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RECORD 52

TITLE: Effluent Reporting Requirement Per 10 CFR 20.405(a)

FICHE: 38289-151



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

0472/79  
Sent as requested  
5/9/80  
J. Hounsbury

December 21, 1979

Mr. Andrew Mattox  
Radiation Safety Officer  
Rosenstiel Basic Medical Sciences  
Research Center  
Brandeis University  
Waltham, Massachusetts 02154

Dear Mr. Mattox:

Thank you for your letter of December 6, 1979 to the General Counsel's office, requesting an explanation of the reporting requirements in 10 CFR §20.405 (a)(5). The Office of the Executive Legal Director has been designated to answer you letter with respect to the practice under Part 20 and the section in question.

As you may know, Part 20 was promulgated to establish permissible doses for radiation workers and for the public, and permissible concentrations of radioactivity in air and water, based on the recommendations of the National Committee on Radiation Protection (since 1965, National Council on Radiation Protection & Measurement) and the "Radiation Protection Guides" of the former Federal Radiation Council. It was also promulgated to establish precautionary requirements for personnel monitoring, posting of areas and containers where radiation or radioactive materials exist, radiation surveying, record keeping, storage of radioactive material, instruction of personnel, and reporting of radiation over-exposure, accidents, and loss or theft of licensed material.

The regulation does not specify detailed procedures to be followed in meeting safety standards in most cases, but individual licenses may, and usually do, contain special safety requirements and conditions necessitated by the particular situation. Radiation exposure of personnel is controlled through the licensee's ability to control access to its facility and to direct the actions of individuals within the facility and by protective equipment, devices, and procedures. Exposure of the public is controlled by limiting the quantity and concentration of radioactive material which may be released by the licensee to areas not controlled by it.

The sections and appendixes incorporating limits on radiation levels and concentrations of radioactive material in unrestricted areas are designed to assure that individuals in "unrestricted areas" do not receive exposure in excess of 10% of the limits established for persons exposed in restricted areas. For this purpose, these regulations limit levels of radiation and concentrations of radioactive material which may be created in unrestricted areas by licensees, without special authorization from NRC, to extremely low levels. These levels are believed to be sufficiently low to assure that there is no reasonable probability of individuals in unrestricted areas receiving exposures in excess of 10% of the permissible levels for restricted areas under any circumstances. Moreover, as a precautionary procedure, §20.201 requires licensees to make (or have made for them) such surveys (and with such frequency) as may be necessary to comply with the regulations in Part 20.

Within this scheme, section 20.405(a)(5) requires written reports within 30 days of levels of radiation or concentrations of radioactive material in an unrestricted area in excess of ten times any applicable limit set forth in Part 20 or in the license. The applicable limits in Part 20 are listed in Table II of Appendix B and are modified to the extent that §20.106 allows a licensee to average concentrations over a period not greater than one year. Thus, §20.106 and 20.405 are complementary; averaging is, in fact, permitted; and a licensee is not normally required to report in writing releases of single milliliters of air or water which exceed by a factor greater than ten the concentrations specified in Table II of Appendix B.

The reporting requirements in question have been a part of the regulations for twenty years. Each report under §20.405 requires the licensee to

"describe the extent of exposure of individuals to radiation or to radioactive material, including estimates of each individual's exposure...; levels of radiation and concentrations of radioactive material involved; the cause of the exposure, levels or concentrations; and corrective steps taken or planned to assure against a recurrence."

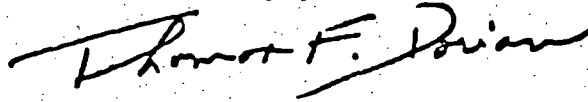
Clearly, the regulations attempt to ensure that NRC knows about abnormal conditions at licensees' facilities; that licensees control their activities, including procedures, equipment and people, to protect against radiation hazards; and that every reasonable effort is made to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonable achievable.

Mr. Andrew Mattox

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I hope we have been responsive to your concerns. If you have any further questions, please feel free to call me (301-492-8690).

Very truly yours,

A handwritten signature in black ink, appearing to read "Thomas F. Dorian". The signature is written in a cursive style with a prominent flourish at the end.

Thomas F. Dorian  
Attorney  
Regulations Division  
Office of the Executive Legal Director

cc: Robert McClintock, Region I