation to the Winter Storage ponds shall be completed by the licensee within three years after cessation of use as determined by the NRC.*

Samples of the sludge in the bottom of the evaporation ponds have been taken periodically to determine the radium-226 and thorium-230 concentrations so that the radon barrier thickness can be confirmed. Samples were taken in 1999, 2000, 2004 and 2005. The results are summarized on Table 1.

As can be seen, the thorium-230 concentrations are all less than 1 pCi/g. Most of the radium-226 concentrations are also less than 1 pCi/g. The 2005 data indicate radium-226 concentrations are approximately 3 pCi/g.

Calculations were performed to determine the anticipated radon flux from the reclaimed evaporation ponds. The parameters used in the calculations were obtained from the previously approved reclamation

plan dated February 7, 1994. The parameters used are presented in Table 2. The cover design for the evaporation ponds in the 1994 reclamation plan is shown on Figure 1.

The anticipated radon flux from the reclaimed evaporation ponds as originally designed was determined to be 1.7 $pCi/m^2/sec$. This is much less than the regulatory limit of 20 $pCi/m^2/sec$. Therefore, the assumed cover configuration in the 1994 reclamation plan can be used for final reclamation of the evaporation ponds. We are therefore requesting that approval of reclamation of the evaporation ponds in accordance with the 1994 plan be granted. The results of the radon calculations are presented in Attachment 1.

The pond reclamation will occur as soon as practical after permission to discontinue the groundwater CAP has been obtained and the water in the evaporation pond has evaporated. It is anticipated that this could occur as soon as September or October 2006. We are therefore asking you to review and approve this request as soon as possible so we can begin the contracting process.

Should you have any questions regarding the data contained in this report, please contact me or our technical consultant, Lou Miller (970-223-9600) at your convenience.

Sincerely,

L. J. Corte by L.M.

Lawrence J. Corte, President
Western Nuclear, Inc.

cc: B.K. DeWaard, WNI – Wyoming
L.L. Miller, MFG, Inc.
H.W. Shaver, Esq.
WNI Central File – Golden

Table 1 Radium and Thorium Analysis from CAP Ponds

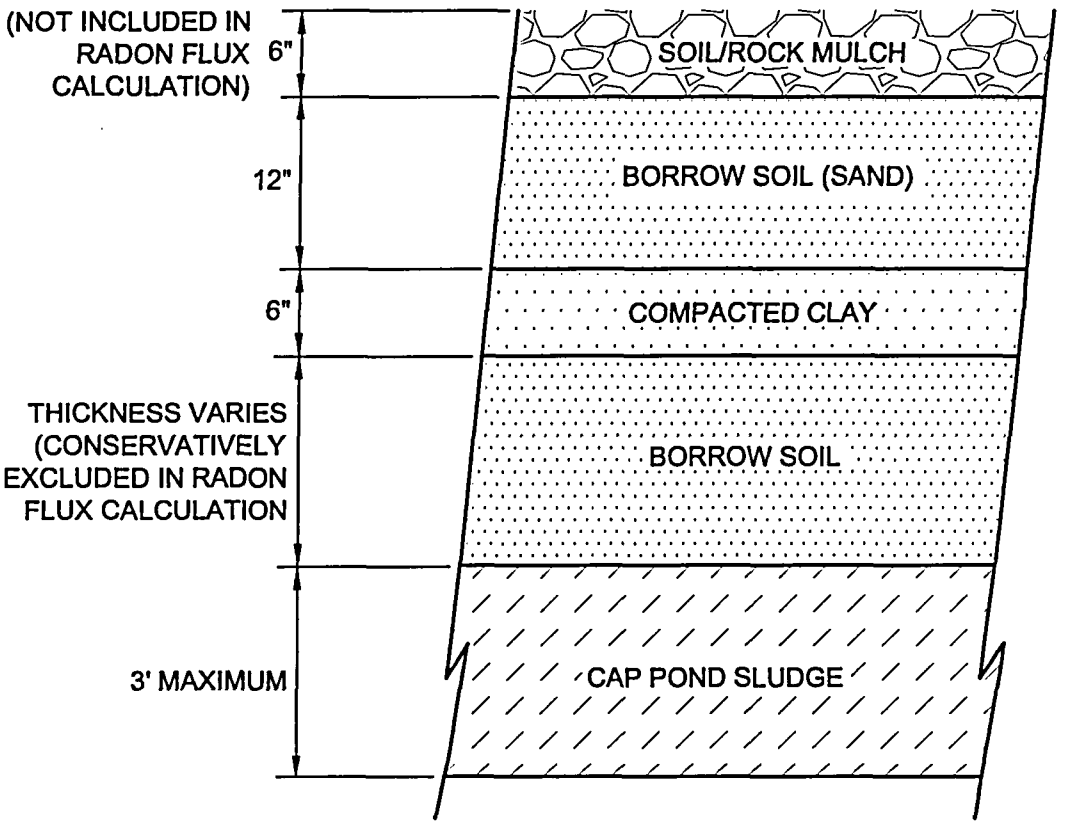
Year	Location	Th-230 (pCi/g)	Ra-226 (pCi/g)
1999	West Pond Composite	0.47	0.41
	East Pond Composite	0.18	0.31
2000	West Pond Composite	0.41	0.53
	East Pond Composite	0.28	0.41
2004	West Pond Composite	<0.2	<0.1
	East Pond Composite	<0.2	<0.1
2005	West Pond Composite	<0.1	3
	East Pond Composite	0.1	3

Table 2 Radon Flux Model Parameters

	Sludge[2]	Clay[1]	Cover Sand[1]
Porosity	0.4	0.44	0.4
Mass density (g/cm^3)	1.55	1.56	1.55
Radium Concentration (pCi/g)	3	0	1.1
Emanation Coefficient	Default	--	Default
Long-term Moisture Content (%)	1.5	16.9	2.0
Thickness (cm)	91	15.24	30.48

[1] Clay and sand parameters are the same as those used in the 1994 design. Assume clay compacted to 90 percent Proctor density.

[2] Sludge parameters are the same as tailings, except radium concentration – used maximum from Table 1 – and thickness. Maximum thickness of sludge is approximately three feet, or 91 cm.



MFG, Inc. *consulting scientists and engineers*	FIGURE 1 CAP POND COVER CONFIGURATION

Date:	JULY 2006
Project:	180888
File:	CAP-FIG-001.DWG

ATTACHMENT 1

RADON FLUX CALCULATION

-----*****! RADON !*****-----

Version 1.2 - MAY 22, 1989 - G.F. Birchard tel.# (301)492-7000
U.S. Nuclear Regulatory Commission Office of Research

RADON FLUX, CONCENTRATION AND TAILINGS COVER THICKNESS ARE CALCULATED FOR MULTIPLE LAYERS

OUTPUT FILE: SplitRock

DESCRIPTION: Split Rock Water Storage Ponds

CONSTANTS

RADON DECAY CONSTANT	.0000021	s^-1
RADON WATER/AIR PARTITION COEFFICIENT	.26	
DEFAULT SPECIFIC GRAVITY OF COVER & TAILINGS	2.65	

GENERAL INPUT PARAMETERS

LAYERS OF COVER AND TAILINGS	3	
DEFAULT RADON FLUX LIMIT	20	pCi m^-2 s^-1
LAYER THICKNESS NOT OPTIMIZED		
DEFAULT SURFACE RADON CONCENTRATION	0	pCi l^-1
SURFACE FLUX PRECISION	.001	pCi m^-2 s^-1

LAYER INPUT PARAMETERS

LAYER 1 Sludge

THICKNESS	91	cm
DEFAULT POROSITY	.4	
MEASURED MASS DENSITY	1.55	g cm^-3
MEASURED RADIUM ACTIVITY	3	pCi/g^-1
DEFAULT LAYER EMANATION COEFFICIENT	.35	
CALCULATED SOURCE TERM CONCENTRATION	8.544D-06	pCi cm^-3 s^-1
WEIGHT % MOISTURE	1.5	%
MOISTURE SATURATION FRACTION	.058	
CALCULATED DIFFUSION COEFFICIENT	5.758D-02	cm^2 s^-1

LAYER 2 Clay

THICKNESS	15	cm
POROSITY	.44	
MEASURED MASS DENSITY	1.56	g cm^-3
MEASURED RADIUM ACTIVITY	0	pCi/g^-1
DEFAULT LAYER EMANATION COEFFICIENT	.35	
CALCULATED SOURCE TERM CONCENTRATION	0.000D+00	pCi cm^-3 s^-1
WEIGHT % MOISTURE	16.9	%
MOISTURE SATURATION FRACTION	.599	
CALCULATED DIFFUSION COEFFICIENT	7.440D-03	cm^2 s^-1

LAYER 3 Borrow Soil

THICKNESS	30	cm
DEFAULT POROSITY	.4	
MEASURED MASS DENSITY	1.55	g cm^-3
MEASURED RADIUM ACTIVITY	1.1	pCi/g^-1
DEFAULT LAYER EMANATION COEFFICIENT	.35	
CALCULATED SOURCE TERM CONCENTRATION	3.133D-06	pCi cm^-3 s^-1
WEIGHT % MOISTURE	2	%
MOISTURE SATURATION FRACTION	.077	
CALCULATED DIFFUSION COEFFICIENT	5.395D-02	cm^2 s^-1

DATA SENT TO THE FILE `RNDATA' ON DRIVE A:

N	F01	CN1	ICOST	CRITJ	ACC
3	-1.000D+00	0.000D+00	0	2.000D+01	1.000D-03

LAYER	DX	D	P	Q	XMS	RHO
1	9.100D+01	5.758D-02	4.000D-01	8.544D-06	5.812D-02	1.550
2	1.500D+01	7.440D-03	4.400D-01	0.000D+00	5.992D-01	1.560
3	3.000D+01	5.395D-02	4.000D-01	3.133D-06	7.750D-02	1.550

BARE SOURCE FLUX FROM LAYER 1: 2.327D+00 pCi m^-2 s^-1

RESULTS OF THE RADON DIFFUSION CALCULATIONS

LAYER	THICKNESS (cm)	EXIT FLUX (pCi m^-2 s^-1)	EXIT CONC. (pCi l^-1)
1	9.100D+01	1.419D+00	1.304D+03
2	1.500D+01	1.359D+00	1.254D+02
3	3.000D+01	**1.707D+00**	0.000D+00