

ADVANCED NUCLEAR FUELS CORPORATION (51 FR 30870) DOCKETED
DATE

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November 28, 1989
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U.S. Nuclear Regulatory Commission
Attn: Mr. Kenneth M. Carr, Chairman
Washington, D.C. 20555

Dear Mr. Carr:

Advanced Nuclear Fuels Corporation's (ANF) comments on proposed changes to the Standards for Protection Against Radiation (10CFR20) were transmitted to the Commission by letters from R. W. McCullugh, Vice President, ANF, dated October 11, 1988 and February 13, 1989 (copies enclosed). In furtherance of those comments, ANF and other fuel fabricators met with NRC staff on February 22, 1989 and proposed a combined committed dose - annual dose system for assessment of worker internal dose from persistent radionuclides such as uranium. A detailed illustration of the proposed system, as requested by NRC staff, was forwarded from the fuel fabricators by NUMARC in May 1989. The results of the illustration showed that the combined annual-committed dose system is reliable and effective. The NRC staff analysis of the industry proposal was completed and documented within one week after the NUMARC package was transmitted.

The purpose of this memo is to ensure that the fuel fabricators' position receives consideration as the 10CFR20 debate approaches conclusion. This issue can be a significant factor in shifting the ability of U.S. fuel fabricators to compete in the world market. It will affect the cost of nuclear generated electricity and perhaps the viability of nuclear power in the U.S. If there were any significant increases in safety to the worker or the public, certain additional costs could be justified, however, there is no identified positive cost/benefit. The NRC staff analysis mentioned above states ". . . the dose allowed in each year is numerically equivalent to the dose allowed in the committed dose approach."

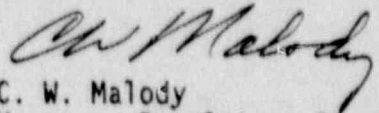
In summary, the industry's position is to control the work place on a committed dose basis, but to determine internal doses on an annual effective dose equivalent basis. The annual dose can be determined directly by measuring the radionuclide actually deposited in the worker's lungs. In most cases, the committed dose must be calculated from data secondary to the uptake utilizing significantly over-predictive ICRP models. In the first case, both the licensees and the NRC know the internal exposure status of each worker rather quickly. In the latter case, much time and effort can be spent without satisfactorily determining exposure within reasonable accuracy.

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We appreciate your time and attention to these comments.

Sincerely,



C. W. Malody
Manager, Regulatory Compliance

kk

Enclosures

cc: James Curtiss
Thomas M. Roberts
Kenneth C. Rogers

ADVANCED NUCLEAR FUELS CORPORATION

2101 HORN RAPIDS ROAD, PO BOX 130, RICHLAND, WA 99352-0130
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Engineering & Production
R. W. McCULLUGH
Vice President

October 11, 1988

U. S. Nuclear Regulatory Commission
Attention: Mr. L. W. Zech, Jr., Chairman
Washington, DC 20555

Dear Mr. Zech:

Advanced Nuclear Fuels Corporation (ANF) wishes to comment on proposed changes to the Standards for Protection Against Radiation (10CFR20) which it understands will be presented to the Commission for action shortly.

During the development of the proposed rule, the NRC staff interacted on numerous occasions with a large number of groups and individuals, including some with whom ANF has membership. The net result was that, when published for public comment in January 1986, the proposed rule had already received vigorous scrutiny by interested parties and did represent a consensus within the framework of International Congress on Radiation Protection (ICRP) guidance and recommendations.

Of particular importance to ANF and others in the uranium fabrication industry was paragraph 20.205 of the January 1986 draft rule which allowed measurement of radionuclides with long radioactive and biological half-lives on an annual dose basis rather than on a 50-year committed dose basis. This paragraph (p 20.205) recognized that measurement of these nuclides in a practical manner so as to permit projections of committed effective dose equivalent with sufficient accuracy to demonstrate compliance with the proposed limits would be extremely difficult and might not be possible. The latest recommendation of the NRC staff is to remove the annual dose flexibility provided by paragraph 20.205. ANF is concerned that such action ignores the thought and effort given to provide a solution to this measurement problem by NRC staff, licensees, and cognizant national and professional bodies. Of particular concern is that the removal of paragraph 20.205 is directly contrary to positions on the subject taken by knowledgeable regulatory and scientific bodies to whom the NRC should look for guidance. Statements supporting this view have been excerpted from published material and are presented below.

The National Council on Radiation Protection and Measurements (NCRP) states in Section 7 of NCRP Report No. 84, "A committed effective dose equivalent system should specifically not be used as a measure of an individual worker's exposure status. Recognition of this restriction is essential if the system is not to be abused."

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The Administrator, Environmental Protection Agency prepared a memorandum titled "Federal Radiation Protection Guidance for Occupational Exposure" which was approved by the President, was published in the Federal Register, Vol. 52, No. 17 and which contained the following statement, "Provisions should be made to assess annual dose equivalents due to radionuclides retained in the body from such intake for as long as they are significant for ensuring conformance with the limiting values specified in Recommendation 3."

In 1988 in a letter from Chairman W. Kerr to the Honorable Lando W. Zech, Jr. the Advisory Committee on Reactor Safeguards offered the following specific comment, "We agree that application of the committed effective dose equivalent is the proper approach to follow in planning for radiation protection and in controlling exposures from nuclear activities. However, the committed effective dose equivalent does not constitute a sufficient basis in itself for evaluating the potential health effects of radiation exposures in individuals. Such evaluation should be based on estimates of the actual absorbed dose for the period of exposure appropriate to the individual case. For this reason, in the case of radionuclides having long effective half-lives, it is recommended that licensees be provided the option of using the annual effective dose equivalent in the determination of compliance with 10 CFR 20."

A Health Physics Society position paper in 1984 endorsed committed dose for control of the work place and annual dose for assessing worker dose from persistent radionuclides.

One other government agency also establishes radiation protection regulations for the nuclear work place and worker, the Department of Energy (DOE). The DOE in its latest (April 5, 1988) draft of Order DOE 5480.11 on the subject of Radiation Protection for Occupational Workers states, "The annual effective dose equivalent to an individual shall be determined by summing the annual effective dose equivalent from internally deposited radionuclides and ..." It is difficult to understand how two government agencies receiving guidance from identical sources can arrive at such different regulations. The fact that DOE must practically apply these regulations to its own facilities and the NRC does not, might account for the difference.

The provisions of the proposed rule requiring internal doses to be determined on a committed dose basis has been estimated by the NRC staff to cost the U.S. fuel fabrication industry \$75 million. This estimate is comparable to industry estimates. Accounting for internal dose on an annual basis would cost a small fraction of that amount with no loss in worker protection.

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The ANF position on the proposed regulation is consistent with those positions mentioned above. The 50 year committed effective dose equivalent should be used to control internal exposure in the work place but annual effective dose equivalent should be used to record actual internal doses which, in turn, should be compared against annual dose limits.

The NRC staff position does not reflect the position of those to whom it is supposed to look for guidance, it is in opposition to other government agency regulations on the same subject, it is extremely costly with no measurable benefit and is fraught with problems with respect to practical application. For these reasons, ANF requests that the Commission direct the staff to incorporate the annual dose provision, as originally stated in paragraph 20.205, into the final rule.

We appreciate your time and attention to these comments and hope that they have been helpful.

Sincerely,

R W McCullugh

R. W. McCullugh, Vice President
Engineering and Production

RWM:jrs

cc: Kenneth M. Carr
Thomas M. Roberts
Kenneth Rogers

ADVANCED NUCLEAR FUELS CORPORATION

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Engineering & Production
R.W. McCULLUGH
Vice President

February 13, 1989

U. S. Nuclear Regulatory Commission
Attention: Mr. L. W. Zech, Jr., Chairman
Washington, DC 20555

Dear Mr. Zech:

Advanced Nuclear Fuels Corporation (ANF) comments on proposed changes to the Standards for Protection Against Radiation (10 CFR 20) were transmitted to you by my letter of October 11, 1988 (copy enclosed). Certain events have transpired since that time which cause me to add to those earlier comments.

We have become aware that the Advisory Committee on Nuclear Waste (ACNW) has reviewed the annual dose versus committed dose question with NRC staff personnel and has issued a recommendation which concurs with deletion of Section 20.205 from the proposed regulation. ANF remains opposed to that position. We are concerned that the proposed regulation which was issued for comment containing paragraph 20.205 following years of work by NRC staff and others, including thousands of man-hours of consultation with affected organizations and licensees, is now placed in jeopardy by a three-man committee following a very short review time. It is recognized that this subject is not without controversy and that it is possible to find committees of knowledgeable people, particularly small committees, wherein two or three individuals may cause some position to be taken. More to the point, those committees or organizations which are large enough and contain sufficient expertise to reflect a consensus of the scientific community and furthermore whose charter includes the broad responsibility of recommending the course for the nation have already spoken in favor of annual limits for certain nuclides as stated in my letter to you of October 11, 1988. ANF believes that the broader based view should prevail.

I would also point out that since my earlier letter the Department of Energy (DOE) has adopted their draft position of using annual exposure as their final position.

Thank you for considering our views.

Very truly yours,

R.W. McCullugh
R. W. McCullugh

vb

Enclosure

cc: Kenneth M. Carr, Commissioner
James Curtiss, Commissioner
Thomas M. Roberts, Commissioner
Kenneth C. Rogers, Commissioner

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