

DOCKET NUMBER
PROPOSED RULE PR *misc. notice*
Reg Guide

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October 15, 1980



Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention Docketing and Service Branch

Ref: Draft Regulatory Guide: Information Relevant to Ensuring that
Occupational Exposure at Uranium Mills will be as Low as Reasonably
Achievable.

Task OH-941-4

Gentlemen:

It is appropriate to have such a concise statement of the NRC's thinking concerning uranium mills. Some comments are attached concerning the wording of certain sections of the guide.

I do not agree with the proposed radiation safety organization and its management structure. There are valid reasons for an alternate Health Physics organization relationship to management. The suggested alternative wording of the regulatory guide is set forth in the comments. The proposed organization has been shown to be workable and efficient.

Objection is also raised to the regulatory guide's proposal that the air in uranium mills should be controlled below 10% of MPC limits. This is a desirable objective, but it is difficult to meet everywhere in the typical uranium mill. The probability of a license denial is very real in future time, because of non-compliance with this requirement of a regulatory guide. It appears that the requirements of 10 CFR 20 are being revised downward by this guide.

It is recommended that the wording of the regulatory guide be revised to incorporate these comments.

Very truly yours,

Ralph F. Peak
Mill Superintendent

RFP:mk

Attachments

CC: J.E. Russell
L. Sandman
RSO File
G. Dooley

Acknowledged by card... 10/20/80

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Comments on Draft Regulatory Guide Task-OH-941-4

"Information Relevant to Ensuring that Occupational Exposure at Uranium Mills will be As Low As Reasonably Achievable." Dtd-August 1980 1.1 Licensee Management.

Most of these requirements have previously been implemented for this operation at Shirley Basin, Wyoming as part of the conditions to the license application submitted in 1976. Difficulties are anticipated in this area, some rewording is suggested later in these comments.

1.2 Radiation Safety Officer.

Comments: It is apparent from the statements concerning the delegation of responsibility and authority to the RSO, that the NRC is accustomed to operating in a rigid and delegated authority type of power structure. The RSO is charged with 2. "Responsibility to develop and administer the ALARA program" 1. "Sufficient authority to enforce regulations and administrative policies that affect any aspect of the radiological safety program" 3. "Authority to review and approve plans for new equipment process changes, or changes in operating procedures" (sentences rearranged for emphasis and proper priority)

2.1 Health Physics Authorities and Responsibilities.

"The Radiation Safety Officer shall be responsible for conducting the health physics program and for assisting the resident manager in ensuring compliance with NRC's Regulations and the license conditions applicable to worker health protection."

"Generally, the RSO should report directly to the Resident Manager on matters of safety"

The comments on these two sections have been combined in the discussion that follows because there are valid reasons for the slightly different approach. The approach recommended is not optimum in my opinion.

It is obvious in looking at the combined requirements of sections 1.1, 1.2, and 2.1 that the NRC feels there is no responsibility for, authority to improve or concern by the mill production superintendent for on going MSHA and NRC safety requirements. In contrast to the expressed and implied attitudes of NRC in this matter, there is a legal moral, and management responsibility for worker safety at each step in the management ladder. This responsibility does not end with the local "resident manager" but continues to the highest Chief Executive Officer having knowledge of the problems.

First: The worker's immediate shift foreman is legally a company representative. He has been held responsible for safety in past and probably future court legal cases. His authority to control worker actions and to enforce safety rules stems directly from his relationship to the management above him. His responsibility includes enforcement of policies and rules to maintain the ALARA concept for his subordinates.

Second: Each level in the management chain of command has to have full responsibility and authority for maintaining the ALARA concept along with the responsibility for worker safety and responsibility for meeting production objectives. Regardless of his title i.e. "Mill Superintendent", "Production Department Head", "Operations Manager" or "Hey you, Ralph", the person in charge of the uranium mill and its workers is responsible for safety, radiation safety and for maintenance of the ALARA concept. All of the workers involved with radiation and radiological hazards at a uranium mill report to an individual responsible for their work output and their work safety. This is the person that has to be responsible for development and enforcement of rules, regulations and administrative policies affecting all aspects of the radiological safety program inside and outside the mill.

If this production management person has to contend with an individual RSO responsible only to the manager's own superior there will be friction, feuds, power struggles and conflicts of interest. The RSO as defined in section 2.4.1 is supposed to be a technical expert on uranium mill health physics. As such his/her primary concern is to furnish the technical knowledge for preparing, implementing, and revising as necessary the policies and procedures required to maintain the ALARA concept.

Paragraph 2.1 Continues to state: "The RSO may have other safety-related duties, such as responsibility for programs of industrial hygiene and fire safety but should have no direct production-related responsibility." Comment: The NRC neglected to include who is responsible for worker safety at the mill site as required by MSHA law, which will effect future inspection and whether the "RSO" can be responsible for or should be excluded from these similar responsibilities.

The most significant weakness of the drafted Regulatory Guide is: THAT MANAGEMENT IS NOT CHARGED WITH THE RESPONSIBILITY FOR WORKER HEALTH, SAFETY AND THE MAINTENANCE OF THE ALARA CONCEPT. Paragraph 1, ALARA philosophy states that the responsibilities are shared by management, the RSO, and mill workers. I submit that responsibilities are never shared. Authority is only delegated to ensure that proper actions are taken. A shared responsibility is nobodies responsibility.

Therefore, the following rewording of the paragraph 1 and its subsections is suggested.

Paragraph 1. Philosophy, revise second and third sentences. Words omitted are indicated ~~emitted~~ words added underlined.

"Thus the implementation and effectiveness of a successful ALARA program becomes the responsibility of everyone ~~incidental to~~ involved in the processing of uranium ores. The responsibility for conducting an ALARA program ~~are shared by~~ rests directly on licensee management, with technical support from the radiation safety officer (RSO), and cooperation from all mill workers.

1.1 Licensee Management.

Add: Licensee Management at each level is responsible for developing, implementing and enforcing the rules policies and procedures necessary for an effective ALARA program for the workers and persons under their control.

Licensee Management shall provide the following: 1 through 4 as is. Add 5. Management leadership for enforcement by words, actions and personal example of the policies, rules, and requirements of the ALARA program at their location.

1.2 Radiation Safety Officer.

Add: The Radiation Safety Officer has primary responsibility for the technical adequacy and correctness of the ALARA program, and has continuing surveillance responsibilities over worker and supervisor actions in the enforcement of the program.

The Radiation Safety Officer should be delegated the following:

1. Sufficient authority to enforce regulations and administrative policies that affect any aspect of the radiological safety program (no changes)
2. Responsibility for the technical adequacy and content in development and administration of the ALARA program.
3. Authority to review and approve plans for new equipment No change, but a comment: The technical staff at a typical uranium mill is small. There should be and normally is, continuous daily communication between the RSO and the engineering, maintenance and operations personnel. The mill management is responsible under my proposal for the ALARA program and should and would include comments by the RSO in their planning long before it was put on paper and therefore subject to review and approval.

2. Health Physics Organization and Administrative Procedure.

2.1 Health Physics Authorities and Responsibilities.

Add: Operating management at the mill site is responsible for implementing, enforcing and conducting the health physics program to maintain exposures ALARA.

Revise: The Radiation Safety Officer ~~at~~ the mill site should be responsible for the technical content and surveillance of the health physics program and shall assist the manager in ensuring compliance

Generally The RSO will report directly to the production resident manager on matters of safety, and shall have direct simultaneous reporting responsibilities to higher management for all incidents of overexposures, violations of regulations and license conditions applicable to workers health protection. (Remainder of paragraph satisfactory)

2.2 Operating Procedures: (last paragraph)

"The RSO should indicate by signature the review of each RWP prior to the initiation of work

Comment: The largest problem in a uranium mill is not the penetrating radiation exposure, such as is encountered later in the fuel cycle, but is the industrial hygiene problem of yellow cake dust around the dryer and packaging area. All work in this area should be covered by blanket precautions of adequate, approved and properly fitted respirators and protective clothing. The implementation of

the RWP then becomes a matter of following the rules and of being certain that the necessary monitoring is carried out. The RSO does not necessarily have to review each RWP prior to start of the work if he has developed the respirator program and other necessary procedures.

If the intent of this paragraph is to require an RWP for an unusual or special job, then it might make some sense to leave it as is. If the intent is to require documentation of each maintenance job, then standard procedures should be developed and implemented.

2.3 Surveillance: Audits and Inspections.

2.3.1 Daily and Weekly Inspections.

Comment: The requirement for daily inspections, recording of problems, signatures and record keeping is a fine example of bureaucratic crucifixion of the first line supervisors, and attempt to make a man confess his own errors, or to "squeal on" the shift ahead of his. There is already a requirement under MSHA that the supervisor inspect his area for safety "before" each shift and to record the inspection results. Assuredly at some future time these inspection records will be used as evidence in a "wrongful death" suit by an aggressive and hardnosed lawyer such as Melvin Belli of California or Gerry Spence of Wyoming.

It is my opinion that the requirements of this paragraph are too restrictive and should be revised to require notations of problems encountered and actions taken to correct the problem.

The weekly inspection is more meaningful, particularly if the RSO gets out from under the pile of paperwork mandated by this regulatory guide, and does the inspection himself.

2.3.2 Monthly Inspections.

The first paragraph mandates a veritable "blizzard" of paper work for a monthly report. If this report is to be meaningful it should be a report of the exceptions from the normal. It is nearly impossible to get bioassay data and other exposure calculations out in a timely manner for a monthly summary.

2.3.3 ALARA Program Audit.

A formal semiannual audit of the type presented should be changed to an annual review and audit presented to, and participated in by management. There should be a monthly look, and a quarterly look at exceptions to good practice; what the normal levels are and the trends within the mill.

2.4 Technical Qualifications of Health Physics Staff.

2.4.1 Radiation Safety Officer.

.1 Education: A Bachelor's degree in the physical science or engineering from an accredited college or university.

Comments: Requirement is too restrictive and discourages the use of industrial hygienists or biological science graduates having specialized training pertinent to radiation. Considering the amount of paper work projected for the job it appears a bookkeeper, accountant or computer expert with an English grammar minor would be a more suitable choice to be given the health physics training. The requirements should be revised to include persons having life sciences training.

.4 Specialized training: Comment: The formalized intensive course of four weeks plus/or including one week of uranium mining and milling health physics is a "great idea". The trouble is that there are no such courses available. At best we have to "blow the RSO's mind" with overkill about later steps in the fuel cycle where penetrating radiation becomes a real problem and where the hazardous isotopes are totally different. This is the typical result of the five week course at Oak Ridge.

5. Specialized Knowledge:

Add: A thorough understanding of the uranium milling process and equipment used in his mill, and how the hazards are generated and controlled during the milling process.

2.5 Radiation Safety Training:

2.5.2 Personal Hygiene at Uranium Mills.

b. Wearing respirators when appropriate.

Comments: This does not place proper emphasis on the respirator. In my opinion once the facility has installed engineering controls, the proper use of respirators is essential to maintaining the ALARA concept.

2.5.4.b In Vivo counting is mentioned as a bioassay method. Considerable technical doubt exists as to its efficiency and pertinence as a routine measure.

2.7 Respiratory Protection: Second sentence.

There should be adequate supplies of respiratory devices to enable assignment of a device to each individual who may routinely enter airborne radioactivity areas.

Comment: Revise to read: "Supplies of respirators should be adequate to supply a device to each individual who enters airborne radioactivity areas." The concept of assignment or issuance on a permanent basis negates the very important aspects of respirator cleaning, maintenance and inspection which should be accomplished after each day's use of the respirator. It is not cost effective to have sufficient half mask respirators, full face respirators, and power air supply respirators to issue one of each to each individual, and to let him decide which to use for a job. It is more effective to require daily cleaning, inspection and maintenance of all respirators used, and to supply the respirators needed for each days work after consideration of the hazard in that area.

3.3 Ventilation Systems.

"10 CFR 20 (Table 1, App. B) lists maximum permissible concentrations, not the level below which one ceases to worry about the problem. Under the ALARA concept as I understand it the goal is a level of zero, when that level is reasonably achievable (admittedly this is never the case). The concept of reducing the concentrations of natural uranium to below the MPC is not objectionable. I object to the setting of an arbitrary limit (i.e. 10%). The combination of equipment design, work procedures, and the respirator program should reduce the hazard below the MPC, as low as reasonably achievable, not to any specified level."
(comment by M. Nolte, RSO)

1. Second sentence. "The design ventilation rate to less than 10% of the maximum permissible concentration MPC given in table 1 of appendix B to 10 CFR part 20.

Comment: It appears that 10 CFR part 20 is being rewritten by regulatory guide fiat, and the concentration is being revised downward. When the regulatory standards were adopted, as a result of considerable effort and technical study, the standards were set so as to assure a minimum of effect on a worker during a normal working life time. Now here the standard is effectively being reduced by a factor of 10.

Section 4. Control of Airborne Uranium and its Daughters.

A careful consideration of the four types of areas leads me to the belief that no part of the mill was omitted.

4.2, 4.3, 4.4 The statement that concentrations should be controlled below 10% of MPC appears to be another attempt to move the acceptable standard downward. It is also obvious that the proposed requirements of the G.E.I.S. are being implemented. If the requirements of this guide are set forth in a license application the uranium company has effectively put itself on record to live with an exposure level 10% of the allowable.

The impact estimated in the G.E.I.S for uranium mill workers was only one radiation implicated early death per 2000 man years of worker exposure. That was estimated for "NRC model mill" having a "low level" of control. Such an "NRC model mill" is not consistent with present licensing requirements. Here in this proposed regulatory guide the present requirements are being tightened to a level which would have an early death rate of less than one per 25 to 30 thousand man years as compared to a normal cancer death rate of 200 to 300 for the same population.

In my opinion the proposed regulatory guide will be excessively cumbersome, a paperwork jungle, and effectively do little to improve the status of worker health and industrial hygiene. As an engineer and mill superintendent with some years of experience, the equipment requirements of section 4 are a theoretical expert's dreams of what will work. Bag filters for uranium applications are an operational and industrial hygiene nightmare, and are a prime source of dust exposures.

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