40-8907

UNITED NUCLEAR CORPORATION

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December 14, 2000

Philip Ting, Branch Chief
Fuel Cycle Safety & Safeguards
Fuel Cycle Licensing Branch
Uranium Recovery Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguard
Mail Stop T-8A33

Dear Mr. Ting:

Pursuant to License Condition 28A of our License SUA-1475, submitted herewith are the results of our ALARA Audit conducted on December 11, 2000.

If you have any questions, please advise.

Sincerely,

Larry Bush
Manager & Sr. Geologist

LB:r

Enclosure

Cc: US NRC, Region IV Div. Of Radiation Safety and Safeguards
Steve Cline, GE
Roy Blickwedel, GE

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December 14, 2000

Dwight Chamberlain, Chief
U.S. Nuclear Regulatory Commission, Region IV
Division of Radiation Safety and Safeguards
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4951

Dear Mr. Chamberlain:

Pursuant to License Condition 28A of our License SUA-1475, submitted herewith are the results of our ALARA Audit conducted on December 11, 2000.

If you have any questions, please advise.

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To: File

From: Larry Bush

Subject: ALARA Committee Meeting and Audit, December 11, 2000

The UNC Mining and Milling ALARA Committee met on December 11, 2000 to audit the results of the radiological monitoring program for the fourth quarter of 1999 and the first three quarters of data for 2000. Current committee members are: Mr. Larry Bush, Manager and Sr. Geologist; and Mr. Max Chischilly, Jr., Radiation Safety Officer. The committee reviewed Mr. Chischilly's Annual Report entitled "Environmental Monitoring Program for Inactive Status 2000," dated December, 2000, and "Data Summary between the fourth quarter of 1999 to the first three quarters of 2000."

Current Significant Findings and Events

1. No radiation exposure was recorded to for United Nuclear Corp. (UNC) employees, contractors and the public due to our current site status condition.

2. Training and refresher training of employees on Radiation Protection and Safety was done in 2000 as required.

3. All documentation required by our monitoring program is in order for 2000.

4. Available data for this Report is also reported as per suggested format in Regulatory Guide 4.14 (see attached tables).

5. Currently, the Environmental Monitoring Program requirements are deleted with the exception of item #6, item #1 (continued this procedure on 10-19-00) and item #7 (report dependent on available data). However, some deleted items (i.e. #2, #3, and #4 under the EMP) might be re-implemented and required under a future Radiation Work Permit (RWP) for ALARA purposes (see attached pg.3 of 6 for specific items). And the Personnel Monitoring Program is solely under the Radiation Work Permit as needed.

6. The 700 series collection wells (716, 717, & 718) are currently shut down as of 6-23-00 pending the main collection pipeline repairal (i.e. problem is due to the high back pressure in the main collection pipeline caused by the gradual buildups of residual precepitates). And the 800 series collection wells (802, 803, & 808) are still currently active.

7. The pond evaporation mist system is shutdown as of 6-9-00 and the spray cannons are also shutdown as of 6-28-99 due to the low pond levels.

8. The annual land use survey was done on 3-20-00 with no significant changes from the previous year.

9. On 5-01-00, the past quarterly ground water sampling procedure was changed and implemented to a low flow purge and sampling technique using dedicated pumps.

Past Significant Events

1. The mill site was release from our License SUA-1475 as a restricted area by Amendment #21 in 1995.

2. The final tailings reclamation was completed in 1995. The last of drainage channels were completed in 1996. The reclamation of evaporation ponds is being delayed until the ground water corrective Action Plan is deemed completed by the NRC and EPA.

3. The radon cap cover was completed in 1996 with the exception of the lined evaporation ponds.

4. The report submitted January 3, 1997 and January 13, 1998 on Radon Emanation Testing of UNC's Church Rock Tailings Site shows the average Radon Flux to be 5.71 pci/m^{2}sec., which is less than the allowable of 20.0 pci/m^{2}sec.

UNC MINING AND MILLING

ENVIRONMENTAL SURVEILLANCE

Monitoring Program

*1. The Radiation Safety Officer (RSO) inspects the restricted areas monthly.

*2. Air sampling is continuously done at four locations; one lcoated upwind of the tailings impoundment, two located downwind of the tailings impoundment, and one background sampling location (see EMP-2).

*3. Gamma exposure is continuously monitored with TLDs at the same four locations as the air sampling. The TLDs are changed out and analyzed semi-annually (See Procedure EMP-3).

*4. Ambient radon is continously monitored with radon detectors at the same sites as air sampling. The detectors are changed out and analyzed quarterly and reported semi-annually (see Procedure EMP-4).

*5. Groundwater samples are collected and analyzed quarterly at two locations near tailings, and one domestic water well at the mill site (see Procedures EMP-5 and EMP-5a).

6. Equipment being sold or for other purposes, leaving the restricted area is surveyed for compliance with guidelines for release to unrestricted use (see Procedure EMP-8A).

*7. An Effluent Report will be submitted semi-annually within 60 days of each six-month period. All of the Environmental Monitoring Program data is included in this report, with the exception of the equipment surveys (see EMP-9).

Note: The above (*) marked items are deleted as per NRC approved License amendment 29 dated 6-18-99 deleting condition's #16, #22, and #28.

Additional Note: Item #1 procedure is continued on 10-19-99, to show and maintain the integrity of the restricted tailings area. Effluent Report under Item #7 is reported when pertinent data is available.

M. Chischilly 1/22/99

Mary Chischilly Jr. 1/20/00

E Morales 1/19/97

E Morales 1/20/96

E Morales 1/22/98

ENVIRONMENTAL MONITORING SUMMARY DATA

For 4th- Qr. 1999 to 3rd - Qr. 2000

Environmental Monitoring	Required Analysis	Highest Result Obtained	Allowable
2. Qtly Air Sample Composite:	U-Nat. $\frac{(uci)}{ml}$	NM	$9.00E^{-14}$ (Effluent)
(Also Note: Alara Goal is 10-20% or less of effluent limit depending on circumstances)	Th-230 $\frac{(uci)}{ml}$	NM	$3.00E^{-14}$ (Effluent)
	RA-226 $\frac{(uci)}{ml}$	NM	$9.00E^{-13}$ (Effluent)
	PB-210 $\frac{(uci)}{ml}$	NM	$6.00E^{-13}$ (Effluent)
4. Qtly Ambient Radon:	RN-222 $\frac{(uci)}{ml}$	NM	$1.00E^{-8}$ (Effluent)
3. Semi-Annual Area TLD:	Gamma $\frac{(mrem)}{yr}$	*22.1	25 (Clean-up Std.) 100 (TEDE Annual Limit)
5. Qtly Ground Water GW-Wells:	U-Nat $\frac{(mg)}{l}$	0.057(dissolved)	0.30 (NRC) 5.0 (ARAR)
	Th-230 $\frac{(pci)}{l}$	<0.20 (dissolved)	5.0 (NRC) 15.0 (ARAR)
	RA-226 $\frac{(pci)}{l}$	0.60 (dissolved)	5.0 (NRC) 5.0 (ARAR)
	PB-210 $\frac{(pci)}{l}$	< 1.0 (dissolved)	1.0 (NRC)
	PO-210 $\frac{(pci)}{l}$	< 1.0 (dissolved)	1.0 (NRC)
	PH (units)	6.68	6-9 (NMED)

NM-Not Monitored

* Based on the high results @ Site C (i.e. 2nd half of 99=14.2 mrem and the same hypothetical projection from the same 2nd half of 99 results due to the 1st half of 2000 not being monitored) above Site D's background results.

Qtly Domestic Water Well:	U-Nat ($\frac{mg}{l}$)	NM	0.30 (NRC)	5.0 (ARAR)
	Th-230 ($\frac{pci}{l}$)	NM	5.0 (NRC)	15.0 (ARAR)
	RA-226 ($\frac{pci}{l}$)	NM	5.0 (NRC)	5.0 (ARAR)
	PB-210 ($\frac{pci}{l}$)	NM	1.0 (NRC)	
	PO-210 ($\frac{pci}{l}$)	NM	1.0 (NRC)	

Other Environmental Item

6. Surface Alpha: All material or equipment released met the requirements for unrestricted use

Removable 1000 $\frac{dpm}{100cm^2}$

Fixed Average 5000 $\frac{dpm}{cm^2}$

Where Area is $1m^2$
Gamma is 40 ur/hr

Monthly Inspection: Problems were encountered on two different events or mos. concerning fences (broken fence line caused by cattle). Immediate corrective action was taken to remediate these problems and all other months checked okay.

Checklist:
- Fences
- Air Monitors
- Rad. Warning Signs
- Locked Gates

Important Note: Currently, all items listed under the Environmental Monitoring Program are deleted, but with the exception of item #6, item #1 (continued this procedure on 10-19-00) and item #7 (report is dependent on available data). However, item #2, #3 and #4 might be re-implemented and required under a future Radiation Work Permit (RWP) at the discretion of the RSO for ALARA purposes (e.g. during the pond reclamation).

PERSONNEL MONITORING SUMMARY DATA

From 4th-Qr. 1999 to 3rd-Qr. 2000

Personnel Monitoring Item	Required Analysis	Highest Result Obtained	Allowable
1. Semi-Annual or as needed personnel TLD (DDE):	Gamma ($\frac{rem}{yr}$)	NM	0.500 (Action Level)
2. Semi-Annual or as needed Bioassay:	Total Uranium ($\frac{ug}{l}$)	NM	15-35 (action level)
3. Bi-weekely or quarterly air samples:	Gross Alpha ($\frac{uci}{ml}$)	NM	$6E^{-11}$ (DAC)
(Also Note: Action level is 10% of an applicable dose limit)	Th-230 (uci)/ml	NM	$6E^{-12}$ (DAC)
	RA-226 ($\frac{uci}{ml}$)	NM	$3E^{-10}$
	PB-210 ($\frac{uci}{ml}$)	NM	$1E^{-10}$ (DAC)
	RN-222 ($\frac{uci}{ml}$)	NM	$4E^{-6}$ (DAC)
	(-Daughter)		
	U-Nat ($\frac{uci}{ml}$)	NM	$2E^{-11}$ (DAC)

Personnel Exposure

4. Estimated Annual Total Effective Dose Equivalent (TEDE):	TEDE (rem)	NM	5.0 (MAX.) 2.0 (Action Level)

Note: The above items are only required under an RWP as needed (see PMP, REV. 4). And no RWP was issued during this reporting period.

NM-Not Monitored

TABLE 1

DIRECT RADIATION MEASUREMENTS

Exposure Date and Frequency	Location and Badge No.	Exposure Rate (mR/Qr.)	Error Estimate (mR/Qr.)	Above Background Exposure Rate (mR/Qr.)
2nd Half - 99	Site C	32.0	2.6	+5.6
(Semi-Annual)	(01013)			
"	Site D	26.4	7.1	Background Site
"	(01014)			
1st Half - 2000 *	Site C	32.0	2.6	+5.6
(Semi-Annual)	(01013)			
"	Site D	26.4	7.1	Background Site
"	(01014)			

COMMENTS: 2nd Half - 99 is based on Eberlines 234 days.

*Hypothetical projection from the 2nd half-99 results due to the 1st half-2000 not being monitored.

TABLE 2

QUARTERLY LIQUID SAMPLES

Date/ Qr.	Location	Type	Radionuclide	Concentration Mg/l	Concentration uci/ml	Error Est. uci/ml	LLD uci/ml
4th-Qr. 1999 to 3rd-Qr. 2000	GW-3	Ground Water Well	U-Nat(dissolved)		$3.85E^{-8}$		$2.0E^{-10}$
			Th-230(dissolved)		$<2.00E^{-10}$		$2.0E^{-10}$
			Ra-226(dissolved)		$6.00E^{-10}$	$2.00E^{-10}$	$2.0E^{-10}$
			Pb-210(dissolved)		$<1.00E^{-9}$		$1.0E^{-9}$
			PO-210(dissolved)		$<1.00E^{-9}$		$1.0E^{-9}$

UNC Field Data: PH(STD. Units) = 6.68

Cond.(U MHOS) = 5,040

Water Depth (Ft.) = 52.0

Temp. (°C) = 18.2

COMMENTS: GW-4 well is not producing enough water to pump since the 4th Qr. of 1999.