

**HALF YEARLY REPORT**  
**SEG GAC COUNTRY REPRESENTATIVE REPORT**  
**January 2007 – Due to Regional Coordinators MARCH 2, 2007**

Name of Region or Country **India**

Name of Coordinators/Representatives Coordinator : **Apurba Saha / Alfred Liaw**  
Country Rep : **B S Bora**

Specific **Goals and Accomplishments** for the Country for the year 2007

**1. Communications with SEG Sections in the country**

Following are the SEG sections in the country

- Affiliated Society : **Society of Petroleum Geophysicists (SPG, India)**

Society has 6 regional sections and 9 student sections. The society arranges lectures, workshops for its members at different locations. The society also coordinates and arranges SEG/EAGE events like DISC or DL in India. The society also brings out a six monthly journal on Geophysics, viz., 'Geohorizons'. In addition, the society holds a biennial conference on Petroleum Geophysicists.

Representatives are sent to participate in the annual meeting of SEG.

No of Members : 1200 approx

Some recent activities –

- Symposium on Advancement in Seismic Data Processing to Solve Complex G&G Problems at Mumbai on 25<sup>th</sup> September, 2007.
- Workshop on New and Emerging Technologies at Mumbai on 5<sup>th</sup> November, 2007.
- SPG President Mr A Saha and Mr R D Bapat participated in the SEG Annual meeting at New Orleans.

Active Leader : Mr Apurba Saha, President of the society.

Meetings & Speakers planned:

- DISC 2007 on 24<sup>th</sup> October, 2007 at Chennai, Dr Biondo Biondi
- RL programme on Borehole Geophysics applications by Dr Steve Chang at different locations. Schedule to be finalized.
- 7<sup>th</sup> International Conference of SPG, Hyderabad-2008 at Hyderabad during 14<sup>th</sup> to 16<sup>th</sup> January, 2008.
- SPG coordinated the RL programme of Dr Chang at three student sections during 25<sup>th</sup> to 28<sup>th</sup> February, 2007.

- Student Sections :

SEG has 7 student sections in India. The section names and the faculty advisors are as follows:

- (i) IIT Roorkee, Roorkee – Prof. R G S Sastry
- (ii) Benaras Hindu University, Varanasi – Prof. V P Singh
- (iii) Kurukshetra University, Kurukshetra – Dr S S Teotia
- (iv) Andhra University, Visakhapatnam – Prof. D Bhaskar Rao
- (v) IIT Bombay, Mumbai – Prof. G Mohan
- (vi) Indian School of Mines, Dhanbad – Prof M Mukhopadhyay
- (vii) NGRI, Hyderabad – Dr H V Rambabu

#### Meetings and Speakers planned

- RL programme on Borehole Geophysics applications by Dr Steve Chang was held at NGRI, IIT Mumbai and Benaras Hindu University on 25<sup>th</sup>, 27<sup>th</sup> & 28<sup>th</sup> February, 2007 respectively. Other centres are planned to be covered during next visit of Dr Chang.
- Some students from the sections will also be invited to participate in SEG's DISC course.

## 2. To make at least two new SEG student sections

There are ten universities/Institutes in India where Geophysics is taught at graduate/post graduate levels. Out of these, seven universities/institutes have SEG student sections. Therefore, four more new sections can be opened. It is one of the goals to make at least two new student sections in 2007.

## 3. Preparations for 7<sup>th</sup> International Conference of SPG, India

SPG, India will hold its 7<sup>th</sup> biennial international conference during 14<sup>th</sup> to 16<sup>th</sup> January, 2008 at Hyderabad. Various preparations are to be made to hold the conference. Last conference was held under enhanced level III+ support with SEG. Similar support is expected to continue from SEG for technical enrichment of the conference.

**Potential universities** in the country to be added to **SEG Scholarship** mailing list or for potential student sections.

- (i) IIT Kharagpur, Contact: Prof S K Nath, Fax: +91-3222-255303
- (ii) Cochin University of Science & Technology, Cochin, Contact: Prof C G Nambiar, Fax: +91-484-2374164
- (iii) Osmania University, Hyderabad, Contact: Prof N L Mohan

**Potential companies** in the country that might **sponsor** SEG activities:

- (i) Reliance Industries Limited (RIL)
- (ii) Gujrat State Petroleum Corporation (GSPC)

Geophysical **conferences/meetings/symposiums** that have taken place in the country this year and plan to take place next year.

- (i) AEG conference at Hyderabad during 8<sup>th</sup> to 10<sup>th</sup> November, 2006
- (ii) SPG's 7<sup>th</sup> international Conference on Petroleum Geophysics, 'Hyderabad-2008' during 14<sup>th</sup> to 16<sup>th</sup> January, 2008.

### **Membership:**

SEG membership is highly valued among the professionals. SEG publications are considered as references and authentic material on the subject. The journals are helping the members keeping themselves updated with latest advancements in science and trends in the industry.

The SEG website is informative and has user friendly intuitive design. As far as annual meeting is considered, not many members can attend the same due to geographical location (distance involved).

DISC has been the only continuing education programme held in the country. Recently RL programme has also been initiated. However, need of more programmes in a year at least one or two is felt. At present the DL programmes are not extended to India. If India can be included in DL schedule, it will be a good initiative in continuing education in the country.

### **Petroleum, Mining and Near Surface industries:**

Petroleum Industry (E&P) is a vibrant industry in the country. A number of E&P companies and service companies are operating in India. The major players today are ONGC, OIL, Cairn Energy and GSPC. To accelerate the growth of domestic production, the government introduced New Exploration Licensing Policy (NELP) in 1997 offering many incentives attracting more foreign participation. The government through Ministry of Petroleum & Natural Gas has offered over 150 exploration blocks in onshore as well as offshore areas to the eligible companies on Production Sharing Contract in 6 bidding rounds so far. The Directorate General of Hydrocarbons (DGH) is the regulatory body under Ministry of Petroleum to monitor and regulate the upstream activities.

Apart from the conventional seismic surveys, many new technologies, like Q-Marine, Sea Bed Logging, MTEM, Airborne Electromagnetic, Virtual Drilling etc., are now being used for petroleum exploration.

The mining industry is also pretty large. Mainly government companies like Coal India Limited, Mineral Exploration Corporation Limited, Hindustan Zinc Ltd., Hindustan Copper Ltd, Rare Earths Ltd, Atomic Mineral Division are engaged in mining. In addition, Geological Survey of India too carries out Mineral Exploration. The Coal India Limited, Mineral Exploration Corporation Ltd and Geological Survey of India are known to employ Geophysicists although the intake is too small as compared to Petroleum Industry. Not much information is available on geophysics as a career in other mineral exploration companies.

Not much information is available on near surface industries in the Country. However, Central and State Ground Water Boards are engaged in Ground water exploration and employ Geophysicists.

### **Role of Country Representatives and Regional Coordinators:**

Many a times it has been observed that on various SEG related issues the Regional sections/student sections prefer to communicate directly with SEG rather than sharing it with the country representative/Regional coordinators. In this regard SEG/GAC may help by advising/ encouraging the sections to communicate through country representative/regional coordinators on any SEG related matter. This will necessitate establishing a formal and regular contact between the sections and the country representative/Regional coordinators and the country representative/Regional coordinators will be in a better position to understand the regional needs and will have a broader view of the issues.

### **COUNTRY/REGION STATISTICS:**

Number of SEG members (active, associate, student, etc.) –

(i)	Active –	156	} These are 2006 figures. I did not receive 2007 figures.
(ii)	Associate –	146	
(iii)	Student –	338	
(iv)	Global –	461	

Name(s) of SEG members receiving an SEG award in the last 10 years –

- (i) Mr Anand Gopal Pramanik – Life Membership 2005.

Sections: Name and city –

- (i) Society of Petroleum Geophysicists, India, Dehradun – SEG Section/Associated Society
- (ii) Association of Exploration Geophysicists, India, Hyderabad – Allied Society

Student Sections: Name and city –

- (i) IIT Roorkee, Roorkee
- (ii) Benaras Hindu University, Varanasi
- (iii) Kurukshetra University, Kurukshetra
- (iv) Andhra University, Visakhapatnam
- (v) IIT Bombay, Mumbai
- (vi) Indian School of Mines, Dhanbad
- (vii) NGRI, Hyderabad

Top 15 Oil and service companies doing business in this country (headquartered in what city):

- (i) Oil and Natural Gas Corporation Limited (ONGC) – Regd Office New Delhi
- (ii) Oil India Ltd (OIL) – Corporate Office New Delhi
- (iii) Reliance Industries Limited – Mumbai
- (iv) Cairn Energy – Corporate office Gurgaon
- (v) Gujrat State Petroleum Corporation Ltd – Gandhinagar
- (vi) Essar Oil
- (vii) Schlumberger – New Delhi
- (viii) WesternGeco – Mumbai
- (ix) CGG – Mumbai and Delhi (local contacts)
- (x) Sercel – Delhi (local contact)
- (xi) I-O – Gurgaon (local contact)
- (xii) Paradigm Geophysical – Mumbai
- (xiii) Landmark Graphics – New Delhi (local contact)
- (xiv) PGS – New Delhi (local contact only)
- (xv) GX Technology Corporation – Dehradun (local contact only)
- (xvi) Fugro Seismic Imaging (working as a division of Fugro Survey, India) - Mumbai

In addition smaller non-seismic companies like, EMGS, MTEM Ltd, Ensaga Energy, Fugro Airborne Surveys etc are also doing business in the country.

Other geophysical societies:

- (i) Association of Exploration Geophysicists (AEG), Hyderabad.
- (ii) Indian Geophysical Union, Hyderabad

Names (and cities) of major universities with geoscience programs (address and name of faculty advisor if known):

- (i) IIT Roorkee, Roorkee – Prof. R G S Sastry
- (ii) Benaras Hindu University, Varanasi – Prof. V P Singh
- (iii) Kurukshetra University, Kurukshetra – Dr S S Teotia
- (iv) Andhra University, Visakhapatnam – Prof. D Bhaskar Rao
- (v) IIT Bombay, Mumbai – Prof. G Mohan
- (vi) Indian School of Mines, Dhanbad – Prof M Mukhopadhyay

- (vii) IIT Kharagpur - Prof S K Nath
- (viii) Cochin University of Science & Technology, Cochin
- (ix) Osmania University, Hyderabad, Contact: Prof N L Mohan

Percentage of oil production (compared to rest of world) and/or other geophysical activity – by country:  
India produces about 1% of total world production of oil and gas.

(Estimated) Number of geophysicists graduating per year countrywide: 150

(Estimated) Number of geophysicists working in the country: 2000

Geophysical challenges for country:

With the domestic production of crude oil in the range of 30-34 Million Metric Tons from 2001-2005, India meets, over 75 % of its crude oil demand through imports. The biggest challenge is to minimize the gap between the demand and domestic supply through enhanced domestic Exploration & Production.

In terms of Geophysical terms, the challenges would be to explore the Mesozoic sediments below basalt, frontier areas like Himalayan foot hills and geologically complex thrust belt area with improved imaging and integrated exploration approach. The challenge also lies in managing the ageing reservoirs with maximum production.

Is Web Access readily available for students and/or working geophysicists: Yes

Salary range of Geophysicists – 10 years in the field: US\$ 1400 (Govt Sector)– US\$ 5000 (Pvt Sector)

*SEG continuing education programming (in the last five years) – SEG office will provide*

*Scholarships given to students in the country (in the last 2-3 years) – SEG office will provide*

*Accepted authors for SEG annual meeting (last three years) – SEG will provide*

*Conferences sponsored by SEG held in this country (in the last five years)– SEG will provide*