# CHAPTER 3
# DESCRIPTION OF THE INCIDENT

Based on the information obtained through interviews, site visits, and data collection by the Investigating Committee events leading to the incident are found to be:

**3.1** BPCL put an indent in the morning at 10.00 a.m. of 29th October for receiving MS (1567 KL) and SKO (850 KL) to be received in their neighbouring installation by pipeline transfer on 30th October. Shri G.S Chambal, Manager Operations BPCL who was on a half day duty on 29th came to IOC control room around 2.30 p.m. to plan the activities for next day's PLT operations of both MS & SKO. However when he met Shri A.B. Gupta, Shift Officer of IOC, Shri A.B. Gupta informed him that he, (A.B. Gupta) had received directions from his superior (Shri Poddar, Senior Manager IOC) to start SKO transfer today (i.e. on 29th October). Thereafter a telephonic discussion took place between Shri Poddar, Shri Chambal and Shri Gupta in which Shri Chambal requested that in case SKO transfer was being preponed to 29th, then MS transfer should also take place on 29th. Since by then Shri Poddar had received the product quality results for MS from Quality Control (QC), and the product were certified meeting quality standards, he (Poddar) agreed to the request of BPCL to transfer MS also on 29th in addition to SKO.

**3.2** It was decided that the PLT will start after TLF operation at 17.30 hrs. and Shri D.S. Chambal agreed to arrive at that time for necessary witnessing of tank gauging and lining up for PLT start up operations. Shri A.B. Gupta the Shift Officer in second shift had three operators present in his shift at the beginning of his shift - Shri. K.N. Agarwal, Shri. K.R Meena and Shri R.N. Meena. Shri K.R. Meena was continuing on overtime from first shift (morning) operations. In fact, from the overtime

records it is found that Shri K.R. Meena had worked 16 hours on 27th October and also on 28th October and was doing the third consecutive day of 16 hours of work on 29th, the day when the accident happened. Shri K.N. Agarwal, the other operator on Shri Gupta's shift approached Shri Gupta seeking permission for two hours leave for attending some Puja at his house. Shri Gupta reportedly indicated his unwillingness to accede to Shri Agarwal's request in view of the considerable job load involving transfer operations of two products MS and SKO and few other activities. Shri Agrawal was at that time assigned the job of draining water from MS tank 409-A and subsequent dipping of the tank. Shri Agarwal after completing the job and taking the dip of the tanks left the site apparently without specific permission of Shri Gupta around 5.30 pm taking the general shift bus. Shri Agarwal's leaving the premises has also been confirmed by the gate security.

**3.3** At around 5.10 p.m. Shri Gupta called Shri Gangal, Shift Officer, Pipeline Division of IOC for taking over a SKO tank No.402-A from pipeline custody to marketing custody and proceeded towards the tank along with both the available operators Shri K.R. Meena and Shri R.N. Meena. After reaching SKO tank 402-A, all valve positions were checked as correct in the presence of both Shri Gupta and Shri Gangal and the water was drained from the tank. Thereafter the inlet valve to the tank was closed including the hammer blind valve and the lock earlier put on the outlet line hammer blind valve was taken out and put on the inlet line hammer blind valve. On completion of this operation, Shri Gupta and Shri Gangal along with Shri K.R. Meena went on the tank top and took the dip. Thus the custody of the SKO tank 402-A was taken over by Marketing from Pipeline. At this time Shri Gupta from top of the tank 402-A noticed two BPCL contractors' men who carry out sealing of the valves for BPCL prior to PLT approaching the tank farm. Normally when inter company pipeline transfer took place for any product, the receiving

company personnel checked the line up and sealed the valve to make sure that no product inadvertently went to any other destination other than the intended tank in the receiving company. This practice had been adopted because the accounting practices were based on the difference of between the opening and closing dips of the delivery (supplying company, i.e. IOC) tanks. After the dipping and taking over of tank from the Pipeline, the two operators Shri K.R. Meena and Shri R.N. Meena lined up SKO tank 402-A to SKO pumps for pumping to BPCL by first reversing the outlet line hammer blind valve in the line up position, opening the HOV and lastly then MOV in the outlet line, in the end.

**3.4** Shri Gupta thereafter along with Shri Gangal proceeded with his team to MS tank farm area for taking over and lining up of MS tank 401-A in a similar manner. On reaching there first the valve positions were checked and water drained and lock on the Hammer Blind was reversed from outline to inlet line. Thereafter Shri Gupta and Shri Gangal went to the tank 401-A top along with Shri R.N. Meena and completed the dip operation while Shri K.R. Meena stayed at the ground level. On climbing down after dipping of the tank, Shri Gupta did not find Shri K.R.Meena in the tank bund area though he was supposed to carry out the line up operation along with Shri R.N. Meena. Shri Gupta in his deposition before the Committee stated that when he was on the tank 401-A top, he had heard Shri K.R. Meena trying to tell him something but he could not make out what he was trying to say. As per Shri Gupta, he instructed Shri R.N. Meena to wait for Shri K.R. Meena and on his arrival carry out the line up operation. Thereafter Shri Gupta along with Shri Gangal went on the other side of tank 401-A and completed the dip memos for SKO tank 402-A and MS tank 401- A. The copy of the dip memo which was found in Shri Gupta's pocket indicated the timing as 17.20 hrs. for SKO tank and 17.50 hrs. for MS tank. Thereafter Shri Gupta noticing that Shri D.S. Chambal is yet to arrive (expected at 17.30 p.m.) and decided to

call him using his cell phone and for this purpose went out of the bund and crossed the plant road.

**3.5** Soon thereafter (around 18.10 hrs) Shri. Gupta heard Shri R.N. Meena shouting (not visible being on other side of the tank) stating that there is a major MS leak and that he (Shri R.N. Meena) is blinded with MS (Guptaji bahut petrol leek ho gaya, meri ankhon mein gaya). Shri Gupta shouted “close the valve” (valve bandh karo, valve bandh karo) and rushed towards Shri R.N. Meena .

Then Shri Gupta on reaching near Shri Meena observed the following:

(a) MS was leaking in vertical direction as a fountain, the height being little higher than man’s height (presumably 7/8 feet) but rose gradually to a higher levels and finally being observed almost up to 25/30 feet.

(a) Shri R.N. Meena was in completely dazed condition, drenched entirely in MS and close to asphyxiation.

**3.6** Shri Gupta carried Shri R.N. Meena, intending to bring him to safe area outside bund but very soon himself was overcome by MS vapours which compelled him to drop Shri R.N. Meena and to get himself over the bundwall to save him. Shri Gupta managed to cross the dyke but was nearly immobilised and managed to shout in his walkie-talkie stating “huge MS leak, I am dying (bahut leak ho gaya, main mar gaya)”.

a. The other operator Shri K.R. Meena at that time was having tea in the canteen and he overheard the distress call of Shri Gupta through walkie-talkie of Shri Hoshiyar Singh, the contractor electrician who was also having tea in the canteen at that time. Shri K.R. Meena immediately ran at top speed and went to tank T-401-A

entering the dyke area presumably to control the situation. However, he apparently could neither stop the leaking MS nor was able to get Shri R.N. Meena or even himself out from the affected dyke. The remains of Shri K.R. Meena were identified only because of his small personal belongings like key chain on the eastern side of the tank pad of 401-A. The remains of Shri R.N. Meena were also found on the eastern side close to partition tank of 401-A and B.

b. Following, Shri K.R. Meena, Shri Hoshiyar Singh (the contractor electrician also in-charge of the DG supervision in whose walkie-talkie Shri Gupta's distress call was received), Shri Mukesh Sain of SB Enterprises (building water tank repair contractor) who was also present in the canteen at that time rushed towards tank 401-A. The distance from canteen to tank 401-A is approx. 250 M.

c. At the same time the security personnel at gate who also received Shri Gupta's call in walkie-talkie rushed towards tank 401-A. The security gate is approx. 500 M away from tank No.401-A.

**3.7** Almost at the same time Shri G.S. Chambal, Manager Operations of BPCL, who had come to take joint dip of the tanks (402-A and 401-A), along with Shri Gupta had reached the control room found none , and learnt that IOC personnel had gone to the tank area, of tank 401-A. He also heard loud shouts and rushed towards the tank. He found that Shri A.B Gupta coming down from the dyke of tank 401-A and then lie down on the road intersection (southern side) between tank No.401-A and 403-C. Shri A.B. Gupta was found drenched in MS. By this time, all the people mentioned above had also reached the same spot and Shri Chambal too reached the spot. Then the security personnel assisted by Shri Mukesh Sain carried Shri Gupta towards the control room followed

by Shri G.S. Chambal whose vehicle was parked outside control room. Shri Gupta was put in Shri Chambal's (BPCL's vehicle) which was pushed to the gate by security personnel. The car was started thereafter and Shri Gupta was taken to the hospital by Shri Chambal, leaving the gate reportedly around/after 18.30 hrs. Around the same time the siren was sounded by the security personnel.

**3.8** During this period, around 06.15 pm, Shri S.S. Gupta, Chief Operations Manager of IOC pipe line division who was leaving pipeline division office in his car after duty hours had experienced strong smell of MS vapour. However, he just informed pipeline control room officer about the smell asking him to investigate and left the site. After leaving the Terminal while on his way home he received a message from his colleagues present in the pipeline division that a profuse leak had occurred at MS tank area of Marketing Division. Shri S.S. Gupta immediately tried to contact Shri Poddar and after several tries, could get him on phone and Shri Poddar informed him about the uncontrollable leakage of MS and also said that an emergency had been declared. At this, Shri S.S. Gupta immediately intimated all the officials present in the Pipeline area to evacuate immediately and escape for the safety of their lives. As emergency gate near the Pipeline Division had been walled up, the only exit for the Pipeline Division officials was through the Terminal, which became inaccessible due to heavy concentration of MS vapours. Hence they were trapped inside. Even in this situation, Shri Gangal took all the steps to close the valves in the Pipeline Division to ensure safe shut down of the pipeline systems. Unfortunately, they failed to gauge the imminent danger looming on their lives.

Computer records indicated that at 18.36 hrs., crude oil booster pumps (diesel operated) stopped

**3.9** Shri D.C. Verma, Manager - IS also heard the sound of the siren while he was inside BCC building at around 18.30 hrs. came out and enquired about the situation. On being intimated about the dangerous situation, he went back to office room, spoke to his colleagues/seniors, gave command for safe shutdown of the system and came to the main gate at around 19.20 hrs. He also found strong vapour smell which was unbearable. This was clear indication that MS vapour, which was gushing out of open hammer blind, had by then spread through length and breadth of the terminal and was waiting for the catastrophe to happen.

**3.10** During the time Shri Gupta was put in Shri Chambal's car near the control room and the car was being pushed, Shri Chambal had phoned Shri A.K. Poddar, Senior Manager (Terminal) around 18.24 hrs. informing about the incident. Shri Poddar, who had reached home, immediately informed Shri Shashank Shekhar, Senior Operations Manager (SOM)/other colleagues and Shri Shashank Shekhar, in turn, informed Shri Gautam Bose, GM, Rajasthan State Office. Shri Bose immediately along with his other colleagues at the Guest House rushed to the site and picked up Shri Kanaujia, Senior Terminal Manager, In-charge, from a gymnasium. On the way Shri Bose informed senior government officials, district authorities, police etc., requesting fire tenders and personnel and also informed other IOC sites.

**3.11** While Shri A.B. Gupta was brought to the Marketing Division control room around/before 18.30 hrs., main gate security personnel called Shri Jagdish, driver of the pipeline division jeep, parked at the pipeline gate to carry Shri Gupta to the hospital. Shri Jagdish however, in spite of his repeated attempts could not start the jeep, presumably because of heavy MS vapour formation in the area already by that time in the area, which made the air too rich for ignition in the engine.

**3.12** In this situation Shri Sher Singh, Chief of Security (ex-army man, now employed by the security contractor) made valiant repeated efforts to rescue Shri R.M. Meena and K.R. Meena along with a security guard each time. However, due to very heavy MS vapour concentration, non availability of Self Contained Breathing Apparatus (SCBA), absence of any training to deal with such emergency, he could do little and finally had to withdraw because other security personnel fearing for their lives refused to assist him.

**3.13** Because of non-availability of SCBA site IOC officials went to BPCL terminal and finally brought 2 Nos. BPCL SCBA sets around 19.15/19.20 hrs. By that time Shri Gautam Bose and other local senior IOC officials reached the site assembling in the gate unable to enter tank farm area because of heavy MS vapour which had by that time reached plant entry gate.

**3.14** On receiving SCBA sets (around 7.20 pm), attempt was on to persuade Shri Mukesh Sain of S.D Enterprise to put on a SCBA set and approach tank farm area for attempting stopping the MS leak. In spite of having no training on SCBA set use, Shri Mukesh Sain agreed to put on the same and move inside.

**3.15** While this exercise was on at the gate around 7.35 pm, the heavy vapour cloud which by that time had spread over almost entire plant area and was very dense found an ignition source (yet to be identified) and resulted in a massive explosion identical to detonation.

**3.16** Almost simultaneously after explosion, small blasts followed by fire occurred in nine of the eleven tanks and the fire continued till the fuel contents were totally burnt. Two MS tanks (409 A &B) which did not

ignite immediately caught fire after a few hours. These two tanks experienced seal fire and their roof was not blown.

**3.17** A few selected photographs are shown in the subsequent pages.