

UNITED STATES GOVERNMENT

Memorandum

Files

TO : THRU: Donald A. Nussbaumer, Chief
Source & Special Nuclear Materials Br., DML
Don F. Harmon
DATE: SEP 12 1966

FROM : Source & Special Nuclear Materials Branch
Division of Materials Licensing

SUBJECT: RENEWAL OF EFFLUENT AUTHORIZATION, ATLAS CORPORATION. DOCKET NO. 40-3453
DML:DFH

By letter dated April 28, 1966, the subject licensee provided us with effluent survey results as required by Item 6 of the licensee's effluent authorization dated April 30, 1965. Renewal of the effluent authorization was also requested to permit the evaluation of significant circuit changes. Listed below is a summary of the survey results for 1965.

| <u>Average Colorado River Concentrations for 1965</u> | <u>Radium-226 x10⁻⁸ uc/ml</u> | <u>Thorium-230 x10⁻⁶ uc/ml</u> | <u>Uranium x10⁻⁵ uc/ml</u> |
|---|--|---|---|
| 1 mile above mill | .03 | .011 | <.0006 |
| 1/4 mile below mill | .05 | .009 | <.0006 |
| 1/2 mile below mill | .045 | .012 | <.0006 |
| 1 mile below mill | .045 | .008 | <.0006 |
| 5 miles below mill | .047 | .010 | <.0006 |
| 10 miles below mill | .046 | .009 | <.0006 |
| Part 20 limit Ra-226 - 3×10^{-8} uc/ml | | | |
| Part 20 limit Th-230 - 2×10^{-6} uc/ml | | | |
| Part 20 limit Uranium - 2×10^{-5} uc/ml | | | |

Average 1965 effluent concentration for the sum of radium-226, thorium-230 and natural uranium -

$$\frac{1.98}{3} + \frac{.055}{2} + \frac{0.09}{2} = 0.73 \text{ which is 73\% of the Part 20 limit}$$

Average 1965 Colorado River flow rate - 4,171,847 gpm
Average 1965 effluent flow rate - 571 gpm
Average 1965 dilution factor - 7300



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The above data indicate that the licensee's activities, with regard to liquid effluents, were in compliance with 10 CFR 20 requirements without an effluent authorization during 1965. Compliance has been achieved through the treatment of the effluent with BaCl_2 which has effectively reduced the radium-226 concentrations. However, due to plans for a major circuit modification in late 1966, the licensee is requesting renewal of the authorization until such time as the effects of the circuit modification can be ascertained. Because of the large dilution factor offered by the Colorado River and the low concentrations involved, there does not appear to be a radiological safety problem.

Accordingly, it is appropriate that the authorization be renewed for a one year period.

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| DATE ▶ | 9/2/66 | 9/12/66 | | | | |