

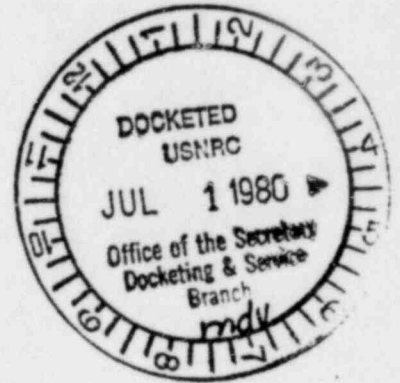


# National Wildlife Federation

NATURAL RESOURCE CLINIC  
FLEMING LAW BUILDING  
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PROPOSED RULE PR-Misc Notice  
Reg Guide



Mr. Robert B. Minogue  
Director, Office of Standards Development  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Minogue:

We are pleased to comment as follows on Revision 1 to Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills," dated April 25, 1980.

In general, we are of the view that these requirements are an improvement over existing practices at many sites. We are therefore in support of many specific elements of the monitoring program.

We do, however, have a number of specific items to raise, as follows:

1. Wildlife. In our past contacts with NRC, we have found that the staff appears to be sympathetic to wildlife concerns. However, this sympathy has yet to demonstrate itself in the form of regulations or environmental monitoring requirements directed toward wildlife protection.

NRC staff have in the past asserted that:

a. Wildlife are no more sensitive to radiation than man; therefore programs designed to limit radiation exposure to man are adequate to protect wildlife;

b. That many wildlife species range over relatively wide areas and may therefore "balance" periods of relatively heavy exposure in the immediate mill area with periods of background exposure outside the mill area; and

c. That potential human exposure through consumption of meat from contaminated game animals is not a significant threat.

On the contrary, we believe that:

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a. These NRC positions are merely a priori assumptions or guesses with little or no foundation in solid research. In some cases, these assumptions are probably wrong;

b. Because wildlife may live much closer to mill facilities than humans, and may feed on plants, insects or other animals in the mill vicinity, their exposure may be significantly higher than human exposure;

c. no general conclusions can be drawn about the range or habits of "wildlife" in general. Range and behavior of individual species vary significantly depending upon site-specific conditions;

d. Domestic herbivores eat a significantly different variety of plants from plants eaten by wild herbivores. Vegetation monitoring to determine effects on domestic herbivores may therefore be inadequate to predict effects on wild herbivores;

e. The significant differences in food chains between man and many wild animals means that different--and perhaps greater--buildup of radionuclides can occur in wildlife than in man.

We therefore believe very strongly that NRC should revise its environmental monitoring requirements with the following goals in mind:

a. Detection of radiological effluents and concentrations of radionuclides which could impact wildlife early enough to take preventive measures before harm could occur; and

b. Providing baseline data adequate to insure that any changes in wildlife species diversity, abundance, and mortality may be ascertained.

Specific measures to achieve these ends, as well as other comments, are set out below.

2. Nonradiological impacts. We recognize that Regulatory Guide 4.14 is designed to discuss monitoring of radiological effluents. However, nonradiological effluents, particularly heavy metals, may also be of concern.

We would appreciate being informed of what Regulatory Guide or other publication addresses monitoring of nonradiological environmental parameters.

3. Other facilities. Many uranium mills are constructed in the immediate vicinity of other uranium-related facilities which release radiation into the general environment. Such facilities may include uranium mines, other mills, or heap leaching sites.

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In the past, NRC has given inadequate attention to the potential effects of the combined releases from such facilities.

The monitoring information proposed in Regulatory Guide 4.14 does not adequately address this problem. Prescribed monitoring sites may or may not be adequate to address this problem of combined effects.

We will suggest three possible strategies for dealing with this problem. We regard the first of these proposals as a minimum, or "bare bones" system for monitoring. The other systems are more realistic and should, to the extent possible, be implemented.

Proposal I: Minimal Monitoring. Both preoperational and operational monitoring of radioactive airborne particulates, radon, and ground water quality should be required in the vicinity of (i) other mills, (ii) surface and underground uranium mines, (iii) heap leaching sites, and (iv) in situ mining facilities operated by the applicant within 50 km of the proposed mill site.

Proposal II: Additional Monitoring. In addition to the monitoring required by Proposal I, the applicant would have to conduct preoperational and operational monitoring at all other uranium-related facilities within 50 km of the proposal mill site which are to be operated in conjunction with the proposed mill, whether or not owned or operated by the applicant.

An example would be a mine, operated by another company, which supplies ore for the proposed mill.

Proposal III: Full Monitoring. An applicant would be required to submit preoperational and operational monitoring data on all uranium-related facilities within 50 km, regardless of ownership.

Obviously, under any of the three alternatives, data might already exist. For example, license applications by other operators in the area would necessarily include monitoring data on those facilities. Under any of the three proposals above, additional collection of data where data already exist would not be required.

Since mills, heap leaching facilities, and in situ mining operations are all subject to NRC licensing criteria, presumably all will be required to report monitoring data. Realistically, therefore, the major requirement will simply be to assemble existing publicly available data into a single package for disclosure in environmental impact statements and consideration in the licensing process.

The situation in which a problem might exist would be with respect to mines, releases from ore trucks, and other potential sources not now monitored. We believe that this problem can be solved as follows:

1. Applicants should be required to submit monitoring data on their own mines and mines operated in conjunction with the applicant's operations; and

2. Applicants should be required to estimate, based on standard methodology, releases from mines owned by others.

To fail to require such information is simply to admit that NRC regards the amount of radiation released in the area from sources other than the licensed facility as irrelevant to the licensing decision. Such information is manifestly not irrelevant. We strongly question, for example, whether NRC should license a new facility in an area where radiation dose from other existing facilities is already high.

4. Drainage from potentially contaminated areas. We believe that the requirement that water and sediment samples be collected from offsite water impoundments which may be subject to drainage from potentially contaminated areas is an important one.

It should be made clear and emphasized in the Regulatory Guide what a "potentially contaminated area" is. Such areas clearly include areas in which windblown tailings dust may be deposited.

5. Forage vegetation. It is not clear what NRC means by "forage vegetation" in section 1.1.3. It seems likely that very different results might be obtained by sampling different types of plant species.

Some herbivores, for example, prefer grasses. Others prefer broad-leaf species. Establishing pre-operational concentrations of radionuclides in grass, or monitoring concentrations in grass during operation, may not, for example, give an accurate picture of concentration in forbs or potential hazards to herbivores preferring forbs.

Again, we believe that the Regulatory Guide should not concentrate only on exposure of domestic animals. At least some attention should be given to wildlife problems.

The Regulatory Guide should be much more explicit about what is required in terms of vegetation monitoring.

6. Particle size distribution. It is fairly clear that the size of particles containing radionuclides has an important



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influence on their dispersion in the environment and the degree of hazard to man. Operational monitoring should include periodic measurements of particle size distribution for particles containing the various radionuclides.

7. Monitoring of wildlife populations. The Regulatory Guide should provide for a program of monitoring diversity, abundance, and distribution of wildlife species in the mill area. The program should be adequate to detect decline in populations, significant changes in their distribution, or changes in the mix of species inhabiting the area. Tissue samples from game animals killed in the area or other wildlife samples should be tested on a periodic basis.

Again, thank you for the opportunity to comment on Regulatory Guide 4.14.

Very truly yours,



Luke J. Danielson  
Counsel

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