



प ख नि समाचारपत्र AMD NEWSLETTER



परमाणु खनिज अन्वेषण एवं अनुसंधान निदेशालय (प ख नि) का वार्षिक प्रकाशन
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Isotope Ratio Mass Spectrometer



Core Library

प ख नि के नए निदेशक AMD HAS NEW DIRECTOR

Shri L.K. Nanda, Additional Director assumed the office of the Director, AMD w.e.f. 30th November, 2016. Glimpses of the occasion and farewell function of Dr. A.K. Rai, Outstanding Scientist on superannuation are presented below:



Dr. A.K. Rai relinquishing the charge



Shri L.K. Nanda assuming the charge



Dignitaries on the dias



Regional Directors, Group Heads and section of dignitaries on the occasion



Dr. A.K. Rai felicitated by Shri L.K. Nanda

Shri L.K. Nanda, Director, AMD Wishes
All the Employees of AMD A Happy and
Prosperous New Year - 2017





Shri Lalit Kumar Nanda obtained Master's Degree in Applied Geology from Indian Institute of Technology (IIT), Kharagpur in 1980 and joined Atomic

Minerals Directorate for Exploration and Research (AMD) in 1981. In his illustrious career spanning over 36 years, Shri Nanda has made exceptional contributions in the field of uranium exploration in varied geological domains of India in different capacities. Shri L.K. Nanda, as a team leader, developed AMD's main thrust areas for exploration of various types of deposits viz. unconformity type in Kaladgi and Shillong basins, sandstone type in Mahadek and Gondwana basins, metasomatite type in North Delhi Fold Belt and fracture controlled and dolostone hosted in Southern Cuddapah basin. The skilful exploration strategy of Shri Nanda has resulted in establishing a sizeable uranium deposit at Rohil, Rajasthan. Further, extensive sub-surface exploration initiated by him in the adjoining areas of Rohil has resulted in establishing significant uranium mineralisation in Jahaz-Maota and Narsinghpuri areas, Rajasthan which can be developed as satellite deposits of Rohil. He has the credit of initiating exploration and developing the geological domains of Siwana Ring Complex, Rajasthan and Ambadongar Carbonatite Complex, Gujarat where substantial REE resources are estimated. He has been instrumental in bringing out the uranium potential of several geologically favourable domains such as Mahadek basin, Meghalaya, calcrete of western Rajasthan, Singhbhum – Orissa Craton of Jharkhand and Odisha, southwestern part of Cuddapah basin, Andhra Pradesh and Lesser Himalaya, Uttarakhand and Himachal Pradesh.

Shri Nanda has represented the country as an expert member in various international fora such as Nuclear Techniques in Mineral Exploration, IAEA, Manila, Philippines in 1986, 21st World Mining Congress and Expo-2008, Krakow, Poland and URAM-2009, IAEA, Vienna, Austria. He has published/presented over 100 research articles in National/International journals/conferences.

निदेशक का संदेश MESSAGE FROM DIRECTOR

My dear colleagues,

I wish all of you and your family a very fruitful and challenging new year, 2017 through this edition of the Newsletter. The year 2016, had been eventful for AMD and we have achieved inclusive growth in all spheres of the major activities. We are steadily progressing towards the goal of making our country self – reliant in nuclear raw materials. In the uranium front, our programme of intensive exploration in the known uranium provinces to quickly augment the resources and simultaneously developing new sectors for future has started paying rich dividends. During the XII plan 69,937t U₃O₈ has been established against the target of 75,000t. I congratulate all the officers and staff of AMD for achieving this immense feat. Besides carrying out extensive exploration in the thrust areas, namely the Southern Cuddapah basin, Andhra Pradesh; Singhbhum Shear Zone, Jharkhand; North Delhi Fold Belt, Rajasthan; Bhima basin, Karnataka; and Mahadek basin, Meghalaya some of the key geological domains like Aravalli fold belt, Rajasthan; Siwalik Group in Himachal Pradesh; the Chhotanagpur Granite Gneiss Complex, Uttar Pradesh; and Kaladgi-Badami Basins, Karnataka are being reassessed for their uranium potential. It is heartening to note that the exploratory mining has commenced at Rohil, Sikar district, Rajasthan and the process for exploratory mining in Peddagattu, Nalgonda district, Telangana and Singridungri – Banadungri, East Singhbhum district, Jharkhand has been initiated.

In RMRE exploration, our efforts in proving the REE potential of the carbonatite complexes and acidic intrusives have been successful, and the Ambadongar carbonatite complex, Gujarat may soon emerge as the largest REE deposit in India. Besides, exploration in Siwana Ring Complex has given encouraging results. The "Sonic drilling" for exploring the beach sand heavy mineral horizons upto a depth of 50m in Chavara deposit, Kerala has augmented substantial resources and is being deployed in other BSM deposits, in phases. Our laboratories have rendered unstinted support to our exploration programme and are being upgraded with state of the art instruments to meet the pace of exploration. The NABL accreditation of Chemistry laboratory, Hyderabad, commissioning of IRMS and EPMA at Hyderabad and three WD-XRF at Regional Centers bears testimony to our commitment of establishing the finest exploration oriented laboratory setup in the country. AMD continued its efforts to mobilise favourable public opinion on the benefits of nuclear energy by organising several public outreach programmes in various parts of the country. As part of infrastructure development, the new office complex of South Central Region, Training School and Core Library at Cherlapally, Hyderabad, inaugurated by Dr. Sekhar Basu, Chairman, AEC, is now fully functional. AMD has achieved several laurels and distinctions during the year in various scientific and geo-scientific fora in the country. I whole heartedly congratulate all the awardees and wish that these accomplishments will energise us to achieve the mammoth goals set in the proposed DAE vision document for the next fifteen years. I am confident that the articles in this issue of the newsletter will make an interesting reading.

अध्यक्ष, परमाणु ऊर्जा आयोग का पखनि में दौरा VISIT OF CHAIRMAN, ATOMIC ENERGY COMMISSION TO AMD



Dr. Sekhar Basu, Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy visited Camp M.C.Palle, Kadapa district, Andhra Pradesh on 20th August, 2016. Dr. A.K. Rai, the then Director, AMD and Dr. Syed Zakaula, Regional Director, Southern Region apprised the Chairman about the exploration activities in and around Tummalapalle area.



Dr. Sekhar Basu, visited Western Region, Jaipur on 23rd January, 2016. He reviewed the status of exploration activities being carried out in Western Region.



दक्षिण मध्यवर्ती क्षेत्र, प्रशिक्षण विद्यालय और कोर लाइब्रेरी का उद्घाटन INAUGURATION OF SOUTH CENTRAL REGION, TRAINING SCHOOL AND CORE LIBRARY

The new office cum residential complex of South Central Region, Training School and Core Library was inaugurated by Dr. Sekhar Basu, Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy at Cherlapally, Hyderabad on 26th May, 2016. Members of Council of Management of AMD, senior officers from Nuclear Fuel Complex and Electronics Corporation of India, Regional Directors, Group Heads, officers and staff of AMD were present on the occasion. An exhibition on uranium and rare metal and rare earth exploration carried out in South Central Region was also organised on the occasion.



उपलब्धियाँ : वार्षिक कार्यक्रम 2015-16

ACHIEVEMENTS: ANNUAL PROGRAMME 2015-16

The exploration activities of AMD are on a high pedestal, resulting in the annual incremental achievements during XII five year plan. The highlights of achievements during the Annual Programme (November, 2015 to October, 2016), are listed below.

- ❖ 15,011t in-situ U_3O_8 has been augmented thus enhancing country's total uranium resources to 2,44,947t (XII Plan Achievement 69,937t U_3O_8 ; Target: 75,000t U_3O_8).
- ❖ Reconnaissance (5,432 sq km) and detailed (282.75 sq km) surveys have helped in locating promising uranium occurrences at (i) Dharangmau (upto 2.76% U_3O_8), Betul district, Madhya Pradesh associated with Motur sandstone of Gondwana Supergroup, (ii) Laitduh (upto 0.34% U_3O_8), East Khasi Hills district, Meghalaya associated with sandstone of Mahadek Group, (iii) Gwalsar-Parah (upto 0.049% U_3O_8), Una district, Himachal Pradesh associated with sandstone of Siwalik Group, (iv) Bijori, Bhuli, Khudaradhana, Setparas and Sajba (upto 0.11% U_3O_8), Chhindwara district, Madhya Pradesh associated with Betul Crystalline Complex and (v) Kolarghat – Kauhapani – Gandhinagar, Bortalao – Khampura – Burhanchhapar - Aledand and Nawatola – Ramatola – Kolarbhatti, Rajnandgaon district, Chhattisgarh (upto 0.047 % U_3O_8) associated with gritty sandstone and conglomerate of Bortalao Formation.
- ❖ 84,446.60m drilling by 35 departmental rigs and 86,675.70m drilling on contract, have been carried out for uranium investigations (Total drilling: 1,71,122.30m).
- ❖ Geochemical survey (3,840 sq km) has helped in demarcation of hydro-geochemical haloes in Ghaggar river palaeochannel (upto 7,284 ppb), Sri Ganganagar district and Loha (upto 72ppb), Churu district, Rajasthan.
- ❖ Heliborne geophysical survey has been carried out over 28,740 line km in parts of Aravalli Fold Belt, Rajasthan and Chhattisgarh basin, Chhattisgarh. Ground geophysical survey (Regional: 433 sq km and Detailed: 286.35 sq km) helped in identification of subsurface causative bodies in Sankadih, Jharkhand, Bagholi-Jodhpura, Jhunjhunu district, Rajasthan; Kanchankayi, Yadgir district, Karnataka and Dharangmau-Kachhar, Betul district, Madhya Pradesh.
- ❖ Rare Metal and Rare Earth investigations have been carried out by reconnaissance (1,190 sq km) and detailed (19.70 sq km) surveys in pegmatitic belts of Karnataka, Rajasthan, Odisha, Chhattisgarh and Andhra Pradesh. 3,022 kg of Nb-Ta ore (Marlagalla, Pandikimal & Bodenar), 900kg of beryl (Bodenar & Pandikimal) and 6,550 kg of xenotime bearing polymineral concentrate (Siri River) have been recovered. Additional resources of 3.21t columbite-tantalite and 27.26t xenotime bearing polymineral concentrate have been estimated in Jogiyani and Kasijore nala, Chhattisgarh respectively.
- ❖ Beach Sand and Offshore Investigations carried out by reconnaissance (335.68 sq km) and detailed (14.38 sq km) surveys have resulted in establishment of Total Heavy Mineral (THM) rich zones at Parisavaripalem-Kottapalem (upto 48.10%), Metturu-Bhavanapadu (upto 22.87%) and Hope Island (upto 30%), Andhra Pradesh and Oppilan-Valinokkam (upto 10%), Tamil Nadu. Sonic drilling (5,114m) on contract in Neendakara-Kayamkulam sector (Chavara deposit), Kollam district, Kerala recorded 1.54-74.19% THM (avg. 11% THM) in IREL-1 block and its extension areas.
- ❖ Various laboratories (Physics, Chemistry, XRD, XRF, Petrology and Geochronology) in Headquarters and Regional Centers have fully achieved the targets and provided effective analytical support to field investigations. The Chemistry laboratory at AMD headquarters received ISO 17025:2005 certification from National Accreditation Board for Testing and Calibration Laboratories (NABL).
- ❖ A documentary film depicting the activities of AMD has been released for public awareness programmes.



भारत में यूरेनियम अन्वेषण - वर्तमान और भविष्य URANIUM EXPLORATION IN INDIA – PRESENT AND THE FUTURE

डॉ. अश्विनी कुमार राय Dr. Ashwini Kumar Rai



Dr. A.K. Rai, obtained his M.Sc. (Applied Geology) from Banaras Hindu University, Uttar Pradesh and Ph.D. from University of Mysore, Karnataka. He has over 37 years of experience in various domains of mineral exploration. He has worked in various parts of the country in different capacities. During the last decade he has immensely contributed to the developments in AMD as Regional Director, Southern Region, Additional Director and Director. He retired as Outstanding Scientist and Director, AMD on 30th November, 2016 after attaining superannuation.

The multidisciplinary exploration strategy for uranium, adopted by AMD over the past few years is based on the potential of the various geological domains for hosting different types of uranium mineralisation. Further, to fulfill the commitment of the Directorate for augmenting substantial uranium resources in the next fifteen years, an integrated multi-disciplinary exploration programme has been visualised.

The results of the envisaged exploration programme heavily rely on airborne and ground geophysics and drilling. Airborne geophysical technique has considerably evolved over the years, which allows deeper imaging of the subsurface. AMD is planning to deploy modern techniques like high-resolution

electromagnetic (EM) such as AFMAG surveys, high-resolution magnetic and gravity (gravity gradiometry) surveys. Hyper-spectral remote sensing, integrated geophysical, geochemical and geological cum radiometric surveys will be utilised in targeting the concealed deposits at depth. Drilling is an integral part of our programme and modernisation of our drilling infrastructure will have to be carried out to achieve this immense task. It is therefore imperative that we utilise our existing resources judiciously. In my view, the exploration strategy can be classified into three categories.

Category - I: Exploration in this category is aimed at rapid augmentation of uranium resources. The geological domains in this category include the areas where uranium resources are being continuously augmented. Nearly 40 - 50 % of the exploration resources available in the respective Regions can be associated with this category. Six important geological domains in this category are 1) Southern Cuddapah basin, 2) Singhbhum Shear Zone, 3) North Delhi Fold Belt, 4) Bhima basin, 5) Mahadek basin and 6) Northern Cuddapah basin.

The Tummalapalle uranium deposit, which is one of its kind in the world, lies in the southwestern part of Proterozoic Cuddapah basin and is hosted by dolostone of Vempalle Formation. The gigantic size of the deposit, its stratabound nature in impure dolostone and the point to point correlation of the mineralised bands over considerable distances both along strike and dip directions makes it unique and one of the largest uranium deposits in the world. This deposit, occurs over a strike length of 15.5 km, with vertical depth extending up to 800m. Exploration is in the advanced stages in an another contiguous block of 12 km strike extent. Further, the surface shows of mineralisation have been observed in similar host rock for over another 140 km intermittently and intensive multi-parametric exploration is being carried out in this entire stretch of Vempalle Formation along the southwestern part of Cuddapah basin.

The Singhbhum Shear Zone (SSZ), having a strike extent of 200 km in Jharkhand is one of the most potential geological domains of the country and had been the only uranium production center till recently. 14 uranium deposits of varying size have been established till date and 7 uranium mines at Jaduguda, Bhatin, Narwapahar, Turamdih, Mohuldih, Bagjata and Banduhurang and 2 uranium mills at Jaduguda and Turamdih are operating in SSZ. A major part of the India's uranium inventory is contributed from this region and exploration is still continuing in the similar contiguous geological sectors. Notable among them are Bangurdih and Narwapahar- Singridungri -Banadungri-Jaduguda North sectors.

In Bhima basin, the integrated exploration efforts by AMD have established a small tonnage medium grade uranium deposit at Gogi, Yadgir district, Karnataka. Major part of the uranium mineralisation at Gogi is hosted in brecciated limestone close to the faulted sediment - basement contact along Kurlagere - Gundahalli fault. Mineralisation also occurs in the granite, in the form of fracture fillings, veins and veinlets. Present exploration efforts are concentrated in the Kanchankayi sector located in the northeastern extension of Gogi deposit and also in west of Gogi and as well as between Gogi and Kanchankayi. This will enhance the total tonnage of Gogi and its extension blocks with richer grade mineralisation.

Four uranium deposits namely Lambapur, Peddagattu and Chitrial in Nalgonda district, Telangana and Koppunuru in Guntur district, Andhra Pradesh have been established in the northern parts of Cuddapah basin. Uranium mineralisation in Lambapur, Peddagattu and Chitrial is mainly confined to the fractured basement granite close to unconformity with the overlying sedimentary rocks of Srisaillam Formation, with shallow depth persistence. In Koppunuru deposit, the mineralisation is hosted by sedimentary rocks of the Kurnool Group and altered and brecciated basement granite. Exploration during the last two decades had been confined only to the shallower portions of the Srisaillam sub-basin and exploration in the deeper part of the basin is planned in future for quick augmentation of uranium resources.

The sandstone of Lower Mahadek Formation exposed along the southern fringes of Shillong plateau, Meghalaya is an important geological province for uranium mineralisation. Exploration since late seventies has established seven low to medium tonnage sandstone type uranium deposits at Domiasiat, Wahkyn, Wahkut, Gomaghat, Tynai, Umthongkut and Lostoin. Uranium mineralisation occurs mainly along the palaeo-channels and paleo-basement lows within the sandstones above the basement crystalline rocks. Exploration efforts are presently being continued in Wahkut, Nongjri and Kulang sectors and are also planned in other parts of the Meghalaya plateau.

In the North Delhi Fold Belt of Rajasthan and Haryana, the 160 km long NNE-SSW trending 'albitite line' is a zone of extensive soda metasomatism which hosts more than 200 uranium occurrences. Integrated exploration including heliborne and ground geophysical, geochemical, geological followed by drilling has resulted in establishing a small uranium deposit near Rohil, Sikar district, Rajasthan. Uranium mineralisation is hosted by albitised quartz-biotite schist, carbonaceous (graphitic) schist and albitised quartzite. Exploration in the geologically contiguous areas of Rohil has resulted in establishing promising new blocks in Gumansingh-Ki-Dhani, Narsinghpuri, Hurra-Ki-Dhani, Jahaj- Maota areas. The interpreted data of heliborne and ground geophysical surveys indicate that south Rajasthan will be a potential target area for uranium exploration.

Category-II: The uranium potential sectors where detailed information about geology, controls of mineralisation, structure etc. have already been accrued can be classed into this category. The geological domains in this category include areas where uranium deposits can be established in near future i.e. within 2-3 years. Approximately 20-30 % of the exploration resources available in the respective Regions can be associated with this category. This category includes not only the areas in which there is distinct possibility of establishing large tonnage and low grade uranium deposits, but also the geological domains which are favourable for hosting high grade unconformity and vein types of deposits. In India, the Proterozoic basins and its environs including the basement can be explored for such high grade deposits. The classic example where such a geological setting exists is the south western and north-northwestern margin of Cuddapah basin including the fracture systems in Gulcheru Formation.

A number of the potential sectors, spread all over the country can be placed in this category, viz. Dharmapuri Shear Zone (DSZ) in Tamil Nadu, Dongargarh - Kotri Belt in Chhattisgarh, Chhotanagpur Granite Gneiss Complex (CGGC) in Madhya Pradesh, Chhattisgarh and Uttar Pradesh, Narendranagar-Shivpuri syncline in Himachal Pradesh, Siwalik Group in Himachal Pradesh and Uttarakhand, Kaladgi basin in Karnataka, Gondwana basins of Central and Eastern India and Proterozoic basins such as Chhattisgarh, Bijawar and Vindhyan. Integrated multidisciplinary exploration strategy has been proposed in several of these sectors in 15 year road map of AMD.

Category-III: A number of virgin, potential sectors which can be developed for future by carrying out extensive research, either by in-house facilities or through BRNS projects, can be classed into this category. Fundamental research on geological and geochemical aspects can lead to the identification of many new sectors, besides enhancing the potential of the already established sectors. Few of the sectors such as Proterozoic fringe areas covered by Deccan Traps, calcretes of the western Rajasthan, granites and fracture systems surrounding the Proterozoic basins such as the Cuddapah and Chhattisgarh, alkaline intrusives of the Southern Granulite Terrain (SGT) and phosphorite deposits of India are some of the potential domains which can be included in this category.

In addition to the exploration in the contiguous sectors of known uranium provinces, our focus should be on establishing high grade uranium deposits such as unconformity, vein (granite related) and sandstone type uranium deposits. AMD possesses focused and well trained experts who can be game changer. I hope that with the concerted effort of each one, AMD will be able to establish several large tonnage and high grade uranium deposits. I wish AMD all the best in its future endeavours.

भूवैज्ञानिक - एक स्वतः जीवन एवं धर्म GEOLOGIST - A WAY OF LIFE AND A RELIGION BY ITSELF

डॉ. राजगोपाल महांति Dr. Rajagopal Mohanty



Dr. Rajagopal Mohanty, obtained his M.Sc. (Applied Geology) from Indian Institute of Technology (IIT), Kharagpur and Ph.D. from Indian School of Mines (ISM), Dhanbad. He has over 37 years of experience in various domains of mineral exploration. He has worked in various parts of the country in different capacities. During the last decade he has immensely contributed to the developments in AMD as Regional Director, Northeastern Region & Southern Region and Additional Director. He retired as Scientific Officer H+ and Additional Director on 29th February, 2016 after attaining superannuation.

When Head, PMSG sent me a mail asking for an article for AMD Newsletter, I could not but agree for two reasons: one - I was involved in drafting and designing the first such newsletter nearly two decades back and two - I wanted to jot down some of my experiences as a geologist which made me view the life through a different prism.

The profession of a geologist came to me by chance. Post pre-professional (an equivalent of +2) exam, when I was looking for a subject to pursue in my career, the prospect of getting a good job made me choose geology. Now looking back into the time line, I feel that it was a correct decision.

Studying geology and then making geology as a profession gives one advantage of knowing different realms of mother

earth better than others. In the biosphere of the earth, man is the most evolved creature. Man (and for that matter every living being) gets birth and then dies. While explaining this event, different religions and thinkers put forward their hypotheses and linked it up to the act of god with some logic and reasoning. While all beliefs co-exist, though sometimes contradicting each other, hardly ever any faith appears to have knowledge in terms of the history or origin of the earth. Let's analyse. We know that our planet earth is 4,500 million years old and the earliest human (Homo Erectus) arrived on the earth around only 1.3 million years ago. This means that humans were not there during 99.9% of the earth's history - a point to be noted with great importance. The fossil of earliest aborigine is dated to be around only 60,000 years. Obviously there was neither religion nor existence of god during this major part of earth's history. But certainly there were ethics and rules (of nature) among all creatures of the living world.

Before Copernicus (1473-1543), man considered earth as the center of the universe. Copernicus had to face the wrath from the King for proposing this contradicting view. Even Galileo, as late as 1632, had to face house arrest from Catholic Church for carrying forward Copernicus's work. It was quite natural for a person not exposed to science to wonder at the appearance of the sun every morning and disappearance in the evening day after day and year after year. For him, it was definitely a divine activity where Sun god not only distributed light every morning, but also made the environment dark (by its disappearance) for the living world to sleep during night. This led him to worship the Sun as a god.

In Indian context, we know the first religious doctrines were found in Veda which was created during 500-1,700 BC i.e. only 3,700 years (maximum) back. The oldest Veda i.e. Rig Veda (one of the oldest religious texts) was likely to have been composed sometime during 1,100-1,700 BC. There was no script. It is said that these were transmitted through memory (smriti) and hearing (shruti). The slokas in Sanskrit (the language spoken that time) used to be chanted and passed on from generation to generation. Similarly, the Bhagavad Gita - the holy Hindu granth is considered to have been composed during 400-500 BC i.e. maximum 2,500 years ago. It is quite obvious that in absence of any scientific information, every natural happening or natural creation was either given the status of god or the action of god. As such different gods (for example, Indra-God of lightening, Agni-God of fire) are worshipped. Prior to Vedic period, though contradiction exists, the oldest age derived from carbon dating of either the potteries in Indus valley or rock paintings in ancient Egypt is about 15,000 years old when there are reports of animals or nature being worshipped in different forms. Clearly there was no religion. Hence it is only with knowledge of science (more particularly geosciences), that a person can have the correct understanding of the complexities and nature.

I would like to narrate few following incidents which happened with me during field investigations in this context.

It was field season 1980-81. We were planning to shift our camp from Nonglang, a village in West Khasi Hills district in Meghalaya. A few days before, we had selected an apparently barren ground near Mawmairang in the same district. We packed up our tents, had 'khichdi' and reached the new camping site in the afternoon. The

workers unpacked and pitched the tents when it became almost evening (in northeast, evening sets in early, particularly in winter). After a hot cup of tea when we were strolling out, we observed few passers-by looking at us with surprise. It was then that we spotted on the adjacent land some stones half buried in a pattern and immediately could understand that it was the graveyard for the village. There was no time to unpack the tents and go elsewhere. We built up the courage to stay there that night though we were terrified. After dinner, I tried to sleep, but all sorts of negative thoughts kept on coming. I prayed and started reading some books in lantern light. I don't know when did I sleep, but I was delighted when I woke up next morning and found myself unharmed. Suddenly it came to my mind and I started concluding that the ghosts, if at all exist, either cannot scare a geologist or remain friends of geologist !! I believe, the latter is more nearer to the truth. The fear of ghost which I had in my mind vanished. I started believing that it is your own perception and mental analysis which drives one to conclude on his own way. And that week, we discovered strongest radioactive anomaly in that area which truly speaking, changed then existing view that plateau sediments may not host much uranium.

It was in 1990, when I, as the Resident Geologist of Mohuldih prospect - a tribal village in Singhbhum, had decided a borehole point outside the village and shown to the concerned drilling engineer. Next day when foundation pit was about to be dug, a group of villagers stopped us. On enquiry, I learnt that the villagers use the land, to worship a conical hillock in the otherwise plain area. They believe to have been blessed by the Hill God who has been constantly protecting the village by driving away any sort of bad omen. We shifted the borehole point a few tens of meters on their request.

Quite obvious, man is driven by his beliefs and in case some belief yields positive results, it becomes stronger. In the above case, villagers might not be knowing as to how the hills or mountains have been formed. The peculiar shape of a hill is thought as an act of God.

It was again in eighties, when I was posted in NER. One morning, I left Shillong in a vehicle to go to a camp in Jamiri in West Kameng district of Arunachal Pradesh. It was evening as we travelled up the foot hills of Himalayas. The vehicle was on top speed. Suddenly a black wild cat appeared from the bush and crossed the road in front of us. All sorts of bad thoughts came to my mind because, we were told from childhood, that if a black cat crossed your path, it signals grave danger ahead. Since our vehicles were old and not in very good condition, I started thinking that there may be some problem ahead. I looked at the person on wheel and didn't find any reaction or apprehension on his face. He was a person from northeast and given a chance, he would probably have killed it and taken for a feast. Believe me, I reached Jamiri quite on time and had a nice dinner.

All of us might also have experienced similar incidents. But reactions differ from person to person. I strongly feel that it is our mind which is responsible for the nature of reaction by the individual. More exposure to the nature (being a field geologist) always helps in taking a matured decision.

Our mother Earth, shelters billions and trillions of creatures on its surface. Every creature, be it in the oceanic world or terrestrial, follows a certain do's and don'ts principle, except probably the modern human being who more often than not, tries to break it. Remember, this modern man has been there for only 0.1% of the time of the Earth's history. He is certainly more intelligent and ambitious. To fulfill his desire and goal in life he, in addition to the effort, prays and worships the God. Prayer and worship do work, provided it is for the do's. For don'ts, even if they apparently appear to work, the end result is always negative. I believe that prayer and worship helps one to concentrate his thoughts - be it for a thief who is planning to steal or for a hard-working student who goes to take an examination. Once success is achieved, faith and belief become stronger. This leads to religious beliefs, tennets and diktats. Over-following of certain religious beliefs may lead to religious fanaticism. There are plenty of examples of such fanatic actions even now which at times causes death.

A person unaware of Earth's history will always consider every happening as an act of god. He may not know that many violent earthquakes and volcanic eruptions have occurred in the past. Therefore it is felt that a minimum knowledge of geoscience is necessary for every human being, for not only it helps to remove many blind beliefs but also prevents becoming a religious fanatic. Being a geologist is a way of life and religion by itself !!

महाडेक द्रोणी: प्रचुर भण्डार और उच्च श्रेणी सैंडस्टोन प्रकार यूरेनियम निक्षेप हेतु संभाव्य क्षेत्र MAHADEK BASIN: A POTENTIAL TARGET FOR LARGE TONNAGE AND HIGH GRADE SANDSTONE TYPE URANIUM DEPOSIT

के. महेन्द्र कुमार K. Mahendra Kumar



Shri K. Mahendra Kumar, obtained his M.Sc. (Tech.) (Applied Geology) from Rajasthan University, Rajasthan. He has over 38 years of experience in various domains of mineral exploration. He has worked in various parts of the country in different capacities. During the last decade he has immensely contributed to the developments in AMD as Incharge, Bhima Basin Investigations, Southern Region, Deputy Regional Director, Eastern Region and Regional Director, Northeastern Region. He retired as Scientific Officer H and Regional Director, NER on 30th April, 2016 after attaining superannuation.*

The Upper Cretaceous - Lower Mahadek sandstone in Meghalaya Plateau is the prime target for sandstone type uranium mineralisation since mid-50's. Extensive survey and sub-surface exploration in this part have proved about 25,000 tonnes of uranium oxide in two main (Domiasat & Wahkyn-Wahkut) and five satellite deposits (Umthongkut, Gomaghat, Tynrai, Phlangdiloin and Lostoin).

Meghalaya Plateau, in the northeastern extension of the 'Indian Peninsula', is considered to be an uplifted horst bounded by steep and seismically active reverse faults. It comprises Archaean gneiss/schist, Palaeo-Mesoproterozoic Shillong Group with intrusive Neoproterozoic to Early Palaeozoic granite plutons, Late Jurassic Sylhet Trap which are overlain by Cretaceous - Tertiary sedimentary sequence in the southern

part of the plateau. The basal part of the sedimentary sequence (Jadukata / Mahadek of Upper Cretaceous age) comprises both marginal marine and fluvial sediments, whereas the overlying upper members (Langpar and Shella) are mainly of marine origin deposited in stable shelf condition.

The Mahadek Formation is divided into Lower and Upper Members based on their depositional and sedimentological characters. Uranium mineralisation is hosted by Lower Mahadek sandstone of proximal fluvial facies and is characterised by coarse to very coarse grained, poorly sorted, immature, feldspathic arenite/wacke with abundant carbonaceous matter and framboidal pyrite.

Concentration of ore grade mineralisation in the area appears to be governed by several factors like fluvial palaeochannel, lithology, thickness of host unit, palaeo-basement slope, sedimentological control, fertile provenance, presence of suitable reductants, geochemical control, diagenetic control, palaeo-environment, etc.

Recent sub-surface exploration in Wahkut block, located about 1.4 km southeast of Wahkyn South block, proved not only a sizeable uranium deposit, but also helped in establishing south-eastern link of uranium ore body of Wahkyn deposit. Presently Wahkyn-Wahkut deposit is considered to be the country's largest sandstone type uranium deposit containing more than 10,000 tonnes of uranium oxide. The deposit is elongated in NW-SE direction over an extent of 2.70 km and the plan width varies from 100m to about 1 km. The main uranium bearing minerals are pitchblende, coffinite and minor uraninite along with detrital radioactive minerals like monazite, xenotime, sphene, allanite etc. The ore body is still open in the south and south - eastern part in Wahkut block and as such the possibility of augmenting uranium oxide from this belt is very high.

The southern part of the Meghalaya Plateau where host Lower Mahadek sediments are concealed under thick Tertiary cover is still unexplored. Recent exploration in Wahkut and Kulang established the presence of thick Lower Mahadek sequence under Tertiary cover. Some of the boreholes intercepted significant U - mineralisation indicating that the southern part of Mahadek Basin is a potential sector for uranium mineralisation.

Laitduh uranium occurrence in Cherrapunjee plateau in the eastern part of Mahadek Basin, is located north of Raibha fault. Detailed exploration in the area, in recent past has brought to light the fact that Mahadek sediments occurring north of the fault are fluvial whereas in the south they are marine to marginal marine. Mineralisation in Laitduh area is confined to 50m - 70m thick Lower Mahadek sandstone at two different levels, one at redox front close to Upper and Lower Mahadek sandstone and another close to unconformity, occurring 8-15m above the basement granite. This area has significant potential to host another sizeable deposit in the eastern part of the Mahadek Basin.

I am very much confident that even after socio - economic constraints in the region and perilous terrain, the Mahadek Basin will emerge as one of the largest uranium production centers of India. I wish AMD all success in the years to come.

प ख नि प्रबंधन परिषद का पुनर्गठन

RECONSTITUTION OF COUNCIL OF MANAGEMENT OF AMD

1	Dr. Sekhar Basu, Chairman, AEC and Secretary, DAE	Chairman
2	Dr. A.K. Suri, Former Director, Materials Group, BARC	Co - Chairman
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12	Shri Ravi Prakash Verma, Former Deputy Director General, GSI	Member
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14	Shri L.K. Nanda, Director, AMD	Member
15	Dr. A.K. Chaturvedi, Additional Director (Operations-I), AMD	Member
16	Shri M.B. Verma, Additional Director (Operations-II), AMD	Member
17	Shri G.B. Joshi, Additional Director (R&D), AMD	Member
18	Shri R.K. Purohit, Additional Director (Operations-III), AMD	Member
19	Dr. S.N. Chaturvedi, Head, PMSG, AMD	Non-Member Secretary

कार्यशाला / संगोष्ठी WORKSHOP / SEMINAR

A National Workshop on "Rare Earths, Zirconium and Titanium Resources from Beach Placer Deposits of India" was organised during 7-11 November, 2016 in association with Geological Society of India, Bengaluru at NCESS, Thiruvananthapuram. The programme included 19 invited lectures on various aspects of beach sand mineral exploration and field visits to Chavara deposit, Kerala and Muttam teri sands, Tamil Nadu.



International Symposium on Emerging Trends in Analytical Chemistry (ETAC – 2016) was organised during 21-23 September, 2016 at AMD Complex, Bengaluru. The symposium was organised by Chemistry Group, AMD in association with Indian Society of Analytical Scientists (ISAS), Bangalore Chapter. More than 100 research articles were presented.



स्वतंत्रता दिवस समारोह INDEPENDENCE DAY CELEBRATIONS

The 70th Independence Day was celebrated with great fervour in AMD Headquarters, Regional Centers and in the field camps. Glimpses of the celebrations are presented below:

मुख्यालय Headquarters

On the 70th Independence day, **Dr. A. K. Rai**, the then Director, hoisted the National Flag and received the guard -of-honour, in AMD, Hyderabad. In his address, he briefed about the activities and achievements of AMD during the year. He also emphasised that discipline in all spheres of life is important. This was followed by a colourful cultural programme organised by AMD Recreation Club, Hyderabad, which highlighted the sacrifices made by "Unsung heroes of Indian freedom movement".



क्षेत्रीय मुख्यालय Regional Headquarters



Western Region, Jaipur



Southern Region, Bengaluru



Eastern Region, Jamshedpur



Central Region,
Nagpur



Northeastern Region, Shillong



Northern Region, New Delhi



*You must be the change you wish to see in the world.
The weak can never forgive. Forgiveness is the attribute of the strong.
Happiness is when what you think, what you say, and what you do are in harmony.
An eye for eye only ends up making the whole world blind - Mahatma Gandhi*

पखनि - वार्षिक दिवस समारोह AMD - ANNUAL DAY CELEBRATIONS



The 67th Annual Day celebrations of AMD were held on 29th July, 2016 at Headquarters, Hyderabad. The function was attended by many retired employees of AMD. Shri G. Kalyankrishnan, Chief Executive, Nuclear Fuel Complex, Hyderabad, Dr. K. Shivkumar Scientific Officer (Retd.) and Shri Gajanan Pandey, Deputy Director, OL - (Retd.) were the guests of honour. Dr. A.K.Rai, the then Director,

AMD presided over the function and briefed the audience about the achievements of AMD during the last year and expressed desire of better performance in the years to come with the blessings of elders and active involvement of the employees. "Rolling Trophies" for best performing drilling units for the year 2014-15 were distributed by Shri G. Kalyankrishnan and Dr. A.K. Rai.

Shri Kalyankrishnan delivered the annual day lecture on "An overview of fuel fabrication facilities of NFC". The retired employees shared their reminiscences on the occasion. The programme concluded with colourful cultural events by in-house talent.



Best performing drilling units - Rolling Trophy

Mechanical Rig Category

First Prize: DM-400 (8) deployed in North Delhi Fold Belt Investigations, Western Region. **Shri D.P. Nautiyal**, Incharge along with his crew members achieved a drilling progress of 2,308.50m (Target 1,500m). Congratulations.



Second Prize: DM-1000 deployed in North Delhi Fold Belt Investigations, Western Region. **Shri K.S. Meena**, Incharge along with the crew members achieved a progress of 2,196.40m (Target 1,600m). Congratulations.



Third Prize: DM-400 (4) deployed in Kaladgi Basin Investigations, Southern Region. **Shri M. Raju**, Incharge along with the crew members achieved a progress of 2,182.20m (Target 2,000m). Congratulations.



Hydrostatic Rig Category



First Prize: WA IIIC (2) deployed in Southern Cuddapah Basin Investigations, Southern Region. **Shri A. Ramakrishna Prasad**, Incharge along with the crew members achieved a progress of 4,828.95m (Target 3,600m). Congratulations.

Second Prize: WA IIIC (1) deployed in North Delhi Fold Belt Investigations, Western Region. **Shri Bhupinder Singh**, Incharge along with the crew members achieved a progress of 4,632.20m (Target 3,600m). Congratulations.



Annual Day celebrations were held in all the Regional Centers.
Several retired employees attended the celebrations.



Northern Region, New Delhi



Southern Region, Bengaluru



Eastern Region, Jamshedpur



Western Region, Jaipur

राजभाषा समाचार

‘विश्व हिंदी दिवस’ का आयोजन

‘विश्व हिंदी दिवस’ 11 जनवरी, 2016 को मनाया गया। इस अवसर पर प्रो.एम. वेंकटेश्वर, पूर्व प्राचार्य एवं परीक्षा नियंत्रक, उस्मानिया विश्वविद्यालय तथा वर्तमान सदस्य, हिंदी सलाहकार समिति, पञ्जवि एवं अंतरिक्ष विभाग के व्याख्यान का आयोजन किया गया। पखनि के सभी क्षेत्रीय कार्यालयों में भी विश्व हिंदी दिवस का आयोजन किया गया।



लोकार्पण

- * ‘विश्व हिंदी दिवस’ के अवसर पर गृह-पत्रिका ‘खनिज भारती’ के अंक-7 का लोकार्पण किया गया।
- * वैज्ञानिक संगोष्ठी के अवसर पर सारांश पुस्तिका का लोकार्पण डॉ. लालजी सिंह, पूर्व निदेशक, सीसीएमबी एवं पूर्व कुलपति, बनारस हिंदू विश्वविद्यालय ने 16 मार्च, 2016 को किया।
- * हिंदी पखवाड़ा के समापन समारोह के अवसर डॉ. अश्विनी कुमार राय ने ‘पखनि वैज्ञानिक शब्दावली’ और ‘स्मारिका-29’ का लोकार्पण किया।



राजभाषा संबंधी पुरस्कार

- * ‘हिंदी सेवी सम्मान’ पुरस्कार - मुंबई में 31 मई, 2016 को आयोजित पञ्जवि के राजभाषा सम्मेलन, 2016 के अवसर पर पखनि, मुख्यालय के श्री पी.के.गुप्ता, वैज्ञानिक अधिकारी/जी को ‘हिंदी सेवी सम्मान’ पुरस्कार से सम्मानित किया गया।
- * मुंबई में 31 मई, 2016 को आयोजित पञ्जवि के राजभाषा सम्मेलन के अवसर पर पखनि की गृह-पत्रिका को प्रशस्ति पत्र से सम्मानित किया गया।



संसदीय राजभाषा समिति द्वारा निरीक्षण

- * पखनि, उत्तरी क्षेत्र, नई दिल्ली का संसदीय राजभाषा समिति ने 06 जून, 2016 को निरीक्षण किया।

निदेशक, पखनि द्वारा निरीक्षण

- * निदेशक, पखनि ने सभी क्षेत्रीय कार्यालयों में जुलाई, 2016 में तकनीकी बैठक के दौरान राजभाषा के कार्यान्वयन का निरीक्षण किया तथा सुचारु कार्यान्वयन पर वरिष्ठ अधिकारियों से चर्चा की।
- * मुख्यालय में समिति के निरीक्षणोपरांत सभी निरीक्षित अनुभागों के प्रमुखों के साथ बैठक कर निरीक्षण में उजागर कमियों को दूर करने पर चर्चा की।

राजभाषा कार्यान्वयन का निरीक्षण

- * फरवरी, 2016 में उप निदेशक (राजभाषा), पञ्जवि, नई दिल्ली ने राजभाषायी निरीक्षण किया।
- * डॉ. यमुना सिंह, प्रधान, एमपीजी के संयोजकत्व में गठित निरीक्षण समिति ने जुलाई, 2016 में प्रशासन व लेखा के क्रमशः 4 और 3 अनुभागों तथा नवंबर-दिसंबर, 2016 में विभिन्न वैज्ञानिक वर्गों / अनुभागों का निरीक्षण किया।
- * सहायक निदेशक (राजभाषा) ने दक्षिणी क्षेत्र, बंगलुरु का 16 अगस्त, 2016 में निरीक्षण किया तथा रा.भा. का. समिति एवं अन्य वरिष्ठ अधिकारियों को संसदीय राजभाषा समिति के निरीक्षण के संबंध में कार्यान्वयन संबंधी तैयारी पर संबोधित किया। उन्होंने एम.सी.पल्ली फील्ड कार्यालय में 17 अगस्त, 2016 को आयोजित हिंदी कार्यशाला में व्याख्यान दिया।

वैज्ञानिक संगोष्ठी

- * मुख्यालय में वैज्ञानिक संगोष्ठी का आयोजन 16-17 मार्च, 2016 को किया गया जिसमें 42 शोधपत्र प्रस्तुत किये गये। डॉ. लालजी सिंह, पूर्व निदेशक, सीसीएमबी एवं पूर्व कुलपति, बनारस हिंदू विश्वविद्यालय ने संगोष्ठी का उद्घाटन किया।



- * मध्यवर्ती क्षेत्र, नागपुर में सितंबर, 2016 तथा पूर्वोत्तर क्षेत्र, शिलांग में नवंबर, 2016 में वैज्ञानिक संगोष्ठी का आयोजन किया गया ।

हिंदी कार्यशाला का आयोजन

(1) तकनीशियनों और वाहन चालकों हेतु 05 फरवरी, 2016 (2) पखनि में नवनियुक्त कार्य सहायकों के लिए 20 जून, 2016, (3) सभी सुरक्षा कर्मियों के लिए 29 अगस्त, 2016 और (4) तिमाही रिपोर्ट तैयार करने वाले कर्मचारियों और अधिकारियों के लिए 28 दिसंबर, 2016 को हिंदी कार्यशाला का आयोजन किया गया । इसी प्रकार पखनि के सभी क्षेत्रीय कार्यालयों में प्रत्येक तिमाही में हिंदी कार्यशाला का आयोजन किया गया ।



राजभाषा कार्यान्वयन समिति की बैठक

- * प्रत्येक तिमाही में राजभाषा कार्यान्वयन समिति की बैठक नियमित रूप से आयोजित की गई और उनमें लिये गये निर्णयों पर ससमय अनुवर्ती कार्रवाई की गई ।
- * पखनि के सभी क्षेत्रीय कार्यालयों में राजभाषा कार्यान्वयन समिति की बैठकें प्रत्येक तिमाही में आयोजित की गई ।



तिमाही प्रगति रिपोर्ट

- * पखनि मुख्यालय एवं इसके सभी क्षेत्रीय कार्यालयों की तिमाही प्रगति रिपोर्ट समय पर तैयार कर क्रमशः मुख्यालय और पऊवि को प्रेषित की गई ।



‘ पखनि राजभाषा शील्ड ’ योजना

- * पखनि के क्षेत्रीय कार्यालयों में राजभाषा के कार्यान्वयन हेतु स्वस्थ प्रतिस्पर्धा पैदा करने के लिए ‘पखनि राजभाषा शील्ड’ योजना इसी वर्ष लागू की गई है ।



श्वेत पटल पर हिंदी में अनुभागवार जानकारी

- * राजभाषा कार्यान्वयन की इस प्रतियोगिता के अनुसार प्रतिदिन पृथक वर्गों/अनुभागों/प्रयोगशालाओं द्वारा हिंदी में उनके कार्य से संबंधित विशेष जानकारी बोर्ड पर लिखी गई। हिंदी पखवाड़ा समापन के अवसर पर सुंदर और प्रभावपूर्ण प्रस्तुति के लिए क्रमशः दक्षिण मध्यवर्ती क्षेत्र और भूवेधन वर्ग को प्रथम और द्वितीय पुरस्कार से निदेशक, पखनि ने सम्मानित किया ।

नगर राजभाषा कार्यान्वयन समिति

- * मुख्यालय, हैदराबाद और इसके सभी क्षेत्रीय कार्यालय क्रमशः अपने-अपने नगरों में नगर राजभाषा कार्यान्वयन समिति के सदस्य हैं और इसकी वर्ष में आयोजित दो बैठकों में भाग लेने के साथ-साथ उनके द्वारा आयोजित कार्यक्रमों में भाग लेते हैं । दक्षिणी क्षेत्र, बेंगलुरु कार्यालय ने इस वर्ष के दौरान न केवल पुरस्कार अर्जित किया अपितु नगर राजभाषा कार्यान्वयन समिति के कई कार्यक्रम अपने कार्यालय में संपन्न करवाए ।

क्षेत्रीय कार्यालयों के साथ समन्वयन

- * पखनि के क्षेत्रीय कार्यालयों में राजभाषा कार्यान्वयन के सुचारु रूप से जारी रहने के संबंध में मुख्यालय के हिंदी अनुभाग द्वारा समय-समय पर मार्गदर्शन और सहायता उपलब्ध कराई गई ।



राजभाषा पखवाड़ा / सप्ताह

- * पखनि, मुख्यालय, इसके 7 क्षेत्रीय और अनुभागीय कार्यालयों और बीएसओआई (विशाखापट्टणम व तिरुवनंतपुरम) में बड़े उत्साह के साथ राजभाषा पखवाड़ा/सप्ताह मनाया गया । इस अवसर पर हिंदी दिवस/राजभाषा वार्ता/हिंदी प्रतियोगिताएं/पुरस्कार वितरण समारोह आदि का आयोजन भी किया गया ।

पुरस्कार तथा सम्मान AWARDS AND RECOGNITIONS

Dr. A. K. Rai, former Director, AMD was conferred the "Indian Nuclear Society (INS) - Outstanding Service Award (2015)". The award was presented by Dr. K. Radhakrishnan, former Chairman, ISRO and Secretary, Department of Space, on 17th March, 2016 during the INS Annual Conference held at BARC, Mumbai.



Dr. A.K. Rai, former Director, AMD and **Dr. A.K. Chaturvedi**, Additional Director (Operations-I), AMD, were jointly conferred the Homi Bhabha Science & Technology Award - 2015.



Shri S.D. Rai, **Dr. G. Nagendra Babu**, **Shri P.V. Tirupathi**, **Shri K.L. Mundra**, **Shri P. Jagadeesan** and **Shri M. Saibaba** were conferred the "DAE – Group Achievement Award - 2015" for the activity titled "Rare Metal and Rare Earth Exploration".



Shri M.V. Venugopal, Driver Grade – II, Southern Region, Bengaluru was conferred the "DAE - Meritorious Service Award – 2015" in recognition of his outstanding contributions.

These awards were presented by Dr. S.S. Bajaj, former Chairman, Atomic Energy Regulatory Board during BARC Founders Day Celebrations held at Mumbai on 28th October, 2016.



Dr. A. K. Rai, former Director, AMD, was awarded the "Life Time Achievement Award" and **Dr. S.N. Chaturvedi**, Head, Planning and Management Services Group, Hyderabad, was awarded the "Dr. G.R. Udas - Dr. K.K. Dwivedy Medal -2015" instituted by of Indian Society of Applied Geochemists (ISAG).



The awards were presented to them in the Annual General Body meeting of the Society held during 10 – 11 November, 2016 at Kohima.



The Geological Society of India "Radhakrishna Prize - 2015" for the best research paper published in the journal of Geological Society of India was awarded to the research paper "New 1.9-2.0 Ga, Pb-Pb (PbSL) age of dolomites from Vempalle Formation, lower Cuddapah Supergroup, eastern Dharwar craton, India" authored by **A. K. Rai**, **U. K. Pandey**, **Syed Zakaulla** and **P. S. Parihar**. **Dr. U.K. Pandey**, Scientific Officer/F, MPG Group, Hyderabad received the award on behalf of Dr. A.K. Rai during Annual Convention of the society, held at IIT, Kharagpur, on 23rd October, 2016.

Shri Dileep Kumar Gurjar, Assistant Security Officer, Jamshedpur has been conferred the "Rashtrapati Rover Scout Certificate – 2015".



Shri J.Sridhar, Senior Technician – H, Hyderabad received 1st Prize for the 'Best Slogan', during the 33rd DAE Safety and Health Professionals Meet at Institute of Plasma Research (IPR), Gandhinagar during 23 - 25 November, 2016. The slogan is "Laser Brings Ability! Safety Prevents Disability".

राष्ट्रीय विज्ञान दिवस NATIONAL SCIENCE DAY

National Science Day with the focal theme "Make in India: Science and Technology Driven Innovations" was celebrated in Headquarters and the Regional Centers. The highlights of the events are given below.

Headquarters : Hyderabad

AMD Hyderabad participated in the public awareness programme jointly organised by ECIL, HWB, NFC and AMD at Nuclear Fuel Complex, Hyderabad during 27-29 February, 2016. **Sri N. Saibaba**, the then Chief Executive, NFC inaugurated the exhibition which was visited by more than 3,000 people including students.



In Headquarters, Hyderabad an exhibition depicting activities of AMD and DAE was organised on 4th March, 2016. 160 students along with teaching faculty from ten schools spread across Hyderabad and officers and staff of AMD participated in various programmes. The programme included a popular science lecture on "India's Friendship with Science" by Prof. D. Balasubramaniam, Research Director, L.V. Prasad Eye Institute, Hyderabad, visits to museum and science quiz.

Northern Region, New Delhi



Two day programme was organised in Northern Region, New Delhi during 25 - 26 February, 2016 in which students of class IX and X from MCD School, Sector-V, R.K.Puram participated. The programme included lectures on "Make in India", "Science in Ancient, Medieval, British and Modern India", "Atom in Service of Mankind", a short film on working of reactors, science exhibition, poster making, quiz competition and visit to various laboratories.

A science exhibition organised during 26 -27 February, 2016 at Camp: Tibba-Basai, Jhunjhunu district, Rajasthan was visited by students along with teachers of Govt. Hr. Sec. School, Tibba Basai. The programme included lectures on "Development of Science through Ancient, Medieval and Modern India", "Importance of Drilling in AMD's Exploration Programme", "Basic Principles of Radioactivity and Radiation Detection", exhibition and essay writing competition.



A programme was conducted on 27th February, 2016 at Saraswati Mandir Inter College and Mahatma Jyotirao Phule Inter College, Sonrai, Lalitpur district, Uttar Pradesh. The programme included lectures on "परमाणु शक्ति - एक आवश्यकता व भ्रांतियाँ एवं सच्चाई", "रेडियोधर्मिता का विज्ञान", essay writing and art competitions. The programme was widely covered by the local media.

Southern Region, Bengaluru

An open day science exhibition was organised on 2nd February, 2016 in AMD Complex, Bengaluru. The programme was inaugurated by Prof. Thimme Gowda, Vice Chancellor, Bangalore University and included lecture on "Role of AMD in Nuclear Fuel Cycle, Uranium Exploration, Reactor Site Selection and Spent Fuel Management" and visit to laboratories.



An open day science exhibition was conducted at Camp: MC Palle, Kadapa district, Andhra Pradesh on 8th March, 2016. The programme was inaugurated by Fr. M. Xavier Rex, Principal, Loyola Polytechnic College, Pulivendla, and included demonstrations of analytical methods and radiometric instruments, exhibitions of rock / mineral specimens, petrological microscope, model of nuclear reactor and drilling rig. About 800 students and teachers from different schools and colleges and parents attended the program.

Eastern Region, Jamshedpur

A programme was organised during 25 - 26 February, 2016 in AMD Complex, Jamshedpur. Dr. Shantanu Bhattacharjee, Chief Scientist (Retd.), Analytical Chemistry Division, National Metallurgical Laboratory (CSIR), Jamshedpur inaugurated the programme and delivered a lecture on "Safe Drinking Water, Water Quality Issues in India and Alternate Source of Drinking Water". The programme included a science exhibition and visit to laboratories. A presentation competition on "Life in 22nd Century" was organised in AMD Complex for the students during 19 – 20 February, 2016 in which 34 students from 23 schools and colleges of Jamshedpur participated.



Northeastern Region, Shillong

A programme was organised in AMD Complex, Shillong during 3 - 4 March, 2016. The programme was graced by Prof. B. Myrboh, Chemistry Department, North Eastern Hill University, Shri P.L.N. Raju, Director, NESAC and Shri P. N. Sarkar, General Manager (Mines), UCIL. The programme included an exhibition, essay writing, poster competition and science quiz. Around 250 students from 10 schools of Shillong visited the exhibition and 55 students of class IX and X from various schools participated in the competitions.



Western Region, Jaipur



A programme was conducted in AMD Complex, Jaipur on 29th February, 2016 in which nearly 100 students and faculty from various schools and colleges of Jaipur participated. The programme included a lecture on "Make in India: Science and Technology Driven Innovations", video



show, exhibition and visit to laboratories and museum. A lecture on "Nuclear Mineral Exploration" and an exhibition were organised at Manipal University, Jaipur on 29th February, 2016.



Programmes were conducted in Camp: Hurra Ki Dhani and Camp: Khandela on 3rd March, 2016. A public awareness programme was organised at Rajakiya Balika Madhyamik Vidyalaya, Guhala, near Hurra Ki Dhani. About 200 students and faculty from various schools in Guhala participated. The programme included quiz competition, exhibition and half marathon.

A programme was conducted in Swami Vivekanand Government Model School, Siwana on 5th March, 2016 which included lecture on "Benefits of Atomic Energy and Exploration for Atomic Minerals", exhibition, science quiz and interactive session.

Central Region, Nagpur



A programme was organised at AMD Complex, Nagpur during 23 - 28 February, 2016. The programme included lectures, invited talk on "Indian space programme and its application for national development" by Dr. S.V.C. Kameshwar Rao, Director of RRSC, Nagpur and "Suno Dil se Dil ki Baat" by Dr. P. Mundra, Cardiologist, exhibition and quiz competition. More than 450 students



and teachers representing 12 schools of Nagpur participated in the programme.

A programme was conducted on 23rd February, 2016 at Bishnu Dev High School, Bagmara, Pokrasaleh, Jharsuguda district, Odisha which included lecture, poster exhibition and quiz competition.

South Central Region, Hyderabad



Programmes were conducted at Brindavan Institute of Technology and Science, Pedda Tekuru, Kurnool district, Andhra Pradesh and Mahatma Gandhi University, Nalgonda, Nalgonda district, Telangana on 22nd February, 2016 and Gandhi Academy of Technical Education, Kodad, Nalgonda district, Telangana on 25th February, 2016. The programmes included science exhibition,



elocution and essay competitions. Science quiz was organised for the staff in Camp: VP South, Guntur district, Andhra Pradesh and Camp: Mellacheruvu, Nalgonda district, Telangana on 25th February, 2016.

BSOI, Thiruvananthapuram

A programme was organised in the office premises of BSOI, Thiruvananthapuram during 26th February, 2016 to 1st March, 2016. The programme included lecture by Dr. C. S. Shajumon, Professor of Economics in the Department of Humanities at Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram, exhibition, science quiz and elocution competition. A large number of people attended the exhibition and interacted with officers and staff.



BSOI, Visakhapatnam

A programme was conducted in the office premises of BSOI, Visakhapatnam on 28th February, 2016. The programme included lecture by Dr. B.L. Narasayya, Deputy Director General (Retd.), Geological Survey of India, exhibition and elocution competition.



जनजागरुकता कार्यक्रम PUBLIC AWARENESS PROGRAMME

मुख्यालय: हैदराबाद Headquarters : Hyderabad

A programme was conducted on 18-24, August - 2016 at Jawaharlal Nehru Technological University, Hyderabad as a part of "Bharat Utsav-2016" celebrations. Several government institutions including AMD, NFC, ECIL, ICMR, DRDO, ISRO, DST and CSIR displayed their exhibits. About 10,000 students, 400 teachers and 1,500 persons visited the AMD stall.



An awareness programme was conducted at Geological Survey of India, Hyderabad during 20 - 22 October, 2016 on the eve of 38th Annual Convention of Association of Exploration Geophysicists (AEG).



Northern Region

Students and faculty of Ramlal Anand College visited AMD office complex, Northern Region on 8th April, 2016. Lectures on AMD activities, Remote Sensing, Mineral Exploration and Nuclear Energy were delivered. The students visited all the laboratories.

Southern Region

A programme was conducted at AMD Complex, Southern Region, Bengaluru on 17th February, 2016 for science graduate students and faculty members of JSS College for women, Mysuru. The programme included lectures and visit to the laboratories, museum and rock garden.



Eastern Region

A public awareness programme was conducted at National Institute of Technology, Rourkela, Odisha on 13th February, 2016.

A public awareness programme consisting of lectures and an exhibition was conducted during 11 -12 February, 2016 at Bonaigarh College, Sundargarh district, Odisha. Students from various schools of Bonai and Sundargarh districts participated in the programme.



Northeastern Region

Public awareness programmes were conducted in and around Domiasiat. Officers and staff of NER visited Mawthabha and Nongbajharyn villages and spread awareness about the activities of AMD. Solar lanterns, sports gear, water filters, school bags etc., were distributed. A medical health check-up camp was also organised in these villages.



Western Region

Students and faculty members of Manipal University, Jaipur visited AMD Complex on 30th November, 2016. 250 students and faculty members of Maheshwari Public School, Jaipur visited the office during 5 – 6 December, 2016.



विज्ञान भारती जयपुर के तत्वावधान में राजस्थान विश्वविद्यालय में राष्ट्रीय हिन्दी विज्ञान सम्मेलन-2016 दिनांक 15 दिसम्बर, 2016 को आयोजित किया गया। पखनि, पश्चिमी क्षेत्र की ओर से उक्त विज्ञान प्रदर्शनी में एक स्टाल के माध्यम से परमाणु खनिज निदेशालय की गतिविधियों को प्रस्तुत किया गया।

Central Region

Central Region participated in the "Science Expo 16" held at Raman Science Center, Nagpur during 9 - 13 January, 2016. More than fifty eight thousand students visited AMD gallery during the exhibition.



South Central Region

An exhibition was conducted during the 32nd Mines Safety week celebrated by Mines Safety and Productivity Council, Telangana Region, Hyderabad at Mellacheruvu, Suryapet district, Telangana on 18th December, 2016. Shri S.K. Dutta, Director of Mines and Safety, Hyderabad Region awarded the Best Stall Award to AMD, South Central Region.

सतर्कता जागरूकता कार्यक्रम VIGILANCE AWARENESS PROGRAMME

Vigilance Awareness Week-2016 was observed during 31st October – 5th November, 2016. A pledge was taken by all the employees of AMD Headquarters, Regional Offices and Field Units on 31st October, 2016. Various programmes including lectures by Shri Shaik Mohd Iqbal, DIG, Government of Andhra Pradesh and Shri V.S.B. Babu, Director (Personnel), ECIL, Hyderabad, elocution competition for the employees of the Headquarters and skit titled "Pension Ka Tension" by students of the BARC-Training School were conducted. An essay writing competition on the topic "Public participation in promoting integrity and eradicating corruption" was conducted for the students of Gitanjali Senior School, Begumpet, Hyderabad. The winners of the various competitions were awarded by Shri L.K. Nanda, Director, AMD.



रसायन प्रयोगशाला, हैदराबाद की उपलब्धि

ACCOMPLISHMENT OF CHEMISTRY LABORATORY, HYDERABAD

Chemistry Laboratory, Headquarters, Hyderabad has invented unique filters for removal of uranium and arsenic from domestic water. Technology Transfer and Collaboration Division (TT & CD), BARC, Mumbai has approved these two filters for releasing them in public domain for technology transfer. Brief details of the inventions are given below.



Arsenic is classified as group 1 human carcinogenic substance. About 200 million people are exposed to arsenic contamination worldwide. To provide arsenic free water in remote areas, a simple, inexpensive, single stage removal kit has been developed by Dr. G. Chakrapani, Head, Chemistry Group and Dr. Anita Mary Thomas, Scientific Officer-F. The kit comprises Filter / Cartridge filled with novel sorbent media – SMAC-II granules which can remove arsenic and provide 3,000 liters of arsenic-free water. The gravity based filtration does not require any pre-treatment and is done under natural pH conditions which does not affect the pH of treated water.

The uranium removal kit (developed by Dr. G. Chakrapani, Head, Chemistry Group and Smt. Leela Gopal, Scientific Officer-E) comprises SMPAC-IV (a novel sorbent) filled cartridge which can deliver 2,000 liters of uranium free water. Filtration is done at natural pH and quality of water is unaffected as per BIS: 10,500. More than 95% uranium as high as 2,000ppb, can be removed.



DAE – Intellectual Properties Rights Cell has recommended for filing patent in India on “Development of filter with modified cartridge filled with granular modified powdered activated carbon loaded with ferrous for removal of high concentration of arsenic, uranium, lead and cadmium from drinking water and other aqueous systems for societal needs”.

पखनि में विश्लेषणात्मक सुविधाओं का उन्नयन UPGRADATION OF ANALYTICAL FACILITIES IN AMD

Isotope Ratio Mass Spectrometer (IRMS - Horizon NH031) has been commissioned in Headquarters, Hyderabad. It is a gas-source mass spectrometer used for determination of isotopic ratios based on mass/charge ratio in carbonate (C and O), sulphide/organic matter (S, N and C) and silicate (O). The isotopic ratio study helps in understanding the genesis of uranium mineralisation as well as their source/host rocks.



Three new WDXRFS systems (ARL PERFORM'X 4200 of Thermo Fisher Scientific) have been commissioned at Southern Region, Bengaluru; Central Region, Nagpur; and Western Region, Jaipur. The instruments are equipped with 5GN+ type Rh target X-Ray tube (rated capacity 4.2kW; maximum tube voltage 60kV; maximum current 120mA), eight (8) flat crystals (PET, LiF200, LiF220, LiF420, GE111, AX-03, AX-06, AX-16C), two detectors (flow proportional and scintillation), five (5) programmable Primary Beam Filters (Al20, Al200, Al500, Al750, Cu270) and automatic sample changer for nine (9) samples.

स्वच्छता पखवाड़ा SWACHHATA PAKHWADA

"Swachhata Pakhwada" was observed in AMD Headquarters, all the Regional Centres and sectional Headquarters during 18th April – 2nd May, 2016. Glimpses of the activities are given below.



Headquarters, Hyderabad



Northern Region, New Delhi

Southern Region, Bengaluru



Eastern Region, Jamshedpur

North Eastern Region, Shillong

Western Region, Jaipur



Central Region, Nagpur

South Central Region, Hyderabad

BSOI, Visakhapatnam

प्रशिक्षण TRAINING

A Lecture-cum-Demonstration on fire fighting techniques was organised at AMD Complex, Southern Region, Bengaluru on 6th April, 2016 by Karnataka State Fire & Emergency Services, Bengaluru.



A training programme on "Radioactive Geological Sample Handling, Preparation and Radiation Safety" was conducted at AMD Complex, Eastern Region, Jamshedpur during 11 -13 May, 2016. 21 Technicians and Work Assistants from various Regions participated in the programme.



A training programme on "Environmental Management" was organised during 19 - 23 September, 2016 at AMD Complex, Jaipur. 18 officers from various Regions and Groups of AMD participated in the programme.

A Training programme in Petrology, XRF, XRD and Geochronology was held at MPG Group, AMD, Hyderabad during 22nd August – 16th September 2016. 7 officers from various Regions participated in the programme.

A programme on "Autocad Map, Version-2015" for creating and editing maps was organised during 3-7, October, 2016 at AMD Complex, Nagpur. 12 Scientific and Technical Officers from different Regions participated in the programme.



An Orientation programme for newly joined Chemists was held at AMD, Northern Region, New Delhi during 25-29 July, 2016. 15 Technical Officers and Scientific Assistants participated in the programme.

A training programme titled "Sample Preparation and Related Safety Aspects" was conducted in Petrology, XRF, XRD and Geochronology Laboratories, Hyderabad during 19-23 September, 2016. 4 Technicians participated in the programme.

A training programme titled "Geophysical Exploration Techniques" was organised at AMD Complex, Hyderabad during 22nd August to 2nd September, 2016. 6 officers of Exploration Geophysics Group from various Regions participated in the programme.

Training on "Remote Sensing Techniques" was organised by ASRS Group at AMD, Hyderabad during 1st August – 12th August, 2016. 6 officers from various regions attended the programme.

क्षेत्रीय कार्यालयों में पदक वितरण समारोह

MEDAL DISTRIBUTION CEREMONY IN REGIONS

Best Performing Drilling Unit Award ceremony for AMD, Southern Region was held on 8th November, 2016 at AMD Complex, Southern Region, Bengaluru. Three Departmental Drilling units, viz. HDCD-400(4), WA-IIIC(2) and DM-400(4), deployed in the field areas of South Cuddapah Basin Investigations and Kaladgi Basin Investigations won the Best Performance Award for the Field Seasons 2013-14 and 2014-15. On this occasion, Dr. A.K. Rai, the then Director, AMD, Shri L.K. Nanda, the then Additional Director, Dr. Syed Zakauulla, Regional Director, Southern Region and Shri A.B. Anand, Head, Drilling Group graced the occasion and gave the medals to the officers and staff members of the drilling units.



संक्षिप्त समाचार NEWS IN BRIEF

Officers and staff of Northern Region participated in the "DAE Day" celebrations held at DAE Branch Secretariat during 3 - 4 August, 2016. Dr. Sekhar Basu, Chairman, AEC and Secretary, DAE distributed mementos to the participants.



Exploratory mining at Rohil, Sikar district, Rajasthan commenced on 11th April, 2016.

Recreation Club, Northern Region, New Delhi donated woollen clothes, blankets, caps etc. for homeless and the poor through a Non-Government Organisation.

The newly constructed sports complex named as Y. N. Rama Rao Amphitheatre, after the first Regional Director of Southern Region, at AMD Complex, Bengaluru was inaugurated by Dr. A.K. Rai, the then Director, AMD on 8th November 2016. Shri L.K. Nanda, the then Additional Director, Dr. Syed Zakaualla, Regional Director, Shri A.K.Bhatt, Deputy Regional Director and officers and staff were present on the occasion.



A team of officers of Northeastern Region and UCIL met Hon'ble Governor of Meghalaya, Shri V. Shanmuganathan on 18th August, 2016 and apprised the status of Uranium exploration in Meghalaya. Shri Sandeep Hamilton, Regional Director and other senior officers were present on the occasion.

Shri O.P.Yadav, Regional Director, Central Region attended the 166th Foundation Day celebrations of Geological Survey of India, Nagpur as the Chief Guest of the function.



"Hall of Nuclear Power Gallery" at National Science Centre, Pragati Maidan, New Delhi was inaugurated by Dr. Jitendra Kumar, Minister of State (PMO) on 16th January, 2016. Dr. Sekhar Basu, Chairman, AEC and Secretary, DAE and senior scientists of DAE graced the occasion. Senior officers of AMD, Northern Region including Shri G.B.Joshi, the then Regional Director attended the programme.



AMD, Southern Region participated in 103rd Indian Science Congress held at University of Mysore, Mysuru during 3 - 7 January, 2016. Activities of AMD were displayed as part of DAE pavilion. The dignitaries including Dr. R. K. Sinha Former Chairman, AEC and Secretary DAE, Dr. S. Banerjee former Chairman, AEC and Secretary DAE, Dr. S. Sarkar, Project Director, RMP, Mysore, Shri M. S. Nagar, former CMD, IREL visited the AMD stall. Dr. A. K. Rai, the then Director, AMD delivered a lecture on "Mineral Exploration Activities of AMD" in the Earth System Science Section on 5th January, 2016.

Shri O.P.Yadav, Regional Director, Central Region attended the National Science Day Celebrations of National Environment Engineering Research Institute, Nagpur as the Chief Guest and delivered a talk on "Science & Technology Driven Innovations – Make In India".



दीक्षांत समारोह GRADUATION CEREMONY



BARC Training School (BARCTS) – AMD Campus, Hyderabad is engaged in imparting specialised training on the modern exploration methods in geology and geophysics disciplines. The graduation ceremony of the 6th batch of OCES-2015 of BARCTS, was held on 1st August, 2016. 16 Trainee Scientific Officers



(TSOs) (11 in geology discipline and 5 in geophysics discipline) have graduated. Prof. P. Rama Rao, Member, Atomic Energy Commission and former Secretary, Department of Science and Technology, Government of India graced the occasion as the Chief Guest. He awarded the graduation certificates to the graduating officers and Homi Bhabha Medals to the toppers in Geology (**Shri Kshitij Gautam**) and Geophysics (**Shri T. Manoj Kumar**) disciplines. During the occasion, 12 Scientific Officers of OCES-2012 batch were awarded the M.Tech degree from Homi Bhabha National Institute.



Prof. Rama Rao, in his convocation address, stressed the importance of AMD in the Indian Nuclear Power Programme. He highlighted the role of the young geoscientists in the nature of the work of AMD. He welcomed the new TSOs of OCES-2016 (7th batch) consisting of 9 TSOs in geology and 3 TSOs in geophysics disciplines.



निष्पन्नताएँ ACCOMPLISHMENTS



Shri D.V.L.N. Sastry, Scientific Officer-F, Geochronology and Stable Isotope Group, Hyderabad has been awarded Ph.D (2016) in the field of Applied Geochemistry from Osmania University, Hyderabad for the thesis on “Geochronology and geochemistry of the granites of Chandrasekarapuram – Pamuru area, Prakasam district, Andhra Pradesh”.



Shri Raghbendra Thakur, Scientific Officer-E, Chemistry Laboratory, Jamshedpur has acquired Ph.D (2016) Chemistry from Ranchi University, Ranchi for the thesis on “Micelle-mediated extraction of metals and their determination by Spectrophotometry, Fluorimetry, Atomic Absorption Spectrophotometry (Flame as well as GF-AAS) and ICP-AES”

मेडिकल कैंप MEDICAL CAMP

Medical camps were organised at Chenchu Colony, Guntur district, Andhra Pradesh on 21st September, 2016 and Yepal Madhavaram, Nalgonda district, Telangana on 20th September, 2016. More than 70 patients visited the camp for general medical checkup which was attended by Dr. K Ramesh Rao, SO-G. Common diseases were treated.



अंतर्राष्ट्रीय योगा दिवस INTERNATIONAL YOGA DAY

International Yoga Day was conducted on 21st June, 2016 at Headquarters, Hyderabad. Several officers and staff attended the programme.



प्रतिनियुक्तियां DEPUTATIONS

- * **Dr. A. K. Rai**, the then Director, AMD, attended the Consultancy Meeting on UDEPO during 14 - 17 June, 2016 held at IAEA, Vienna.
- * **Dr. A. K. Rai**, the then Director, AMD, attended 53rd joint OECD/NEA-IAEA Uranium Group Meeting during 18 – 21 October, 2016 and Training Workshop on the Evaluation of Undiscovered Uranium Resources during 24 - 28 October, 2016 at Buenos Aires, Argentina.

अंतर्राष्ट्रीय महिला दिवस समारोह INTERNATIONAL WOMEN'S DAY CELEBRATIONS



International Women's Day was celebrated in Headquarters, Hyderabad and Northern Region, New Delhi on 8th March, 2016. All the women officers and staff attended the celebrations with great spirit.

◀ Northern Region, New Delhi ▶ Headquarters, Hyderabad



खेलकूद SPORTS

S/Shri Amit Singh Negi, Work Assistant –A and **Anup Singh Negi**, Work Assistant – A represented the Pushkar team in XXXII Annual DAE Sports Meet 2016 – in Hockey held at IGCAR, Kalpakkam. The team won the trophy of XXXII Inter DAE Hockey Meet.



Shri S.N. Saini, Security Guard, Western Region represented Pushkar athletics team in the XXXII Annual DAE Sports Meet - 2016 held at UCIL, Jaduguda.

Shri Nayeem A. Khan, Security Guard, Hyderabad won the trophy for the best candidate in indoor and outdoor activities and gold medal in the volleyball tournament in the induction training held at ATI, Mumbai during October, 2016. **Shri V. Rajashekhar**, Security Guard, Hyderabad won the bronze medal in javelin throw, shot-put and discus throw events conducted in the induction training.

ट्रेकिंग अभियान TREKKING EXPEDITION

S/Shri Y.V. Seshagri Rao, **C.V.M. Rajaram**, **M. Rajender** and **K. Venugopala Raju** from Headquarters, Hyderabad participated in the 27th Girisanchar – the Annual All India Trekking Expedition conducted by DAE Sports & Cultural Council during 17-21 January, 2016. The trekking was conducted in Wai, Vasawale, Jorwadi, Kshetra Mahabaleshwar, Par and Hatlot, Maharashtra.



S/Shri Rajeeva Ranjan, **Rakesh Kumar Fogat**, **N.K. Attri** and **S. Naveen Kumar**, Northeastern Region, Shillong have completed trekking of the famous David Scott Trail, a 16 km long trekking route from Mawphalang to Ladmawphalang, near Shillong during the month of November 2016.



स्वजन KITH AND KIN

Ms. Tuhina Pandey, daughter of Shri Pradeep Pandey, Deputy Regional Director, Northern Region received Award of Excellence, from NIIT technologies, New Delhi for her excellent contribution in britishairways. com's content management and enhancement realm.



Master Gaurav Sundi, son of Shri B. Sundi, Security Guard, AMD, Eastern Region, studying in X standard in Atomic Energy Central School, Turamdih, has participated in the "All India Inter AECS Badminton Tournament – 2016 for the under 19 boys & girls" organised by Atomic Energy Central School, Kakrapar.

Master Aditya Choudhary son of Shri Sanjay Kumar, Scientific Officer-E Western Region studying in IV standard in Bharatiya Vidya Bhavan Vidyashram, Jaipur has got 1st rank in Rajasthan State, in the National Level Science Talent Search Examination-2016 (NTSE-2016) and 12th rank in Rajasthan Zone in the 9th International Mathematics Olympiad (IMO) for academic year 2015-16.



Ms. Mallepaka Sai Keerthana, daughter of Shri M. Venkateshwarlu, Scientific Officer-E, South Central Region, studying in III standard has won gold medal under sub-junior para-category in 12th National (Para) Taekwondo Championship – 2016 organised by Taekwondo Board of India (TBI) and Kukkiwon-WTH, South Korea.

Ms. Jayasri, daughter of Shri B. Ramanjulu, Driver - Grade (II), South Central Region, studying B. Com 1st year, has got first position in All India Inter University Boxing Competition.



Master K.Vijay, son of Shri M.Kaliappan, Assistant Security Officer, Headquarters, Hyderabad has secured 10 CGPA in X standard CBSE Board examinations conducted in 2016.

Ms. Sai Deepika, daughter of Shri K.S. Prasad, Work Assistant – B, MPG Group, Hyderabad has secured 9.8 CGPA in X standard CBSE Board examinations conducted in 2016.



Ms. Tina Das, daughter of Shri Jagganath Das, Driver Gr-II, Northeastern Region has secured 9.6 CGPA in X standard CBSE board examinations in 2016.

Ms. Ekta Mondal, daughter of Shri Vasudev Mondal, Driver Grade –II, Eastern Region, Jamshedpur represented Jharkhand state in "27th Senior National Tennis Ball Cricket Championship 2016" held at Agra, Uttar Pradesh. Her team won 3rd position in the tournament.



Ms. Kamakhya Ranjan, daughter of Shri Rajeev Ranjan, Scientific Officer-F, Northeastern Region, Shillong Studying in Bhavan's Vidhyalaya, Asthi, Nagpur has secured 10 CGPA in all subjects in Grade-IX Board examinations conducted in 2016.

AMD wishes all the best in their careers. Congratulations

पिकनिक PICNIC



Headquarters: In and around Nagarjuna Sagar on 6th February, 2016.

Eastern Region: Garabande Theme Park, near Telco on 17th January, 2016.



नई भर्तियाँ NEW RECRUITMENTS

वर्ष 2016 के दौरान नए भर्ती/कार्यभार ग्रहण किए निम्नलिखित पदाधिकारियों का पखनि में स्वागत . उनके वृत्ति-विकास के लिए शुभकामनाएँ

Name (Shri/Smt.)	Designation	Name (Shri/Smt.)	Designation	Name (Shri/Smt.)	Designation
Parijat Mishra	SO C	Pintu Karmakar	Work Asst A	Soumen Das	Work Asst A
Adwait Ranjan Nayak	SO C	Shankar Rajak	Work Asst A	Jogdand Krunal Subhash	Work Asst A
Kshitij Gautam	SO C	Krishna Priya Choudhary	Work Asst A	Suman Kumar	Work Asst A
Manash Jyoti Saikia	SO C	Narendra Kumar	Work Asst A	Anthony Joseph	Security Guard
Karuna Kant Tiwari	SO C	Vivek Kumar Singh Bais	Work Asst A	Nayeem Ahemad Khan	Security Guard
Jitesh Ranjan	SO C	Niraj Kumar	Work Asst A	Santosh Kumar	Security Guard
Danish Aftab	SO C	Vijaya Kumar Polireddy	Work Asst A	Ajesh M	Security Guard
Akshay Kumar	SO C	Vallem Dattatreya Reddy	Work Asst A	Saji C	Security Guard
Pooja Tripathi	SO C	Lokesh Sharma	Work Asst A	Nikhel H	Security Guard
Prakash Bedia	SO C	Ashok Kumar Mahato	Work Asst A	Ramesh	Security Guard
Pankaj Das	SO C	Amit Jha	Work Asst A	Gopi Ram Yadav	Security Guard
Karri Rajesh	SO C	Vishwanath S	Work Asst A	Vivek Kumar Singh	Security Guard
Tirumareddi Manojkumar	SO C	Akhilesh Kumar Rai	Work Asst A	Jahood Ali	Security Guard
Dhirendra Nath Yadav	SO C	Balvir Singh	Work Asst A	Omkar Singh	Security Guard
Damodar K	SO C	Pravath Kumar Singh	Work Asst A	Dere Amit Sahebrao	Security Guard
Harshit Agrawal	TO C	Chakrapal Chandra Verma	Work Asst A	Deshmukh Kiran Ramchandra	Security Guard
Pradeep Kumar P	SAB	Patyane Swapnil Pandurang	Work Asst A	Ummadisetty Sreenivasulu	Security Guard
Alpana Kumari	SAB	Manish Kumar	Work Asst A	Virander Kumar Verma	Security Guard
Harendra Kumar Singh	SAB	Veeru Kumar	Work Asst A	Piyush Vig	Security Guard
Rahul Soni	SAB	Binay Kumar Singh	Work Asst A	Vijay Kumar Brijpal Piwal	Security Guard
Ruben K S	SAB	Pradeep Kuddannavar L	Work Asst A	Nakkala Kumara Swamy	Security Guard
Sreeju N	SAB	Deepak Kumar	Work Asst A	Sanjeev Kumar	Security Guard
Rakesh Kr Roy	SAB	Devendra Kumar	Work Asst A	Praveen Kumar M	Security Guard
Dudekula Hussainaiiah	SAB	Nageshwar Rao C	Work Asst A	Raja Shekhar V	Security Guard
Vadlani Rama Raju V V	SAB	Jamnare Ashish Babanrao	Work Asst A	Sunil Singh Bist	Security Guard
Shidhartha Shekhar Dasgupta	SAB	Ujjawal Kumar	Work Asst A	Anurag Singh	Security Guard
Yogendra Kumar Gautam	SAB	Shyam Kumar	Work Asst A	Rohitash Kashana	Security Guard
Amgothu Raju	SAB	Asenla Barkha Ao	Work Asst A	Menda Narasimhamurthy	Security Guard
Yogesh Sankhla	SAB	Amit Kumar	Work Asst A	Lokesh Kumar	Security Guard
Sant Kumar	SAB	Anup Singh Negi	Work Asst A	Sanju Mathur	Security Guard
Raj Kumar	SAB	Amit Singh Negi	Work Asst A	Ganugu Sairamcharanraj	Security Guard
Nasar Shaik	SAB	Vinit Kumar	Work Asst A	Pantham Suryaprakash	Security Guard
Satish Kumar Sharma	SAB	Jagdish Kumar Saw	Work Asst A	Harikrishna Yadav P	Security Guard
Aswathi Sivanand N	SAB	Ajay Kumar Singh	Work Asst A	Somkuwar Ketan Anil	Security Guard
Dileep Kumar Gurjar	ASO (A)	Chandan Kumar	Work Asst A	Sai Kiran P	Security Guard
Naveen Kumar S	ASO (A)	Ghan Shyama Dass	Work Asst A	Ganaesh M	Security Guard
Venkata Prasad P	Pharmacist B	Mukesh Kumar	Work Asst A	Shailendra Kumar	Security Guard
Santhosh Kumar Reddy	Pharmacist B	Sudarshan Paul	Work Asst A	Mohite Sangram Shankar	Security Guard
Deepak S	Technician B	Hullare Sachin Sampat	Work Asst A	Satish Kumar	Security Guard
Ajbaharul Haque	Technician B	Raghavendra Kumar Upadhyay	Work Asst A	Simpo N Marak	Security Guard
Rajasekhar Reddy K	Technician B	Man Singh Bairwa	Work Asst A	Garje Sandip Adinath	Security Guard
Manish Kumar	Technician B	Rajeev Kumar Singh	Work Asst A	Sumit Kumar	Security Guard
Shivaji Rai	Technician B	Abhay Kumar	Work Asst A	Bhaskararao Choudari	Security Guard
Amit Kumar Singh	Technician B	Kanna Sai Kumar	Work Asst A	Hazuruddeen Ali Beg	Security Guard
Aparna Patra	Technician B	Vikash Kumar	Work Asst A	Ampolu Krushna Rao	Security Guard
Rabindranath Karak	Technician B	Parcha Surya Bharath	Work Asst A	Dip Nath Thakur	Security Guard
Pradeep K	Technician B	Robin Kumar Sandilya	Work Asst A	Devarupula Mahesh	Security Guard
Raushan Lal Karn	UDC	Kamal Kishor Pandey	Work Asst A	Titto Antony	Security Guard
Aleembasha S	Work Asst A	Tarannum Bano Zaheer Ahmed	Work Asst A	Sivaramakrishnan P	Security Guard
Dangeti Trimurthulu	Work Asst A	Govind Kumar	Work Asst A	Devishanker Yogi	Security Guard
Balamani M	Work Asst A	Damuluri Prasanth	Work Asst A	Fal Singh	Security Guard
PL Naga Durga	Work Asst A	Bharath Kumar N	Work Asst A	Ramesh Kumar	Security Guard
Baliboina Krishna	Work Asst A	Bhoora Ram	Work Asst A	Velmakanti Veeraswamy	Security Guard
Vinod A	Work Asst A	Raju Bantupalli	Work Asst A	Santhosh Kumar R V	Security Guard
Jetty Appalanaidu	Work Asst A	Sushila Diggi	Work Asst A	Sumanta Dey	Security Guard
Penta Ramana Murthy	Work Asst A	Dinesh N Marak	Work Asst A	Dipankar Gope	Security Guard
Tirupati Rao A	Work Asst A	Amit Kumar	Work Asst A	Raju Lal Gurjar	Security Guard
Bhagya Laxmi C	Work Asst A	Avtar Singh	Work Asst A	Triveni Yadav	Security Guard
Sonar Deepu Ramnayan	Work Asst A	Srikanth A	Work Asst A	Sankabattula Jeevan Kumar	Security Guard
Abhinav Ojha	Work Asst A	Singh Anup Surendra	Work Asst A	Vijayan Nair M	Security Guard
Parsutkar Kishor Babanrao	Work Asst A	Avnish Kumar	Work Asst A	Tanmay Naha	Security Guard
Shiv Shankar Viswakarma	Work Asst A	Yogendra Kumar	Work Asst A	Sandeep	Security Guard
Pradip Prasad	Work Asst A	Naoshad Ahmad Abdul Jaleel	Work Asst A	Gautam Sunar	Security Guard
Amit Kumar	Work Asst A	Gangtore Nilesh Ramdas	Work Asst A	Karri Poli Naidu	Security Guard
Shubam Sharma	Work Asst A	Phanindra Sai Kumar R	Work Asst A	Bhagam Sai Krishna	Security Guard
Prosenjit Ghosh	Work Asst A	Suresh Ram	Work Asst A	Rajesh Sharma	Security Guard

सेवानिवृत्ति SUPERANNUATION

Name (Dr./Shri/Smt)	Designation	Name (Dr./Shri/Smt)	Designation	Name (Dr./Shri/Smt)	Designation
Rai A K	OS	Jagdish Ram	Tech. G	VY Pendam	Driver Gr I
Rajgopal Mohanty	SO H+	Nagesh N	Tech. G	Krishna G C	UDC
Mahendra Kumar K	SO H+	Jaganath Prasad	Tech. G	Sharwan Singh	UDC
Sinha P K	SO H	Basava Raju K S	Tech. G	Yadaiah B	Sr Work Asst A
Israili I H	SO G	Narain Dass Sharma	Tech. G	Sitalram	Head Sec. Guard
Chattopadhyay P S	SO G	Dev Narayan	Tech. G	Desh Raj	Work Asst B
Prabhakara Rao A	SO G	Hans Raj	Tech. G	Balbir Singh	Work Asst B
Ravindranath	SO G	Sukalu Ram Kunjam	Tech. G	Pritam Chand	Work Asst B
Nagendra Babu G	SO G	Pritam Das Lahare	Tech. G	Bharathi T	Work Asst B
Ved Prakash	SO F	Sahu P L	Tech. G	Khoru Ram Sahu	Sr Sec. Guard
Shinde M G	SO E	Lal Chand	Tech. G	Raghunath Sharma	Sr Sec. Guard
Das Pratap Kumar	SO E	Vishnu Murthy P	Tech. G	Chhoto Hansda	Sr Sec. Guard
Maurya, Inderjit	SO E	Viswanath Nai	Tech. G	Banshi Lal	Sr Sec. Guard
Laxman Rao A S	CA & AO	Trinatha Rao G	Asst. Acctt.	Tambe S T	Sr Sec. Guard
Bhanuchandar Rao D V	Sr Tech. J	Babu Lal Pareek	Tech. F	Vidyadharan R	Sr Sec. Guard
Anand Kumar K	Sr Tech. J	Balak Ram Koreti	Tech. F	Goghnath Ram	Sr Sec. Guard
Sreekumaran Nair K	Sr Tech. H	Dharmik R P	Tech. F	Daljeet Singh	Security Guard
Ram Bilas Pandit	Sr Tech. H	Gian Chand	Tech. F	Ranjit Singh	Security Guard
Sudarshan Ram Sahu	Sr Tech. H	Piar Chand	Tech. F	Budh Ram	Security Guard
Manohar M	Sr Tech. H	Giridharilal	Tech. F	Siddaiah	Security Guard
Lalitha V	Sr Tech. H	Pratap Kumar Limboo	ASO (B)	Nakul Chandra Parmanik	Security Guard
Ravinder N	Sr Tech. H	Mallesh K	Senior Clerk		
Ramaswamy P	Sr Tech. H	Faghuram	Tech. D		
Bandyopadhyay S	Sr Tech. H	Bhagat Ram	Tech. D		
Goel Y K	Sr Tech. H	Ajit Singh	Tech. D		
Bhowmick D K	Sr Tech. H	Govind Singh	Tech. B		
Muchhal A K	AAO/SPO	Ramegowda P	Driver Gr I	Srinivasa Rao J	SO G
Kalwe N S	AAO/SPO	Ambilkar M M	Driver Gr I	Shaibal Gupta	SO F

स्वैच्छिक सेवानिवृत्ति

VOLUNTARY RETIREMENT

मंगलमय सेवानिवृत्त जीवन की हार्दिक शुभकामनाओं के साथ

श्रद्धांजलि OBITUARY

Name (Dr./Shri/Smt)	Designation	Name (Dr./Shri/Smt)	Designation	Name (Dr./Shri/Smt)	Designation
Uma Sankar V	SO E	Anthony Khongsit	Driver Gr II	Gurraiah G	Work Asst B
Ram Singh	Sr Technician H	Daulat Ram	Work Asst C	Sadan D Shira	Sr Sec. Guard
Syed Zahid Ali	Technician F	Bhanja Majhi	Work Asst B	Mahesh Ram	Security Guard
Vishwanath V	Steno Gr I	Mikhil Kujur	Work Asst B	Seshadri S	Cook
Phanidhar Kalitha	Driver Gr II	Jagat Ram	Work Asst B		

हम दिवंगत आत्मा की शांति के लिए प्रार्थना करते हैं

परमाणु खनिज अन्वेषण एवं अनुसंधान निदेशालय

1-10-153-156, बेगमपेट, हैदराबाद - 500 016

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(मात्र निजी परिचालन हेतु)

