have been published on recent energy studies in Peru, Egypt, and Portugal; and similar reports will be available in the near future for Argentina and South Korea. Other countries for which preliminary reports have been prepared recently include: Pakistan, Indonesia, Bangladesh, Turkey, Costa Rica, Morocco, Mexico, Trinidad, Venezuela, USSR, the members of ECOWAS (Economic Community of West African States), and nations in the Persian Gulf area.

BISHOP, ROBERT A., Amoco Production Co., Denver, Colorado

Undrilled Reserves in Cook Inlet Oil Fields, Alaska

The Middle Ground Shoal and Granite Point fields in the Upper Cook Inlet, Alaska, are major oil fields discovered seismically 20 years ago. Development drilling was based on a structural model of an anticlinal ridge bounded by large thrust faults intersecting at depth in a cross sectional "V" configuration. The oil-bearing zones of the Middle Ground Shoal field were originally believed to be confined to a relatively small anticlinal area near the bottom of the fault-bounded "V." Wells were deviated from offshore platforms, and in places where a well was deviated from one flank to the other, the borehole was intially normal to bedding until the axial plane of the fold was crossed and the other limb encountered. From that point, the borehole continued down the limb parallel to the bedding, and was interpreted as having intersected the fault plane.

Additional well data and a review of older well logs indicated that the faults might not exist. If this were the case, the flanks of the structure were not being drained. A similar interpretation was shown to be applicable to the Granite Point field by a well drilled to test this same hypothesis. The well was directionally drilled in the shape of an open hook, deviating 4,000 ft (1,220 m) to the west, then curving back to the east so that the west flank would be encountered normal to the bedding. The well intersected the west dipping flank, which was not faulted, and was completed for 400 bbl of oil per day. A second well is now being drilled.

BLAKE, F. A., and A. J. ANDERSON, ARCO Power System, Littleton, CO

Solar Enhanced Oil Recovery Project Using Heliostats

(No abstract)

BOGDANOV, N. A., Inst. Lithosphere, USSR Academy of Sciences, Moscow, USSR

Tectonic Evolution of Pacific Ocean

In accordance with the lithosphere plate theory, the western part of the Pacific Ocean was occupied by an oceanic basin prior to the disintegration of Pangea. Linear magnetic anomalies and DSDP data indicate that the oldest oceanic crust is Late Jurassic in age. Little is known about the boundaries of the proto-Pacific plate and its fragments in the western part of the Pacific Ocean, but it is obvious that the oceanic crust fragments of this age occur along the western rim of the basin from the Koryak Mountains in Asia to eastern Australia as well as in various foldbelts on the east in Alaska and the Klamath Mountains. The most intensive tectonic movements and spreading within the Pacific Ocean, accompanied by subduction along both sides of the oceanic plate, occurred near the end of the Jurassic (Kimmeridgian-Tithonian) and during Early Cretaceous time (Aptian-Albian). A result was the formation of the Kula plate with tectonic nappes which stand as such submarine dome rises as the Shatsky Rise, Manihiki Plateau, Hess Rise, and Campbell Plateau, characterized by double thicknesses of oceanic crust. By comparing differences in Albian-Aptian facies, between the east Pacific Ocean and the west, it is possible to assume that shallow-water depths characterized the east, while the west was the site of a deep-water abyssal plain. Albian subsidence, in the eastern part of the ocean, coincided with tectonic uplift in the west and with the initiation of subduction along the East Asian volcanic belt.

Island arcs and trenches, formed at the end of the Cretaceous, caused oceanward migration of the subduction zones. This detached the Bering Sea and Philippine plates from the margin of the oceanic plate. Tertiary spreading along the East Pacific Rise was compensated by subduction under South America and within the deep-water trenches. Spreading in marginal seas during Oligocene-Miocene time resulted in the formation of back-arc basins, compression within the framework of island arcs and thrusting of the arcs onto the oceanic crust. Convergence of arcs may be explained by rapid oceanward displacement within marginal seas, and local movement along transform faults significantly affected the evolution of the Pacific Ocean and the distribution of mineral deposits within the oceanic basins and on the continental shelf.

BOURCIER, PHILIPPE, Energy Dept., World Bank, THONGCHAT HONGLADAROMP, Petroleum Authority of Thailand, and HAROLD M. LIAN, Union Oil Co. of California, Los Angeles, California

Thailand Gas Project—A Cooperative Effort of World Bank, Government of Thailand, and Private Enterprise

After Union Oil's discovery of large offshore reserves of gas in the early 1970s, Thailand was presented with an opportunity to reduce its almost complete dependence on oil imports for its commercial energy supplies. This, however, required considerable changes in the structure of its energy supply and the creation of a new industry in which Thailand had no previous experience. Faced with this challenge, the government of Thailand investigated several possible alternative scenarios, and associated the World Bank, which had a long experience in the power sector, the major potential gas consumer. This cooperation, involving the public sector, the international oil industry, and the international financial community resulted in one of the first successful developments of natural gas by an international oil company for the purpose of meeting the domestic demand of a developing country. The paper presents the various issues that had to be faced during the preparation and implementation of this project and elaborates on its possible value for other countries.

BOYD, GRAEME L., CSR Energy Division, Brisbane, Australia

On a Mechanism for Seam Splitting and Implications for Exploration, Evaluation, and Exploitation of Coal Resources

Exploitation of coal resources to meet both economic and community (environmental) expectations is commensurate with the scale of exploration, the comprehensiveness of data evaluation, and the "wisdom" shown in mine design. As accepted criteria, all three requirements rely on appropriate knowledge of the geology of the orebody and its associated sediments.