18. Ross E. Wells, Thurman Consultants, Denver
Igneous Tectonics at Slater Dome, Moffat County, Colorado

Slater Dome, a sharp anticlinal feature in eastern Moffat County, Colorado, is believed due to local thickness variations in a sill intruded near the base of the Mesaverde. There is sufficient well control to establish, in part, the attitude of the upper surface of the sill. Available evidence for the igneous origin of the structure is presented and the time of gas accumulation considered in relation to the period of deformation.

19. Wallace G. Bell, Gulf Oil Corporation, Casper
Tectonic Setting of Happy Springs and Near-by Structures in Sweetwater Uplift Area, Central Wyoming

The Happy Springs, Crooks Gap, Kirk, and Sheep Creek oil fields are situated along the Green Mountain-Crooks Mountain trend in southeastern Fremont County, Wyoming.

Structurally, the fields lie within the southwestern part of the Wind River basin, near the western end of the so-called "Sweetwater arch."

The main structural features of the area were formed by Laramide compressive forces and consist of (1) several easterly trending shear zones, and (2) a series of northwest-trending folds and associated thrust faults. The folds and shear faults formed concomitantly in response to Laramide compressive forces. The shear faults divide the area into several elongate blocks and developed to accommodate different deformational patterns within the blocks.

The Happy Springs and adjacent fields consist of tightly folded, thrust-faulted, northwest-trending anticlines formed *en échelon* on the south side of an easterly trending shear zone. These folds represent crustal shortening in the block lying south of the shear zone. The features in which crustal shortening is manifested in the block north of the shear zone are located about 10 miles west of the Happy Springs area in the large Mormon Trail anticline and thrust fault. The shear zone is a line of release that developed between the two blocks when they responded differentially to compressive forces.

The main accumulation of oil in the Happy Springs and Kirk fields is in the deformed strata along the foot-wall of the shear zone.

20. Donald L. Everhart, U. S. Atomic Energy Commission, Denver
Tectonic Control of Uranium Deposition in Rocky Mountain Region

Significant uranium deposits are distributed in a complex pattern throughout the eastern and southern, the central, and the northern Rocky Mountains; and the Black Hills uplift, Dakota plains, and Wyoming basins. Consideration of uranium deposits in the Colorado Plateau is not included in this paper.

In considering the wide variety of known types of uranium deposits, under any scheme of classification, it is noted that nearly all types occur in the Rocky Mountain region. It seems likely that there is also considerable variety in the genetic history of uranium emplacement in the various types. However, tectonic influence appears to be consistently important throughout the entire pattern of distribution.

The relation of ore deposition to regional structural features is illustrated by the concentration of uranium minerals: (1) along or near major tensional faults; (2) along or near major lineaments; (3) at the flanks of structural basins, and (4) on structural terraces.

The striking influence of the broad tectonic framework of the earth's crust on world-wide uranium distribution patterns supports the conclusion that the Rocky Mountains region is but one segment of one of the world's great uranium "provinces." The variety of ore types within this area is the result of complex redistribution processes following the introduction of uranium into the upper parts of the earth's crust by juvenile solutions along controlling structure. Sedimentation, ground-water movement, and the transfer of organic material, all influenced in turn by tectonic history, have had an important bearing on uranium concentration in many parts of the large area discussed.

21. Y. William Isachsen, U. S. Atomic Energy Commission, Grand Junction
Regional Influence of Tectonics on Uranium Occurrences in Colorado Plateau Area

Most uranium deposits of the Colorado Plateau are restricted to lenticular sandstones and conglomerates, and are characterized by relatively obvious *local* sedimentary controls. An argument can be made, however, that the *areal* and *regional* controls of uranium deposition are probably more closely related to the tectonic framework of the Plateau than to sedimentation. In addition, significant examples can be cited where even *local* controls are tectonic, such as the Woodrow Mine near Laguna, New Mexico, where ore is restricted to a breccia pipe, the Rajah Mine south of Gateway, Colorado, where ore occurs in and adjacent to a fault breccia, several fault-controlled deposits in Cane Creek Canyon, southeast Utah, and a deposit in Big Indian Wash, southeast Utah, that appears