

Fisher

UNC TETON EXPLORATION DRILLING, INC.

40-8728



Subsidiary of United Nuclear Corporation
A **UNC RESOURCES** Company

PO Drawer A-1
Casper, Wyoming 82601

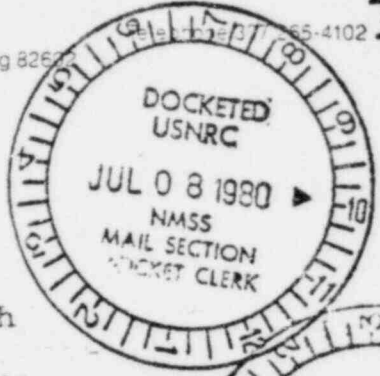
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June 20, 1980

Uranium Recovery Licensing Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Source Material License SUA-1373
Docket Number 040-8728
Stipulation 30h



Gentlemen:

In accordance with referenced license, Teton Exploration Drilling Company, Inc. herewith presents this evaluation report of the need for direct exhausting above process equipment and tanks to reduce potentially high concentrations of radon and radon daughters.

To alleviate the potential problems of high radon and radon daughter concentrations, Teton installed an above tank ventilation system to all non-sealed process solution tanks prior to the initial start-up of the process plant. This system consists of a fresh air intake to all non-sealed tanks and a forced air exhaust from these same tanks. Ten inch air ducts are used to route the flow of air with an 1800 cubic feet per minute fan used to exhaust the circulated air.

Radon and radon daughter concentrations are monitored monthly, both inside the plant process area and from the exhaust ventilation stack. Radon and alpha particle concentrations that are indicated in this report were monitored from February through May. In that the ventilation system was installed prior to the process plant start-up, Teton has no information on non-ventilated radon and alpha particle concentrations for comparison with existing conditions. All monitoring was done under normal operating conditions.

In the process area, radon concentrations are usually well below the maximum permissible concentration. The highest radon concentration monitored was in the waste effluent sump, which was 41.01 ± 0.20 pCi/l. The other monitoring stations have had concentrations below 15.00 pCi/l. The lowest concentration monitored was 1.98 ± 0.07 pCi/l at the base of the precipitation tank. The

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Source Material License (2)

The average calculated concentration in the process area was 8.45 ± 0.11 pCi/l

Alpha particle concentrations in the process area have also remained reasonably low with concentrations normally not exceeding 20.00 pCi/l. The highest concentration monitored was in the waste effluent sump which was 105.00 ± 0.18 pCi/l. The lowest concentration monitored was 0.33 ± 0.04 pCi/l which was beneath the ion exchange columns. The average calculated concentration in the process area was 10.54 ± 0.06 pCi/l.

The ventilation system was monitored during the first four months of the plant's operation for radon and alpha particle concentrations. Radon concentrations ranged from a low of 1201.41 ± 1.07 pCi/l to a high of 1677.33 ± 1.28 pCi/l. The average calculated concentration of radon was 1391.54 ± 1.17 pCi/l. Alpha particle concentration ranged from a low of 348.66 ± 0.30 pCi/l to a high of 756.20 ± 0.45 pCi/l. The average calculated concentration of alpha particles was 541.63 ± 0.36 pCi/l.

The radon concentrations monitored outside the plant during this time period have not exceeded 0.5 pCi/l. Alpha particle concentrations have not exceeded 3.00 pCi/l. These concentrations are equal to or less than natural background concentrations and do not appear to present any health hazards.

With respect to this four month evaluation period, it appears that an above tank ventilation system is a very important, if not necessary, tool for the protection of the health of process plant personnel. The data presented indicates that this system reduces the radon and radon daughter concentrations that the workers are potentially exposed to. This practice is consistent with the U.S. Nuclear Regulatory Commission's principle of as-low-as-reasonably achievable.

Sincerely,

Steven N. Rieger

Steven N. Rieger
Environmental Coordinator
UNC TETON EXPLORATION DRILLING, INC.

SNR:pjw

cc U.S. Nuclear Regulatory Commission
c/o Document Management Branch