Contribution ID: **167** Type: **Poster**

Uranium exploration status in Bangladesh: Conceptual feasibility studies

Wednesday, 25 June 2014 17:10 (0 minutes)

Bangladesh has a nuclear power program of its own and has been trying to setup a nuclear power reactor. For this reason the Bangladesh Atomic Energy Commission (BAEC) is very much interested to get uranium from indigenous sources. Considering the basic need of nuclear minerals and favourable geological setup for nuclear mineral exploration in Bangladesh, BAEC has been operating nuclear mineral exploration program by its limited resource. As Bangladesh is geologically made of solely sedimentary rocks, it is only possibility to mineralize sedimentary types of uranium deposits under favourable reducing environment, which tends to be deposited as commercial uranium ore. Considering the favourable criteria for uranium formation Bangladesh has been divided into 4 zones as the (1) Eastern Mobile Belt (EMB), (2) Stable Platform (SP), (3) Dauki Fault Belt (DFB) and (4) Dinajpur Slope (DS).

The occurrence of uranium in Harargaj anticline is the most suitable indication of uranium potentiality in the EMB. The SP is characterized by the occurrences of Gondwana basins in the subsurface. These basins are quite similar to those exist in uranium bearing Gondwana basins of India, South Africa, Brazil, Argentina, Niger, Australia and Madagascar. The DFB is situated close to the Mahadek uranium belt in the southern fringe of Shillong plateau. Recent investigations has shown that number of anomalous radioactive sites have been detected in Jaintiapur, Sreepur and Jadukata river valley of DFB. These results indicate that uranium bearing solution is still flowing in this zone. So, it can be assumed that the solution has been flowing for very long geologic time and ore might have been formed in and around the DFB. The Dinajpur Slope is characterized by Siwalik sediments, which is capable of hosting uranium as found in India and Pakistan. Besides, the gravels beds of alluvial fans have originated from Darjeeling and Sikkim belts, that are two reportedly uranium potential zones of uranium. As Bangladesh is drained by the Padma-Meghna-Jamuna systems, there are numerous sand bars in those river channels. These sand bars are the prospective locations for uranium bearing minerals. In Bangladesh a regional reconnaissance survey was carried out in more than 2000 sq. km areas of greater Chittagong and Chittagong Hill Tracts and Sylhet districts that has resulted in the identification of more than 150 surface radiometric anomalies. Most of the samples collected from anomalous beds contain uranium ranging from 10-300 ppm. The highest radiometric counts occurred in Phooltala Reserve Forest within the Harargaj anticline of Moulavi bazar district, which was about 6000 cps (60 times the background counts). Chemical analysis of this sample has indicated the presence of 1020 ppm total uranium and two uranium bearing minerals namely uranothorite and thorianite have been discovered in the rock samples. Besides, anomalous reading of 25 times higher than the background was observed in the crystalline basement rocks at Mitapukur in Rangpur district. Moreover, in recent studies conducted by the Geological Survey of Bangladesh (GSB), higher radiometric counts have been observed in sand bar deposits of the Brahmaputra River.

Primary author: Dr MAJUMDER, Ratan Kumar (Bangladesh Atomic Energy Commission)

Co-authors: Mr KHALIL, M (Bangladesh Atomic Energy Commission); Mr RASHID, M (Bangladesh Atomic Energy Commission)

Presenter: Dr MAJUMDER, Ratan Kumar (Bangladesh Atomic Energy Commission)

Session Classification: Poster Session

Track Classification: Evaluation of uranium resources