

Minutes of public meeting  
held on 08.07.2010 by  
Collector

## **Draft summary of INO outreach meeting in Ramakrishnapuram Govt High School, July 8, 2010, in presence of Collector, Theni District**

### **Members Present:**

Theni District Collector, Shri Pu. Muthuveerran, IAS  
Superintendent of Police, Shri Balasubramanian, IPS  
Theni District Revenue Officer, Smt Birundha Devi  
District Forest Officer, Shri Srinivasa Reddy, IFS  
Bodi MLA Shri Lakshmanan  
American College Principal, Prof Chinnaraj Joseph Jaikumar  
INO Spokesperson Prof Naba K Mondal, TIFR  
INO Scientists Prof M V N Murthy, Dr Vivek Datar, Prof D Indumathi, Dr Deepak Samuel, Dr B Satyanarayana, Mr S Kalmani  
INO Engineers Shri N S Sreenivasan, Shri P Verma, Shri R Sundara Srinivasan  
TNEB SE Shri Stephen,  
TNEB EE, Srhi Madaswamy  
TNEB Engineers Shri R Rose, Smt Shyamala, Shri Shekhar  
IGCAR Outreach team, headed by Shri Daniel Chellappa  
Uttamapalayam Tahsildar Shri Manoharan,  
Revenue Inspector Shri Kannan  
Pottipuram Panchayat President Smt Suruliammal  
Pottipuram VAO Shri Surulivelu,  
about 1000-1200 members of Pottipuram and surrounding 6 villages  
and about 40 members of the press.

### ***Agenda of the meeting attached.***

- The meeting began by the American College Principal, Prof Chinnaraj Joseph Jaikumar, welcoming the gathering.
- The Collector, Shri Muthuveerran, addressed the villagers, telling them that he had promised to bring the INO scientists to their village to hear their questions and clarify their doubts and this was that promised forum. He urged the villagers to ask all their questions and that every question would be addressed, however long it took. He said that the decision on whether this project would be good or bad for the villagers was one that they should reach after hearing the answers to all their questions.
- Bodi MLA Shri Lakshmanan spoke, saying that there had already been several meetings held at several places and times earlier where people's doubts had been cleared. Today was also one such, where he requested that they should come to a definite conclusion. He also said that the INO project team had searched all over and had chosen OUR site as the most appropriate one for locating the project and that it would not be in any way harmful to the people or the land. He also requested the people to clearly find out what benefits would accrue from the project.
- The Principal, AC introduced the INO project members as well as Mr Stephen and the rest of the TNEB team. He gave a short overview of the four presentations that were to be shown. He clarified that this is a project jointly funded by the Department of Science and Technology (DST) and by the Department of Atomic Energy (DAE). He said that neutrino is a fundamental particle whose properties are not well known. Research in this area could lead to many applications in the future such as medical imaging etc. He also stressed that there was no relationship between neutrinos and radioactivity; in fact, there would be no production even of neutrinos but simply a study of those

already abundantly present.

The Principal also explained the reason for going underground to build a lab and said that the TNEB engineers would explain how such tunnels and caverns can be constructed without any disturbance.

⇒ The presentation began with the INO Movie in Tamil giving an overview of the science of neutrinos, why we want to study them and an artistic depiction of INO tunnels and caverns.

⇒ Dr. Deepak Samuel presented details of surface facilities and land use pattern. He also outlined the method of storing the rock debris and briefly mentioned other existing neutrinos labs.

⇒ Er. A. Stephen of TNEB presented the details on how the tunnel and caverns are constructed. He mentioned that some caverns, larger than the proposed INO cavern, have been built in Tamil Nadu by the TNEB and clearly show cased through photographs their expertise in this area. His presentation dispelled the fears about the building of tunnels and caverns.

⇒ Mr. Daniel Chellappa presented a short film on existing science parks in Chennai and mentioned the possibility that such a facility could come up near INO facilities.

● The Principal coordinated the question answer session which lasted for about an hour and ten minutes. Some questions were repeated many times. Some questions were about local pending issues which the Collector and the Bodi MLA responded to positively.

A comprehensive list of questions, along with the answers, are provided at the end.

● In the end, the Collector summarised the meeting, saying that on the basis of the presentation, he expected progress in the neighbourhood vis a vis local infrastructure development such as Community Hall and job opportunities.

He also mentioned that novel ideas such as Science Park in the locality will attract youngsters not only from Theni but Tamil Nadu and even from all over India who will come and see it. He was willing to offer any help to the locals as required and urged them to talk to scientists whenever they have questions in future.

He again reminded people that he had promised to bring the scientists to directly interact with and answer questions of the villagers and that this meeting was very useful and satisfying. In this context, he said that the villagers had been asked to decide whether this project was good or bad for them and stated that they had clearly understood and accepted the scientists' statements on the project. Accordingly, the villagers have resoundingly voiced a yes to this project. He thanked the elders of the village who had come to listen. He told the villagers that this project provided a golden opportunity for their children to also become good scientists apart from just the monetary inflow.

With this acceptance of the local village people, the Collector stated that he would now give the go-ahead for the INO project and that he and his Department would take the necessary action.

● The meeting ended with a vote of thanks by D. Indumathi.

### **List of questions asked in the interaction session**

Unless otherwise specified, questions were answered by Dr Chinnaraj Joseph Jaikumar, Principal, American College, who coordinated the session.

\* Are there job opportunities for local people; in particular, possibility of preference to local people.

**Ans:** Yes.

\* Water requirements of INO project; whether local ground water resources will be used.

**Ans:** All water requirements will be met from tankers/outside. No ground water will be utilised.

\* Will there be radioactivity from the project?

**Ans:** No.

\* Electricity requirements; whether this would affect local power supply.

**Ans:** No; again, power will be drawn through a dedicated line without affecting local power supply.

\* How will you handle the excavated mud.

**Ans:** Less than 5-7% of muck is in the form of powder/mud. Most of it is boulders that are very useful for construction activities. This will be stored in covered yard (lower portion RCC retaining wall, with a wind fence above, all around) and then taken out in covered lorries to prevent dust dispersal.

\* Of what use is neutrino research.

**Ans:** Building a large-scale lab always leads to technology development. In addition, a basic sciences project like this one has many possible spin-offs that may not be evident at the outset.

\* Will you take over any agricultural land.

**Ans:** No.

\* How many tunnels? Meaning of safety.

**Ans:** There is a single access tunnel; other tunnels are short interconnecting tunnels connecting the two caverns to each other and to the main access tunnel. Here the meaning of safety can be understood as usual safety when a house has more than one exit, etc.

\* Why not use the existing PUSHEP Caverns in Singara itself.

**Ans (Murthy):** The cover over the PUSHEP cavern is only about 500 m and this is insufficient for conducting neutrino physics research. Otherwise it would have been an ideal possibility.

\* It is said that the project was moved from Singara because of Forest. Does it mean that there is no forest here?

**Ans (DFO):** Demarcation of Forest Land is a technical statement; this does not mean that there are no forests outside. In addition, he clarified that the Mudumalai Wildlife Sanctuary was upgraded into a Tiger Reserve, thus changing its legal status. This, and the existence of a sensitive elephant corridor in the vicinity of the earlier proposal, were the reasons why the project was moved from Singara. He clarified further that there was no wildlife sanctuary in the vicinity of Pottipuram and that the INO project will not occupy any forest land.

\* Cattle and goat graze on the puromboke land. What alternative arrangements can be made for them.

**Ans (DFO):** The INO land requirement is very small compared to the grazing land available. In addition, no part of the mountain (where the cattle graze) will be used by INO.

\* Can any one enter, will there be security blocks.

**Ans:** Any one can enter, with prior permission, because of usual safety requirements. In particular, students are most welcome.

\* Will you be talking to us after this meeting.

**Ans:** Yes.

\* Panchayat President Ms. Suruliammal spoke welcoming the project. While the huge investment is good she wanted clarification regarding management of dust, jobs for people, any possible danger to people living nearby. She raised the issue of visiting other labs to satisfy herself about these issues.

**Ans:** The issue of dust and job opportunities was clarified as above. Bodi MLA Shri Lakshmanan suggested that a group of people could be taken to one of the existing labs in Mumbai or Kolkata. Prof. Naba Mondal said that he would be happy to show the Mumbai lab, but owing to the accommodation problems in Mumbai, only a small group could visit at a time.

\* Is the cosmic radiation on the surface doing any harm.

**Ans:** No.

\* There is a place of worship on Ambarappan Malai which is accessed once a year by the villagers. Will the project affect the access to this place.

**Ans (DFO):** No. In addition, the INO facilities would come up to the right of the stream, while the temple is on the left side. The route from this temple to the place of worship on the mountain would also not be affected.

\* How can you guarantee that this will not become another Bhopal.

**Ans:** Bhopal was a commercial factory and a chemical industry. INO is a research lab and does not manufacture/produce any thing, leave alone deadly chemicals. Hence there is no possibility of this becoming another Bhopal. In fact, the Principal, American College, clarified that he himself was participating in this outreach activity because he believed that science has brought many benefits and he believed that INO would bring benefits not only to the local region but also in a wider context.

\* Any danger from the electromagnet in the Laboratory.

**Ans (Datar):** This is a DC magnet. There is no magnetic field outside the magnet and hence any person can stand very close to it and not be affected. You can even stand nearby with a metal screw-driver in your hand.

\* Will there be any displacement of villagers.

**Ans:** No.

\* Pollution Control Board (PCB) must constantly monitor the project and listen to grievances of farmers.

**Ans:** The Pollution Control Board is mandated to monitor projects of this sort.

\* More details about other neutrino labs and research going on in them.

**Ans (Indumathi):** While the technical details of the research have not been presented, there is world-wide interest in the studies to be conducted at INO. These studies will be complementary to the existing research going on in labs such as in Italy and Japan. While it is difficult to precisely predict the outcome of such an experiment, it is expected to produce world-class research, and have very good results in the long run.

\* Safety aspects of other neutrino labs.

**Ans (Indumathi):** As shown in the presentation, houses dot the hills under which the labs are located in Italy and Japan. In fact, the lab is located off an underground highway in Italy and many hundreds of vehicles pass by all the time. Hence, human habitation exists very close to (and above) these labs. There is no danger to people from such labs.

