



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-001

April 22, 1997

*Received 4/25/97*  
*[Signature]*

MEMORANDUM TO: Uranium Recovery Branch

FROM: Joseph J. Holonich, Chief *[Signature]*  
Uranium Recovery Branch  
Division of Waste Management

SUBJECT: CLARIFICATION ON POLICY FOR GROUNDWATER MONITORING AT  
URANIUM MILLS

On November 7, 1996, John Greeves, Director, Division of Waste Management issued a memorandum outlining the policy for requiring sampling at uranium mills. A copy of that policy is attached for your convenience. That policy required that prior to license termination, all uranium mills implement a single, one time measure of groundwater for constituents of regulatory concern. In addition, the policy stated that the staff had the flexibility to require monitoring of constituents for sites implementing groundwater corrective action plans (CAPs). Recently, some questions have arisen about the exact meaning of the policy. Therefore, the purpose of this memorandum is to provide the staff with additional clarification on how the policy documented in the November 7, 1996, memorandum should be implemented. This clarification has been reviewed by the Office of the General Counsel, and there is no legal objection.

In implementing the policy outlined in the November 7, 1996, memorandum, the staff must ensure that the need to add any new constituents of regulatory concern is identified in a timely manner. A constituent of regulatory concern is one that is: 1) either (a) currently identified in 10 CFR Part 40, Appendix A, Criterion 13, or (b) is not listed in Criterion 13, but is placed in a license condition as part of the staff's review of the CAP; and 2) has been identified in the tailings liquor. At the time of license termination, licensees will be required to submit a final groundwater measurement for these constituents, and demonstrate that they meet the applicable groundwater standards. The staff review of this final groundwater submittal will focus on ensuring that all the constituents previously identified as constituents of regulatory concern have been monitored, and these constituents are within established standards. This review will not be used to identify any new constituents that licensees will be required to monitor. Rather, as discussed below, the staff should identify constituents of regulatory concern early in the process such that timely interaction with the licensees can be achieved.

10 CFR Part 40, Appendix A, Criterion 13 contains a list of constituents that must be included in any final groundwater monitoring if they are found in the tailings liquor. Therefore, it is clear that those constituents listed in Criterion 13 and found in the tailings liquor must be monitored at the time of

CONTACT: Joseph J. Holonich, NMSS  
415-7238

license termination. In addition, the regulation provides the staff with flexibility to add other constituents not identified in Criterion 13 that the staff believes should be covered. In identifying this second set of constituents, the staff should ensure that any additions are made based on a sound technical and regulatory basis. Also, the staff should consider if such constituents are covered by ongoing state groundwater programs. Identification of additional constituents not identified in Criterion 13 should be done in a timely manner. This is either at the time the CAP is accepted, or at some time during the lifetime of the CAP. However, new constituents will not be added at the time of the license-termination monitoring submittal. In addition, for any constituent added, the staff must ensure that there is a health and safety or significant environmental concern that needs to be addressed. Examples of sound technical bases include the following:

- 1) The Nuclear Regulatory Commission and the Environmental Protection Agency agree to use one Federal contact with a licensee, which is the NRC. This approach requires NRC to include some constituents in its license that are not normally covered by NRC.
- 2) Trends in groundwater contamination show that after several years of decreases in the level of contamination, the level of contamination is beginning to rise again.
- 3) Surrogate parameters that cover a family of constituents show an increase in the concentration in groundwater. Therefore, the staff may require licensees to monitor for all constituents found in that family.

The staff should be particularly careful to avoid adding additional constituents just because an individual state regulatory body is concerned about that constituent. States share regulation for some nonradioactive constituents with the NRC based on the concurrent jurisdiction role established under the Uranium Mill Tailings Radiation Control Act. This is especially true for those nonradiological constituents identified in Criterion 13. For other nonradiological constituents not identified in Criterion 13, the states have sole regulatory responsibility. In identifying constituents of regulatory concern not covered in Criterion 13, the staff must ensure that an individual state does not use the NRC to implement the groundwater programs that are the responsibility of the state. In other words, having a state identify a constituent as one of concern to the state is not necessarily a proper basis for the NRC to include that constituent in the NRC issued license.

Please ensure that each of you follow this guidance in conducting reviews of the groundwater CAPs and license termination evaluations that are currently undergoing or will be completed in the future.

Attachment: As stated

cc: J. Greeves  
M. Federline  
C. Paperiello  
R. Fonner, OGC

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OFC	URB*		OGC*		DWM					
NAME	JHolonich		RFonner		JGreeves					
DATE	4/3/97		4/3/97		4/1/97					

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\*see previous concurrence

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- 1) Ammonia is found to have an impact on endangered species in a river where the contaminated groundwater from a site ultimately discharges. The ammonia in the groundwater is a result of the contamination from the tailings. Ammonia should be added to the list of constituents to be monitored.
- 2) The Nuclear Regulatory Commission and the Environmental Protection Agency agree to use one Federal contact with a licensee, which is the NRC. This approach requires NRC to include some constituents in its license that are not normally covered by NRC.
- 3) Trends in groundwater contamination show that after several years of decreases in the level of contamination, the level of contamination is beginning to rise again.
- 4) Surrogate parameters that cover a family of constituents show an increase in the concentration in groundwater. Therefore, the staff may require licensees to monitor for all constituents found in that family.

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Please ensure that each of you follow this guidance in conducting reviews of the groundwater CAPs and license termination evaluations that are currently undergoing or will be completed in the future.

cc: J. Greeves M. Federline C. Paperiello R. Fonner, OGC  
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OFC	URB	E	OGC	DWM					
NAME	JHelenich	R. Fonner	J. Greeves						
DATE	4/3/97	4/3/97	4/ /97						

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 7, 1996

MEMORANDUM TO: Carl Paperiello, Director  
Office of Nuclear Material Safety  
and Safeguards

FROM: John T. Greeves, Director *[Signature]*  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: GROUNDWATER MONITORING AT TITLE II URANIUM MILLS

In late May, the Division of Waste Management staff briefed you on the groundwater monitoring requirements at Title II uranium mills. Specifically, we discussed whether or not to require licensees to increase groundwater monitoring by testing for additional site-specific constituents at certain times. This issue was triggered by the State of Utah's request that the U.S. Nuclear Regulatory Commission require the Atlas Corporation to increase the list of monitored constituents at its Moab, Utah site. The State of Utah requested that the list of monitored constituents be expanded to include constituents that are of concern to the State, but that are not included in the Atlas license. In addition, the State of Utah requested that all constituents of concern be monitored on a set frequency such as annually. At present, Atlas is not required to monitor for all constituents that are of concern to the State of Utah. During the May briefing, the staff outlined three options:

- (1) A one-time measurement of all constituents of concern at the time of license termination;
- (2) Measurement of all constituents of concern on three specific occasions: a) once within the next year, b) upon termination of the corrective action program (CAP) to restore groundwater quality, and c) before license termination and transfer of site to the U.S. Department of Energy for long-term custody; and,
- (3) Routine periodic measurements of all constituents of concern, just as requested by the State of Utah.

At that time, you agreed with the staff recommendation that Option 2 was the most appropriate. You also indicated that the staff should prepare a Commission paper to discuss the issue and obtain Commission concurrence on the staff proposal.

We have since drafted a Commission paper, and discussed it with the uranium recovery Agreement States and NRC's Office of the General Counsel. A consensus was reached that the uranium mill licensees should be required to

Latif Hamdan, URB/DWM  
415-6639

Attachment

monitor for all constituents of concern in the groundwater at the time of license termination. This would require licensees to implement a single, one time measurement of a full-suite of site-specific constituents of concern to NRC, as provided in the regulations, before the license is terminated (i.e., consistent with the monitoring requirement under Option 1). But in addition, it was also agreed that the NRC and Agreement States should have the flexibility to require additional monitoring (similar to the requirements outlined under Options 2 and 3) at specific sites, if warranted based on site-specific conditions that cause uncertainty in site performance.

Groundwater CAPs are currently implemented at all uranium mills with contaminated groundwater. These CAPs require that licensees monitor the groundwater for constituents that were found to be above standards when the programs were developed in the late 1980s and early 1990s. Requiring routine monitoring of constituents that were not above standards when the CAPs were accepted may not be necessary for two reasons. First, the CAPs currently in place work to reduce groundwater contamination for all constituents that are present, not just those being monitored. Second, requiring monitoring for additional constituents does not necessarily result in protection of public health and safety. All that monitoring does is confirm the amount of constituents in the groundwater. It is the CAP which reduces the amount of contamination in the groundwater, and thus helps protect public health and safety. However, as noted above, additional monitoring may be necessary at select sites, if warranted based on site-specific conditions that cause uncertainty in site performance.

The staff proposes to implement the above stated policy for groundwater monitoring at currently licensed uranium mills.