

URANIUM REDUCTION COMPANY

INTER-OFFICE CORRESPONDENCE

To: R. F. Hollis

From: L. A. Palmer

Date: August 11, 1959

Subject: Radiation Control Division

In your letter of the Director of the Division of Industrial Regulation of the AEC dated August 10, 1959, the following measures were given. The action to be taken by the Division is as follows:

July 20, 1959. Target date for engineering program for all URC employees. This program has been completed on schedule.

July 27, 1959. Target date for engineering plans designed to correct blockage of main dust collection ducts in the main dry plant. Plans were completed on schedule.

Target date for engineering plans designed to correct positive pressure and leakage at discharge of dust from primary vibrating screen in the crushing plant. Plans were completed on schedule.

August 7, 1959. Target date for completion of changes designed to correct blockage of main dust collection ducts in the crushing building. This project was completed on schedule.

Target date for completion of changes designed to correct positive pressure and leakage at the discharge of the dust from the primary vibrating screen in the crushing plant. This project was completed on schedule.

September 1, 1959. Target date for first successful installation of water fog nozzle for dust suppression. It was determined that such a system is inworkable. A fog nozzle system was installed and the first discharge chute on #2 conveyor. The fog tank of the system has been installed. In so far as dust suppression is concerned the installation can be considered a success and the target date may be postponed to later date. The noise of application, however, proved to be too high and was reduced by the addition of the ball conveyor. Recent information gathered by Mr. Wilson and Mr. Poppa from experts in the dust suppression field indicates the use of fog nozzles in conjunction with a bag type dust collecting system may give rise to bag clogging. Nevertheless, several additional fog nozzle installations are being prepared.

Target date for completion of cleaning of dust under the roller scrubber. The engineering and working on this project has been completed. At the present time there is no reason to doubt that the job will be completed on schedule.

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PDR ADDOCK 04003453
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URANIUM REDUCTION COMPANY

INTER-OFFICE CORRESPONDENCE

To R. F. Hollis

From L. A. Palmer

Date August 20, 1959

Subject Radiative Control Division

In your letter of the 11th of June, 1959, the Division of Radiative Control, Regulation of the AEC dated August 10, 1959, advised that the radiative control measures were given. The following is a summary of the work as follows:

July 20, 1959. Target date for completion of program for all URC employees. This program has been completed on schedule.

July 27, 1959. Target date for engineering plans designed to correct blockage of main dust collection ducts in the existing plant. Plans were completed on schedule.

Target date for engineering plans designed to correct positive pressure and dumping at discharge of dust from primary vibrating screen in the existing plant. Plans are completed on schedule.

August 7, 1959. Target date for completion of changes designed to correct blockage of main dust collection ducts in the existing building. This project was completed on schedule.

Target date for completion of changes designed to correct positive pressures at discharge of dust from the dust from the primary vibrating screen in the existing plant. This project was completed on schedule.

September 1, 1959. Target date for first successful installation of water fog nozzles for dust suppression. It was determined that such a system is inworkable. A fog nozzle system was installed in the dust collector discharge chute of #2 conveyor. The fog nozzle system has been installed to date. In so far as dust suppression is concerned, the installation can be considered a success and the target date may be considered to have been met. The point of application, however, proved to be too close to the dust collector discharge chute conveyor. Recent information gathered by Mr. Wilson and Mrs. Poppe from experts in the dust suppression field indicates that the use of fog nozzles in conjunction with a bag type dust collector system may give rise to bag blowing. Nevertheless, several additional fog nozzle installations are being prepared.

Target date for completion of installation of water fog nozzles under the roller scrubber. The engineering and planning on this project has been completed. At the present time there is no reason to doubt that the job will be completed on schedule.

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URANIUM REDUCTION COMPANY

SHEET 2

DATE 8-24-59

TO R. F. HALL

January 1, 1960. The progress of the complete range of water fog system at critical areas in the existing department is in a satisfactory position. The installation has proved to be successful. An expanded use of the use of water fog nozzles is of questionable overall benefit with our existing dust collection system. However, revisions are now being made, aimed at the use of water fog nozzles in critical areas. This work will be finished and used prior to January 1, 1960.

The above are all of the target dates set forth in your letter to the AEC and all have been completed on schedule or are proceeding on schedule.

cc: B.B. Wier
Radiation file.

Appendix C/3

August 10, 1959

External Department

Subject: Employee Instruction on Radiation

At the present time there is not any conclusive evidence that low dosages of radiation spread over a long period of time will have any life-shortening effect. However, it is known that an extreme short time exposure to radiation can cause physical damage and even death. For example, 100 rads of radiation received within a 24 hour period will cause nausea and fatigue. Under the present AEC regulations the maximum amount of radiation an employee is allowed to receive in a twenty year period is 100 rads of radiation.

It is believed that the human body can withstand small doses of radiation without any apparent effect. Perhaps a similar comparison can be found in the daily consumption of small quantities of alcohol. Most men can drink an ounce of 100 proof whiskey every day without any apparent effect, but let him drink three months supply in a single sitting and the chances are likely he will end up in the morgue. The body cannot fight off such a large quantity of alcohol and consequently the man would probably die from alcoholic poisoning.

Even though the amount of radiation we may receive here at Union Station is very small we want to keep it as low as possible. Our concern then, is how to be protected from even the small amounts of radiation. Radioactive materials can affect the body in two ways, one from a source external to the body, second, from a source inside the body.

Protection from external radiation

Protection from external radiation exposure at this point may be obtained by the use of the safety factors of time and distance.

The Safety factor of Time

The shorter the period of time the body is exposed to radioactive materials, the less radiation it will receive.

The Safety factor of distance

The farther away the body is from the source of radiation, the smaller is the amount of radiation received.

Therefore, to protect yourself from external radiation you should spend as little time as possible in highly radioactive areas. Secondly, keep the source of radiation as far away from your body as possible. This would also indicate keeping radioactive materials off your face, hands and clothing.

Protection from increased radiation

There are four possible ways to get radioactive materials into the body:

1. By breathing
2. By swallowing
3. Through glands in the skin
4. By excretion through the cells

The obvious technique to keep from obtaining internal radiation by any of the foregoing methods is to keep all working areas entirely free from radioactive materials. However, in the processing of uranium ore certain amounts of radioactive materials are bound to get into the air, but the amount of airborne radioactive materials is largely determined by the care utilized in processing the ore and the safety instructions of the operating personnel. The Company recognizes the importance of maintaining working surroundings as free from radioactive materials as possible. This is evidenced by doing frequent air sample studies, monitoring personnel, and maintaining the kind of equipment that can keep the air reasonably free from radioactive dust. It is up to each employee for his protection to extend his fullest cooperation to the Company by doing items such as the following as directed by the supervisor:

1. Utilize good housekeeping techniques
 - a. Use vacuum cleaner - reason - because pick up radioactive dust and sweep it to some distance.
 - b. Throw away that can be sent down, wear them and keep them away.
2. Don't smoke in areas where radioactive materials are handled - reason - radioactive materials are transferred from the hands to the cigarette to the mouth, and into the body.
3. Wash up before you eat - reason - radioactive materials on the hands go on the food, to the mouth and into the body.
4. Wear a respirator or gas mask when required.

In general, obey Company policies and regulations regarding radiation, they are made for your protection.

[illegible]