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Director

Government of India
Department of Atomic Energy
Construction & Services Group

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No.C&SG/DIR/PA/18/11621

October 19, 1989

Sub: Molecular Biology Laboratory at TIFR

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Dear Shri Sankaranarayanan,

Kindly refer to the discussion the undersigned and our Engineers S/Shri H.K. Rajanna and J.S. Aurora had with you as well as Prof. Sidheque and Prof. Tripathi of TIFR on 29.9.1989, regarding the improvements to be made in the existing Molecular Biology Laboratory occupied by the Users in the first and second floors of B. Block.

During the discussion, Prof. Sidheque mentioned that the existing Molecular Biology area is unsuitable for their R & D works in view of the fungus growth, excessive humidity, several electrical fires, extensive leakage of water in the false ceiling, inadequate services connection for gas, compressed air etc. It was also stated that the Laboratory areas are not suitable with respect to Radiation, Biological and fire safety. In addition, it was also reported that rodents enter the services areas and cause extensive damage. The vibration levels in the Lab room area are also very high, more than 20 to 30 microns, and that they would require this vibration level to be reduced to 1 micron to facilitate their R & D Works.

During discussion Prof. Sidheque also furnished an estimate sent by Shri Kulkarni, TSD, BARC during June/July 1988 indicating the expenditure to be incurred with respect to modifications to the airconditioning system, additional power connections and civil works to be executed in the Lab. The report furnished by Prof. Sidheque was discussed. Director, C & S Group stated as under.

1) With respect to maintaining the temperatures required in the Lab, TIFR has already implemented the modification in the Air Handling Units with improved chiller tubes, Air Handling Unit fans and also incorporating changes to reduce the vibration level. With these changes, the required temperature in the Lab has already been attained and the vibration level has also been minimised to about 8 to 10 microns.

(2) The estimate does not cover the modifications to be made in the Laboratory with respect to humidity control, provision of gas line, sewer line, biological radiation, fire safety, prevention of fungus growth, prevention of rodent entry etc.

After discussion, all the officers visited the Lab building to assess the present condition. The following points were noted during inspection.

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1) B Block - 1st floor

- a) There is extensive leakage of water wherever a/c ducts and service counters are located.
- b) The provision of service counters with respect to water supply lines, was extremely shabby and congested and electrical connections are liable for fire hazards and did not meet the Indian Electricity Act regulations.
- c) Considerable fungus growth was observed on the external walls.

2) B Block - 2nd floor

In addition to the deficiencies observed in the first floor, additional deficiencies noted in the 2nd floor are as under:

- a) Hollow clay blocks are damaged at number of places and are hazardous for the safety of the personnel working, as the roof may fall down at varying load and environmental conditions. In addition, the rib beams supporting the slabs have also cracked at number of places and have been temporarily plastered, which is also not safe structurally, for occupation.
- b) In the external walls, especially in the sea side, plaster has fallen down extensively due to seepage of water through the Dolphur stone cladding at the outer cover and fungus growth was also observed.

In general, the existing equipment layout of the Lab and services have not been effectively located for safe operation and prevention of fire hazards etc. In fact, there is no biological safety in any of the Lab rooms since fungus growth is observed practically in every Lab room.

In the light of the above conditions in the existing Laboratory, the specific safety requirements for the Micro Biological Lab R & D work, as required by Prof. Sidheque cannot be provided in the existing Lab.

remedial

Immediate measures are required to be taken for the roof slab of the 2nd floor of B Block to prevent damage to the personnel and Lab equipments, since there is extensive leakage in the hollow clay blocks. Extensive water leakage is also observed in number of service counter areas, a/c room areas, etc. which need immediate attention and rectification.

It is suggested that to meet the immediate Biological R & D work, it may be necessary to shift the Lab to some other area,

where functional requirements as required by Prof. Sidheque are provided, before the Laboratory is shifted to that area. Please expedite necessary action in this regard, especially with regard to the improvements to be made in the 2nd floor slab for the safety of personnel working and the Laboratory equipments.

With regards,

Yours sincerely,

S. N. Narasinga Rao
(S.N.Narasinga Rao)

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Copy to: 1) Prof. Sidhique, TIFR
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