

143

RECORD #143

TITLE: Requirement of Form NRC-4

FICHE: 38289-138

Rad Protection Policy 7.

0442178  
A. Stone

JAN 25 1978

T. S. D

Mr. Thomas A. DeVlieger  
1501 Edgerton Drive  
Joliet, IL 60435

Dear Mr. DeVlieger:

This is in response to your letter to me dated January 9, 1978, requesting an interpretation by General Counsel concerning how NRC Forms 4 should be used. Contacts with our legal staff have indicated that the questions you ask require largely technical answers and that the questions do not require a legal interpretation by General Counsel as you suggest. Therefore, we have enclosed a separate attachment which provides answers to your questions.

We hope the enclosed discussion and answers to your questions are responsive to your concerns. Should you have any additional questions or desire further clarification of the use of Forms 4, you may direct them here or to our office in Region III.

Sincerely,

Original Signed by  
Ernst Volgenau  
Director  
Office of Inspection  
and Enforcement

Enclosure:  
As stated

bcc: N. C. Moseley                   EVolgenau Reading  
      H. D. Thornburg                IE Reading File  
      E. D. Jordan  
      L. N. Haller  
      B. H. Grier, RI  
      J. P. O'Reilly, RII  
      J. G. Keppler, RIII  
      E. M. Howard, RIV  
      R. H. Engelken, RV

SEE PREVIOUS YELLOW FOR CONCURRENCES

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Form 4

Sections 20.101(b) and 20.102 of 10 CFR Part 20 provide a means to exceed the limit of 1.25 rems per calendar quarter as specified in Section 20.101(a) provided that the lifetime exposure limit is not exceeded. The lifetime limit is specified in Section 20.101(b) and is determined by the formula  $5(N-18)$  where "N" is a worker's age in years. In all circumstances the occupational radiation dose limit provided for in Sections 20.101(b) and 20.102 cannot exceed 3 rems per calendar quarter. However, if during an emergency or accident a lifetime dose is obtained there is nothing to prevent an individual from receiving up to 1.25 rems per quarter as provided in Section 20.101. The lifetime dose limitation only applies when exceeding 1.25 rems per quarter as provided in Section 20.101(b).

In your letter, Section 20.102 is quoted with several key words or phrases underscored. To obtain a certificate on Form NRC-4 requires that your employer make a reasonable effort to obtain the total radiation exposure from each of your previous employers where radiation exposures were received, so that the information can be entered on the new Form 4. If the information can not be gotten, then your employer may use assumed exposures as set out in the table in Section 20.102(c)(1) or restrict you to 1.25 rems per calendar quarter which would require no Form 4. Each period of time means those periods while in the employ of a single employer; for example, if two previous licensees (employers) were involved, this would constitute two time periods. And of course, each Form 4 must be signed by the employee or the Form 4 is not considered valid. The individual's signature on the Form 4 does not mean that permission is granted to exceed 1.25 rems per quarter; it only acknowledges that the history is correct and complete to the best of his knowledge. When all of the dose information is received and recorded then it is a simple matter to determine the lifetime dose remaining by using the formula given above.

In your letter you list some specific questions in addition to those implied. Following are answers in order of the questions listed.

- Q. Must the individual sign the form every time he exceeds 1.25 rems per quarter?
- A. No. The Form is only a history of previous employment exposures and all remaining dose information under the current employer may be found in the exposure records, known as the NRC Form 5 or equivalent as specified in Section 20.401, which must be maintained. Keep in mind that the Form 4 is only filled out and signed once and remains in effect for as long as an individual works for that employer.

- Q. Must the Form 4 be filled out every time the 1.25 rems is exceeded for every quarter it is exceeded?
- A. No.
- Q. If it is not required every time how often must the licensee update and have signed his Form 4?
- A. Updating is not necessary as long as the employee works for the same licensee (employer). As indicated earlier current exposure information is found in the Form 5 or equivalent.
- Q. If the licensee is unsure of exposure is an outdated Form 4 sufficient to exceed 1.25 rems per quarter?
- A. A Form 4 cannot be outdated for the same employer since it is only a previous history. The Form 5 should be examined for a current update on exposures. With regard to the Form 5 the employer can only be as certain of the exposures as entered from analysis of film badge or TLD exposure data. Usually, the current exposure records (Form 5 data) show for each individual the lifetime exposure used and that remaining as well as current quarter and current year to date exposures.
- Q. Must more than a casual concerned glance be done before the 1.25 rem limit is exceeded?
- A. If a glance is needed to confirm that the employee has a Form 4 in case of doubt, then this may be all that is necessary (assuming that the Form 4 was adequately completed and signed initially.) In real practice the licensee should obtain a current update by examining the exposure records (Form 5) and the results of pocket dosimeter readings, if used. This may require more than a "concerned glance" to make certain the employee will not exceed 3 rems per quarter.
- Q. If the licensee has not filled out a new Form 4 immediately prior to exceeding 1.25 rems per quarter does Section 20.405(a) apply as regards the thirty day notification?
- A. If a Form 4 has previously been filled out an individual can receive up to 3 rems per quarter. If no Form 4 has been filled out and an individual exceeds 1.25 rems per quarter, a report pursuant to Section 20.405 is required. An individual cannot be permitted to exceed 1.25 rems per quarter prior to having a Form 4 completed.

Q. Is it possible that a Form 4 signed in February 1974 can be used in December 1977 to exceed 1.25 rems per quarter?

A. Yes, as discussed above a Form 4 with the same employer is valid for as long as the employee remains with the employer. Again any updating would be reflected in the exposure records.

Q. Does not 20.102(b)(1) in its use of the word "obtain" and the words "each period of time" force a continual update of the Form 4 at the time 1.25 rems per quarter is exceeded?

A. No. The continual update is obtained on the Form 5 and the phrase "obtain for each period of time" as used in 20.102(b)(1) has been discussed above.

Mr Director,

I would appreciate an interpretation of 10 CFR 20 by the General Counsel as per 10 CFR 20, section 20.6.

Having discussed the subject with your Glen Ellyn Office I still am unsure of the Commission's official interpretation of the Code. Two inspectors agree with me but a third took an opposite view. In all fairness the third was Your expert on the Radiation Protection aspects.

The sections in question are in regards to exceeding Quarterly Exposure, Record keeping and notification of abuse.

Section 20.101 Lists  $1\frac{1}{2}$  Rem as a quarterly limit for whole Body Dose unless "The Licensee has determined the individual's accumulated occupational dose to the whole body on Form NRC-4, or on a clear and legible record containing all the information required in that form; and has otherwise complied with the requirements of 20.102."

Section 20.102 (1) States " Obtain a certificate on Form NRC-4 or a clear and legible record containing all the information required in that form, Signed by the individual showing each period of time after the individual attained the age of 18 in which the individual received an occupational dose of radiation; (2) Calculate on Form NRC-4 in accordance with the instructions appearing thereon, or on a clear and legible record containing all the information required in that form, the previously accumulated occupational dose received by the individual and the additional dose allowed for that individual under 20.101(b)".

The questions in regards to my doubt are these;

Must the individual sign the form every time He exceeds  $1\frac{1}{2}$  Rem/quarter?

Must the Form NRC-4 ( or its substitute) be filled out everytime the  $1\frac{1}{2}$  Rem is exceeded for every quarter it is exceeded? If it is not required everytime how often must the licensee update and sign His Form NRC-4? If the licensee is unsure of exposure is an outdated Form NRC-4 sufficient to exceed  $1\frac{1}{2}$  Rem/Quarter?

Must more than a casual concerned glance be done before the  $1\frac{1}{2}$  Rem limit is exceeded? And finally. If the licensee has not filled out a new Form NRC-4 immediately prior to exceeding  $1\frac{1}{2}$  Rem/quarter does section 20.405(a) apply as regards the thirty day notification?

It is my opinion that exceeding  $1\frac{1}{2}$ Rem/quarter requires an updated Form NRC signed by the individual. And that it must be done each and every time this quarterly exposure limit is to be exceeded.

The other interpretation is that only one FormNRC-4 form is needed no matter how dated and that no signature is needed, for every overexposure.

Is it possible that a NRC-4 form, signed in say Feb, 1974 to be used in ,say, Dec 1977to exceed  $1\frac{1}{2}$ Rem/ quarter? Does not 20.102(1) in its use of the word "obtain" and the words "each period of time" force a continual update of the NRC-4 Form at the time of exceeding  $1\frac{1}{2}$ Rem/quarter?

I would appreciate a written reply sent to: Thomas A. De Vlieger  
1501 Edgerton Drive  
Joliet, Illinois  
60435

Yours Truly,

*Thomas A. De Vlieger*