

Inspector's or Certifying Surgeon's Remarks:-

Union Carbide India Ltd, Bhopal

Dated 2.8.80

Visited the factory today at work along with Shri. M.C. Jain, Asst Director of Industrial Health and Safety, Bhopal. Shri Pande, Asst. Industrial Relations Manager took us round the plant

1. Air Compressor Section: Identification mark and date next test and examination.  
N2-bottle be painted.  
Water drain of this tank be operated regularly.
2. Plans of workman dinning and lockers room were scrutinized on the spot.  
There are in addition to (illegible) and rest room.
3. Enquired into the accident case of Mr. A.N. Banerjee, Drafts man, who got the burn injury when he was supervising and standing nearby at the time of the drum was being cut by the welder. It was learnt latter on that the drum was containing some volatile chemical after de-contamination. The management is hereby directed to ensure that the cutting of such drums shall be carried out only after ascertaining that the drum has no chemical

Also enquired into the accident case of minor nature since last inspection MIC and Co. plant were down at the time of Inspection

By Director  
Indl Health & Safety  
Bhopal

Union Carbide India Ltd, Kaliparade, Bhopal

Dated; 5.10.81

Visited the factory today at work with Shri Anoop Rai, Personnel officer and Shri P.K. Bose, Manager Formulation

1. A round to the formulation department was taken. Dust was found coming out from joints of Raymond mills. These joints be sealed properly to reduce dust ??? in the department. Floors near the machines (Raymond Mills), wall in stairs be cleaned regularly to reduce fine dust. Rain material bags be stacked systematically as explained on the spot.
2. Waste material was found laying near the entrance gate of the packing line. This waste material shall immediately be removed and entrance gate be kept free for easy movement.
3. Sevidol Plant: Floor of this sevidol plant was found much dusty. Waste polythene bag etc was also found laying on the floor. Therefore it is advised that the floor be kept clean by regular sweeping. Raw material bags shall not be stacked in the passage ways of this department. Empty and filled bags of raw material were seen kept in unsystematic order near the fremix feeding point. Machine workers working near this machine finds difficulty in walking and in working. So it is advised that these empty bags be removed immediately and filled bags be stacked systematically.
4. Discussed with Mr. Jariwala regarding the complaint made him regarding the dust problems in formulation sectors. Some of the joint at different machines were seen leaking the dust. So instructions were issued on the sot to Shri Bose to look after this matter and put some packing material to avoid leaking of dust.

Report compliance with 7 days

By Director  
Industrial Health & Safety  
Bhopal

Union Carbide India Ltd, Kaliparade, Bhopal

Dated: 26.12.81

Visited the factory on 26.12.81 along with Shri M.C. Jain, Asst Directory, Industrial Health and Safety, Bhopal to enquire into the fatal incident case of Shri Ashraf Khan s/o Akbar khan. Shri Shirvastva took us to the spot of accident i.e. Phosgene evaporater in the MIC plant. Since there was no eye witness available at the time of enquiry, so statement could not be recorded. Management is hereby instructed to keep eye witness available to get their statement recorded and to conduct enquiry.

Undersigned had signed the stop valve at the site of the phosgene gas evaporator. At the time of the visit . Please do not handle this stop-valve because undersigned want to get this examined and tested for leaking.

Management hereby also instructed to keep the record of handling, testing checking repairs if any done , operation and examining the valves cocks etc available for checking.

By Director  
Industrial Health and safety  
(Sr. Inspector of Factories)  
Bhopal Division, Bhopal

Union Carbide India Ltd. Kaliparade, Bhopal

Dated: 2.2.82

Visited the factory at work with Shri D.S. Pandey, Manager, Industrial Relations was found present.

1. All cocks and valves shall be operated at least once a month and shall be tested periodically by a competent person and record these test and examination shall be kept in a register. A schedule for such test and examinations shall also be planned out and shall be kept readily available for personal.
2. Emergency Instructions: Simple and special instructions shall be formed and displayed in every work shed of the factory to ensure that the effective measures will be carried out in the cases of emergency to deal with escaped poisonous gases, vapours, liquids or dust. All workers shall be trained and instructed in the action to be taken in such emergency and in the general hazards of their employment. Only trained workers or personal be allowed or permitted to handle emergency cases to deal with escaped poisonous gases, vapours, liquids, etc.
3. Workers working or putting the bolts at the ?? of valves and pipes shall be instructed to open these bolts which are away from then working side and shall also be instructed use protective appliances. While they are working they must not remove the protective appliances in case of any failure ?? and ?? they are instructed by a competent person. Jobs of receiving or pulling the ????? supervisors or persons.
4. Workers shall only be allowed in those places in which they have been given or do work.
5. Job safety instructions shall be displayed in simple language in everyone's shed of the factory.

By Director  
Industrial Health & Safety  
Bhopal Division, Bhopal

Union Carbide India Let, Bhopal

Dated: 13.8.82

Visited the factory at work with Shri D.S. Pande, Manager, Industrial Relations was found present. Mr. Anoop Rai took me around the factory.

1. Enquired in to accident causes. They were found to be of minor nature.
2. Maintenance work shops near the sevidol plant be shifted to some other suitable place because large quantity of dust was coming to this shop and irritation swell of the chemical was affecting the workers working in this shop.
3. Compliance to the last inspections shall be reported to the office of the undersigned.

By Director  
Industrial & health Safety  
Bhopal Division, Bhopal

Union Carbide, India Ltd, Kaliparade, Bhopal

Dated: 1.8.83

Manager: Shri J. Mukund

Visited the factory today at work with Shri R. Pathak and safety manager took us round the factory. Only formulation section was found operational.

1. Kindly submit detailed information of all the pressure vessels which are in use in the plant.
2. Enquired into the accident cause. Only 3 accident cases found reportable and workers has joined their duties. These accidents were of minor nature.
3. Half yearly returned proposal was checked.

By Director  
Industrial & health Safety  
Bhopal Division, Bhopal

Union Carbide India Ltd, Kaliparade Ground, Bhopal

Date of Inspection: 16.12.83

Manager: Shri J. Mukund

Inspected the factory today in the afternoon along with Shri P.C. Shrimal (Director of Industrial Health & Safety). Shri N.T. Parakh took us round the MIC plant. Studied the circumstance under which exposure to phosgene gas took place, and the suspected inhalation of the gas, to some people of the nearby plant was reported in the plant medical center. People were put under observation in the plant hospital and after few hours of treatment and x-ray of the lungs were released. It was explained that the phosgene surge tank was under evacuation step by step as per procedure and when the water was flushed inside the tank, the protected gas escaped from the tank soon after the gas was smelt and the water showers were put on to hill it out. It is reported that the MIC ?? will be taken up for maintenance. It is once again brought to the notice of the management that their sevidol XI chemicals sub-rule 6 and 7, the instruments corks and valves are to be tested periodically and recorded of such test examinations shall be maintained. Such records are not so far maintained. These shall be completed and reported to the office.

By Director  
Industrial Health & Safety  
Bhopal

M.C.Jain  
Asstt Dir HIS

Union Carbide India Limited, Kaliparade Bhopal

Dated: 17.2.84

Manager: Shri J. Mukund

Visited the factory today at work, Shri S. Mitra was found present. Shri Shrivastava took me round the factory. Only the formulation plant was secure kind and workers were found doing packing jobs.

1. Empty gunny bags and polythene bags kept near the machines in the formulation plant shall be removed and these places shall be maintained clean.
2. Accident register was check. There is no accident since January 1<sup>st</sup>, 1984.
3. Discussion held with Mr Madhukar for submitting further details for declaring competent person for examining and testing pressure vessels which are used in the plant and working at pressure higher than atmospheric pressure.
4. Record of payment of wages was checked. Payment of wages is made every 1<sup>st</sup> of the month.

By Director  
Industrial & health Safety  
Bhopal Division, Bhopal

Further:-

5. Fine dust was seen leaking from R-5 joints. These joints shall be properly sealed in such a way so that this fine dust cannot leak.
6. Sliding transparent sheets be provided in front of the BHC granular pans so as to avoid dust inhalation and dust nuisance in the plant.

Specific compliance shall be reported for the points no 3, 5, & 6 within 10 days to the office of the undersigned.

P. Shrimal  
17.2.84  
D.D. I.H.S

Union Carbide India Limited, Bhopal

Dated: 15.11.84

Manager: Shri J. Mukund

Visited the factory today at work. Shri S. Mitra was found present. Shri Pathak took me round the factory only packing process was seen carried on in the formulation section.

1. House keeping in the formulation section and road near this block 10 shall be improved.
2. First aid boxes shall be replenished with the prescribed materials.

Report Compliance

By Director  
Industrial & health Safety  
Bhopal Division, Bhopal

17<sup>th</sup> Jan, 1984

The Sr. Inspector of Factories,  
Government of Madhya Pradesh  
Junior HIG No. 42  
Behind Hotel birez, habibgang  
Bhopal

Attn; Mr. Jain

Dear Sir:

Sub: Competent uthority for testing  
of pressure vessels

The undersigned is extremely thankful to you for the courtesy extended on 31/12/1983 at the time of discussions on testing of pressure vessels. The plea to entrust the responsibility of testing of pressure vessels in our plans with the following mechanical engineer show bio-data attached herewith.

1. Mr. T.K. Chakravarty
2. Mr. S.K. Bhattacharya

These two gentlemen are working in our organization as mechanical engineers and have enough experience of testing of pressure vessels, etc. We therefore request you to authorize these two gentlemen to sign as 'Competent Authority' for testing of pressure vessels and maintain necessary records etc. Both these gentlemen are available in our Bhopal factory on all working days and can be interviewed if desired.

Thanking You

Sincerely Yours  
For???

N.T. Kar  
Manager-Utilities & Electricals

Cc: The chief Inspector of Factores  
Mahatma Gandhi Road, Indore

Mr. T.K. Chakravarty  
Mr. S.K. Bhattacharya  
Union Carbide India Ltd, Bhopal

Dated: 18.2.82

There was accidental leakage of phosgene gas in the MIC plant from 10.2.82 to 12.2.82. This accident is being investigated by Mr. P.R. Lombar and P.C. Shrimal. Supervisors and workers were interviewed regarding this accident. In order to avoid this accident following precautions should be taken:

1. While handling dangerous chemicals or liquid gases it should be ensured that those factory pumps should be used that carry mechanical seal on it. While fitting the ring of mechanical seal, an engineer should measure and verify the compression fitting setting and this fitting should also be entered in the log book.
2. After the pump leakage has been tested in the workshop and before this pump becomes operational, it should be ensured that water or other suitable chemicals should be tested for half hour to an hour and the leakage should be observed.
3. All the phosgene handling pumps that actually are in the process of production should be carefully secured and observed at all times. There should be constant check on the leakage to ensure that leakage is not in great quantity and necessary steps can be taken immediately to cope with the leakage.

N.C. Jain  
Assistant Director  
Industrial & health Safety  
Bhopal Division, Bhopal

Union carbide India Limited, Kaliparade, Bhopal

Dated: 18.10.82

Factory Manager: Shri J. Mukund

There was a leakage in the MIC plant on 6.10.82 in which 3 workers were affected. The leak happened on the gillet line. This incident has been under investigation. In order to avoid this kind of accident in future following points should be fulfilled.

1. Officials should