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PROPOSED RULE 1.1

*notice notice
Reg Guide*

November 12, 1980



Mr. Samuel J. Chilk
Secretary to the Commission
U.S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Attn: Docketing and Service Branch

Dear Mr. Secretary:

Re: Draft Regulatory Guide: "Information Relevant To Ensuring That Occupational Exposures At Uranium Mills Will Be As Low As Reasonably Achievable" (Task OH 941-4)

The American Mining Congress Uranium Environmental Subcommittee takes this opportunity to comment upon the above captioned draft regulatory guide.

The American Mining Congress is a trade association founded in 1897. Its membership is composed of over 500 U.S. companies that produce most of the nation's metals, coal and industrial and agricultural minerals; companies that manufacture mining and mineral processing machinery, equipment and supplies; and engineering and contracting companies and banks that serve the mining industry. The membership includes the producers and processors of nearly all uranium in this country.

While the uranium industry unequivocally supports the ALARA concept, the regulatory guide as proposed misses the mark. Exposures in uranium mills simply are not of the same significance as those in other elements of the nuclear fuel cycle.

We trust that these comments will be of significant benefit to the Commission's staff as they pursue development of this guide.

Sincerely,
Larry Boggs
Larry A. Boggs
Counsel

*IFP-11
Comment*

11/12/80

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AMERICAN MINING CONGRESS
URANIUM ENVIRONMENTAL SUBCOMMITTEE
COMMENTS ON THE

DRAFT REGULATORY GUIDE:
"INFORMATION RELEVANT TO ENSURING
THAT OCCUPATIONAL EXPOSURES AT
URANIUM MILLS WILL BE AS LOW
AS REASONABLY ACHIEVABLE"
(Task OH 941-4)

November 10, 1980

These are comments prepared by the American Mining Congress Uranium Environmental Subcommittee on the NRC Draft Regulatory Guide, "Information Relevant to Ensuring That Occupational Radiation Exposures at Uranium Mills Will Be As Low As Is Reasonably Achievable (Task OH 941-4).

We certainly believe in the ALARA principle but we also solicit that this regulatory guide must recognize that radiation protection emphasis in a uranium mill should be commensurate with potential hazards. The fact remains that the maximum radiation exposures that a person could get in uranium mills are not of an acute health effect nature as they can be in other fuel cycle facilities.

General Comments

1. Even though this is a "guide" and the licensee should have some discretion in its application, the AMC believes NRC should recognize that the size and type of an operation will have an effect on the ALARA program. As an example, a small heap leach or in situ operation would not justify as extensive an ALARA program as a full-scale milling operation; nor would a small upgrading operation where no dried yellow cake was produced need as extensive a program.
2. Where "safety" is mentioned throughout the report, it should be deleted or, where applicable, changed to radiation safety. This guide should not address safety except where it is directly related to radiation exposure of personnel. We note "safety" is referred to in the following locations:

p.5, 2.1, para. 2, line 2
p.8, 2.3.3, #5
p.10, 2.5, #3.b
p.11, 2.5, para. 2, lines 2 & 7
p.11, 2.5, para. 4, line 2

Specific Comments

1. COMMENT: On page 4, first line, the words "and members of the general public" should be deleted.

DISCUSSION: In describing the ALARA program as it applies to the radiation protection program, the general public is not involved. Other guides pertain to the general environment and general public. As the title of this guide notes, it applies to "occupational radiation exposures."

2. COMMENT: On page 5, 1.3, the first line should be changed to read: "Because an effective radiation safety program is only as effective as the worker's adherence to the program all workers at the mill should be responsible for the following:"

DISCUSSION: Industry wholeheartedly endorses firm delineation and fixed responsibility of the uranium mill operator to provide for adequate protection for all involved in the operation. An effective radiation safety program is only as effective as the worker's adherence to the program. We believe the above change emphasizes this point.

3. COMMENT: On page 5, 2.1, the third sentence of the second paragraph should read: "The RSO should, through appropriate line management, have both the responsibility and the authority to suspend, postpone, or modify any work actively that is potentially hazardous to workers or a violation of the Commission's regulations or license conditions."

DISCUSSION: The action required to suspend, postpone, or modify maintenance or operation activity is under final authority of line management: As now worded this is indicated but the line management must recognize the authority of the RSO.

4. COMMENT: On page 5, 2.1, the words in the last two lines, "but should have no direct production-related responsibility" should be deleted.

DISCUSSION: The guide suggests the RSO may have safety-related duties but not production-related responsibility. In small operations where the number of technical personnel is limited, the RSO may also be a metallurgist, chief chemist, or the like. We do not believe an NRC guide should dictate organizational structure of personnel in a mill. This might be changed to a preferred requirement instead of a should do category.

5. COMMENT: On the first line of page 6, the word "environmental" should be deleted.

DISCUSSION: Environmental monitoring, sampling, analysis, and instrument calibration are not within the scope of this guide.

6. COMMENT: On page 7 at the beginning of 2.3.1 make the following changes: "The RSO or designated health physics technician and the mill foreman should conduct a weekly inspection of all mill areas to observe general radiation control practices and review necessary changes in procedures and equipment." As frequently as reasonable, but at least weekly, the RSO or designated health physics technician ~~and the mill foreman~~ should conduct a daily walk through (visual) inspection of all work and storage areas of the mill ..."

Also, in line 6 change the frequency of recording inspections in a logbook from daily to weekly, and in line 7 change review of each day's findings to each week's findings.

DISCUSSION: The RSO cannot always be at a mill every day and at small operations there may be no health physics technician. The mill foreman will be in most parts of the mill on every shift but should not be required to tour the entire mill with the RSO daily. Although the value of such an inspection might, on the surface, look desirable, making it a daily requirement may defeat its purpose by the magnitude of the task. A good, thorough inspection weekly is more practical.

7. COMMENT: On page 7, line 9 of 2.3.1 change "...manager and other mill employees who have authority to correct the problem." to "manager or other mill employees..."

DISCUSSION: It should not require the resident manager's decision on minor changes which must be made.

8. COMMENT: On page 7, 2.3.1, last line of first paragraph, change to read "...the RSO, his staff, or designee..."

DISCUSSION: This will give more flexibility in who can approve work permits requiring radiation monitoring.

9. COMMENT: On page 8 delete the last paragraph of 2.3.1

9. DISCUSSION: The changes suggested in Comment No. 6 provide for frequent (at least weekly) inspections by the RSO or his technician, for weekly inspections by the mill foreman in accompaniment with the RSO or the technician, and a weekly review of procedures and problems with someone in authority. We believe this is very adequate coverage and a weekly inspection by the technician is not necessary. He will be busy taking samples, preparing reports, etc., and would be expected routinely to report on non-compliance items to his supervisor.

10. COMMENT: On page 7 the following changes in the title and first lines: "Monthly Reviews at least monthly the RSO should ~~conduct an inspection of all work and~~ review all monitoring and exposure data for the month and ~~the RSO should~~ provide to the resident manager..." Also, delete the word "inspection" in the first and fifth lines of the second paragraph.

DISCUSSION: With frequent inspections of the mill by the RSO or the technician, and weekly inspections with the mill foreman, it is certainly not necessary to add a monthly inspection. As changed, the RSO conducts a monthly review with the resident manager and department heads and prepares a summary which will be useful to non-resident personnel.

11. COMMENT: On page 8 at the start of 2.3.3 change as follows: "The licensee management personnel in coordination with the RSO should perform a formal ~~semi-annual~~ annual audit of the ALARA program..." Also, change semi-annual to annual in the first line of the second paragraph.

DISCUSSION: An audit should be performed by personnel other than the RSO or his staff and preferably by some non-resident personnel to evaluate the entire radiation safety program. The RSO and his staff should, of course, participate. Annual, rather semi-annual, audits are accepted practice, be they accounting audits or safety audits. A thorough annual team audit will be more effective than more frequent audits which may be performed only because a guide suggests it.

12. COMMENT: On page 8, 2.3.3, No. 3, delete "daily."

DISCUSSION: See Comment No. 6

13. COMMENT: On page 8, 2.3.3, No. 7, delete "and environmental."
DISCUSSION: See Comment No. 5
14. COMMENT: On page 8 in the second numerical listing, delete item 2 referring to effluent releases, delete "and effluent control" in item 3, and delete "and effluent releases" in item 4.
DISCUSSION: Effluents are beyond the scope of this guide; this is an occupational radiation exposure guide.
15. COMMENT: On page 8, 2.4.1, change to read: "The RSO should preferably have the following education, training, and experience:
"1. Education: A bachelor's degree in physical science or engineering from an accredited college or university, or equivalent experience.
"2. General experience: ~~One-year-of-supervisory experience-and~~ one year experience in a uranium mill or related industry.
DISCUSSION: We recognize that an RSO should have some education and/or experience in uranium mills and in health physics duties. However, on-the-job training of personnel with some technical education is commonly the method of RSO development. We do not believe supervisory experience is necessarily required.
16. COMMENT: On page 8, 2.4.1, item 4, change "4 week's duration" to "1-2 week's duration."
DISCUSSION: We are not aware of such courses available with a 4-week duration. There are a few 1-week courses available.
17. COMMENT: On page 9, 2.4.2 the introductory sentence should read, "In addition to the RSO and for full-scale milling operation there should be a minimum of one full time health physics technician ~~at every uranium mill~~."
DISCUSSION: Small operations may not be able to justify an RSO plus a full time health physics technician.
18. COMMENT: On page 9, 2.4.2, 1. add to the first sentence, "or equivalent practical experience." Under 3 make the one year work experience preferred. Under 4 change 4 weeks of formalized training to 1 week.
DISCUSSION: Associate degree technicians are scarce. It is usually necessary to train such technicians on the job. While a few 1-week training courses are available, we are not aware of 4-week technician training courses.

19. COMMENT: On page 10, 2.5, 3.b either delete "Safety designed features for process equipment," or add "Radiation safety..."
- DISCUSSION: If any agency control over such an item exists, it would be covered by OSHA or MSHA.
20. COMMENT: On page 11, 2.5, delete the first four sentences on this page pertaining to a written test and substitute the following: "Each worker should receive a minimum of one hour of instruction on the basic principles of radiation safety and health protection in uranium milling and a thorough review of all instructions pertaining to radiation protection which workers must follow."
- DISCUSSION: We believe the requirements for a written test, a personal review of wrong answers, and retesting goes far beyond the practical training realistically necessary. MSHA safety training is already very burdensome and often reduces the effectiveness of a company's own safety training program because it has been mandatory to substitute the MSHA program. We believe oral or videotape training is effective and adequate.
21. COMMENT: On page 11, 2.5, second paragraph, last sentence, change "2 months to "year."
- DISCUSSION: Most mills have regular safety training programs that may include a monthly routine review. We believe devoting one of these a year to radiation protection is adequate for routine training. Radiation training programs every two months would seriously dilute regular safety training which addresses far more serious and potential hazards.
22. COMMENT: On page 11, 2.5, add at the end of the second paragraph: "Other radiation safety matters which arise between annual training should be reviewed in monthly or bimonthly safety meetings."
- DISCUSSION: Most operations have monthly safety meetings. Radiation safety problems can be reviewed at these meetings without devoting the entire meeting to radiation safety.
23. COMMENT: On page 12, 2.7, change the second sentence as follows: "There should be adequate supplies of respiratory devices to enable assignment use of the by each individual who may routinely enter airborne radioactive areas or a program for routinely cleaning, inspecting, and packaging respiratory devices."

23. DISCUSSION: This alternate method of supplying respirators should be provided in addition to assigning respirators to individuals. It may be more effective and is a commonly acceptable method.

24. COMMENT: On page 8, 2.7, strike the third sentence referring to locating respirators near access points of airborne radioactivity areas.

DISCUSSION: If respirator devices are available to all employees as required in our proposed change, there is no need for having respirators located near airborne radioactivity areas. Also, it is poor practice to have respirators stored near higher airborne radioactive areas. The 10 CFR 20 regulations do not necessarily require the use of respirators in airborne radioactive areas.

25. COMMENT: On page 12, replace 2.8 with the following: "The bioassay program should be patterned after the format of proposed Regulatory Guide 8.22 with the specific frequency adopted and the type of analysis being proposed; the RSO according to individual site specific considerations, e.g. presence of a yellow cake dryer, commercial analytical laboratory turn around times, etc."

DISCUSSION: Regulatory Guide 8.22 has not yet been finalized and it is inappropriate to reference this guide as if it were final. The suggested wording will allow a licensee to implement the program proposed in Regulatory Guide 8.22 with some flexibility for conditions at individual operating sites.

26. COMMENT: On page 12, 3., line 3, strike "and toxic."

DISCUSSION: Toxic hazards are not within the scope of this guide.

27. COMMENT: On page 13, 3.1, 5, change the sentence to read, "The need to locate emergency personnel decontamination equipment (e.g. shower facilities) in an easily accessible location, in the advent (sic)..."

DISCUSSION: Having emergency showers adjacent to mill equipment for a radiation overexposure is not necessary. It would be preferred to have the employee go to a change room where he can remove clothes and shower. There is no urgency as in the case of acid splashes to remove ore dust or yellow cake immediately.

28. COMMENT: On page 13, 3.2, delete the words, "or security locks."
- DISCUSSION: Fire protection procedures discourage locking of areas such as gas-fired driers where there is fire potential. We believe control by supervisors and operational personnel is adequate.
29. COMMENT: On page 13, 3.3, item 1, delete references to 10% values of Table I, Appendix B, 10 CFR 20.
- DISCUSSION: ALARA guidelines should not be quantified because quantification is contrary to the very ALARA concept. The value of 10% MPC_a, equal to 1×10^{-11} uCi/ml Unat, therefore, becomes the MPC_a, a level which may or may not be as low as reasonably achievable. Furthermore, there is given no justification to reduce the standards as given in 10 CFR 20.203(d) (1)(ii).
30. COMMENT: On page 14, 3.4, delete words in title and in last sentence pertaining to high-level alarms on "tanks containing hazardous chemicals."
- DISCUSSION: Hazardous chemicals are not within the scope of this guide.
31. COMMENT: On page 15, 3.6, item 2., change to read: "Provide adequate space in yellow cake storage area to conduct an initial survey and smear test..."
- DISCUSSION: Gamma survey and smear test of yellow cake drums should be done in or near storage areas before shipping, not in packaging area. Drums are normally cleaned before leaving packaging area.
32. COMMENT: On page 15, 3.6, item 3., change to read: "So far as is practical, locate yellow cake storage and shipping areas so as to minimize handling time required prior to shipment."
- DISCUSSION: Contracts, delivery dates, and inventory buildups may not permit minimizing handling and storage time.
33. COMMENT: On page 16, item 4, change to read: "(3) yellow cake precipitation, drying, and packaging, and (4) miscellaneous mill locations as specified in 4.4."
- DISCUSSION: "Ore precipitation" is in error. Second addition is for clarification.

34. COMMENT: On page 61, 4.2, delete this entire first paragraph which erroneously refers to eliminating crushing and certain ventilation by the use of semi-autogenous grinding.
- DISCUSSION: The statements are not necessarily true. Autogenous grinding does not necessarily eliminate crushing.
35. COMMENT: On page 17, 4.3, delete the first two sentences.
- DISCUSSION: Not all mills use ammonia for precipitating yellow cake. The remainder of the paragraph adequately addresses ventilation in these areas of the mill.
36. COMMENT: On page 18, 4.3, change the last two sentences to read as follows: "To insure proper operation, the scrubber system on the concentrate drying and packaging areas should be checked every shift and documented, or automatic malfunction alarm or interlock systems installed. Manometer readings or operational and instrument checks should be recorded once per shift and subsequently documented.
- DISCUSSION: With adequate automated equipment and instrumentation, inspections every shift should be adequate. Most mills have some type of automated system to verify proper operations. Hourly checks may divert operators time away from other equally or more important matters.

We appreciate the opportunity to submit comments on the proposed regulatory guide. Although the comments may seem voluminous, we believe our suggested changes will result in the guide being more acceptable to the industry and being applied in a more useful manner. We will be pleased to meet with NRC personnel to discuss the proposed guide in more detail.