

M. C. Mehta and Another

Vs

Union of India and Others

Shriram Foods and Fertiliser Industries and Another

Vs

Union of India and Others

Civil Writ Petitions Nos. 12739 of 1985 and 26 of 1986

(CJI P. N. Bhagwati, G. L. Oza, D. P. Madon JJ)

17.02.1986

JUDGMENT

P.N. BHAGWATI, C.J. -

1. Writ Petition No. 12739 of 1985 which has been brought by way of public interest litigation raises some seminal questions concerning the true scope and ambit of Articles 21 and 32 of the Constitution, the principles and norms for determining the liability of large enterprises engaged in manufacture and sale of hazardous products, the basis on which damages in case of such liability should be quantified and whether such large enterprises should be allowed to continue to function in thickly populated areas and if they are permitted so to function, what measures must be taken for the purpose of reducing to a minimum the hazard to the workmen and the community living in the neighbourhood. These questions which have been raised by the petitioner are questions of the greatest importance particularly since, following upon the leakage of MIC gas from the Union Carbide Plant in Bhopal, lawyers, judges and jurists are considerably exercised as to what controls, whether by way of relocation or by way of installation of adequate safety devices, need to be imposed on Corporations employing hazardous technology and producing toxic or dangerous substances and if any liquid or gas escapes which is injurious to the workmen and the people living in the surrounding areas, on account of negligence or otherwise, what is the extent of liability of such Corporations and what remedies can be devised for enforcing such liability with a view to securing payment of damages to the persons affected by such leakage of liquid or gas. These questions arise in the present case since on December 4 and 6, 1985, there was admittedly leakage of oleum gas from one of the units of Shriram Foods and Fertiliser Industries and as a result of such leakage, several persons were affected and according to the petitioner and the Delhi Bar Association, one advocate practising in the Tis Hazari Courts died. We propose to hear detailed arguments on these questions at a later date. But one pressing issue which has to be decided by us immediately is whether we should allow the caustic chlorine

plant of Shriram Foods and Fertilisers Industries to be restarted and that is the question which we are proceeding to decide in this judgment.

2. Delhi Cloth Mills Ltd. is a public limited company having its registered office in Delhi. It runs an enterprise called Shriram Foods and Fertiliser Industries and this enterprise has several units engaged in the manufacture of caustic soda, chlorine, hydrochloric acid, stable bleaching powder, superphosphate, vanaspati, soap, sulphuric acid, alum anhydrous sodium sulphate, high test hypochlorite and active earth. These various units are all set up in a single complex situated in approximately 76 acres and they are surrounded by thickly populated colonies such as Punjabi Bagh, West Patel Nagar, Karampura, Ashok Vihar, Tri Nagar and Shastri Nagar and within a radius of 3 kilometers from this complex there is population of approximately 2,00,000. We are concerned in this order only with the caustic chlorine plant. This plant was commissioned in the year 1949 and it has a strength of about 263 employees including executives, supervisors, staff and workers. It appears that until the Bhopal tragedy, no one, neither the management of Shriram Foods and Fertiliser Industries (hereinafter referred to as 'Shriram') nor the government seemed to have bothered at all about the hazardous character of caustic chlorine plant of Shriram. But, it seems that the Bhopal disaster shook off the lethargy of everyone and triggered off a new wave of consciousness and every government became alerted to the necessity of examining whether industries employing hazardous technology and producing dangerous commodities were equipped with proper and adequate safety and pollution control devices and whether they posed any danger to the workmen and the community living around them. The Labour Ministry of the Government of India accordingly commissioned 'Technica', a firm of consultants, scientists and engineers of United Kingdom, to visit the caustic chlorine plant of Shriram and make a report in regard to the areas of concern and potential problems relating to that plant. Dr Slater visited the caustic chlorine plant on behalf of Technica sometime in June-July 1985 and submitted a report to the Government of India summarising the initial impressions formed during his visit and subsequent dialogue with the management and with one Mr Harries. This report was admittedly not an in depth engineering study but it set out the preliminary conclusions of Dr Slater in regard to the areas of concern and potential problems. We do not propose to rely very much on this report since it is a preliminary report.

3. It appears that a question was raised in Parliament sometime in March 1985 in regard to the possibility of major leakage of liquid chlorine from the caustic chlorine unit of Shriram and of danger to the lives of thousands of workers and others. The Minister of Chemicals and Fertilizers, in answer to this question, stated on the floor of the House that the Government of India was fully conscious of the problem of hazards from dangerous and toxic processes and assured the House that the necessary steps for securing observance of safety standards would be taken early in the interest of the workers and the general public. Pursuant to this assurance, the Delhi Administration constituted an Expert Committee consisting of Shri Manmohan Singh, Chief Manager, IPCL, Baroda, as Chairman and 3 other persons as members to go into the existence of safety and pollution control measures covering all aspects such as storage, manufacture and handling of chlorine in Shriram and to suggest measures necessary for strengthening safety and

pollution control arrangements with a view to eliminating community risk. The Manmohan Singh Committee visited the caustic chlorine plant and inspected various operations including storage tanks, cylinders and tonners and obtained detailed information from the management and after a thorough and exhaustive inquiry, submitted its report to the government. This report is a detailed report dealing exclusively with the caustic chlorine plant and considerable reliance must, therefore, be placed upon it. The Manmohan Singh Committee made various recommendations in this report in regard to safety and pollution control measures with a view to minimising hazard to the workmen and the public and obviously the caustic chlorine plant cannot be allowed to be restarted unless these recommendations are strictly complied with by the management of Shriram.

4. Now, on December 4, 1985 a major leakage of oleum gas took place from one of the units of Shriram and this leakage affected a large number of persons, both amongst the workmen and the public, and, according to the petitioner, an advocate practising in the Tis Hazari Courts died on account of inhalation of oleum gas. The leakage resulted from the bursting of the tank containing oleum gas as a result of the collapse of the structure on which it was mounted and it created a scare amongst the people residing in that area. Hardly had the people got out of the shock of this disaster when, within two days, another leakage, though this time a minor one, took place as a result of escape of oleum gas from the joints of a pipe. The immediate response of the Delhi Administration to these two leakages was the making of an order dated December 6, 1985 by the District Magistrate, Delhi under sub-section (1) of Section 133 of the Code of Criminal Procedure, directing and requiring Shriram within two days from the date of issue of the order to cease carrying on the occupation of manufacturing and processing hazardous and lethal chemicals and gases including chlorine, oleum, super-chlorine, phosphate, etc. at their establishment in Delhi and within 7 days to remove such chemicals and gases from the said place and not again to keep or store them at the same place or to appear on December 17, 1985 in the court of the District Magistrate, Delhi to show cause why the order should not be enforced. When we took up the writ petitions for hearing on December 7, 1985, our attention was drawn to this order made by the District Magistrate, Delhi on December 6, 1985 and on perusing the order we pointed out the inadequacies in it which had the effect of virtually defeating the urgency of the action to be taken. We had earlier appointed a team of experts to visit the caustic chlorine plant of Shriram and to report whether the recommendations of the Manmohan Singh Committee had been carried out by the management and this team of experts orally reported to us at the hearing on December 7, 1985 that they had been able to inspect the plant for only a couple of hours and that cursory inspection showed that many of the recommendations of the Manmohan Singh Committee appeared to have been complied with and that too two one hundred MT tanks for storage of chlorine which constituted a major element of hazard or risk had been emptied. Since this inspection made by the team of experts had necessarily to be very hurried and superficial on account of want of sufficient time, we adjourned the writ petition on December 13, 1985 with a direction that the petitioner would be entitled to appoint his own team of experts who would be allowed access to the caustic chlorine plant for the purpose of ascertaining whether the various recommendations of the Manmohan Singh Committee had been carried out or not and whether there were any other drawbacks or deficiencies likely to endanger the lives of

workmen and the public. We also, with a view to expediting adjudication of claims for compensation on behalf of the victims of oleum gas leakage, appointed the Chief Metropolitan Magistrate as the officer before whom claims for compensation may be filed by persons affected by leakage of oleum gas in the course of the two incidents referred to above and we fixed time of four weeks within which such claim of compensation may be filed before the Chief Metropolitan Magistrate, Delhi. We may point out that subsequently by an order dated Jan. 16, 1986 we extended the time for filing of compensation claims up to Jan. 31, 1986. We also by our orders dated Jan. 10, 1986 and Jan. 21, 1986 gave a further direction that those who file compensation claims before the Chief Metropolitan Magistrate, Delhi should be got examined by a team of Medical Experts and this task was entrusted to the Secretary of the Delhi State Legal Aid and Advice Board. This direction was given by us with a view to ensuring that contemporaneous medical evidence of the injuries suffered by the claimants and of the cause of such injury should be available in support of the claims for compensation lodged by the victims of oleum gas leakage.

5. Pursuant to the liberty given by us, the petitioner appointed an Expert Committee consisting of Dr G.D. Agarwal Professor T. Shivaji Rao and Shri Purkayastha. This committee, which we shall hereafter refer to as the 'Agarwal Committee', visited the caustic chlorine plant and submitted a report to this Court in which it pointed out various inadequacies in the plant and expressed the opinion that it was not possible to eliminate hazard to the public so long as the plant remained at the present location.

6. Since there were conflicting opinions put forward before us in regard to the question whether the caustic chlorine plant should be allowed to be restarted without any real hazard or risk to the workmen and the public at large, we thought it desirable to appoint an independent team of experts to assist us in this task. We accordingly by an order dated December 18, 1985 constituted a Committee of Experts consisting of Dr Nilay Choudhary as Chairman and Dr Aghoramurty and Mr R.K. Garg as members to inspect the caustic chlorine plant and submit a report to the court on the following three points :

1. Whether the plant can be allowed to recommence the operations in its present state and condition ?
2. If not, what are the measures required to be adopted against the hazard or possibility of leaks, explosion, pollution of air and water etc., for this purpose ?
3. How many of the safety devices against the above hazards and possibility exist in the plant at present and which of them, though necessary, are not installed in the plant ?

7. This Committee of Experts to which we shall hereafter, for the sake of convenience, refer to as 'Nilay Choudhary Committee', visited the caustic chlorine plant on December 28, 1985 and after considering the reports of Dr Slater, Manmohan Singh Committee and Agarwal Committee and hearing the parties made a report to the court setting out 14

recommendations which in its opinion were required to be complied with by the management in order to minimise the hazards due to possible chlorine leak. Nilay Choudhary Committee pointed out that it was in agreement with the recommendations made in the report of the Manmohan Singh Committee which were exhaustive in nature and obviously the recommendations made by it in its report were supplementary recommendations in addition to those contained in Manmohan Singh Committee's report.

8. We have thus two major reports, one of Manmohan Singh Committee and the other of Nilay Choudhary Committee, setting out the recommendations which must be complied with by the management of Shriram in order to minimise the hazard or risk which the caustic chlorine plant poses to the workmen and the public. The question is whether these recommendations have been complied with by the management of Shriram, for it is only if these recommendations have been carried out that we can possibly consider whether the caustic chlorine plant should be allowed to be restarted.

9. There is also one other report to which we must refer in this connection and that is the report made by the Expert Committee appointed by the Lt. Governor of Delhi following upon the leakage of oleum gas on December 4, 1985. Since the leakage of oleum gas caused serious public concern, the Lt. Governor of Delhi constituted an Expert Committee consisting of Shri N.K. Seturaman as Chairman and four other experts as members to go into the causes of spillage of oleum and its after-effects, to examine if inspection and safety procedures prescribed under the existing laws and rules were followed by Shriram, to fix responsibility for the leakage of oleum gas, to review the emergency plans and measures for containment of risk in the event of occurrence of such situations and for elimination of pollution, to examine any other aspects that may have a bearing on safety, pollution control and hazard to the public from the factory of Shriram, to make specific recommendations with a view to achieving effective pollution control and safety measures in the factory and to advise whether the factory should be shifted away from its present location in densely populated area. This Committee to which we shall hereafter refer to as the 'Seturaman Committee' made an on the spot inspection of the site of the factory and after obtaining the required information about the plant submitted a report on January 3, 1986. This report, it must be conceded, deals primarily with the safety procedures in the sulphuric acid plant from which there was oleum gas leakage and is not based on any in depth review and study of safety and pollution control measures in the caustic chlorine plant. But even so it does contain some observations which have relevance to the question whether the caustic chlorine plant poses any hazard to the community and what steps or measures are necessary to be taken to minimise the risk to the people living in the vicinity.

10. It is necessary at this stage to point out that whilst these proceedings were going on before the court, an order dated December 7, 1985 was issued by the Inspector of Factories, Delhi in exercise of the power conferred under Section 40 sub-section (2) of the Factories Act, 1948. The order commenced with the following recital, viz.,

Whereas it has appeared to me that caustic chlorine plant and sulphuric acid plants are running without adequate safety measures being adopted by your management, thereby

endangering the human life and safety of the workers and the public at large. Earlier notices of the Labour Department asking your management to ensure proper safety measures has not been complied with fully; and

Whereas in spite of your management's assurance vide letter dated October 14, 1985, on December 4, 1985, non-adoption of the adequate safety measures have resulted in collapse of the structure on which oleum tank was mounted resulting in the massive leakage of oleum causing fumes in the environment affecting the health and safety of a large number of residents of the Union Territory of Delhi; and

Whereas the factory is not still having adequate safety measures required for such plants.

and prohibited Shriram from using the caustic chlorine and sulphuric acid plants till adequate safety measures are adopted and imminent danger to human life is eliminated. Soon thereafter, on December 13, 1985, a show-cause notice was issued by the Assistant Commissioner (Factories) of the Municipal Corporation of Delhi calling upon Shriram to show cause as to why action for revocation of its licence should not be taken under Section 430 sub-section (3) of the Delhi Municipal Corporation Act, 1957 for violation of the terms and conditions of the licence. Shriram by its letter dated December 23, 1985 showed cause against the proposed cancellation of its licence but by an order dated December 24, 1985, the Assistant Commissioner (Factories) directed Shriram to stop industrial use of the premises at which the chlorine caustic plant is located. The result is that unless these two orders - one dated December 7, 1985 and the other dated December 24, 1985 - are vacated or suspended, Shriram cannot be allowed to restart the caustic chlorine plant.

11. We may first consider what has been said by the various Expert Committees in regard to the relocation of the caustic chlorine plant. All the Expert Committees are unanimous in their view that by adopting proper and adequate safety measures the element of risk to the workmen and the public can only be minimised but it cannot be totally eliminated. Dr Slater has in the last part of his report pointed out that inspection of the caustic chlorine plant revealed "a worrying state of affairs" and he was of the opinion that the plant was liable to be "classed as a major hazard facility by applying most of the currently accepted definitions" and it did not "measure up to the responsibilities incumbent upon operators of such plants to safeguard both public and employees so far as is reasonably practicable". He made various recommendations which in his opinion were required to be complied with by Shriram and he added that if a substantial improvement in safety was not possible or rapidly forthcoming along the lines of these recommendations "the authorities should consider constraining its activities to protect the public and employees". He concluded by observing that "relocation is the only practicable long-term option which would guarantee the complete removal of the community risk". The Manmohan Singh Committee also observed towards the end of its report that "total elimination of risk to the community i.e. human population from toxic plant/hazardous industry located in close proximity is improbable. However, the probability of risk can be immensely reduced if the plant is run with adequate precautions" and proceeded to make various recommendations for "strict and immediate compliance with an object to minimise risk to the workers and the

population around". Seturaman Committee also pointed out in paragraph 10.8.1. of its report that Shriram factory "is certainly a perennial source of hazard to the community. These hazards cannot be completely eliminated but could be minimised by strict compliance of safety regulations. Giving due weight to the hazard aspects as mentioned above and taking into account the safety of the community as a whole, "the Manmohan Singh Committee observed that functioning of the SFFI in the present location is not desirable. So also Agarwal Committee opined that "under so many uncertain factors a chlorine manufacturing unit cannot be even reasonably safe when located in proximity to a densely populated area. In the circumstances, the only practical solution is to relocate the chlorine plant at least 10 kms. away from the urban limits of densely populated areas with adequate safety measures." Finally Nilay Choudhary Committee also stated that even if all the recommendations made in its report as also in the report of Manmohan Singh Committee were carried out, "the risk due to major release of chlorine could only be reduced but not completely eliminated. Complete elimination of the risk to the population at large obviously lies in relocation of the plant in an area without human habitation." It will thus be seen that the general consensus of opinion of all the Expert Committees is that relocation of the caustic chlorine plant is the only long-term solution if hazard to the community is to be completely eliminated. We have therefore decided to hear arguments on the question as to whether the caustic chlorine plant should be directed to be shifted and relocated at a place where there will be no hazard to the community and if so, within what time frame. This is a question which will require serious consideration and a National Policy will have to be evolved by the government for location of toxic or hazardous industries and a decision will have to be taken in regard to relocation of such industries with a view to eliminating risk to the community likely to arise from the operation of such industries. But the immediate question which we have to consider is whether the caustic chlorine plant of Shriram should be allowed to be reopened and if so, subject to what conditions, keeping in mind constantly that the operation of the caustic chlorine plant does involve a certain amount of hazard or risk to the Community.

12. Now it is an admitted fact that the caustic chlorine plant was set up by Shriram more than 35 years ago and whatever might have been the situation at the time when the plant was installed, it cannot be disputed that, at present, largely owing to the growth and development of the city, there is sizable population living in the vicinity of the plant and there is therefore hazard or risk to large numbers of people, if, on account of any accident, whether occasioned by negligence or not, chlorine gas escapes. The various Expert Committees appointed by the government as well as by the court clearly emphasise the danger to the community living in the vicinity of the caustic chlorine plant if there is exposure to chlorine gas through and accidental release which may take place on account of negligence or other unforeseen events. Now it is evident from the reports of the Expert Committees - and on this aspect of the matter they are all unanimous - that there was considerable negligence on the part of the management of Shriram in the maintenance and operation of the caustic chlorine plant and there were also defects and drawbacks in its structure and design. The report of Dr Slater which is the first report in the series clearly pointed out that the safety policies, practices and awareness on the part of the management needed to be addressed urgently and added inter alia that the effectiveness and availability of the design and emergency arrangements was, to say the

least, questionable and in the real emergency involving a major spill, the measures would probably prove ineffective in limiting serious consequences inside and outside the plant. He also added that the standard of house-keeping and training among the operational staff was not good and it was symptomatic of inadequate awareness of the importance of safety devices and the scale of potential consequences following "loss of containment". He also reiterated that the manner in which the caustic chlorine plant was being maintained and operated did not "measure up to the responsibilities incumbent upon operators of such plants". So also the report of Manmohan Singh Committee pointed out various drawbacks and deficiencies in the structure and design of the caustic chlorine plant as also in its maintenance and operation and made various detailed recommendations which in the opinion of the Manmohan Singh Committee needed to be strictly and scrupulously carried out, if the risk to the workers and the population in the vicinity was to be minimised. The Nilay Choudhary Committee also made several recommendations in order to minimise the hazard due to a possible leakage of chlorine gas. The management of Shriram claimed that all these recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee had been carried out by Shriram and the possible hazard to the workers and the community living in the vicinity was almost reduced to nil and that Shriram should therefore be allowed to reopen the caustic chlorine plant. The management of Shriram made it clear that they did not intend to restart immediately their plants manufacturing sulphuric acid, oleum, chloro-sulphonic acid, super phosphate and granulated fertiliser, ferric alum and active earth. Since these plants were under detailed engineering audit and that out of these plants double conversion double absorption sulphuric acid plant and ferric alum and active earth plants would be started in the second phase "after attending to immediate maintenance needs" and that so far as the other plants were concerned, the schedule for restarting would be communicated later. The only plants in respect of which Shriram sought the permission of the Court to restart were the power plant and the plants manufacturing vanaspati and refined oil including its by-products and recovery plants like soap, glycerine and technical hard oil and the caustic chlorine plant including plants manufacturing by-product such as sodium sulphate, hydrochloric acid, stable bleaching powder, superchlor, sodium hypochlorite and container works. Our directions in the present judgment must therefore necessarily be confined only to these plants which Shriram wants to restart immediately and we may make it clear that so far as other plants which Shriram does not propose to restart immediately are concerned, they shall not be restarted by Shriram without obtaining further directions from the court, particularly since the machinery and equipment in some of these plants is as pointed out in the report of Seturaman Committee old and worn out and the safety instrumentation is not adequate and the court would therefore have to be satisfied that the machinery and equipment is properly renovated and its design and structure modernised with a view to ensuring maximum safety before the court can permit these plants to be recommissioned. Now, of course, there could be no objection to the restarting of the vanaspati and refined oil plant and other recovery plants like soap, glycerine and technical hard oil, because they admittedly do not involve any risk or hazard to the community but these plants obviously cannot be restarted by the management of Shriram unless and until the caustic chlorine plant is also allowed to be reopened, because hydrogen is needed for the vanaspati and refined oil plant and hydrogen would not be available unless the caustic chlorine plant is

put into operation. The question which therefore requires to be considered is whether all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee in regard to the caustic chlorine plant have been carried out by the management of Shriram and if so, whether Shriram should be allowed to restart the caustic chlorine plant.

13. Since there was considerable controversy between the parties as to whether the recommendations made in the report of Manmohan Singh Committee and Nilay Choudhary Committee had been carried out by the management of Shriram and a notice dated January 28, 1986 issued by the Inspector of Factories (Delhi) to the management of Shriram set out seven of these recommendations in respect of which the Inspector of Factories did not appear to be satisfied as to whether they had been complied with or not and a dispute was also specifically raised in the affidavit of Mrs M. Bassi, Joint Labour Commissioner, Delhi Administration, dated January 31, 1986 in regard to compliance with the recommendations of Manmohan Singh Committee set out in paragraph 3 and the recommendations of Nilay Choudhary Committee set out in paragraph 4 of the affidavit, the court decided to appoint another Expert Committee for the purpose of ascertaining whether the various recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee had been complied with by the management. The court accordingly made an order on January 31, 1986 appointing a Committee consisting of Shri Manmohan Singh, Professor P. Khanna, Dr Sharma and Shri Gharekhan to visit the site of the caustic chlorine plant of Shriram and report to the court whether the recommendations contained in the reports of Manmohan Singh Committee and Nilay Choudhary Committee had been complied with by the management of Shriram and even if there was no strict compliance with any of these recommendations, whether the measures adopted by the management of Shriram were sufficient to meet the requirements set out in the reports of Manmohan Singh Committee and Nilay Choudhary Committee. It seems that Professor P. Khanna could not make his services available with the result that the assignment entrusted by us by our order dated January 31, 1986 had to be carried out by a Committee consisting of only three persons, namely, Shri Manmohan Singh, Dr Sharma and Shri Gharekhan. The Committee inspected the caustic chlorine plant of Shriram and submitted its report dated February 3, 1986 showing the status of compliance of the recommendations made by the Manmohan Singh Committee and Nilay Choudhary Committee. The report showed that barring the construction of a shed on the space where filled cylinders are to be kept, which construction is expected to be complete by March 15, 1986, all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee have been complied with by the management of Shriram. The hydraulic test carried out by Messrs Nike Associates, Bombay, a firm recognised by the Chief Inspector of Factories, Bombay as 'competent person' to take up the responsibilities of testing, examining and issuing certificate in respect of pressure vessels also established that all the five tanks had an adequate capacity of withstanding pressure. Since however the authorities wanted a hydraulic test to be carried out once again by the Regional Testing Centre, Okhla, the management of Shriram got a fresh test carried out by the Regional Testing Centre and the certificate issued by the Regional Testing Centre dated February 4, 1986 showed that all the five tanks were found to be strong enough to withstand

pressure of 375 dsig. for thirty minutes' duration. The Committee also insisted that not more than 140 filled chlorine cylinders should be stored and the report shows that this limitation has been accepted by the management of Shriram. The Committee also witnessed a mock drill with a view to ensuring whether there was a specially trained group to handle any chlorine leakage emergency and the Committee stated in the report that the mock drill was found to be satisfactory. There were also one or two other recommendations in respect of which the Committee observed that compliance with them could be tested only during the operation of the plant.

14. The question is whether in view of the fact that all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee have now been complied with by the management of Shriram, the caustic chlorine plant of Shriram should be allowed to be restarted. The petitioner who appeared in person submitted vehemently and passionately that the Court should not permit the caustic chlorine plant to be restarted because there was always an element of hazard or risk to the community in its operation. He urged that chlorine is a dangerous gas and even if the utmost care is taken the possibility of its accidental leakage cannot be ruled out and it would therefore be imprudent to run the risk of allowing the caustic chlorine plant to be restarted. Mrs Kumarmangalam, learned counsel appearing on behalf of Lokahit Congress Union as also the learned counsel appearing on behalf of Karamchari Ekta Union, however, expressed themselves emphatically against the permanent closure of the caustic chlorine plant and submitted that if the caustic chlorine plant was not allowed to be restarted, it would not be possible to operate the plants manufacturing the down stream products and the result would be that about 4000 workmen would be thrown out of employment. Both the learned counsel submitted that since all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee had been complied with by the management of Shriram and the possibility of risk or hazard to the community had been considerably minimised and in their opinion reduced to almost nil, the caustic chlorine plant should be allowed to be reopened. The learned Additional Solicitor-General appearing on behalf of the Union of India and the Delhi Administration stated before us that his clients were not withdrawing their objection to the reopening of the caustic chlorine plant but if the court was satisfied that there was no real risk or hazard to the community by reason of various recommendations of Manmohan Singh Committee and Nilay Choudhary Committee having been carried out by the management of Shriram, the Court might make such order as it thinks fit, but in any event, strict conditions should be imposed with a view to ensuring the safety of the workmen and the people in the vicinity. The learned counsel for Shriram strongly pleaded that now that all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee had been complied with by the management and every possible step had been taken and measure adopted for the purpose of ensuring complete safety in the operation of the caustic chlorine plant, there was no real danger of escape of chlorine gas and even if there was some leakage it could be only of a small quantity and such leakage could easily be contained and there was therefore no reason for permanently closing down the caustic chlorine plant as it would result not only in loss to the company but also in unemployment of about 4000 workmen and non-availability of chlorine to Delhi Water Supply Undertaking and short supply of down stream products. These rival

contentions raise a very difficult and delicate question before the court as to what course of action to adopt.

15. It is undoubtedly true that chlorine gas is dangerous to the life and health of the community and if it escapes either from the storage tanks or from the filled cylinders or from any other point in the course of production, it is likely to affect the health and well-being of the workmen and the people living in the vicinity. There was some controversy before us as to what is the concentration of chlorine in the air which is dangerous to life and health. Agarwal Committee in its report stated that concentration of chlorine in the air above 25 parts per million (PPM) is recognised by Occupational Safety and Health Act (USA) as immediately dangerous to life and health, but this was disputed on behalf of the management of Shriram relying on the report of Manmohan Singh Committee which opined that it is only where concentration of chlorine in the air is between 40 to 60 parts per million (PPM) that exposure for 30 minutes would be dangerous to life. It is not necessary for us to go into this controversy and decide as to which view is correct, whether the one expressed by Agarwal Committee or the one expressed by Manmohan Singh Committee. Fortunately, both Committees are agreed that chlorine is a hazardous gas and though smaller concentrations of chlorine in the air may cause only irritation and coughing, larger concentrations, whether above 25 parts per million (PPM) or above 40 parts per million (PPM) are likely to cause serious danger to life. There can therefore be no doubt that there would be hazard to the life and health of the community, if there is escape of chlorine gas from the caustic chlorine plant, whether by reason of negligence of the management or due to accidental release. In fact the issue of the journal "Scavenger" for January, 1985 enumerates some major accidents which have occurred in different parts of the world in the process industries and this enumeration shows that not less than 25 accidents have been caused by escape of chlorine gas in the last about 70 years and many of these accidents have resulted in death of quite a few persons. To take only a few examples, the escape of chlorine from storage tank in Wilsum Germany in 1952 resulted in death of seven persons and similarly release of chlorine gas in Bankstown, Australia in 1967 resulted in passing of five persons and on account of escape of chlorine gas in Baton Rouge in 1976, about 10,000 persons had to be evacuated. It is true that quite a few of these accidents arose on account of escape of chlorine gas in course of transport by rail tank cars but some accidents did occur on account of escape of chlorine gas from storage tanks. We cannot therefore ignore the possible hazards to the health and well-being of the workmen and the people living in the vicinity on account of escape of chlorine gas. We also cannot overlook the old and worn out state of machinery and equipment, the negligence of the management in the maintenance and operation of the caustic chlorine plant and the indifference shown by the management in installing proper safety devices and safety instruments and taking proper and adequate measures for ensuring safety of the workmen and the people living in the vicinity. These are considerations which are very relevant in deciding whether the caustic chlorine plant should be allowed to be restarted. But as against these considerations, we must also take into account the proven fact that all the recommendations made in the reports of Manmohan Singh Committee and Nilay Choudhary Committee have been carried out by the management of Shriram and it is the opinion of not only Manmohan Singh Committee and Nilay Choudhary Committee but also of the last Committee appointed by us on January 31, 1986 that since

all these recommendations have been complied with by the management in satisfactory manner, Shriram may be allowed to restart the caustic chlorine plant. There can be no doubt, particularly having regard to the opinion of Manmohan Singh Committee, Nilay Choudhary Committee and the last Committee appointed by us, that the possibility of hazard or risk to the community is considerably minimised and there is now no appreciable risk of danger to the community if the caustic chlorine plant is allowed to be restarted. We cannot also ignore the interests of the workmen while deciding this delicate and complex question. It could not be disputed either by the Government of India or by the Delhi Administration or even by the petitioner that the effect of permanently closing down the caustic chlorine plant would be to throw about 4000 workmen out of employment and that such closure would lead to their utter impoverishment. The Delhi Water Supply Undertaking which gets its supply of chlorine from Shriram would also have to find alternative sources of supply and it was common ground between the parties that such sources may be quite distant from Delhi. The production of down stream products would also be seriously affected resulting to some extent in short supply of these products. These various considerations on both sides have to be weighed and balanced and a decision has to be made as to on which side the considerations preponderate and tilt the balance. It is a none too easy task, for the decision either way may entail serious consequences. We have therefore reflected over the various aspects of this rather difficult and complex question with great anxiety and care and taking an overall view of the diverse considerations, we have, with considerable hesitation, bordering almost on trepidations reached the conclusion that, pending consideration of the issue whether the caustic chlorine plant should be directed to be shifted and relocated at some other place, the caustic chlorine plant should be allowed to be restarted by the management of Shriram, subject to certain stringent conditions which we propose to specify.

16. But before we proceed to set out the conditions which must strictly be observed by the management of Shriram while operating the caustic chlorine plant, we must deal with one other question which was raised before us on behalf of the Central Board of Prevention and Control of Water Pollution (hereinafter referred to as the Central Board). The Central Board is constituted under the Water (Prevention and Control of Pollution) Act, 1974 (hereinafter referred to as the Water Act) and it is also required to perform the functions assigned under the Air (Prevention and Control of Pollution) Act, 1981 (hereinafter referred to as the Air Act). Since some of the plants of Shriram situate within the complex including the vanaspati plant were discharging effluent, Shriram was required to obtain consent for discharging effluent from the Central Board under Section 25 of the Water Act and Shriram accordingly made an application for this purpose in the prescribed form. The Central Board passed an order on April 19, 1979 granting consent to Shriram to discharge effluent from their factory in the sewer, subject to the terms and conditions set out in the consent order. The consent granted to Shriram was renewed from time to time and the last renewed Consent Order was dated July 22, 1985 and it was valid up to December 31, 1985. Pursuant to the Consent Order Shriram installed effluent treatment plants in the vanaspati, stable bleaching powder, super phosphate and active earth units with a view to complying with the limiting standards stipulated by the Central Board in the Consent Order. The waste water in other units was either solar dried in lagoons or recycled in the different process houses and the major units emanating waste

water were thus vanaspati, active earth, super phosphate and stable bleaching powder plants. The waste water effluent from these four plants used to be drained out through one common terminal outlet and the complaint of the Central Board was that this combined effluent at the terminal outlet never complied with the limiting standards prescribed by the Central Board. The results of analysis of the samples collected by the officers of the Central Board at the terminal outlet were annexed as Annexure I to the supplementary affidavit dated December 19, 1985 filed by Shri P.R. Gharekhan on behalf of the Central Board. The Central Board also repeatedly complained that the effluent discharged from the vanaspati plant was not in accordance with the limiting standards prescribed in the Consent Order. Now, as pointed out by Surendra Kumar, Senior Environmental Engineer in the employ of Shriram, there are broadly two technologies available for effluent treatment in vanaspati industry. One is the technology of removing suspended solids by setting with the help of clariflocculation and the other is the technology of removing suspended solids, oils and grease and greasy solids by flotation and skimming. The affidavit of Surendra Kumar stated that the technology based on settling with the help of clariflocculation was recommended by the Central Board and Messrs Dorr Oliver were selected by Shriram in consultation with the Central Board for supply of an effluent treatment plant employing this technology. But, unfortunately, the plant of Messrs Dorr Oliver failed to give the guaranteed results presumably because this technology was not satisfactory. The Central Board in fact carried out a performance evaluation of this plant in December, 1983 and they came to the conclusion that this plant would require substantial changes to make it to achieve stipulated effluent standards. It was then realised that the technology of removal of impurities by flotation method is more appropriate for vanaspati plant effluent and Shriram accordingly one again, as pointed out in the affidavit of Surendra Kumar, made a reference to the Central Board. On January 17, 1985 the Central Board directed that Messrs Kroft Engineering Company should be asked to set up a pilot plant based on dissolved air flotation technology in the vanaspati plant for treatability study of the effluent. But despite the follow up action taken by Shriram, the pilot plant was not set up by Messrs Kroft Engineering Company. Shriram thereupon in its anxiety to comply with the limiting standards set by the Central Board in the Consent Order, placed an order with another reputed supplier namely, Messrs Patel Brothers of Bombay in June, 1985 for supply of a plant based on flotation technology. Messrs Patel Brothers guaranteed to instal and commission the plant by December 31, 1985 but the affidavits show that there has been some delay in the installation of this plant and its installation is now going to be completed by February 28, 1986. Meanwhile, however, Shriram installed at the terminal outlet a plant based on dissolved air flotation technology of Messrs Kroft Engineering Company and the counter-affidavit of Shri P.R. Gharekhan dated January 13, 1986 shows that the representatives of the Central Board have verified that this terminal treatment plant has been installed. However, the performance of this terminal treatment plant is yet to be evaluated by the Central Board in order to assess compliance with the limiting standards stipulated in the Consent Order. The Central Board will therefore have to evaluate the performance of this terminal treatment plant after the caustic chlorine and other plants of Shriram commence production. So far as the effluent discharged by the active earth plant and stable bleaching plant is concerned, it complies with the limiting standards prescribed for it in the Consent Order but the effluent discharged by the vanaspati plant does not comply

with the relevant limiting standards. Shriram has, however, stated that one the plant ordered from Messrs Patel Brothers, Bombay is installed, it will be possible to secure compliance with the requirement of the limiting standards. This of course will have to be assessed on the basis of performance evaluation of the plant of Messrs Patel Brothers when installed.

17. But there is one difficulty in the way of Shriram restarting its vanaspati plant. The last renewed Consent Order dated July 2, 1985 expired on December 31, 1985 and obviously therefore Shriram cannot operate the vanaspati plant and discharge effluent unless and until the Consent Order is renewed, for the discharge of effluent without Consent Order would be contrary to the provisions of the Water Act. We, however, find that the Central Board has stated in the affidavit filed in this behalf by Shri D.C. Sharma, Assistant Environmental Engineer, that the Central Board has no objection to grant temporary consent pursuant to the provisions of the Water Act on condition that Shriram would comply with all the recommendations of various Committees appointed by this Court or otherwise and that such consent would be valid only for a period of one month from the date of issue of the Consent Order. Since we are permitting Shriram to reopen its caustic chlorine, vanaspati and other plants above referred to, we would ask the Central Board to grant a temporary Consent Order to Shriram valid for a period of one month from the date of its issue and the Central Board will take samples from the effluent discharged from the vanaspati plant as also at the terminal outlet and ascertain whether the samples comply with the limiting standards set out in the Consent Order. If the samples do not comply with the relevant standards, the Central Board will immediately bring such fact to the notice of this Court and it will be open to the Central Board to take such action as it thinks fit including non-renewal of the Consent Order.

18. So far as compliance with the provisions of the Air Act is concerned, the Central Government in consultation with the Central Board issued a notification under section 19(1) of the Air Act notifying certain areas in the Union Territory of Delhi as air pollution control areas. The plants of Shriram are admittedly situated in the air pollution control area and the industries carried on by Shriram also fall within the schedule of industries specified in the Air Act. Shriram was therefore required to apply for a Consent Order from the Central Board under Section 21 of the Air Act and an application was accordingly made by Shriram on the basis of which a Consent Order was issued by the Central Board on June 13, 1985 authorising Shriram to operate their plants in the air pollution control area, subject to the conditions set out in the Consent Order. The Consent Order relates to three plants of Shriram, namely, sulphuric acid plant, super phosphate plant and power plant. We are not concerned at the present stage with the sulphuric acid and super phosphate plants since permission to restart them is not presently sought by Shriram and we need not therefore pause to consider whether the conditions laid down in the Consent Order in respect of these two plants have been complied with or not. So far as the power plant of Shriram is concerned, it is not the case of the Central Board that the conditions in the Consent Order in regard to the operation of the power plant are not being complied with by the management, though there is a specific complaint made in the affidavit filed on behalf of the Central Board that the conditions in the Consent Order relating to sulphuric acid and super phosphate plants are not being observed. We may

however point out that if the Central Board finds at any time that the conditions in the Consent Order relating to the power plant are not being complied with and the particulate matter emitted by the stacks of the boilers is more than 150 mg/Nm³, it will be open to the Central Board to take whatever action is appropriate under the law.

19. Before we part with this topic of water and air pollution by the plants operated by Shriram, we may point out a most unsatisfactory state of affairs which seems to prevail in the Delhi Municipal Corporation. The Municipal Corporation sewer in the Nazafgarh area has admittedly been lying choked since 1980 with the result that Shriram has since then not been able to discharge its domestic effluent in the municipal sewer and the domestic effluent has to be discharged in the Nazafgarh drain thereby adversely affecting the standards prescribed by the Central Board. It is difficult to understand as to why the Delhi Municipal Corporation has not taken any steps for the last five years to clean up the sewer so that it can be used for carrying domestic effluent discharged by the people. We are not issuing any direction in this behalf but we are certainly constrained to express our deep sense of regret at the total indifference of the Delhi Municipal Corporation in discharging its obligations under the law.

20. We have therefore decided to permit Shriram to restart its power plant as also plants for manufacture of caustic chlorine including its by-products like sodium sulphate, hydrochloric acid, stable bleaching powder, superchlor, and sodium hypochlorite, vanaspati refined oil including its by-products and recovery plants like soap, glycerine and technical hard oil and container works. But there are two orders which prohibit Shriram from operating these plants. One is the order dated December 7, 1985 issued by the Inspector of Factories, Delhi, prohibiting Shriram from using the caustic chlorine and other plants till adequate safety measures are adopted and imminent danger to human life is eliminated and the other is the order dated December 24, 1985 issued by the Assistant Commissioner (Factories) directing Shriram to stop industrial use of the premises on which the caustic chlorine plant is located. The validity of these two orders has been assailed by Shriram in Writ Petition No. 26 of 1986. We are not inclined at the present moment to vacate these two orders because the permission which we are granting by this judgment to Shriram to reopen these plants is as a temporary measure to be reviewed at some point of time in the future and we would therefore merely suspend the operation of these two orders until further directions with a view to enabling Shriram to restart these plants. But we are laying down certain conditions which shall be strictly and scrupulously followed by Shriram and if at any time it is found that any one or more of these conditions are violated, the permission granted by us will be liable to be withdrawn. We formulate these conditions as follows :

- (1) Since it is clear from the affidavits and the reports of the various Expert Committees that the management of Shriram was negligent in the operation and maintenance of the caustic chlorine plant and did not take the necessary measures for improving the design and quality of the plant and equipment and installing adequate safety devices and instruments, with a view to ensuring the maximum safety of the workers and the community living in the vicinity and it is only after W.P. No. 12739 of

1985 was filed and all the glaring deficiencies were pointed out that the management carried out various alterations and adopted various measures in accordance with the recommendations made by Manmohan Singh Committee and Nilay Choudhary Committee, it is necessary that an Expert Committee should be appointed by us which will monitor the operation and maintenance of the plant and equipment and ensure the continued implementation of the recommendations of these two Committees. We accordingly constituted an Expert Committee consisting of Shri Manmohan Singh, Shri P.R. Gharekhan and Professor P. Khanna of the Indian Institute of Technology, Bombay - and if Professor P. Khanna is not available for any reason, Dr Sharma of the University Department of Chemical Technology, Bombay will take his place as a member of the Expert Committee - and this Expert Committee will inspect the caustic chlorine plant of Shriram at least once in a fortnight and examine whether the recommendations made by Manmohan Singh Committee and Nilay Choudhary Committee are being scrupulously implemented by the management. The Expert Committee will also examine the adequacy of the design, materials, fabrication etc. of the devices, instruments and other hardware calculated to monitor, warn, avoid, control and handle all situations arising on account of possible accidental release of chlorine gas, keeping in mind meteorological factors, location of the plant and the largeness of the population exposed to hazard or risk. This examination may involve a thorough check and experimentation at site with a view to determining how far the safety measures adopted by the management are adequate to deal with a possible situation. The Expert Committee will submit a report of its examination to this Court immediately after completion of the examination with copies to the petitioner and Shriram. The first such examination shall be made by the Expert Committee within one week of the restarting of the caustic chlorine plant and it shall be followed by a second examination within a further period of 15 days. If as a result of either of such examination it is found that there is default on the part of the management in continuous compliance with any of the recommendations made by Manmohan Singh Committee and Nilay Choudhary Committee or the safety devices or instruments are not adequate or are not in operation or are not properly functioning, the petitioner will be at liberty to immediately bring such default to the notice of this Court so that in that event, the permission granted to the management to restart the caustic chlorine plant may be revoked. Shriram will, within 3 days from today, deposit a sum of Rs 30,000 in this Court to meet the travelling, boarding and lodging expenses of the members of the Expert Committee.

(2) One operator should be designated as personally responsible for each safety device or measure and the head of the caustic chlorine division should be made individually responsible for the efficient operation of such safety device or measure. If at any time during examination by the Expert

Committee or inspection by the Inspectorate it is found that any safety device or measure is inoperative or is not properly functioning, the head of the caustic chlorine plant as well as the operator in charge of such safety device or measure shall be held personally responsible. Their duty shall be not merely to report non-functioning or malfunctioning of any safety device or measure to the higher authority but to see that the operation of the entire plant is immediately shut down, the safety device is urgently replenished and the plant does not restart functioning until such replenishment is completed.

(3) The Chief Inspector of Factories or any Senior Inspector duly nominated by him, who has necessary expertise in inspection of chemical factories, will inspect the caustic chlorine plant at least once in a week by paying surprise visit without any previous intimation and examine whether the recommendations of Manmohan Singh Committee and Nilay Choudhary Committee are being complied with by the management and whether the safety devices or instruments installed by the management are operative and are properly functioning or whether there are any defects or deficiencies in the operation and maintenance of the caustic chlorine plant and in the safety devices or instruments installed in the plant. The Chief Inspector of Factories or the Senior Inspector nominated by him, who carries out such inspection, shall immediately report to this Court and to the Labour Commissioner any default, deficiency or remissness on the part of the management which may be noticed by him in the course of such inspection and on such report being made, it will be open to the Labour Commissioner and the Chief Inspector of Factories to take such action as they think fit.

(4) The Central Board will also depute a senior Inspector to visit the caustic chlorine plant and the vanaspati plant at least once in a week without any prior notice to the management, for the purpose of ascertaining whether the effluent discharged from the vanaspati plant as also at the terminal outlet complies with the limiting standards laid down in the Consent Order issued under the Water Act and the particulate matter emitted by the stacks of the boilers in the power plant complies with the standards laid down in the Consent Order issued under the Air Act and if there is any default in complying with the relevant standards in either case, such default shall be brought to the notice of this Court and the Central Board will be entitled to take such action as it thinks fit, including revocation of the relevant Consent Order.

(5) The management of Shriram will obtain an undertaking from the Chairman and Managing Director of the Delhi Cloth Mills Ltd. which is the owner of the various units of Shriram as also from the officer or officers who are in actual management of the caustic chlorine plant that in case there is any escape of chlorine gas resulting in death or injury to the

workmen or to the people living in the vicinity, they will be personally responsible for payment of compensation for such death or injury and such undertakings shall be filed in court within one week from today.

(6) There shall be a Committee of three representatives of Lokahit Congress Union and three representatives of Karamchhari Ekta Union to look after the safety arrangements in the caustic chlorine plant. The function of this Committee will be to ensure that all safety measures are strictly observed and there is no non-functioning or mal-functioning of the safety devices and instruments and for this purpose, they will be entitled to visit any section or department of the plant during any shift and ask for any relevant information from the management. If there is any default or negligence in the observance of the safety measures and the maintenance and operation of the safety devices and instruments, this Committee will be entitled to bring such default or negligence to the notice of the management and if the management does not heed to the same, this Committee will be entitled to draw the attention of the Labour Commissioner to such default or negligence. The members of this Committee will be given proper and adequate training in regard to the functioning of the caustic chlorine plant and the operation of the safety devices and instruments and this will be done within a period of 2 weeks after the nomination of three representatives on the Committee is communicated by each of the two unions to the management.

(7) There shall be placed in each department or section of the caustic chlorine plant as also at the gate of the premises a detailed chart in English and Hindi stating the effects of chlorine gas on human body and informing the workmen and the people as to what immediate treatment should be taken in case they are affected by leakage of chlorine gas.

(8) Every worker in the caustic chlorine plant should be properly trained and instructed in regard to the functioning of the specific plant and equipment in which he is working and he should also be educated and informed as to what precautions should be taken and in case of leakage of chlorine gas, what steps should be taken to control and contain such leakage. The most effective way of giving such training and instruction would be through audio-visual programmes to be specially prepared by the management. Even after proper training and instruction is given it is likely that the workers engaged in the plant may, on account of lapse of time, forget the sequence of steps to be taken to monitor, warn, avoid, control and handle any chlorine leakage emergency and refresher courses should therefore be conducted at least once in 6 weeks with mock trials.

(9) Loud speakers shall be installed all around the factory premises for giving timely warning and adequate instructions to the people residing in the vicinity in case of leakage of chlorine gas.

(10) The management shall maintain proper vigilance with a view to ensuring that workers working in the caustic chlorine plant wear helmet, gas masks or safety belts as the case may be while working in the hazardous departments or sections of the plant and regular medical check-up of the workers shall be got carried out by the management in order to ensure that the workers are in good health.

(11) The management of Shriram will deposit in this Court a sum of Rs 20 lacs as and by way of security for payment of compensation claims made by or on behalf of the victims of oleum gas, if and to the extent to which such compensation claims are held to be well founded. This amount deposited by the management of Shriram will be invested by the Registrar of this Court in fixed deposit with a nationalised Bank so that it earns interest and it will abide further directions of this Court. The management of Shriram will also furnish a bank guarantee to the satisfaction of the Registrar of this Court for a sum of Rs 15 lacs which bank guarantee shall be encashed by the Registrar, wholly or in part, in case there is any escape of chlorine gas within a period of three years from today resulting in death or injury to any workman or to any persons or persons living in the vicinity. The amount of the bank guarantee when encashed shall be utilised in or towards payment of compensation to the victims of chlorine gas, the quantum of compensation being determinable by the District Judge, Delhi on applications for compensations being made to him by the victims of chlorine gas. The amount of Rs 20 lacs shall be deposited and the bank guarantee for Rs 15 lacs shall be furnished within a period of 2 weeks from today and on failure of the management of Shriram to do so, the permission granted by us by this judgment to restart the caustic chlorine plant and other plants shall stand withdrawn.

21. We have formulated these conditions with a view to ensuring continuous compliance with the recommendations of Manmohan Singh Committee and Nilay Choudhary Committee and strict observance of safety standards and procedures, so that the possibility of hazard or risk to the workmen and the community is almost reduced to nil. We would like to point out that the caustic chlorine plant of Shriram is not the only plant which is carrying on a hazardous industry. There are many other plants in Delhi which are employing hazardous technology or are engaged in manufacture of hazardous goods and if proper and adequate precautions are not taken, they too are likely to endanger the life and health of the community. We would therefore suggest that a High Powered Authority should be set up by the Government of India in consultation with the Central Board for overseeing functioning of hazardous industries with a view to ensuring that there are no defects or deficiencies in the design, structure or quality of their plant and machinery, there is no negligence in maintenance and operation of the plant and equipment and necessary safety devices and instruments are installed and are in operation and proper and adequate safety standards and procedures are strictly followed. This is a question which needs serious attention of the Government of India and we would request the Government of India to take the necessary steps at the earliest, because the problem

of danger to the health and well-being of the community on account of chemical and other hazardous industries has become a pressing problem in modern industrial society. It is also necessary to point that when science and technology are increasingly employed in producing goods and services calculated to improve the quality of life, there is a certain element of hazard or risk inherent in the very use of science and technology and it is not possible to totally eliminate such hazard or risk altogether. We cannot possibly adopt a policy of not having any chemical or other hazardous industries merely because they pose hazard or risk to the community. If such a policy were adopted, it would mean the end of all progress and development. Such industries, even if hazardous, have to be set up since they are essential for economic development and advancement of well-being of the people. We can only hope to reduce the element of hazard or risk to the community by taking all necessary steps for locating such industries in a manner which would pose least risk of danger to the community and maximising safety requirements in such industries. We would therefore like to impress upon the Government of India to evolve a national policy for location of chemical and other hazardous industries in areas where population is scarce and there is little hazard or risk to the community, and when hazardous industries are located in such areas, every care must be taken to see that large human habitation does not grow around them. There should preferably be a green belt of 1 to 5 km. width around such hazardous industries.

22. There is also one other matter to which we should like to draw the attention of the Government of India. We have noticed that in the past few years there is an increasing trend in the number of cases based on environmental pollution and ecological destruction coming up before the courts. Many such cases concerning the material basis of livelihood of millions of poor people are reaching this Court by way of public interest litigation. In most of these cases there is need for neutral scientific expertise as an essential input to inform judicial decision making. These cases require expertise at a high level of scientific and technical sophistication. We felt the need for such expertise in this very case and we had to appoint several expert committees to inform the court as to what measures were required to be adopted by the management of Shriram to safeguard against the hazard or possibility of leaks, explosion, pollution of air and water etc. and how many of the safety devices against this hazard or possibility existed in the plant and which of them, though necessary, were not installed. We had great difficulty in finding out independent experts who would be able to advise the court on these issues. Since there is at present no independent and competent machinery to generate, gather and make available the necessary scientific and technical information, we had to make an effort on our own to identify experts who would provide reliable scientific and technical input necessary for the decision of the case and this was obviously a difficult and by its very nature, unsatisfactory exercise. It is therefore absolutely essential that there should be an independent Centre with professionally competent and public spirited experts to provide the needed scientific and technological input. We would in the circumstances urge upon the Government of India to set up an Ecological Sciences Research Group consisting of independent, professionally competent experts in different branches of science and technology, who would act as an information bank for the court and the government departments and generate new information according to the particular requirements of the court or the concerned government department. We would also suggest to the

Government of India that since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up Environment Courts on the regional basis with one professional Judge and two experts drawn from the Ecological Sciences Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would of course be a right of appeal to this Court from the decision of the Environment Court.

23. We have in this judgment dealt only with the question as to whether Shriram should be allowed to restart its caustic chlorine plant and other plants manufacturing by-products and if so, subject to what conditions. There are many other issues of seminal importance arising out of the claims for compensation by victims of oleum gas which have to be considered by the court. We have formulated these issues and asked the petitioner and those supporting him in W.P. 12739 of 1985 to file their written submissions on or before February 24, 1986 and Shriram to file their written submissions on or before February 28, 1986 so that we can take up the hearing of the writ petitions on March 4, 1986.

24. Before we part with this judgment we would like to express our deep sense of appreciation for the bold initiative taken by the petitioner in bringing this public interest litigation before the court. The petitioner has rendered signal service to the community by bringing this public interest litigation and he has produced before the court considerable material bearing on the issues arising in the litigation. He has argued his case with great sincerity and dedication and the people of Delhi must be grateful to him for espousing such a public cause. There is no doubt in our mind that but for this public interest litigation brought by the petitioner, there would have been no improvement in the design, structure and quality of the machinery and equipment in the caustic chlorine plant nor would any proper and adequate safety devices and instruments have been installed nor would there have been any pressure on the management to observe safety standards and procedures and the possibility cannot be ruled out that perhaps some day oleum gas tragedy might have been repeated but this time with chlorine gas which is admittedly more dangerous than oleum gas. Though lone and single, he has fought a valiant battle against a giant enterprise and achieved substantial success. We would therefore as a token of our appreciation of the work done by the petitioner direct that a sum of Rs 10,000 be paid by Shriram to the petitioner by way of costs.