GOVERNMENT OF INDIA
MINISTRY OF MINES
*******

No.14/9/2007 – Metal IV

Delhi, the 3rd October 2007.

To

1. Secretary,
   Ministry of Science & Technology,
   Technology Bhawan, New Mehrauli Road, New Delhi-110016

2. Shri L.P. Sonkar, Advisor (Minerals),
   Planning Commission,
   Yojana Bhavan,
   Sansad Marg, New Delhi.

3. The Director General,
   Geological Survey of India
   27, Jawaharlal Nehru Road,
   Kolkata – 700 019.

4. Shri C.P. Ambesh,
   The Controller General,
   Indian Bureau of Mines,
   Indira Bhawan, Civil Lines, Nagpur – 440 001.

5. The Director,
   Defence Metallurgical Research Laboratory,
   P. O. Kanchan Bagh,
   Hyderabad.

6. The Director (Material Group),
   Bhabha Atomic Research Laboratory,
   Trombe,
   Mumbai – 450 085.

7. The Chairman & MD,
   National Aluminium Company Limited,
   NALCO Bhavan, P-2, Nayapalli,
   Bhubaneswar 751 007.

8. The Director,
   Regional Research Laboratory,
   Near Habibganj Naka,
   Bhopal

9. Dr. B.B. Dhar,
   Former Director, CMRI,
   D -20, Pamposh Enclave,

10. Dr. Pradip,
    Group Head,
    Tata Research Development & Design Centre,
    54B Hadapsar Industrial Estate, Pune – 411 013.

11. Dr. K. Balasubrahmanian,
    Director,
    Non-Ferrous Material & Technology Development Centre,
    Kanchan Bagh, Hyderabad.

12. Dr. R.N. Gupta,
    Ex. Director, NIRM,
    C002 Gopalan,
    Celestian Greens, Old Madras Road,
    Post Office, C.V.Raman Nagar,
    Bangalore – 560093.

13. The Director, JNARDDC, Nagpur.

Subject: Minutes of the 36th meeting of the Standing Scientific Advisory Group
[SSAG].

Sir,

I am directed to forward herewith a copy of the Minutes of the 36th meeting of the
Standing Scientific Advisory Group [SSAG] held on 01.08.2007 under the Chairmanship
of Secretary, Ministry of Mines for information and necessary action.

Yours faithfully,

( Dr. K. Ayyasami )
Director(T) & Member Secretary
Tel. 2338 4592

Encl. as above.
Copy along with a copy of minutes for information and necessary action to:-

1. Prof. B.K. Mishra, Director, Regional Research Laboratory, **Bhubaneswar – 751 013**.
2. Dr. S.S. Rathore, Associate Professor & Head, Department of Mining Engineering, College of Technology & Engineering, Maharana Pratap University of Agriculture & Technology, **Udaipur (Rajasthan)**.
3. Dr. A.K. Chakraborty, Scientist-in-charge, Central Mining Research Institute [CMRI], Regional Centre, 3rd Floor, MECL Building, Seminary Hills, **Nagpur – 440 006**.
4. Dr. R.P. Singh, Scientist E1, Central Institute of Mining & Fuel Research [CIMFR], 3rd Floor, MECL Building, Seminary Hills, **Nagpur – 440 006**.
5. Shri Pinaki Sengupta, Scientist “F” & Head, Material Science Division, Regional Research Laboratory, **Jorhat – 785 006 (Assam)**.
6. Dr. O.P. Pandey, Assistant Professor, School of Physics & Material Science, Thapar Institute of Engineering & Technology, Post Box No.32, **Patiala – 147004 (Punjab)**.
7. Dr. Kulvir Singh, Assistant Prof., School of Physics & Material Science, Thapar Institute of Engineering & Technology, Post Box No.32, **Patiala – 147 004**.
8. Shri P.K. Rautray, Deputy General Manager, NALCO, NALCO Bhawan, P-2, Nayapalli, **Bhubaneswar – 751 007**.
9. Shri M.K.B. Nair, General Manager(R&D), NALCO, **Bhubaneswar – 751 007**.
10. Shri A.K. Mathur, Director, Geological Survey of India, **New Delhi**.
11. Dr. (Mrs.) Malini Goyal, Advisor & Scientist, Ministry of Science & Technology, Technology Bhawan, New Mehrauli Road, **New Delhi – 110 016**.
12. Dr. S. Das, Scientist (F) & Head, Metallic Composite Group, Regional Research Laboratory, Hoshangabad Road, Near Habibganj Naka, **Bhopal – 462 026**.
13. Shri C.S. Gundewar, Chief Ore Dressing Officer, Indian Bureau of Mines, Indira Bhawan, Civil Lines, **Nagpur – 440 006**.
14. Shri V.N.S.U., Visvanath, Scientist, JNARDDC, **Nagpur**.
15. Shri Saktivel, Scientist, JNARDDC, **Nagpur**.
16. Shri R.S. Mishra, Scientist IV, JNARDDC, **Nagpur**.
17. Shri A. Agnihotri, Scientist IV, JNARDDC, **Nagpur**.

( Dr. K. Ayyasami )

Director(T) & Member Secretary

Copy also for information to:-

(i) Sr. PPS to Secretary (M) (ii) PPS to Special Secretary (M) (iii) PS to JS&FA, MOM (iv) Director(T) (v) Shri K.P. Lall, Ex. Advisor (TPCC) (vi) Shri A.K. Bhandari, Advisor (TPCC).
Government of India  
Ministry of Mines  

MINUTES OF THE 36th MEETING OF THE STANDING SCIENTIFIC ADVISORY GROUP (SSAG) HELD ON 1st AUGUST 2007 IN THE CHAMBER OF SECRETARY, MINISTRY OF MINES

The list of participants is placed at Annexure.

2.0 The Chairman welcomed all the members and participants to the SSAG meeting. In his opening remarks, the Chairman remarked that the meeting of SSAG had been convened after a long time of two years. The 35th meeting of SSAG was held on 29th August, 2005. The Chairman desired to know the action taken report on the Project Evaluation & Review Committee (PERC). The SSAG committee should discuss the new projects, review the completed ones and identify the gaps in the process and suggest remedies. K. Ayyasami, Advisor, TPPC initiated the discussions and agenda items were taken up for discussion.

3.0 Agenda item No.1: Ratification of the minutes of the 1st Project Evaluation & Review Committee (PERC).
The matter is outside the purview of SSAG and not discussed.

4.0 Agenda item No.2: Approval and sanction of the grant for new S&T projects recommended by the 2nd PERC.

Agenda item 2(A):

Project title
Characterization, beneficiation and utility study of some Graphite deposits from Arunachal Pradesh – North-East Institute of Science & Tecnology (NEIST), Jorhat 785006, Assam (formerly Regional Research Laboratory, Jorhat).

Sri. P. Sengupta, Deputy Director and Head, NEIST presented the project in which the characterization, beneficiation and utilization aspects of graphite deposits from Arunachal Pradesh would be investigated. Although graphite occurred in three districts (Subansiri, Siang and Lohit) of Arunachal Pradesh, the present the investigation would be limited to deposits belonging to Subansiri district only. Mr. Sengupta informed that the standard techniques of investigation would be employed for characterization, beneficiation and utility study.

The objectives of the investigation are –

1. Chemical and mineralogical characterization of some potential Graphite deposits of La-Lamdak (Bopi) and Taliha, Arunachal Pradesh,
2. Beneficiation study of the materials by known techniques
3. Determination of suitability of the products for using in various industries
During the discussion, the Chairman wanted clarification on three aspects –

1. Techniques used for characterization, beneficiation and utility study
2. Industries, where graphite is used and potentiality in Arunachal Pradesh
3. Mineralogical/geological characteristics of the deposits

Sri. Sengupta clarified the points by explaining various techniques to be used and by listing out various industries where graphite was used. It was also mentioned that the study would generate techniques and data base which then could be utilized for implementation in industrially backward state like Arunachal Pradesh. Presently in Arunachal Pradesh, some industries have been operating for producing coke from coal. They may be approached in future for taking up the developed technologies based on graphite.

Clarification during the presentation was sought on the monitoring of the project, interim report, yearly progress report, work schedule and milestone etc. Sri. Sengupta provided the information as set out in the project proposal. Sri. Sengupta further informed that the project will be monitored periodically by the Project Monitoring & Evaluation cell headed by Director of NEIST, Jorhat and by the Research Council of NEIST, Jorhat as per normal procedure of CSIR laboratories. Additionally, it may be monitored by the monitoring committee of the ministry formed specifically for the purpose.

Dr. Pradeep Kumar, Special Secretary, asked about the need of the study as industries already existed using other graphite deposits like Orissa graphite deposits, etc. Mr. Sengupta informed that no work regarding characterization, beneficiation and utilisation of Arunachal Pradesh graphite was conducted till date by other agencies.

The Chairman opined that the different types of occurrences of graphite needed different methods of scientific study including basic techniques and laboratory work.

The committee opined that the project merits support from the ministry with a grant-in-aid of Rs. 26.30 lakhs (Capital expenditure Rs. 13.00 lakhs + Recurring expenditure Rs. 13.30 lakhs) for a duration of 3 (three) years from the zero date.

Agenda item 2(B):

Project title

Preparation of Strontium Hexa-Ferrite powders from celestite ore and blue dust – Thaper Institute of Engineering & Technology, Patiala, Punjab.

Dr. O. P. Pandey presented the objectives and the nature of technical work to be done. Dr. Pradeep Kumar, Special Secretary (Mines) asked Dr. Pandey to explain how this proposal would be beneficial to society. Dr. Pandey replied that Strontium had better magnetic property and the Small Scale Industries would be the users. During presentation Dr. Pandey mentioned the processes to achieve strontium oxide for its subsequent use in preparation of strontium hexaferrite, Dr. K. Balasubramanian, Director, NFTDC, Hyderabad (Member) and Dr. A. K. Suri,
Director, Materials Group, BARC, Mumbai (Member) asked if there is a programme for extraction of metal Strontium from this process. Dr. Balasubramanian mentioned that it would be better first to develop a proper flow sheet for the extraction of strontium from the ore. It was suggested that there was an urgent need to have a process flow sheet for the extraction of strontium as country did not have such flow sheet giving details of products, byproducts and waste materials. Since the process of development required mega projects where the involvement of several units was required, it was suggested to invite proposals separately. There was a discussion on chemico-mechanical process involved in this presented proposal. The Chairman asked as to how the proposer intended to spread the message of the results to the public and whether the findings would be used in real-life applications. After a detailed discussion, the committee approved the proposal.

Funding from MoM was kept at Rs. 16.88 lakhs with Rs. 7.00 lakhs for capital and Rs. 9.88 lakhs towards recurring expenditure respectively for a duration of 3 years (36 months) from the zero date.

5.0 The following proposals will be considered in the next SSAG meeting as the proposers did not attend the meeting for presentation before the Committee:

1. Feasibility and application of Bio-fuel as well as low cost and diluted ANFO (Ammonium Nitrate Fuel Oil) for cost effective and safe blasting practices in Open Cast Metalliferous Mines in India by CIMFR, Nagpur
2. Development of underground stoping method for soapstone mining in Rajasthan by Department of Engineering, College of Technology and Engineering, Udaipur, Rajasthan
3. Characterization and dry beneficiation studies to enrich the Nickel content from the waste lateritic Nickel bearing chromite overburden material of Sukinda, Orissa – Regional Research Laboratory, Bhubaneswar

6.0 The following projects were submitted by the Indian Bureau of Mines (IBM), Nagpur and the Chairman observed that the IBM might fund these proposals from its own budget.

1. Recovery of Ilmenite, Rutile, Zircon, Sillimanite and Garnet from beach sand
2. Beneficiation of China Clay from West Bengal

The meeting ended with a vote of thanks to the Chair.
ANNEXURE

List of participants in the 36th Meeting of the SSAG held on 1st August, 2007.

1. Sri. J. P. Singh, Secretary (Mines) – In the Chair
2. Dr. Pradeep Kumar, Special Secretary (Mines)
3. Sri. Sanjiv Mittal, JS&FA
4. Dr. J. Mukhopadadhyay, Director, JNARDDC, Nagpur
5. Sri. P. K. Rautray, DGM, NALCO
6. Sri. M. K. B. Nair, GM(R&D), NALCO
7. Sri. A. K. Mathur, Director, GSI, New Delhi
8. Sri. L. P. Sonkar, Advisor, Planning Commission, New Delhi
9. Dr. Malti Goel, Advisor & Scientist, Min. Sci. & Tech., New Delhi
10. Sri. S. Das, Scientist F, AMPRI, Bhopal
11. Dr. R. P. Singh, Scientist E1, CIMFR
12. Prof. B. B. Dhar, Former Director, CMRI
13. Prof. R. N. Gupta, Former Director, NIRM
14. Dr. A. K. Suri, Director, Materials Group, BARC, Mumbai
15. Dr. K. Balasubramanian, Director, NFTDC, Hyderabad
16. Dr. K. Ayyasami, Director (Tech.), MOM & Advisor (TPPC) – Convener
17. Dr. O. P. Pandey, Prof. & Head, Thapar University, Patiala
18. Dr. Kulvir Singh, Assistant Prof., Thapar University, Patiala
19. Sri. C. S. Gundewar, Chief Ore Dressing Officer, IBM
20. Sri. P. Sungupta, Scientist F, RRL, Jorhat
21. Sri. V.N.S.U. Viswanath, Scientist I, JNARDDC
22. Sri. Saktivel, Scientist I, JNARDDC
23. Sri. R. S. Mishra, Scientist IV, JNARDDC
24. Sri. A. Agnihotri, Scientist IV, JNARDDC, Nagpur