

14th and 15 March 2018

AFTER ACTION REPORT ON MOCK EXERCISE CONDUCTED IN IOCL LPG BOTTLING PLANT, SANAND, AHMEDABAD ON 16 MARCH 2018

1. As part of the CIDM Ahmadabad which was organized at Hotel Hyatt Regency, Ahmedabad on 14 and 15 March 2018, an 'on-site' emergency leading to 'off-site' industrial disaster was conducted in IOCL LPG Bottling Plant, Sanand, 30 km from Ahmedabad. The scenario depicted was ,”driver of a LPG loaded tanker noticed leak in the vehicle when he was about to reach the IOCL Bottling Plant to unload the LPG. He informed the Plant Manager, who gets the unloading bays cleared and allows the vehicle to enter the Plant. While leak was getting fixed, a spark created due to falling of a tool, led to pool fire which soon spread in other areas. When the Plant responders were not able to douse the fire, the emergency was declared “off-site” and help of the first responders from the district as also the mutual aid units was sought. The fire got under control after two hours of joint efforts of the industrial unit, mutual aid units and the first responders at the district level”.

Table Top Exercise.

2. Two important events preceded the mock exercise. First one was Coordinating Conference with the Collector, Ahmedabad, Director, DISH, Government of Gujarat and

the IOCL LPG Bottling Plant, district first responders and the mutual aid units located in the industrial hub on 13 March in the conference room of the Collector. It was informed by the Collector that simultaneously another mock exercise on earthquake would also be taking place at State level, where 8 districts, including Ahmedabad would be taking part. This activity would divide the resources of the district for response. On 15 March 2018, a table top exercise was conducted in which the scenarios & timings of the exercise were finalized and the participants who would take part in the mock exercise were identified. The scenario as given above was given out and responses of various stake-holders for the 'on-site' and 'off-site' emergencies were elicited. All doubts on the roles and responsibilities of various take holders were clarified.

Mock Exercise

- 3. Scenario Painting.** The scenario as rehearsed during the table top exercise was painted by the onsite observers.
- 4. Detailing of Observers.** Before the start of the exercise, observers were detailed for ICP, control room, entry gate, medical, fire services, on-site, security and traffic inside the plant.
- 5. Simulation of Casualties.** 20 casualties were simulated 10 inside the plant and 10 outside the plant and dummy casualties were placed at various locations. The observers and the casualties were briefed by the FICCI Coordinator, Brig BK Khanna and by Dy Director, DISH, Govt of Gujarat.

Precautions were taken to ensure that casualties are so placed that no accident takes place during the exercise.

6. Participants in the Mock Exercise. Besides the IOCL bottling plant, other mutual aid units located in the industrial hub and had water bowzers took part. From the district although SDM, ACP and some police personnel did attend the mock exercise but it was more as observers and not as participants. One fire tender of the Municipal Corporation did take part in dousing the fire. The limited resources from district could be due to simultaneous mock exercise on earthquake at State level which drew most first responders. However officials from the Directorate of Industrial Safety and Health were in full attendance. FICCI officials and 130 participants of CIDM also attended the mock exercise as observers. Overall there were approx 350 personnel who participated in the mock exercise .

Conduct

7. The mock exercise started at about 1030 hrs on 16 March 2018 with driver of LPG loaded tanker reporting to the Manager, IOCL that there was leakage of gas in his tanker and he needed help to plug the same. The Manager asked him to come slowly into the Plant. In the meantime, two LPG tankers off-loading LPG were asked to stop and move out of the Plant area. The smoking tanker was then allowed to enter the Plant and proceed to the off-loading bay. Cooling of the tanker started with water being sprayed from the fixed water points. First fire tender from outside was from Tata Motors and slowly other water

tenders from Mutual Aid Units started coming in. In all 6 fire tenders reported from Mutual Aid units. The Plant has sufficient water for 4 hours fire fighting. The space around the off loading bay area is limited and difficulty was experienced in deploying all the fire tenders. Casualties were taken out by the responders and further carried by the ambulances. At the gate a temporary Occupational Health Centre (OHC) on a table was set up for stabilizing the casualties. The situation was well controlled by the site coordinator. It was looking as if he was the 'one man' show , to check the alternate leadership he was declared casualty. His place was taken by the security Head who discharged her duties well. From the district side, SDM and ACP were present throughout the mock exercise but when emergency was declared 'off-site', the district incident commander did not take over. The command continued with the Plant incharge. One fire tender from Municipal Corporation did report after about one hour of incident. The area was checked for pollution and after all clear the mock exercise was called off at about 1230 hr on 16 March 2018.

Debriefing

- 8.** In the debriefing the observers, responders, SDM, ACP, Dy Director, DISH and participants of CIDM gave their observations and suggestions/recommendations. First various team head of the IOCL Bottling Plant gave out their learning experience from the mock exercise. Thereafter under Dy Director, DISH, the expert observers detailed by Director, DISH gave out good practices and gaps noticed

. Thereafter SDM, ACP and the Dy Director, DISH gave their assessment of the standard of the mock exercise. I also gave my observations and suggestions at the end of the debriefing. Major issues which were brought out during the debriefing are as follows:-

Actions by State/District

- a) **Response of the Police and Fire Services.** The response of the police and fire services was not within acceptable limits. It may be due to the simultaneous state Exercise being conducted and the distance from the Bottling Plant. Atleast one 'off-site' mock exercise should be carried out in a year in which all the first responders from the district and State should participate.
- b) **Incident Response System (IRS).** For response to any disaster, IRS as propagated by NDMA should be adopted. In effect, it means activation of Emergency Operation Centre at the District level on a 24x7 mode, detailing of Incident Commander on occurrence of a disaster, who with his/her Emergency Response Team (detailed previously) would set up an Incident Command Post (ICP), near and yet at a safe distance from the disaster site. Incident Commander, detailed by the Collector, would manage the 'off-site' emergency alongwith Emergency Support Functionaries (ESF), like police, fire services, civil defence, medical services, electricity, pollution control, water, telecommunication, public relations, etc. Training on IRS needs to be

imparted to district officials and first responders. In the exercise, ICP was not activated.

- c) **Moveable ICP.** As per IRS, an ICP is supposed to be established to coordinate the efforts and resources of the first responders. It is recommended that the District may like to have a moveable ICP based on a SUV, with in-built communications, which can be established near the disaster site and made functional in shorter time.
- d) **Participation by State Revenue Deptt.** State Revenue and Labour departments of the State should also be represented in such mock exercises for learning experience.

Action by IOCL Bottling Plant

- e) **Mounded Storage.** The LPG is presently being stored in spheres and bullets, which are more vulnerable. LPG should preferably be kept in mounded storage, for which the industrial unit should take priority action.
- f) **Recording of Conversations at Control Room.** In order to learn from the mistakes during the mock exercise as also to find the gaps in response during actual disasters, it is recommended that the industrial units should have a mechanism for recording all the conversations between control room and the various responders. These can later be played to find out the gaps and good practices noticed during the mock exercise and during disaster, the actual cause and lapses

by various responders, if any. This will improve response.

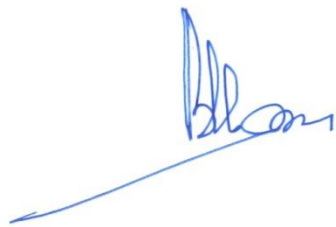
- g) **Location of Control Room**, The control room should be located at a height with fire proof glass facing the Plant, so that the Plant Head can overall monitor the response to the emergency and take any corrective measures required.
- h) **Elbow Room near Off-loading Bays**. There is little space around the off-loading bays for deployment of fire tenders. The filling station and the LPG storage spheres and bullets are also close-by. The unit has adequate space available . It may consider spreading out the vulnerable entities within the plant.
- i) **Occupational Health Centre (OHC)**. The unit does not have an OHC. It is required to stabilise the casualties before sending them to the hospital/s for further treatment. An OHC should be created near the Administrative block and close to entry gate.
- j) **Creation of Water Wall**. A continuous water wall is required to be created around the disaster site, for which necessary equipment should be available.
- k) **Fire Suit**. No responder was seen wearing a fire suit to plug the leaking LPG. The unit should provision at least two fire suits, if not already available and train personnel to wear them for long duration to get used to them.
- l) **General Awareness of Drivers/Assistants**. There are a number of loaded and empty trucks/tankers/vehicles outside the Plant along both sides of the road waiting for their turn. The drivers are in the habit of brewing tea under their vehicles which can be very fatal. The industrial units

must conduct general awareness program for them on do's and don'ts for them while in wait.

- m) **Overall Response. Overall response of the unit to the scenario depicted was prompt and professional. The responders knew their roles and responsibilities and there was no panic or anxiety seen on any leaders' face.**

Conclusion

9. It was one of the very good mock exercises, which was covered well by the electronic and print media. A number of positive lessons have been learnt from this mock exercise. The district official and management of industries were quite positive in their attitude to be informed of the gaps and were willing to bridge those gaps, so that the industries are well prepared to face actual disasters, if at all they do strike.



(Brig (Dr) BK Khanna)
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23 March 2018