

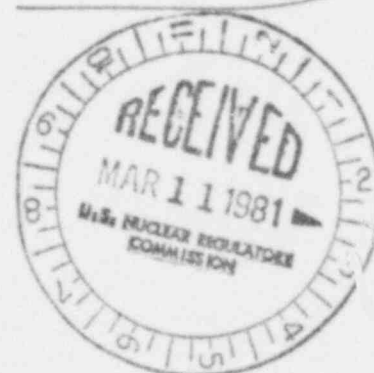


UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

MAR 6 1981

PDR

WM-44



MEMORANDUM FOR: Ross A. Scarano, Chief  
Uranium Recovery Licensing Branch

FROM: Gregory G. Eadie  
Uranium Recovery Licensing Branch

SUBJECT: GAO CLEARANCE OF 40 CFR PART 190 ORDERS

On February 20, 1981, Pat Woolley and I met with Norman F. Heyl, U.S. General Accounting Office (GAO), to resolve the GAO's concern that the 40 CFR Part 190 orders mandated the implementation of Regulatory Guides 4.14 and 4.15.

Upon review of this matter with R. Fonner and K. Cyr of ELD, it was concluded that some of the language of the 40 CFR Part 190 orders had to be changed and are summarized as follows:

- o The quarterly reports shall be submitted using the format in the attached Table, "Sample Format for Reporting Monitoring Date."
- o The licensee shall submit, for NRC review and approval, specifications for a quality assurance program following Regulatory Guide 4.15; or the licensee may provide specifications for an equivalent quality assurance program.
- o The licensee shall follow the lower limits of detection (LLD) contained in the attached Table, "Lower Limits of Detection (LLD) for Sample Analysis."

Upon receipt of the revised orders, a meeting will be scheduled with GAO to expedite their approval of the issuance of the 40 CFR Part 190 orders.

*Gregory G. Eadie*

Gregory G. Eadie  
Uranium Recovery Licensing Branch

Enclosure: As stated

cc: P. Woolley, DMB  
K. Cyr, ELD  
R. Fonner, ELD

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TABLE (a)

## SAMPLE FORMAT FOR REPORTING MONITORING DATA

1. STACK SAMPLES

For each sample analyzed, report the following information:

- a. Date sample was collected
- b. Location of sample collection
- c. Stack flow rate ( $m^3/sec$ )

<u>Radionuclide</u>	<u>Concentration</u> ( $\mu Ci/ml$ )	<u>Error Estimate</u> <sup>(b)</sup> ( $\mu Ci/ml$ )	<u>Release Rate</u> ( $Ci/qr$ )	<u>Error Estimate</u> ( $Ci/qr$ )	<u>LLD</u> <sup>(c)</sup> ( $\mu Ci/ml$ )	<u>% MPC</u> <sup>(c)</sup>
U-nat						
Th-230						
Ra-226						
Pb-210						

2. AIR SAMPLES

For each sample analyzed, report the following information:

- a. Date sample was collected
- b. Location of sample collection

<u>Radionuclide</u>	<u>Concentration</u> ( $\mu Ci/ml$ )	<u>Error Estimate</u> ( $\mu Ci/ml$ )	<u>LLD</u> ( $\mu Ci/ml$ )	<u>% MPC</u>
U-nat				
Th-230				
Ra-226				
Pb-210				
Rn-222				

(a) This table illustrates format only. It is not a complete list of data to be reported.

(b) Error estimate should be calculated at 95% uncertainty level, based on all sources of random error, not merely counting error. Significant systematic error should be reported separately.

(c) All calculations of lower limits of detection (LLD) and percentages of maximum permissible concentration (MPC) should be included as supplemental information.

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## SAMPLE FORMAT FOR REPORTING MONITORING DATA

3. LIQUID SAMPLES

For each sample analyzed, report the following information:

- a. Date sample was collected
- b. Location of sample collection
- c. Type of sample (for example: surface, ground, drinking, stock, or irrigation)

<u>Radionuclide</u>	<u>Concentration</u> ( $\mu\text{Ci/ml}$ )	<u>Error Estimate</u> ( $\mu\text{Ci/ml}$ )	<u>LLD</u> ( $\mu\text{Ci/ml}$ )
U-nat (dissolved)			
U-nat (suspended) <sup>(d)</sup>			
Th-230 (dissolved)			
Th-230 (suspended) <sup>(d)</sup>			
Ra-226 (dissolved)			
Ra-226 (suspended) <sup>(d)</sup>			
Pb-210 (dissolved)			
Pb-210 (suspended) <sup>(d)</sup>			
Po-210 (dissolved)			
Po-210 (suspended) <sup>(d)</sup>			

4. VEGETATION, FOOD, AND FISH SAMPLES

For each sample analyzed, report the following information:

- a. Date sample was collected
- b. Location of sample collection
- c. Type of sample and portion analyzed

<u>Radionuclide</u>	<u>Concentration</u> ( $\mu\text{Ci/kg wet}$ )	<u>Error Estimate</u> ( $\mu\text{Ci/kg}$ )	<u>LLD</u> ( $\mu\text{Ci/kg}$ )
U-nat			
Th-230			
Ra-226			
Pb-210			
Po-210			

<sup>(d)</sup> Not all samples must be analyzed for suspended radionuclides.

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TABLE (Continued)

SAMPLE FORMAT FOR REPORTING MONITORING DATA

5. SOIL AND SEDIMENT SAMPLES

For each sample analyzed, report the following information:

- a. Date sample was collected
- b. Location of sample collection
- c. Type of sample and portion analyzed

<u>Radionuclide</u>	<u>Concentration</u> ( $\mu\text{Ci/g}$ )	<u>Error Estimate</u> ( $\mu\text{Ci/g}$ )	<u>LLD</u> ( $\mu\text{Ci/g}$ )
U-nat			
Th-230			
Ra-226			
Pb-210			
Po-210			

6. DIRECT RADIATION MEASUREMENTS

For each measurement, report the dates covered by the measurement and the following information:

<u>Location</u>	<u>Exposure Rate</u> ( $\text{mR/qr}$ )	<u>Error Estimate</u> ( $\text{mR/qr}$ )

7. RADON FLUX MEASUREMENTS

For each measurement, report the dates covered by the measurement and the following information:

<u>Location</u>	<u>Flux</u> ( $\text{pCi/m}^2\text{-sec}$ )	<u>Error Estimate</u> ( $\text{pCi/m}^2\text{-sec}$ )

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Lower Limits of Detection (LLD) for Sample Analysis

U-natural, Th-230, Ra-226 in air	-	$1 \times 10^{-16}$ $\mu\text{Ci/ml}$
Pb-210 in air	-	$2 \times 10^{-15}$ $\mu\text{Ci/ml}$
Rn-222	-	$2 \times 10^{-10}$ $\mu\text{Ci/ml}$
U-natural, Th-230, Ra-226 in water	-	$2 \times 10^{-10}$ $\mu\text{Ci/ml}$
Po-210 in water	-	$1 \times 10^{-9}$ $\mu\text{Ci/ml}$
Pb-210 in water	-	$1 \times 10^{-9}$ $\mu\text{Ci/ml}$
U-natural, Th-230, Ra-226, Pb-210 in soil and sediment (dry)	-	$2 \times 10^{-7}$ $\mu\text{Ci/g}$
U-natural, Th-230 in vegetation, food, and fish (wet)	-	$2 \times 10^{-7}$ $\mu\text{Ci/kg}$
Ra-226 in vegetation, food, and fish (wet)	-	$5 \times 10^{-8}$ $\mu\text{Ci/kg}$
Po-210, Pb-210 in vegetation, food, and fish (wet)	-	$1 \times 10^{-6}$ $\mu\text{Ci/kg}$