

DS09

**Morton Associates**

technical consultants

10421 Masters Terrace  
Potomac, Maryland 20854

301-83-0365

Bill Morris  
57FR53794  
11/12/92

(3)

1993 JAN -5 PM 1:54

January 4, 1993

Regulatory Publications Branch  
DFIPS, Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Re: Draft Regulatory Guide DG-8013

Dear Sirs:

The following comments on *ALARA Levels For Effluents From Materials Facilities*, Draft Regulatory Guide DG-8013, are offered for your consideration.

The statement concerning the relation between radiation exposure and effect should be made more conclusive [DG-8013, §B, ¶3, sentence 1]. If the author has conclusive data demonstrating an effect at exposure rates experienced by the U. S. population, then say so and cite the data. Else, conclude there is no observed effect at that level.

The draft guide tries to make an untenable inference that what is achievable is practicable. While licensees may have reported effluent concentrations in the range of 0.1 to 0.2 of the 10 CFR Part 20, Appendix B limit, the draft guide offers no basis that that level is ALARA [§1.2, ¶1, s3] nor that a *modest fraction* of the values in 10 CFR Part 20, Appendix B is ALARA [§1.2, ¶1, s1]. Similarly, no rationale is offered why a *modest fraction* of the dose limit for a member of the public is presumed to be ALARA [§1.2, ¶2, s1]. The presumption [§1.2, ¶3] that an arbitrarily small fraction of effluent concentration limit or of the public dose limit is ALARA fails to account for reasonableness. A more appropriate numerical standard for ALARA radioactive effluent would be 40 CFR Part 190.10(a), which was derived to be ALARA.<sup>1</sup>

The proposed guide suggests encapsulation as an prospective effluent treatment [§2, §1, s2]. That seems an unlikely choice.

Its authors specify that systems be modified to meet its unsupported ALARA goal unless analysis indicates no substantial dose reduction or unreasonable cost [§2, ¶2, s1 & s2.]. A more rational, more positive, and somewhat more precedented statement could be, "Effluent treatment should be implemented which is demonstrated to be cost-beneficial and which substantially reduces population dose."

<sup>1</sup> technical basis in USEPA:ORP, 40 CFR 190 Environmental Radiation Protection Requirements For Normal Operations Of Activities In The Uranium Fuel Cycle, Final Environmental Statement, vols 1 & 2, EPA 520/ 4-76-16, Nov. 1976.

Surveys to assess compliance are prescribed in the draft guide [§3, ¶1]. In order to avoid unwitting prescription of an approach that may not work, the text should state clearly that compliance may be assessed on the basis of environmental measurements, effluent measurements, or a combination thereof.

The draft text says that several computer codes that calculate dose from air effluents are available [§3.1, ¶3, s2] and that such may be used if it is demonstrated to use *approved methods* [§3.1, ¶3, s3]. Other than Regulatory Guide 1.109 or NCRP Commentary 3, how would one know what methodology is approved? The important messages that should be stated are whether specific methodology to assess compliance is required, and if so, to specify what that methodology is. It would seem appropriate to refer to a computer code only if it is acceptable, publicly available, and not commercial. Thus, the uncertain references to methods and codes should be deleted from the text [§3.1, ¶3, s2 & s3].

The draft guide also states that Regulatory Guides 4.14 and 4.16 may be useful in calculating doses from liquid effluent [§3.2, ¶1, s3]. Those regulatory guides provide guidance for monitoring but not for calculating dose.

Draft guide DG-8013 proposes routine review, determination, and documentation of whether changes in systems are needed to achieve ALARA [§4, ¶1]. There is precedent<sup>2</sup> that once ALARA effluent treatment is determined, revisiting that routinely without cause is not called for. DG-8013, §4, ¶1, s4 should be stated more specifically to apply to and to provide for review of designs for radioactive effluent treatment system installation and modification. Having done so, the only function of DG-8013, §4, ¶1, s3 would be to ask a licensee to routinely re-verify and document that changes are not needed to maintain ALARA effluent. That is unwarranted.

Thank you for the opportunity to comment on the draft regulatory guide.

Very truly yours,

*Henry W. Morton*

Henry W. Morton

---

<sup>2</sup> 10 CFR Part 50, Appendix I.