

**Minutes of the 1<sup>st</sup> meeting of CGPB- Committee Group IX Geoscientific Investigations, held on 29<sup>th</sup> & 30<sup>th</sup> June, 2009 in the Conference Room of V.K.S. Vardan Auditorium, GSI, Lucknow**

The 1<sup>st</sup> meeting of the reconstituted Central Geological Programming Board (CGPB), - Committee Group-IX on Geoscientific Investigations (geotechnical investigations, natural hazards, climate change, environmental geology, shallow subsurface geology and subsurface hydrology) was held on 29<sup>th</sup> & 30<sup>th</sup> June, 2009 at the conference room of the V. K. S. Vardan Auditorium in the Vasundhara Complex of the Geological Survey of India, Northern Region, Lucknow under the Chairmanship of Shri R.P.S. Chauhan, Dy. Director General, Op. Jammu & Kashmir and Co Chairmanship of Shri Sumant Gupta, Dy. Director General, Op. U.P. & Uttarakhand, Geological Survey of India, Lucknow.

Following members, invitees and officials of the GSI NR, Lucknow attended the meeting:

Shri R.P.S. Chauhan	Dy. Director General	Op. Jammu & Kashmir, GSI, NR, Jammu
Shri Sumant Gupta	Dy. Director General,	Operation U.P. & Uttarakhand, GSI, Lucknow
Dr. S.K. Wadhawan,	Director Monitoring	GSI, Kolkata
Shri M. Raju	Director Monitoring	GSI, Kolkata.
Shri Harsh Gupta,	Director & Member Secretary	Earthquake Geol. Div., GSI, NR, Lucknow
Shri V.C. Srivastava	Director	Tech. Coordination -I, GSI, NR. Lucknow
Shri N.H. Faruqi,	Director	Env. GSI, NR, Lucknow
Dr. P.C. Nawani	Director	NIRM,, Kolar, Karnataka
Shri C.V. Sangewar	Director	Glaciology Division, GSI, NR. Lucknow
Shri V.N. Parcheta	Director (G.C)	Chemical Division, GSI, NR. Lucknow
Shri A.K. Johari	Director	Drilling Division, GSI, NR. Lucknow
Shri K.A.K. Srivastava,	Director	Geophysics Division, GSI, NR. Lucknow
Shri Anwar Hakim	Director	Geophysics Division, GSI, NR. Lucknow
Shri H.P. Mishra	Director	Geophysics Division, GSI, NR. Lucknow
Shri Kumud Sharma	Director	E. G. Div., UP&UK, GSI, NR. Lucknow
Shri G.K. Gupta,	Director	Geoinformatics, Op. UP & UK, GSI, Lucknow
Dr. Alok Kumar	Director	Mineral Physics, GSI, NR. Lucknow
Shri S. Swaroop	Director	GCM Project, Op. UP & UK, GSI, Lucknow
Dr. R.K. Singh	Scientist	Central Pollution Control Board
Dr. A.K. Shukla	Director	EREC, IMD, New Delhi
Shri Abrar Hussain	Regional Director	CGWB, Lucknow
Shri Praveen Khandelwal	Chief Engineer	NTPC Ltd. Noida
Shri N. K. Agarwal,	Director	Project Engg. Geol., GSI, NR, Dehradun
Shri Mulkraj	Director	Project Engg. Geol., GSI, WR, Jaipur
Shri Shekhar Sarkar	Director	Project Engg. Geol., GSI, CR, Pune
Shri Om kumar	Director	Earthquake Geol. Div, GSI, SR, Hyderabad
Shri A.K. Chatterjee	Director	Earthquake Geol. Div, GSI, CR, Nagpur
Shri A.K. Saha	Director	Earthquake Geol. Div, GSI, ER, Kolkata
Shri R. L. Shahu	Director	Project Engg. Geol., GSI, CR, Bhopal
Dr. Kiron Mazumdar	Geologist (Sr.)	Earthquake Geol. Divn. GSI, NER, Guwahati
Shri K.C. Joshi	Geologist (Sr.)	Earthquake Geol. Divn. GSI, NR. Lucknow
Shri R.J. Singh	Geologist (Sr.)	Earthquake Geol. Divn. GSI, NR. Lucknow
Shri G.C. Kandpal,	Geologist (Sr.)	Earthquake Geol. Divn. GSI, NR. Lucknow
Shri Ashok Kumar	Geologist (Sr.)	Project: Engg. Geol. GSI, NR. Lucknow

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Shri V.S. Yadav	Geologist (Sr.)	Project: Engg. Geol.GSI,NR. Lucknow
Shri V. K. Sharma	Geologist (Sr.)	Project: Landslide Hazard Studies,
Shri S.K.Kar	Geologist (Sr.)	Tech.Coord.Op UP&UK , GSI, NR. Lucknow
Shri Vikram Rai	Geologist (Sr.)	Tech. Coordination -I , GSI, NR. Lucknow
Shri Alok Kumar	Geologist (Jr.)	Petrology Division, GSI,NR. Lucknow
Shri Prem Prakash	Geologist (Jr.)	Tech. Coordination Divn. -II., NR, Lucknow
Shri Rajnish Misra	Astt. Geologist	Earthquake Geology Divn. GSI, NR. Lucknow

Shri Harsh Gupta, Member Secretary, Director Earthquake Geol.Divn. GSI, NR. Lucknow welcomed the members of the Committee.

- 1.0 At the outset, Shri R.P.S. Chauhan Dy. Director General Op. Jammu & Kashmir, GSI, NR, Jammu & the Chairman of the Committee expressed serious concern over the thin attendance of the members especially from representatives from different organizations, who had been repeatedly and painstakingly invited by the organizers. He said that idea of having CGPB committee meeting twice a year has been mooted to get the opportunity more than once a year to put our heads together to evolve a common programme, and possibly also to undertake a course correction, if needed, for a systematic scientific pursuit in various geoscientific fields falling in the gamut of Environmental Geology & Natural Hazard by various Government and Non Government Organisations. He added that this exercise is also an attempt to ensure that there is no repetition or overlapping of programmes.
- 2.0 Followed by the opening remarks by the Chairman, members introduced themselves.
- 3.0 Dr. S.K. Wadhawan, Director Monitoring GSI, made a presentation on the terms of reference of the revamped committee and thrust areas of considerations (eg. PM Committee on Climate Change).
- 4.0 During his presentation he advised member secretary that detailed/comprehensive letters on aim and scope on the newly constituted Committee, informing terms of reference be sent to all members. He also advised that help from the DDGs & all HODs be sought to encourage full participation from the GSI.

### **Confirmation of the minutes**

- 5.0 Minutes of the 7<sup>th</sup> meeting held on 23<sup>rd</sup> December 2008 were placed before the House. The house confirmed the minutes unanimously.

### **Follow up action on the recommendations of the 7<sup>th</sup> meeting.**

- 6.0 Dr. A.K. Shukla, Director, IMD thanked GSI for providing geological map on 1:10,000 scale of NCT area, Delhi, which will be a basic input for the preparation of seismic microzonation map of Delhi by the IMD. He then requested for the digital copy of the said map. Shri A.K. Malviya, Director, TC, Op: P,H&HP informed that permission to hand over digital map has been sought from the Director General, GSI., which is awaited. Regarding para 4.0.3 Dr. Wadhawan clarified that he had requested to make available only the list of the last 5 years report and not the reports of the investigations on the natural hazards.  
(Action: Directors of Earthquake and Landslide Hazards of all regions)
- 7.0 Regarding para 5.1 Concerning investigation of As pollution (in the absence of any representation from the UP Jal Nigam), CGWB, Lucknow raised certain problems being faced during the As analysis. Dr.G.C. Srivastava, Director, Geochemistry, NR, GSI, Lucknow suggested to modify procedure of collection of water samples currently being followed.
- 8.0 Chairman advised Director, Chemical Division, NR, Lucknow to prepare and submit a write-up on veracity of different techniques being used for sampling and testing of Arsenic in groundwater/ sediments and suggested that analytical tests should also be carried out for same water samples at time intervals for checking accuracy/ rate of quality deterioration/ chemical changes. Chairman also advised Shri Faruqui, to prepare a comprehensive write up on Arsenic

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pollution in ground water of UP.

*(Action: Director Chemical Division Nr and Sh.N.H.Faruqi, Director Env. Geol. Divn. GSI, NR)*

9. Regarding para 5.4.1 Dr. R.K. Singh, Scientist, Central Pollution Control Board informed that proposal for collaboration with GSI for the study in Panki area (Kanpur) has been sent to the Department of Forest & Environment for clearance.

### **Review of the work done**

10. Dr. P. C. Nawani (NIRM) made a detailed presentation of the areas of the activity / projects undertaken by the Institute.

Dr. Nawani enumerated the areas where NIRM can collaborate with GSI

- a. In training programmes / courses on 'Engineering Geology / Geotechnical Studies' being organized by the GSI with a focus on Rock Mechanics.
  - b. In Geotechnical Laboratory studies during DPR stage.
  - c. Geotechnical insitu testing during DPR stage.
  - d. Dimensional stone technology. GSI during geological investigation will identify the potential dimensional stone deposits and NIRM can help in providing testing facilities. A comprehensive report can be made by two organizations.
  - e. In landslide monitoring by Slope Stability Radar, Accoustic Emission and Microseismic methods.
  - f. In case of DPR preparation of River Linking Projects, GSI can go for geological investigations and NIRM can go for geotechnical Lab or insitu testing.
11. Chairman advised Dr. Nawani to avoid duplication of works being carried out by GSI. Dr. Nawani informed that NIRM has taken up projects in Alaknanda valley, where GSI had expressed unwillingness due to lack of personnel.

*(Action : Member Secretary)*

12. Dr. R.K. Singh, scientist, Central Pollution Control Board presented the activities of his organization. *He also referred to the proposal for collaboration with GSI for carrying out studies in Panki (Kanpur) and also expressed desire to have another collaborative project with GSI for the study of dispersal of highly toxic solid waste in Chinhata area in Lucknow.*

13. *Chairman also advised him to provide list of last 10 years reports of their department, which he readily agreed.* *(Action: Dr.R.K.Singh, CPCB)*

14. Dr. A.K. Shukla, Director, IMD thanked GSI for the preparation of geological map on 1:10,000 scale of Delhi, which will be a basic input for the preparation of seismic microzonation map of Delhi by the IMD.

15. *Chairman advised Dr. Shukla to provide a list of at least 5 cities, which they intend to take up on priority and also to provide list of last 10 years reports of their department.*

*(Action: Dr.A.K.Shukla, IMD)*

16. Dr. Abrar Hussain, CGWB, Lucknow presented a detailed account of activities of CGWB.

*Dr. Wadhawan, asked whether there was any proposal from CGWB to collaborate with GSI, he informed that he would discuss this matter with the authorities at the Central HQs.*

17. *He was requested to provide the list of last 10 years reports of their department.*

*(Action: Dr.Hussain, CGWB, Lucknow)*

18. Mr.Praveen Khandelwal, Design Chief Engineer, NTPC told that due to short gestation period, required for setting up a thermal power plant, geotechnical investigations in a limited time-frame are warranted. He further inquired on the possible collaboration with the GSI. He

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was, however, explained that GSI had already undertaken the geotechnical investigations of Meja Thermal Power Plant in eastern U.P. Under MOU with NTPC, and the same was completed in time. However, he was also informed that any geotechnical investigation takes its own time as per the requirement of the job.

19. Chairman advised the members to submit a Five Year Rolling Plan of activities and programmes in their respective departments/ organizations for assigning priorities.

*( Action all Directors concerned)*

20. Mr. Mulk Raj, Director, Environmental Geology Division, WR, GSI, Jaipur made a presentation of the work being carried out by the Division.

21. Shri N.H. Faruqui, Director, Environmental Geology Division, NR, GSI presented the work pertaining to geoenvironmental studies in Huzurpur Block of Bahraich district

22. Dr. Lokendra Ravi, Director, Environmental Geology Division, ER, GSI presented the work done

23. Dr. Kiron Majumdar, Geologist (Sr) presented the work carried out by the, Environmental Geology Division, GSI, NER, Manipur and highlighted the geoenvironmental appraisal of Imphal valley, especially with respect to Arsenic concentration. He also presented the work carried out by the Landslide Hazard Zonation Project, GSI, NER, and Earthquake Geology Division, NER, GSI, Shillong highlighting the Active Fault studies along foothills of Assam- Bhutan Himalaya, Kokrajhar district, Assam.

24. Mr. Shekhar Sarkar Director, Project Landslide, CR, Op: Maharashtra, GSI presented the work done as well as proposed, which included 'Inventory of Landslides occurring along Ghat roads of Ratnagiri and Raigad districts, to be taken up FS 2009-10. Mr Sarkar was asked to keep the requirements of 'Biodiversity Action Plan' in considerations while working on the inventory of landslide.

25. Shri. N.K. Agarwal, Director, Op: UP & Uttarakhand, Dehradun gave a detailed account of the various landslides projects being undertaken by EG-2 Division in his presentation.

He pointed out that working on enlarged toposheet does not serve the purpose of producing a map on larger scale and therefore is a limitation for the work. He also suggested that the inventory of landslides need to mention whether the particular slide is in the vicinity of any road, as this could indicate whether the slide is natural or anthropogenic.

26. Dr. Wadhawan requested the Directors of Landslide and Engineering Geology Divisions to interact more with the State Government Departments and also to invite them to this forum/meeting.

27. Mr. V.K. Sharma, Geologist Sr., representing the Director Project Landslide Hazard Zonation, NR, Lucknow gave an account of the type of work along with brief outlines of the items.

28. Mr. A.K. Saha, Director, Earthquake Geology Division, ER, Kolkata gave a brief account of the 'Monitoring of the 9 mile slide' being carried out by the Sikkim Unit, Gangtok and also the work done by the EG Div., ER, Kolkata.

29. Dr. C.V. Sangewar, Director, Glaciology Division, NR, GSI made a presentation of outline of

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the field items carried out as well as those proposed. He pointed out that for the climate change studies Geomorphological Map of UP was needed. He emphasized that for 'Climate Change' studies, the geomorphological studies undertaken by the GSI will form the baseline data in identifying / developing the areas for sustainable development and in adopting various mitigation measures. If need be, compilations may be undertaken and "geomorphological map of U.P. may be prepared at the earliest. Similarly, environmental studies should be taken care of.

30. Mr. B.K. Bisaria, Director, informed that the Geological map of U.P. On 1:2,50,000 ( District Resource Maps) prepared by GSI comprises geomorphological features also.

31. In reply to Dr. Sangewar's query for creation of facilities in GSI, Dr. Wadhawan clarified that, there were different divisions/ wings, such as Marine Wing, Quaternary Division, etc. within GSI, to collate the data being generated and, therefore, there is no need for creating fresh facilities.

32. On a query, Dr. Sangewar informed that different generations of moraine maps were available with GSI. He was then asked to make a list of the 'Hydrograph Stations' that could be sent to IMD, which, in turn, would be helpful in interpreting data relevant to change in glacier melt over a long period.

(Action: Dr. C.V. Sangewar, Director Glaciology Divn. GSI, NR.)

33. S.S. Srivastava, Director, PGRS Division, ER, Kolkata presented a study on sea level changes over a period of more than two last decades. *Significantly, his conclusions indicated that over the period of study there was a negative change in the sea level in his area of study, which was not far off from the Sundarban area.*

34. Sri Om Kumar, Director, Earthquake Geology Division, Hyderabad highlighted the seismic microzonation of the Chennai City.

35. Sri A.K. Chatterjee, Director, Earthquake Geology Division, CR, Nagpur presented the work done by the Division.

36. Mr. A.K. Saha, Director, Earthquake Geology Division, ER, Kolkata gave a brief account of the DGPS monitoring being carried out at the Andamans and the Active Fault Studies in Northern part of W. Bengal. He pointed out that the practice of taking observations twice a year by the DGPS is not giving any different results. He was, therefore, of the opinion that the data may be collected once a year only (preferably in the month of January), when there is less of moisture.

37. Shri Harsh Gupta, Director, Earthquake Geology Division, & Member Secretary presented the work that has been carried out by the Earthquake Geology Division, GSI, NR including the Active Fault Studies along Ropar Tear, Ravi Tear and the Seismic Microzonation of Jammu Urban Agglomerate. Additionally, he also discussed about the FSP proposals including Seismic Microzonation of Jullundhar, Amritsar, Gorakhpur and Ambala cities. He also made a presentation of the Five Year Rolling Plan for the Earthquake Geology Division Lucknow.

38. Dr. S.K. Wadhawan informed that in the project for the compilation of the earthquake reports, all the reports being compiled needed to be accompanied by a summary.

39. Shri R.L. Sahu, Director, GSI, Bhopal presented the work carried out by the EG Divisions of Central Region.

40. Shri Mulkraj, Director, WR, Jaipur briefly presented the work carried out by EG Division.

41. Shri N.K. Agarwal, Director, NR, Dehradun briefly presented the work carried out by EG Division - II.

42. Shri Kumud Sharma, Director, Op: UP & Uttarakhand, Lucknow presented in detail the work

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carried out by EG Division.

43. It was suggested that a new policy for rates, i.e. schedule of costs for different activities of Geological Survey of India, should include the work carried out at the Headquarters along with that done in the field for the sponsored projects may be formed.
44. Shri V.S. Yadav, Geologist (Sr), representing Director, E.G. NR, presented the work carried out by the Project Engineering Geology, NR, GSI, Lucknow.
45. Dr. S.K. Wadhawan, Director (Monitoring) and Shri M. Raju, Director (Monitoring) GSI, Kolkata proposed to constitute following Subgroups for specialized subjects and hold meeting with specialized agenda:
  - a. Landslides and Slope stability hazards and geotechnical investigations**
  - b. Glaciology investigations in India**
  - c. Quaternary shallow subsurface geology, Environmental Geology and Seismo-tectonic Geoscientific Investigations**Dr. Wadhawan said that the Committee has recommended that GSI should take up Seismic Micro-Zonation studies of Patna City and Jalandhar City on priority basis as they fall under Seismic Zone IV and have over half million population.
46. Shri Harsh Gupta, Member Secretary summed up the proceedings
47. The meeting ended with a Vote of Thanks proposed by Shri V.C. Srivastava, Director, Technical Coordination, GSI, NR, Lucknow.

