

Why Cuddalore is another Bhopal?

**An analysis of the environmental, safety and regulatory infrastructure
in SIPCOT Chemical complex**



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www.sipcotcuddalore.com

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Executive Summary

In Bhopal, people were gassed to death in one night. In Cuddalore, local residents claim they are exposed to poisonous gases on a daily basis – a slow-motion Bhopal. Is Cuddalore another Bhopal? To answer that, one would need to see if the conditions that led to the 1984 Union Carbide disaster in Bhopal apply in Cuddalore.

The Bhopal disaster happened because hazardous and untested technologies were deployed in a thickly populated residential area. Community and worker complaints about pollution and unsafe workplace conditions were routinely ignored. The worst affected people were also politically the weakest and most vulnerable. They were predominantly working class people preoccupied with keeping their paltry daily wages coming. The community was kept in the dark, and even actively misled about the hazardous chemicals and processes used in the Union Carbide factory. As a result, people were unable to respond appropriately when disaster struck. The regulators and the Government openly colluded with the industry to the extent that community members and workers that dared to complain about pollution were seen as trouble-makers and anti-development.

Consider Cuddalore. Hazardous units have been and continue to be located in close proximity to residential areas, and other hazardous units. Local complaints and even warnings by agencies such as the State Human Rights Commission against expanding the industrial estate have been ignored. Local complaints about pollution and the routine occurrence of hazardous incidents have not made a difference in the attitude of regulators or state planners.

According to data compiled between October 2004 to November 2006 (26 months), there were:

1. 72 different environmental and legal violations recorded in the 26 month period, or an average of 2.6 major incidents or violations a month.
2. 15 hazardous workplace incidents that injured 12 workers and killed 2.
3. 2 accidents involving tankers that transport chemicals to SIPCOT industries. The accidents occurred outside the complex, and killed 2 persons.
4. 1 instance of disease and death due to industrial work reported.
5. 22 instances of illegal effluent discharges into the river, sea or land.
6. 11 instances of major gas leaks.
7. 9 instances of illegal hazardous waste dumping in and around SIPCOT area by the units.
8. 4 instances of fish kills either in Uppanar or in SIPCOT wells.
9. 3 instances of violation of the Supreme Court's order to put a board outside the unit mentioning the details of the hazardous waste generated in the unit.
10. At least 3 units were operating illegally and with the knowledge of the regulators.

In 2004, SIPCOT Area Community Environmental monitors recorded 256 major odour incidents during a 14-week monitoring period, or about 2.5 major odour incidents a day.

This data is by no means comprehensive but it paints a dangerous picture – more than 75 hazardous and major odour incidents every month. At least 12 people have been injured and 5 have lost their lives in the 26-month data period. Warning bells don't ring any louder.

Bhopal 1984; Cuddalore 20?? – Will history repeat itself?

S No.	Conditions	Bhopal	Cuddalore
1.	Toxic facility	Untested toxic facility to manufacture pesticide was set up in Bhopal	Various chemical industries have old and badly maintained plants to manufacture pesticides, paints, dyes, pharmaceuticals and bulk chemicals. Factories Inspectorate permissions are seldom sought prior to construction of factories.
2.	Location of the plant	The plant was located in an area with dense population, with residential areas at a distance less than 50 mts from the unit	The plants are located next to each other sandwiching at least 10 villages. At least 30,000 people reside in the immediate vicinity of the units.
3.	Type of Community	Facility located in a working class neighbourhood with people from socially, economically and politically marginalised sections of society.	SIPCOT residents are predominantly working class, and from socially, economically and politically weaker sections of society.
4.	No information about hazards	No information was shared with the community or workers about the products manufactured in the plant or the chemicals used. Communities knew little about disaster response. Hazards and dangers were underplayed to give a false sense of security.	No information has been shared with the communities about the products manufactured or chemicals used in the SIPCOT industries. The community has been given no information or training on what to do in the event of a disaster. Serious gas leaks and spills are routinely dismissed as mere odour nuisance. Fire service and hospital infrastructure uninformed and inadequate to deal even with minor incidents.
5.	Complaints ignored	Environmental pollution, cattle deaths, worker injuries and deaths due to workplace hazards were not taken seriously. No root-cause investigations were conducted. Routine accidents and hazardous incidents in the Union Carbide factory were ignored.	5 deaths, 12 injuries, and at least 72 major hazardous incidents and illegalities have been recorded in a 26-month period. SIPCOT experiences an average of 2.6 major violations every month. Local complaints, and recommendations against setting up more polluting units in SIPCOT by agencies such as the State Human Rights Commission have fallen on deaf ears.

1. SIPCOT Chemical complex, Cuddalore

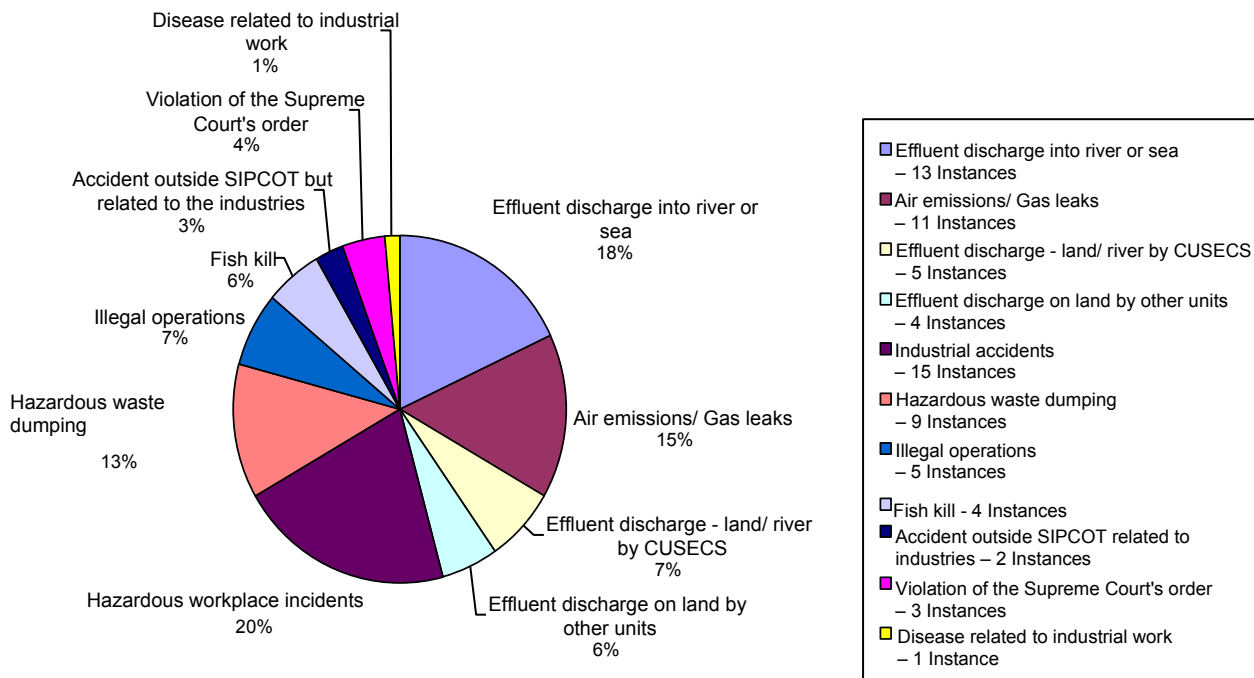
SIPCOT complex was set up in 1982 to promote chemical industries in Tamil Nadu. Fertile agricultural lands were acquired for the purpose. Over the years, these industries have dumped their toxic waste in the land, air and water, flouted rules and regulations, and converted this bountiful land into an industrial waste land. Over the years, commentators have repeatedly likened the unfolding situation in Cuddalore to Bhopal. The 1984 Union Carbide disaster in Bhopal which took the lives of more than 8000 people, happened due to a series of avoidable failings of regulatory agencies and industry. This report analyses the conditions in Cuddalore to reveal the local relevance of symptoms that led to Bhopal.

1.1 What's wrong with SIPCOT?

Between October 2004 and November 2006 (26 months), SIPCOT Area Community Environmental Monitors (SACEM), a local voluntary collective, recorded at least 72 instances of environmental and legal violations. These include industrial accidents, dumping of hazardous wastes, discharge of effluents on land and water, expansion of factories and operation of units without valid permissions.

The data in Fig 1 does not include odour incidents that occur on a daily basis in SIPCOT. SIPCOT Area Community Environmental Monitors (SACEM) has recorded 256 major odour incidents during a 14-week period in 2004. Odour indicates the presence of chemicals in the air. Major odour incidents recorded outside factory premises usually correspond with gas leaks, fugitive emissions or spills of volatile chemicals.

Various incidents in SIPCOT Cuddalore (Fig 1)

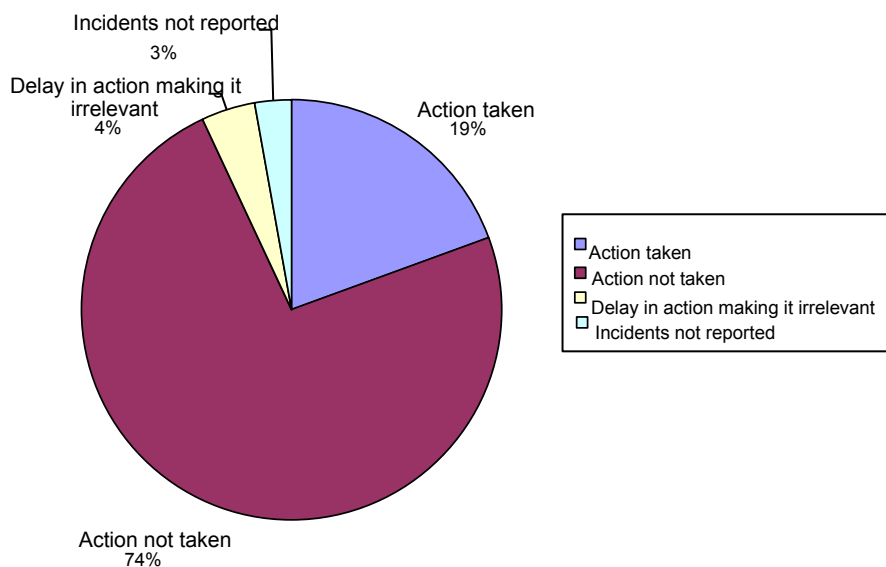


1.2 Response of the authorities

The response of the regulators, i.e. Tamil Nadu Pollution Control Board and the Inspector of Factories, has been dismal. Of the 72 incidents, complaints were sent on 70 occasions whereas action was taken only in 14 instances. Of these 14, in three instances, the action was so delayed as to make it irrelevant. Despite the fact that TNPCB and the Factories Inspectorate would not have found out about these incidents if they weren't informed by community residents, only in 7 cases have the regulators actually communicated their action taken to the complainant.

Where action has been taken, regulators have failed to address root causes, as a result of which similar incidents by the same companies are reported time and again. For example, effluent leaks from CUSECS were reported at least 5 times. Similarly, in the last two years, the Tamilnadu Pollution Control Board ignored and then regularized instances of illegal operations by at least three companies – Tagros Chemicals, Southern Pigments and Pioneer Miyagi – without prosecuting the violators. This has conveyed to the industry that violations of the law will be tolerated and perhaps even be legalized in the long term. Constructing factories without requisite permissions is a common practice that is condoned by regulators and courts.

Response of the authorities (Fig 2)



2. Hazardous Incidents: A Break up

2.1 Lack of Disaster Preparedness

It is widely acknowledged that the infrastructure in SIPCOT is totally inadequate to deal even with industrial accidents, leave alone a disaster. The District Administration has not taken this issue seriously despite the massive hype around the manner in which it dealt with post-Tsunami rehabilitation. On May 20, 2006, a fire started at 4 p.m. in the premises of an abandoned pesticides factory in SIPCOT. It took the fire engines 4 hours to arrive. No ambulances were available. The fire-fighters complained that they didn't have any knowledge of the chemicals, and were unable to access anybody for that information. As a result, even

after their arrival, fire-fighting was delayed by nearly an hour. In the event of a major disaster, delays such as this can push up the death and injury toll significantly.

2.2 Air pollution

Community tests of air samples taken from SIPCOT reveal the presence of more than 25 toxic chemicals, including 8 known carcinogens. Some of the carcinogens, such as 1,2-dichloroethane and chloroform, were found 22,000 times and 5000 times higher than levels considered safe. The regularity of air pollution incidents is alarming. In August 2004, SACEM released a report documenting 243 odour pollution incidents over a 14-week study period. They identified 36 different chemical odours and 30 associated health symptoms.

Between October 2004 and November 2006 SACEM has reported at least 12 serious incidents of gas leaks or toxic emissions. These include instances where residents were exposed to noxious emissions; commuters on the Cuddalore-Chidambaram highway were gassed; and an 8 year old school child from Eachangadu village fainted after a severe gas leak from a factory near her school.

No agency, not even the Supreme Court Monitoring Committee on Hazardous Wastes, seems to have the will or tenacity to consistently address the issue of pollution.

Chronology of Reports on Air pollution in SIPCOT:

Year	Report
September 2004	<p>SACEM released its report "Gas Trouble: Air Quality in SIPCOT Cuddalore." This report found 22 toxic chemicals in the air breathed by SIPCOT residents.</p> <p>In the same month, based on the SACEM report, the Supreme Court Monitoring Committee on Hazardous Wastes ordered –</p> <ol style="list-style-type: none"> 1) The TNPCB to bring air toxics levels to below US Environmental Protection Agency (USEPA)-prescribed levels by December 2004, 2) Directed the Central Pollution Control Board to develop ambient air quality standards for Volatile Organic Compounds (VOCs). <p>The deadline was subsequently extended to June 2005, after which SCMC dropped the matter.</p>
25 and 28 November, 2004	<p>Cuddalore SIPCOT Industries Association conducted a secret study on air quality and VOCs in ambient air in and around SIPCOT.</p> <p>A leaked copy of the report, later confirmed as having been done by the industry, indicates that the study found 13 out of 20 chemicals it looked for in SIPCOT's air. Eight chemicals exceeded safe levels prescribed by the US Environmental Protection Agency. At least six of the chemicals found are known to cause cancer in animals and are potential human carcinogens.</p>
May 2005	<p>SACEM published a follow-up study -- "Gas Trouble II" -- which found 12 toxic chemicals in four samples of ambient air in SIPCOT. Seven of the chemicals including three carcinogens were above safe levels. The air breathed by SIPCOT residents continued to be laced with poisons.</p>
April 2005	<p>TNPCB commissioned National Environmental Engineering Research Institute to monitor for Volatile Organic Compounds (VOCs) at SIPCOT at a cost of Rs. 20.15 lakhs. The study was to be completed in 15 months by July 2006. No results or interim reports have been released</p>

2.3 River Pollution

SIPCOT industries and the Tamilnadu Pollution Control Board repeatedly point out that since effluents from SIPCOT industries are discharged into sea by CUSECS, the Uppanar River is flowing clean. However, data based on monitoring information indicates that this statement is incorrect.

There have been 12 major incidents of illegal effluent discharge in the river which led to fish kills on at least 3 occasions between October 2004 to November 2006. Companies implicated by SACEM or villagers for such incidents include Arkema Peroxides, Pioneer Miyagi Chemicals, Asian Paints, Victory Chemicals and CUSECS.

Inland fishermen complain of health effects due to contact with contaminated water. Skin rashes and itching are commonly reported. Besides, the major incidents reported, SACEM says that illegal discharge of effluents into the River has resumed on a regular basis, and that river water quality has degraded over the last one year.

While repeated complaints have been made to the TNPCB, only a few instances warranted site visits by officials. However, the officials declared without any scientific basis that there was no problem. No samples were drawn to verify the presence or absence of contamination, and the complaints were not investigated thoroughly.

2.4 Sea Pollution

Currently, effluents of several SIPCOT industries are discharged into the sea through a pipeline that releases the effluent near Rajapettai village. The effluents stain the sea red to a distance of more than 200 metres from the point of discharge. The fishermen in this village complain of intense foul odour when the wind blows in from the sea. They report various health problems such as nausea, breathing trouble and throat irritation as a result of exposure to the odour from the effluents. Fisherfolk blame the CUSECS discharge for declining fish stock in the sea and for fish kills, including the death of a dolphin in February 2006.¹

2.5 Dumping of toxic waste

SACEM has recorded 9 instances where hazardous wastes were dumped either on agricultural lands or on public roads in villages near SIPCOT. Victory Chemicals, Tagros Chemicals, Loyal Super Fabrics, Pondicherry Alum and TANFAC have been named in the reported cases of dumping.

In 2004 TNPCB had taken serious note of the hazardous waste dumped on the road by Victory Chemicals and had shut down the unit. Before resuming operations the unit was given specific orders to effectively manage its waste. The company continues to pile toxic wastes on the banks of the River Uppanar in direct violation of the CRZ Notification and the Hazardous Waste Management Rules, 1989.

SPIC, a pharmaceutical company manufacturing penicillin, dumps its hazardous sludge in the River Uppanar. What started as a small landfill on the banks of the River Uppanar, now extends well into the river area.

2.6 Worker Health and Safety

At least 15 hazardous workplace incidents inside the SIPCOT units and two incidents outside the SIPCOT area but related to the industries were reported between October 2004 and November 2006. These incidents have claimed 4 lives and injured at least 12 persons so far. Most of the victims are contract workers with no organisation or union to represent them. No punitive or corrective action is known to have been taken against the erring units.

Most recently, a boiler exploded in Loyal Super Fabrics on 22 November 2006. Locals report that no investigation and inspection was conducted by the Factories Inspector and it has been business as usual for the company. Lack of action has encouraged SIPCOT units to operate without much care for the law. This poses a big hazard to the lives of the workers and the residents.

SACEM has sent complaints about numerous hazardous incidents inside the units but is yet to see any investigation or action taken report from the Inspector of Factories.

Conditions are particularly hostile in SIPCOT for contract workers to organize themselves. Despite laws that prohibit untrained workers from engaging in hazardous activities, the most dangerous and toxic jobs are assigned to contract workers. Any attempt by them to organize is met with immediate punishment. In June 2006, CUSECS workers struck work to demand compensation for a colleague who had succumbed to leukemia, suspected to have developed due to exposure to toxic chemicals at CUSECS. The workers were successful in winning compensation for the family of the deceased worker. But they had also alarmed the industry with their collective power. In November, 2006, when it came time to renew their annual contracts, CUSECS replaced the entire 15-member workforce with a new group.

3. Illegal operations

It is common for companies in SIPCOT and the rest of the country to set up first and obtain necessary permissions legalising their illegalities later. Such practices are routine because even the courts take a light view of such violations, and usually direct the regulator to take a decision on the matter. Government officials, and even senior staff at the Tamilnadu Pollution Control Board acknowledge that their hands are tied, and that decisions are dictated by their political bosses.

In March 2005, 6 SIPCOT companies furnished detailed information regarding their authorizations and emissions data. All six companies violated effluent quality norms prescribed by the Tamilnadu Pollution Control Board.ⁱⁱ Four out of six companies were operating without valid licenses. This was brought to the notice of the TNPCB but no action has been taken.

3.1 CRZ violations

Since the SIPCOT industrial complex is located on the banks of the tidal River Uppanar, the CRZ Notification would apply to most units. Any facility within 100 metres of the coast or coastal influenced water bodies needs special clearances under the Notification to operate.

Some of the SIPCOT units, located on the banks of Uppanar are completely in violation of the CRZ regulations. Some of the violations are listed below:

- a) **Victory Chemicals:** The unit has illegally stored tons of hazardous waste in its compound. Waste has also seeped out of the boundary walls and is being washed away in Uppanar.
- b) **Southern Pigments:** The unit has set up a bore well on the banks of Uppanar to draw water

- for industrial use. Drawing of groundwater from CRZ areas is prohibited.
- c) **SPIC:** The Company has been illegally dumping its hazardous waste behind its unit into the river Uppanar.
 - d) **Chemplast Sanmar:** CRZ clearance given to the company is illegal because it is based on false, incomplete and misleading facts.
 - e) **CUSECS:** CUSECS has not received environmental clearance under CRZ despite being in operation since 2001 (see box titled 'Repeat Offender')

3.2 Other Violations

Tagros Chemicals: In 2002, Tagros Chemical expanded its Deltamethrin and Cypermethrin production units without requisite permissions in SIPCOT Cuddalore. It also introduced new chemicals for which it had no authorization. The illegality was brought to the notice of the TNPCB in August 2004 with a request to cancel the public hearing since it would be held for an already expanded unit.

In September 2004, TNPCB pushed ahead with a public hearing for the illegally expanded unit. At the hearing local people again brought this illegality to the notice of the members of the public hearing panel and TNPCB. TNPCB and District Collector failed to record this observation in the Public Hearing minutes. In March 2006 TNPCB issued a closure notice to the unit for illegal expansion, but by then the unit has been operating for 4 years without any permissions.

Illegality regularized – In April 2006, the unit obtains a post facto clearance from the Ministry of Environment and Forests and resumes normal operations.

Pioneer Miyagi Chemicals: In 2005 Pioneer Miyagi Chemicals initiated the construction of a new Gelatin manufacturing unit within its premises without permission from TNPCB. Immediately the TNPCB issued warning to Pioneer which the company ignored and continued construction. In May 2006 a construction worker died due to a fall from the third floor of the illegal structure. Local residents brought the illegality to various authorities including the District Collector but failed to stop construction.

In August 2006 the matter was brought to the Madras High Court and the construction was stayed.

Illegality Regularised – Unit obtained a Consent to Establish for the already constructed factory from TNPCB and got a nod for continuing the construction of the unit. Matter is pending in the High Court.

CUSECS – Repeat Offender: CUSECS is a common utility set up to collect and forward “treated” effluents from member industries through a network of pipelines and sumps to the sea off the coast of Rajapettai village. According to CUSECS, only pre-treated effluents are sent to the sea. The facility is totally illegal. Till date, it does not have Consent to Establish, Consent to Operate or environmental clearance under CRZ Notification. It has located itself on “No Development” land along Coastal Regulation Zone category 1. Moreover, contrary to its claims, the company discharges untreated effluents into the sea. Results of analyses of treated effluent samples from the CUSECS outlet to sea for the months November-December 2005 and January 2006 indicate that all five samples taken during that period violated one or more standards. The quantity of COD in the effluents discharged is “particularly egregious” because it exceeds permissible limits by more than 10 times in December 2005. This too is a violation of the CRZ Notification, 1991. Even this illegal facility was begun only in 2001, 19 years after the complex was established.

There is no formal monitoring and regulatory regime governing CUSECS. Because the illegal facility is functioning with the tacit consent of the TNPCB, the TNPCB is unable to exercise any legal hold over it. Regulation is entirely voluntary. According to CUSECS, when it receives inadequately treated

effluents, it alerts the errant industry and urges them to set right the treatment process in future. The regulator plays no role in addressing the violation beyond issuing token warnings to the polluter.

CUSECS is a repeat offender. Even if one were to set aside the fact that this is a wholly illegal facility, CUSECS' environmental track record is poor. CUSECS sumps are reported to be the "responsible party" in at least 5 instances of effluent leaks/spills to land. While the TNPCB has monitored the post-spill clean-up, the regulator has prescribed no substantial measures to prevent a repetition of such spills. Also, no prosecution has been launched by TNPCB for CUSECS' failure to operate within the law.

The future of Cuddalore

Twenty years of pollution. The experience of SIPCOT villagers is set to be repeated in other villages of Cuddalore that are to be targeted by a variety of water-intensive, and highly polluting factories. In the pipeline for SIPCOT are:

- 1) Chemplast Sanmar proposed 1,70,000 TPA PVC plant, in Semmankuppam, and marine terminal in Chitrapettai.
- 2) 4000 MW Thermal Power plant and a marine terminal, proposed for Naduthittu
- 3) A 6 million ton per annum capacity oil refinery by Nagarjuna Refineries and a marine terminal.
- 4) A mega textile park promoted by South Indian Millowners Association (SIMA)
- 5) A Ship building yard
- 6) Pumping effluents from Tirupur-Erode textile units through a 400 km long pipeline for discharge into the Cuddalore sea.

All proposals are highly polluting and use the sea as a sink for hazardous waste.

Agriculture and fisheries remain the major livelihoods in the region. Pollution and any threat to groundwater will have a definite negative effect on these economies, affecting more than a 100,000 people. Rather than remediate the damage already done to the environment and people's health, the Government has applied a perverse logic to justify more pollution in Cuddalore because parts of Cuddalore are already polluted. A high-level Government consensus seems to have emerged to sacrifice Cuddalore, and concentrate polluting industries in this coastal district.

i Source: Dolphin washed ashore - New Indian Express, February 2, 2006

ii Source: Letter dated 1 April, 2005, from Nityanand Jayaraman to T. Mohan, Chairman, Cuddalore LAEC