

KOCHI-2013

An overview

Inaugural Session:

SPG's 10th Biennial International Conference and Exposition on the theme "Changing Landscapes in Geophysical Innovations" Kochi-2013 was inaugurated by Union Minister of Petroleum and Natural Gas, Dr. M. Veerapa Moily on 23rd November 2013. The Oman Hall of the Convention Center of Le Meridian, Kochi provided a grand setting for the Inaugural Session that was choc-a-bloc with the attendance of several E&P Industry Captains, Representatives of Service Provider Companies and Sponsors, Eminent Geo-scientists from across the world, Experts from the Academia, Exhibitors, Authors, Keynote Speakers, Delegates & Spouses, Guests and Students from Schools and Colleges and Members of the print and electronic media.

Speaking on the occasion, Dr. Moily urged the Geoscientists to bring in an elephant size inspiration and big thinking for the energy independence of the country. Quoting the Prime Minister, Dr. Manmohan Singh that the period

2010-2020 is an 'Era of Innovations', Dr. Moily said that the E&P companies have no other option but to adopt and implement state-of-art technologies in order to address various multi-faceted issues related to exploration from frontier and difficult areas and 4-D seismic to horizontal drilling, down-hole enhancements, IOR and EOR etc. He also stressed upon the need for focused exploration activities in view of the rapid urbanization and difficulties in getting land. Making a clarion call to Geoscientists and Petroleum Engineers of this country to bridge the gap between the demand and the supply of hydrocarbons, which constitute the lion's share in the energy basket, he termed it as 'India's second freedom struggle for economic salvation'. He stressed that in spite of the immense challenges, 'nothing is impossible' and the 'word- limit is only in our minds'. Expressing happiness over organisation of such International Conferences and Expositions, he said that these kinds of forums bring the inquisitive minds together on a common platform, facilitate brain-storming, deliberations on various challenges and offer implementable solutions as a way forward.



Dr. M. Veerapa Moily Hon'ble Union Minister Minister, P&NG lighting the ceremonial lamp

Earlier, welcoming the Honourable Minister to one of the biggest congregation of the Petroleum Geoscientists, Mr. Sudhir Vasudeva, Chairman and Managing Director, ONGC and Chief Patron SPG, India thanked minister for his presence which, he said would go a long way in motivating the participants. Elaborating the current energy crisis of our country, he said that the NELP rounds have not yielded many large discoveries commensurate with the exploration efforts undertaken. Briefing about the ambitious 'Perspective Plan - 2030', he said that ONGC is firmly focused on India's energy security and has embarked this programme with primary objectives of enhancing the reserve base and production, both from domestic as well as international oil and gas fields and to bolster growth in the emerging business scenario. He appreciated the efforts of SPG, India in continuously striving to carry forward its mission of knowledge expansion and technology improvement through its various events, particularly the biennial conferences and felt that the present convention would be one big leap in that direction.



Shri Sudhir Vasudeva, CMD, ONGC & Chief Patron SPG, addressing the delegates

Speaking on the occasion, Mr. N.K. Verma, Director (Exploration), ONGC and Patron-SPG, India, lauded the efforts of SPG (India) in organising such conventions which provide a platform for knowledge dissemination and emergence of out-of-box ideas and cutting edge technologies. He outlined the exploration activities of ONGC, both current and future including preparedness for exploration of non-conventional energy like Shale Oil/Gas and Coal Bed Methane



Mr. N. K. Verma, Director (E), ONGC and Patron SPG, addressing the delegates

Gas. Stressing the need for a synergistic approach among various disciplines of geosciences, Mr. Verma said that the dream of an 'Energy Independent India' by 2030 is very much achievable with a concerted whole-hearted approach.

Earlier, welcoming the dignitaries and the delegates, Mr. S.K. Das, President SPG, India briefed about the activities of SPG (India). In his welcome address, he expressed delight over the presence of Dr. Veerapa Moily as the Chief Guest, which he said, was a source of motivation and inspiration to everyone present in the congregation. He also expressed elation over the presence of Shri Sudhir Vasudeva and Shri N.K. Verma, who, he said, were a constant



President SPG, Mr S K Das welcoming delegates

source of encouragement, guidance and direction in the run-up to Kochi-2013, in their additional capacities as Patron-in-Chief and Patron respectively. He harped on the achievements of SPG, India how from a humble beginning in 1992, it has grown from strength to strength and has come to be acknowledged as a premier professional body, operating with clear focus for enhancement of scientific knowledge and technology, with the ultimate goal of growth of petroleum geosciences, particularly Geophysics. He informed that presently the society has a membership of over 2000, comprising practicing geoscientists and students of geosciences from 9 Regional and 14 Students chapters spreading across length and breadth of India and 1 North-American chapter. He also gave a brief of the activities and sessions planned for the Convention which included three Plenary Sessions, one Theme Session, twenty four Technical Sessions, Twenty One Continuing Education courses, CEO meet, Industry-Academia Interaction, 'Quiz and Debate' and 'Engaging the Future' programs for students

The dais was also shared by Mr. Phillip Ringrose, Vice-President-EAGE and Mr. N.S.Dangwal, Secretary-SPG (India). Mr. Ringrose spoke about the potential of furthering the cause of geosciences and bringing in new ideas and technologies by strengthening the collaborative efforts between EAGE and SPG, India. Mr. Dangwal gave the vote of thanks, expressing his gratitude to all dignitaries and luminaries present and acknowledging the contribution of everyone in making Kochi-2013 a grand reality.



Dr. Moily conferring the prestigious 'B S Negi Lifetime achievement award' to Mr. N.C.Nanda

The occasion also witnessed Dr. Moily conferring the prestigious 'B S Negi Life time achievement award' on Mr. N.C. Nanda, an acclaimed Geophysicist, for his long and outstanding contributions in the field of Geophysics and petroleum exploration. Another highlight of the occasion was the ceremonial unveiling of the Conference proceedings in the form of a CD and a special issue of 'Geohorizons', the SPG technical journal.

The Conference and Exposition was attended by about 900 participants comprising of geoscientists, service providers and domain experts from India and Overseas and

students from various universities and schools. More than 50 E&P Companies, service providers and geo-scientific societies participated in the Exposition.

Theme Session: Changing Landscape in Geophysical innovations Chairperson Sri Sudhir Vasudeva, C&MD ONGC group of companies

The theme session was chaired by Sri Sudhir Vasudeva, CMD, ONGC group of companies and the speakers were Mr. Sanjay Dhande, Ex Director, IIT Kanpur, Mr. N.K. Verma, Director (Exploration) ONGC,



Unveiling of the Conference Proceedings and Special Issue of Geohorizons L to R : Mr. N.S. Dangwal, Secretary SPG, Mr. S.K. Das, President SPG, Mr. Sudhir Vasudeva, C&MD ONGC, Dr. M. Veerapa Moily, H'ble Union Minister P&NG, Mr. N.K. Verma, Director (E) ONGC and Mr. Philip Ringrose, Vice President EAGE



Theme Session in progress L to R : Mr. Jean G Malcor, CEO, CGG, Mr. Sanjay Dhande Ex Director, IIT Kanpur, Mr. Sudhir Vasudeva, C&MD ONGC, Mr. N.K. Verma, Director (E) ONGC and Mr. Philip Ringrose, Vice President EAGE

Mr. Philip Ringrose, Vice President, EAGE and Mr Jean G Malcor, CEO, CGG.

Mr. Sudhir Vasudeva started with the note that exploration is the first step in in E&P business and if first step is right next step will be right. Exploration which is input deterministic and output probabilistic, at present has become quite challenging and risky as we are moving from easy oil to difficult oil situation.

Mr. Dhande stressed the need for adoption of MEMS & Nano technologies, interdisciplinary approach, environment issues, innovations in education and research and to think about replenishing reserves.

Mr. N.K.Verma started with explaining the limitation of sensing capabilities beneath the earth as compared to the surface. He made an illustrative presentation giving graphic account of total exploration gamut, starting from Peak oil theory to the latest challenges the hydrocarbon exploration industry faces worldwide and the current research and innovative efforts being made. All geophysical innovations in chronological order were shown. The CMD suggested a separate session for his in-depth, engrossing and educative talk. One of the audience namely Mr Darshan Singh from PAN, India, desired the talk to be made in all the SPG student chapters.

Dr. Ringrose gave brief account how EAGE is involved in innovations. He gave two latest examples of AVO inversion and use of satellite data in reservoir level monitoring in on-going projects. He dealt briefly about Broad band Seismic, and CO₂ storage.

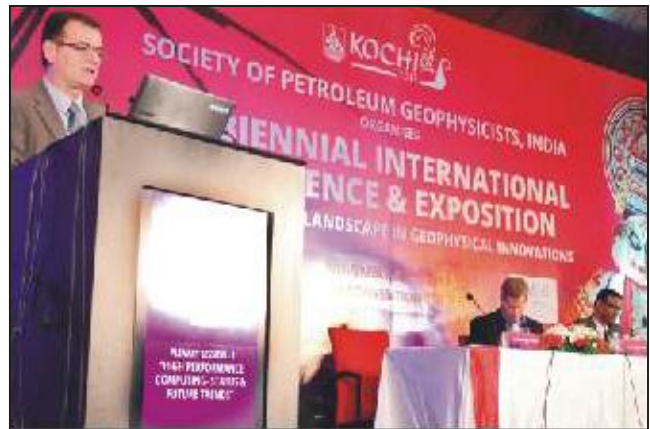
Mr. Malcor, CEO, CGG started with challenges in oil & gas E&P business. He emphasised to change in partnership contracts in E&P business in line with other sectors, which have long been in long term service partnership. He further stressed on integrated API approach and emphasised the use of seismic at development level with example. Mr. Malcor gave example how wide azimuth, long offset and broad band seismic could improve imaging in salt structure.

The session closed with question answers.

Plenary Session I on “High Performance Computing: Status and Future Trends” held on 23rd November 2013. The distinguished speakers were Dr. P K Sinha, C-DAC, Shri R Balasubramanian, HP, Mr. TyMckercher, NVIDIA and Dr. Ulisses T Mello, IBM.

Plenary Session II on “Exploration and Production” was held on 24th November 2013. The Chairperson was Shri N C Nanda and the distinguished speakers were Dr. Narendra Taneja, FICCI, Shri B Ananthakrishnan, CEIL, Dr. Rabi Bastia, Oilmax India and Prof Aftab Alam Khan, Dhaka University.

Plenary Session III on “Technology and Innovations” was chaired by Prof. Mrinal K Sen, Director NGRI and other speakers on dais were Mr. Nader C Dutta, Schlumberger, Dr.



Mr. TyMckercher addressing the delegates during Plenary Session-I



Distinguished speakers during Plenary Session-II on the Dias (L to R): Dr. Rabi Bastia, Dr. Narendra Taneja, Mr. N.C. Nanda, Prof. Aftab Alam Khan and Mr. B. Ananthakrishnan

Satinder Chopra, Arcis Seismic Solutions and Dr. Ian Jones, ION-GXT.



Dr. Satinder Chopra during Plenary Session-III, also on the dais are Dr. Ian Jones, Dr. Mrinal Sen & Mr. Nader C. Dutta

Industry Academia interaction:

The session was moderated by Dr. Narendra Taneja, FICCI and the panellist were Dr. Mrinal Sen, Director, NGRI, Mr. Philip Ringrose, Vice President, EAGE, Mr. K.S. Jamestin, Director (HR), ONGC and Mr. S. Ramamurthy, CEO, Schlumberger, India.

Dr. Taneja made the session very interactive and thought provoking. He was rather worried that in India the interaction



Dr. Narendra Taneja addressing the audience during Industry-Academia Interaction also on the dias are Dr. Mrinal Sen, Mr. Philip Ringrose, Mr. K.S. Jamestin, Director (HR), ONGC and Mr. S. Ramamurthy, CEO, Schlumberger, India.

is not up-to the mark and needs improvement. Dr. Mrinal Sen cited the examples of foreign university professors who go to industry and are in constant touch and desired we in India also can do the same. He further stressed that academia need to have breakthrough ideas. Mr. Ringrose also agreed and that in Norway also they have the concept of industrial professors. Mr. Jamestin explained the ONGC policy of recruitment and explained how ONGC is contributing in this aspect. Mr Ramamurthy also gave an account how Schlumberger deals with academia and the students. The curriculum in the universities was also advised to be changed according to the requirement of industry.

CEO's Meet: Theme- Alternate Energy Resources:

The session was moderated by Dr. Narendra Taneja and panellists were Mr. Jean G Malcor, CEO, CGG, Mr. S.K. Shrivastava, CMD, OIL, Mr K.S.Jamestin, Director (HR), ONGC, Mr. N.K.Verma, Director (Exploration), ONGC and Mr. S. Ramamurthy, CEO, Schlumberger, India.

Dr. Taneja was clinical in his approach from the beginning making the session very exhaustive and covered all aspects of energy resources starting from the very fine line of definition of different terms used in dealing with alternate energy like conventional, unconventional, fossil fuel, shale gas/oil, tight reservoirs, renewable energy, solar energy, wind



CEO Meet in progress.

Dignitaries on the dias (L to R): Dr. Narendra Taneja, Mr. Jean G Malcor, Mr. S.K. Shrivastava, CMD, OIL, Mr K.S.Jamestin, Director (HR), ONGC, Mr. N.K.Verma, Director (E), ONGC and Mr. S. Ramamurthy, CEO, Schlumberger, India.

energy, nuclear energy and green energy. The session dealt in details the various aspects of changing world scenario vis a vis India & China, the two most populated countries, as regards to different energy resources. The session took note of Germany's importing coal from US and focussing back to coal. The shale gas play outside US, its space in other part of the world as regards to environment and available unpopulated space was thoroughly discussed. Sensing and adoption of newer policies in suitably redistributing revenue generation from other resources was aptly conveyed by the dignitaries. How alternate energy resources in prospective plan 2030 of ONGC have been addressed was also deliberated. The commerciality of gas hydrate, production from coal, tight reservoirs their footprints, the likely contribution from wind, solar and nuclear in coming future was also touched upon during the discussion. Finally the session was concluded by the chair after knowing the views of panellists in on "likely world scenario as regards to contribution from different energy resources and the life style there upon around 2070".

Exposition & Poster sessions:

The conference was the largest so far in terms of the technical content too. The technical programme spanned through 24 oral sessions and 5 poster sessions spread over three days. A wide range of topics like Seismic API, Non-Seismic Methods, Advanced Methods for reservoir characterization, Advancement in imaging, Velocity modelling & depth imaging, Alternate energy resources, Energy Security, Project Management in E & P companies etc. were covered by distinguished speakers from India and abroad. A total of 350 technical papers (including 150 oral and 200 poster) were presented in the conference. The poster session was inaugurated by Mr. Philip Ringrose, Vice President, EAGE.

Exposition, which is an integral part of the Conference was inaugurated by the Chief Guest, Mr. Sudhir Vasudeva, CMD, ONGC. A total of 45 E&P companies and service providers showcased their technological advancements and products in 98 exhibitor stalls. Out of these 45 companies 26 were foreign companies. Professional societies SEG, EAGE, APG and SPWLA also displayed their activities and future plans. The major E&P companies and service providers who participated and showcased their products were ONGC, OIL,



Poster Session in progress



Mr Vasudeva inaugurating the exposition

CGGVeritas, ION, CAIRN, Schlumberger, PANGEA, FUGRO, Halliburton, Sercel, GSPC, MGS, Mansarovar, Roxar & SCF.

Mr. Sudhir Vasudeva inaugurated the Exposition and declared it open for the participants. M/s ONGC, M/s. FUGRO and M/s OIL were adjudged as the first, second and third best exhibitors respectively.

Pre/Post Conference Workshop

Another highlight of the rich technical content of the conference was the pre & post conference courses under

continuing education (CE) programs. A total of 21 courses were conducted of which 4 courses were conducted at different locations at Mumbai, Kolkata, and Vadodara where the Society has regional chapters and 17 courses were conducted at Kochi. The technical workshops under Continuing Education (CE) were attended by the representatives of various E&P companies, Service provider, students and academicians. The participants appreciated the faculties and course content.

Media Interaction

The showcase mega event was unveiled with a curtain-



Shri N C Nanda delivering C.E. Course



raiser Press Meet organized on the eve of the Conference, on 22nd November 2013 and attended by Mr. Sudhir Vasudeva, CMD, ONGC & Chief Patron, SPG(India), Mr. N.K. Verma, Director (Expl.), ONGC & Patron SPG, Mr. A.K. Banerjee, Director (Finance), ONGC, Mr. Shashi Shanker, Director (T&FS), ONGC, besides Mr. S.K. Das, President, SPG.

About 60 media persons representing print, wire services and television channels enthusiastically participated in the Press Meet. Kochi has a dominant media presence with number of leading National and Vernacular newspapers.

Addressing the media, Mr. Vasudeva gave a macro feature of the E&P industry and the current challenges before the Nation for energy security. The Question-Answer session which followed the formal address turned out to be very lively and stimulating. Questions ranging from the exploration initiatives in the Kerala-Konkan coast, the investment propositions of ONGC and OVL, exploration for Shale oil and gas as well as the expansion plans of MRPL came up for discussion.

Mr. S.K.Das, President-SPG (India) gave a presentation detailing the canvas of the entire programme before the media persons, underlining the genesis of SPG(India), important milestones of previous nine Conventions and the unique features of KOCHI-2013.

The inaugural audio-visual specially produced for KOCHI-2013, was premiered in the Press Meet. The riveting film set the tone for the event.



Media interaction during "Kochi 2013"

On the dias (L to R): Mr. S.K. Das, Mr. N.K. Verma Director(E) ONGC, Mr. Sudhir Vasudeva, C&MD ONGC, Mr. A.K. Banerjee, Director (F) ONGC and Mr. Shashi Shanker, Director (T&FS), ONGC

Student Programme

The future torch bearer of the nation's energy security largely lies on the fresh mind and students'. Geoscience students have always been a centre of attention for SPG and it is evident from the various students' programme



School Students during the programme

organised during the conference. Apart from the program for university students, separate programs were organised for school children with an aim to create awareness among them about the energy sector in general.



Quiz competition of university students in progress

National level quiz and debate competitions were also organised for school students who were winners in regional rounds organized earlier by all the regional chapters of SPG.

Mr. Shyamal Bhattacharya, OVL and Dr. Raghu Chunduru, Shell were the adjudicators to the event. Out of eleven teams which participated in the school quiz- Modern Academy, Kolkata team comprising of Mr. Sampreet Sarkar and Mr. Agniva Sen was the winner, while Mr. Tungadri Mandal and Usama Khidir from Apeejay, Karghar, Mumbai were the runners-up. In debate competition, Ms. D C Nitikha from DPS Kalali Vadodara was the winner.

The university students, too had an ample opportunity to get a wonderful exposure to the current trends in the industry. They made their presence felt at a number of programs specially structured for them, which included the Students' Forum/ Students' Quest, Brainstorming session and the Students' Quiz, Pre-Post workshop, Oral and Poster presentations, etc. Geophysics/Geology students from 12 Indian universities and institutes participated.



School Students' Quiz competition in progress



Debate competition in progress

The Students' Quiz (University), which is incidentally the inspiration behind SEG Challenge Bowl, was as exciting as ever. Total 12 teams participated from different universities/institutes this year. Mr. Philip Ringrose was the adjudicator to the event. Out of twelve teams, six teams qualified for the final round. The CUSAT Kochi team comprising of Mr Arjun VH and Mr Arun KP was the winner, whereas Mr. Nikhil Barshettiwar and Mr. Ajith Nair from MIT-Pune were the runners-up. Mr. Ajith Nair was the winner of debate competition also.

Spiritual Discourse/Healthy Lifestyle

Amidst the serious technical deliberations and strategic discussions focussing on attaining geophysical challenges, there were two non-technical programs which were immensely liked by the participants. On 24th November, Spiritual discourse by Mr. Sanjeev Nair on 'Thought Process Re-engineering (TPR) mesmerised the audience. The program was about "How you can break bad habits? How can you re-engineer your brain's neurology so that you get positive and productive thoughts? How can you create meaningful coincidences in life, which can lead to fulfilment of your dreams?" The other talk on "General Wellness" by Dr. A M Anwar from Punarnava Hospital, Kochi was very informative and appreciated by the participants.



Mr. A.V. Sathe, G.G.M., ONGC, presenting memento to Mr. Sanjeev Nair

Global Affair Committee(GAC) Meeting

The "Global Affairs Committee" (GAC) meet was held on 25.11.2013 and attended by representatives from EAGE, SPG, APG and SPWLA. Presentations were made by the society representatives highlighting their activities and future plans. Meeting was attended by Mr. Philip Ring Rose Vice President, EAGE, Shri S.K. Das, President-SPG, Mr. R.K. Pande, President, SPWLA, Mr. U.C. Pradhan, Secretary APG, Mr. N.S. Dangwal, Secretary, SPG, Mr. C.M. Varadharajan, Vice President, SPG, Mr. Subimal Kar, APG and Mr. R.S. Waraich, Treasurer, SPG. More interaction among the societies was unanimously agreed upon.

It was apprised that GEO-India 2015 is being organised jointly by APG, AAPG, AEM (Bahrain) and SPWLA from 12-14th January 2015.



GAC Meeting in progress

On the dias (L to R): Mr. Philip Ringrose, Vice President EAGE, Mr. S.K. Das, President SPG and Mr. R. K. Pande President SPWLA

Spouse Programme

Spouses are the main strengths for all of us, as there is saying, 'behind every successful man there is a woman'. To keep our spouses engaged in such conference, specially structured spouse programme was organised for all three days. The spouses participated in wide variety of

entertaining activities ranging from; Housie, Fun Game. Visit to Alleppy, shopping in the Lulu Mall of Kochi, cultural events and much more...

Cultural Programmes

After the day long technical program, the evenings were enjoyed by the participants with spectacular cultural programmes which are the integral part of SPG conferences. The first evening saw a mesmerising performance by Samarpan Group who captivated the audience with their divine fusion instrumental music. The classical dance performance by Kathakali School Kerala, a center for performing arts and culture, situated in Cheruthuruthy, Kerala was well appreciated by the audience.

On the second evening, Mrs. Dona Ganguly and troupe gave an excellent Oddissi dance performance.

This was followed by a captivating performance by Mr. Babul Supriyo and his troupe who kept the audience spell bound with an electric mix of Bollywood numbers.

Valedictory Session

The Valedictory Function was equally remarkable and indeed a befitting conclusion of the grand event, where Shri S.K. Srivastava, CMD-OIL was the Chief Guest. Other



Kathakali Dance by Kerala School



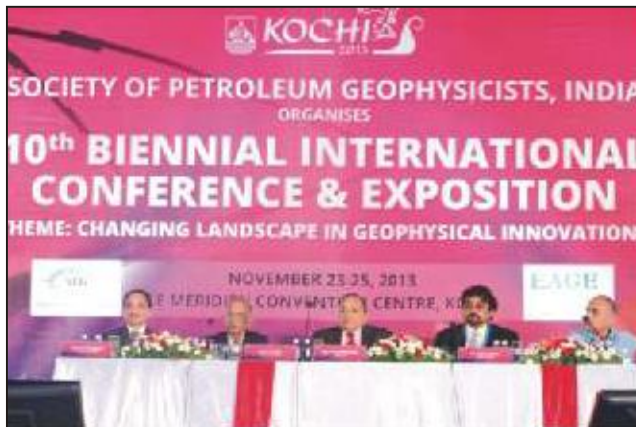
Musical performance by Babul Supriyo



Kathakali Dance by Kerala School



Oddissi dance by Dona Ganguly and troupe



Dignitaries present on the valedictory function



Mr. S.K. Srivastava, CMD, OIL, awarding honorary membership to Prof. K.K. Roy

sessions, technical papers and posters on various contemporary issues like high performing computers, alternate energy resources, exploration of the frontier areas and unconventional energy, Gas hydrates etc, which were able to generate a lot of inquisitiveness and interactions between the presenter and the audience. He thanked and congratulated all the authors and presenters for doing justice to their jobs. Mentioning that the theme of the session has been aptly chosen, keeping in view the frequent enigmas and elusiveness in the field of hydrocarbon exploration, Mr. Srivastava said that such conventions are actually windows to future technologies and each such occasion is witness to showcasing of many innovations and technology developments. He had a word of appreciation for all the stalls put up by the service providers and business associates.

Speaking on the occasion, Dr. Mrinal Sen, Director (NGRI) thanked the organisers for the successful completion of the programme. He informed that SEG acknowledges having adopted the Quiz session of SPG, tailor-made for the



Mr. S.K. Srivastava, CMD, OIL, addressing the delegates during valedictory function

students. Mentioning that there is an urgent need to rejuvenate the spread of the science of Geophysics in India which is presently witnessing a low, he called upon the professional bodies, academia and industries to jointly work towards it.

Mr. S.K. Das, President-SPG (India) expressed satisfaction over the smooth organisation of the three days convention and exposition and thanked all the stakeholders, business partners, service providers, authors, speakers and delegates across India and overseas for their active participation and co-operation. He had a special word of appreciation for the organising team, who had toiled day and night to make the programme successful.

Mr. A.K. Dwivedi, Chairman, Awards Committee recapitulated the three days proceedings at the beginning. Mr. C.M. Varadharajan, Vice-President-SPG (India) proposed the vote of thanks. The programme was brought to a befitting end with a mesmerizing melody by a local troupe.



ONGC representatives receiving the Best Exhibitor Award from Chief Guest Mr. S.K. Srivastava
(L to R): Mr. N.S. Dangwal, Mr. S.K. Das, Dr. B.S. Josyulu, Mr. S.K. Srivastava,
Mr. C.M. Varadarajan, Mr. A.K. Dwivedi and Mr. S.K. Jain

Compiled by: N.S. Dangwal