

MINER DEVELOPMENT

FARMERS UNION BUILDING
DENVER 3, COLORADO

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July 1, 1958
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40-1341

Lyall Johnson, Chief
Licensing Branch
Division of Licensing and Regulation
Grand Junction Operations Office
U. S. Atomic Energy Commission
Grand Junction, Colo.

Dear Mr. Johnson:

Reply is made to your above-referenced letter received by this company June 16, 1958. Said letter concerned our operations at Edgemont, South Dakota licensed under Source Material License No. R-174, as amended.

The matter of alleged non-compliance with the Atomic Energy Commission's "Standards for Protection Against Radiation", Part 20 of Title 10, Code of Federal Regulations, has caused us considerable concern. As requested in your letter, we are now advising of action which we have taken or plan to take in connection therewith.

The problem of radioactivity as it affects uranium ore processing operations is a fairly difficult one to evaluate. The industry has had little experience with the subject, and has only recently begun to accumulate pertinent background information. It has been necessary that we rely heavily on information supplied by agencies such as the Commission, the U. S. Public Health Service, State Health Departments, etc. We do, however, feel that some progress has been made and are continuing our efforts to overcome our lack of knowledge of radioactivity and its effects.

So far as the Edgemont Mill operation is concerned, problems of radioactivity have been under attention for the two years the plant has been in operation. However, in studying "Standards for Protection Against Radiation" and in Section 20.201 (b), it



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is not clear as to the scope or frequency of "surveys". A number of surveys have been conducted at the Edgemont Mill, and the results of these surveys are a matter of record. To review certain of these, the U. S. Public Health Service surveyed the plant on October 15, 1956. The results of this survey, which deals in part with radioactivity, is set forth in a report entitled "An Industrial Hygiene Survey of Mines Development, Inc. Uranium Mill at Edgemont, South Dakota" dated January, 1957.

In February, 1957 the South Dakota State Department of Health surveyed for radioactivity waste samples from our Edgemont Mill and various samples from the Cheyenne River. The mill had been discharging clarified effluent into the Cheyenne River, and this survey was primarily aimed at determining the extent of radioactive contamination of the River. Biological samples were taken, together with samples of ground water and river mud. The results of this survey were fully reported in a letter from the South Dakota State Department of Health dated July 29, 1957.

On July 19, 1957 the U. S. Public Health Service surveyed the mill for radioactivity. From observation it appeared that a complete and thorough survey was conducted. Samples of various products were taken, together with dust and air samples in various critical areas of the plant. It was my understanding that this survey was under the general supervision of Dr. E. C. Tsivoglou, Senior Sanitary Engineer, Chief, Radioactivity Studies WS & WP Program, USPHS, Robert A. Taft Sanitary Engineering Center. Dr. Tsivoglou advises that the results of this survey will be forthcoming in the near future, but that such results are generally favorable. He also advises that certain data from the Edgemont operation will be included in a paper he is preparing for the forthcoming Geneva Convention. I should imagine such report and such paper shall also be a matter of record.

In addition to the above surveys there have been a number of meetings at Edgemont to discuss radioactivity and its problems. Probably the most notable of these was one held on July 23, 1957. This meeting was attended by officials of Mines Development, of the U. S. Atomic Energy Commission, the U. S. Public Health Service and the South Dakota Department of Health. The Division of Civilian Application was represented, and various reports have been prepared concerning discussions held at that time.

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The Edgemont Mill is a relatively new facility. We have taken every reasonable precaution to suppress dust and to contain objectionable products. However, the original operation was based upon neutralization of barren leach liquors, settling of solids, and decanting a clear effluent into the Cheyenne River. Because of the possibility of contamination of this stream, a great deal of attention has been focused on this problem. Based upon recommendations of the U. S. Public Health Service and of the South Dakota State Department of Health, a procedure was established for controlling the rate at which this effluent was fed to the river. However, our company did not feel that this temporary solution was necessarily foolproof, so we have proceeded with construction of facilities to fully contain this material. These facilities, installed at a cost in excess of \$100,000, are now essentially completed and will be incorporated in our operation some time this month. At that time all waste products from the mill will be re-cycled, and we will no longer have the problem of discharging slightly radioactive material to the Cheyenne River.

In connection with the above, we have been monitoring this effluent, and have been reporting the results to the South Dakota Department of Health. Samples of the effluent have been taken on a continuing schedule and have been analyzed for radioactivity by an independent agency. Records pertinent to this program are being maintained. The above program has been under the direct supervision of one of our engineers who is also being trained in other aspects of the situation.

The above matters have been reviewed in an attempt to demonstrate that the Edgemont Mill has been concerned with radioactivity and related problems for some time. While such programs as we have undertaken may not be satisfactorily complete, I should like to note that we have been unable to fully interpret the requirements as set forth in Part 20 "Standard for Protection Against Radiation". Perhaps some clarification can be obtained relative thereto. However, we do wish to advise of our concern and to state that we recognize our responsibility in connection with this matter and are making a continual effort to fully comply with all requirements.

Mr. Lyall Johnson

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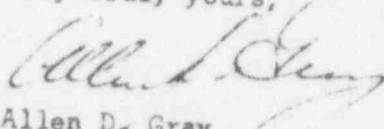
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In connection with the requirements set forth by Section 20.203, we desire to question the need for labeling, signals, and caution signs as required by the "Standards". If such standards are fully complied with, it is our belief that a serious psychological problem will be created with our employees and the residents of the city of Edgemont. I am sure you can fully appreciate the impact of such a program and the awkward position in which our Edgemont operation might find itself. For this and other reasons we wish to request exemption from this provision of the Regulations, and until such time as more is known of the actual problems involved, refrain from publicizing the subject.

In reviewing the Regulations, we are left with the opinion that the rules and regulations set forth therein were not particularly written to apply to uranium processing operations. If possible, we should like to request your comments on this question, and determine whether new regulations might be considered. If so, we should be happy to offer our assistance in every way in developing such regulations.

If further clarification or additional information is desired, please do not hesitate to contact us.

Very truly yours,



Allen D. Gray
Executive Vice President

adg/rhm
cc: C.S. Leonard
C.E. Tonry
H.D. Webb