



**POST EXERCISE REPORT**  
**NATIONAL LEVEL MOCK EXERCISE**  
**ON**  
**INDUSTRIAL ACCIDENTS**  
**28-29 March 2016**



**Engro Fertilizers, Daharki, District Ghotki, Sindh**

**National Disaster Management Authority (NDMA)**

<http://www.ndma.gov.pk>



**National Disaster Management Authority**  
**Prime Minister's Office Premises,**  
**Islamabad**  
<http://www.ndma.gov.pk>

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## **FOREWORD BY CHAIRMAN NDMA**

It is our great privilege to share Post Exercise Report of National Level Mock Exercise 2016 on Industrial Accidents undertaken at Engro Fertilizers Daharki on 29 March 2016. The Exercise was designed to test the disaster response capabilities including coordination mechanism of Engro Corporation with nearby factories and District Administration. This report has been prepared to highlight the important aspects observed at different tiers of response during the exercise and recommend improvement in SOPs by all concerned.



Disaster Management System has come a long way in Pakistan in past few years. With formulation and work on implementation of National Disaster Management Plan 2013-2022 and its important interventions, National Disaster Management Authority (NDMA) in coordination with Provincial Disaster Management Authorities (PDMAs) and all relevant stakeholders has been steadily improving its disaster preparedness nationwide. Continuous efforts are also in hand to prepare ourselves for any untoward incident that may occur at any time in future.

Industrial / Technical Disasters are an ever looming threat in our modern and fast paced world. In Pakistan, local industries have painstakingly developed over the years and significantly contributed in improving our economy. However with the increase in industrial development, risk of industrial accidents have also grown manifold. I hope that the Industrial Mock Exercise held this year in cooperation with Engro Fertilizers will provide a platform to other industries, District and Provincial Administrations to improve their response procedures. I also urge all industries to conduct such exercises more frequently and improve their response and coordination mechanism and Standard Operating Procedures in light of this report.

**POST EXERCISE REPORT**  
**NATIONAL LEVEL MOCK EXERCISE ON INDUSTRIAL ACCIDENTS**  
**(HELD AT ENGRO FERTILIZERS FROM 28 - 29 MARCH 2016)**

1. **General.** A National Level Industrial Disaster Mock Exercise was conducted at Engro Fertilizers located at Daharki on 29 March 2016. Representatives from Armed Forces, PDMA Sindh, Civil Services and all available officials from Chemical Industries attended the said Exercise. Major General Asghar Nawaz, HI(M), Chairman NDMA was the Chief Guest. The Exercise was designed to practice management of an industrial disaster accidents with all available resources, besides educating the participants and setting stage for similar Exercises in future. A similar Industrial Exercise will also be conducted by Fauji Fertilizer Corporation (FFC) in last quarter of 2016. The Exercise was based on real time contingency scenarios to access the response capabilities of various tiers through teams of impartial observers with a view to identify shortcomings and recommend improvement in SOPs. The Exercise also aimed at encouraging other industries to conduct similar exercises regularly and formulate comprehensive SOPs for dealing with industrial disasters effectively.
2. **Aim.** To critically analyse the Industrial Mock Exercise conducted by Engro Fertilizers at Daharki on 29 March 2016 with a view to draw relevant conclusions and strengthen response against Industrial Accidents.
3. **Objectives and Scope of Exercise**
  - a. To hold a detailed National Level Industrial Disaster Mock Exercise to test Contingency Planning for combating Industrial / Technical Disaster situations and improve Response and Coordination of all stakeholders.
  - b. Ensure that clear division of responsibilities is defined and all relevant stakeholders can coordinate an effective response.
  - c. Ensuring a Correct and Rapid Assessment of any incident leading to disaster situation.
  - d. Streamlining of Mechanism for Response and Reporting of Industrial / Technical Disasters.
  - e. Encouraging timely and comprehensive coordination and cooperation amongst stakeholders in Industrial Sector and Provincial / Federal Governments.
  - f. Strengthening inherent capacities of all stakeholders.
  - g. Effective management of public perception through a proactive approach with media.

4. **Participation.** List of participants is attached as **Annex A.**
5. **Pre-Exercise Meetings.** First Pre-Exercise Meeting was held at NDMA on 4 March 2016 which was attended by all relevant stakeholders. During the meeting following decisions were made:-
- a. Date, location and time of the Exercise - 29 March 2016 - Daharki.
  - b. Scenarios of the Exercise - Real-time Scenarios.
  - c. Participants and facilitators of the Exercise - All available industries.
  - d. Forwarding of industrial disaster SOPs by Engro for Tier-1 response.
6. Details of events conducted before the Exercise are as follows:-

<b><u>Serial</u></b>	<b><u>Time / Date</u></b>	<b><u>Events</u></b>
a.	4 March 2016	Preliminary meeting.
b.	11 March 2016	Issuance of General Instructions.
c.	25 March 2016	Issuance of Coordinating Instructions.
d.	26 March 2016	Full Dress Rehearsal at Engro Fertilizers.
e.	28 March 2016	Opening Brief and final coordination conference at Engro Fertilizers.
f.	29 March 2016	Conduct of Exercise.

7. **Conduct of Exercise.** Proceedings of the Exercise commenced with the recitation of Holy Quran followed by the Welcome Address by the Chairman NDMA and Vice President of Engro Fertilizers. Detailed briefing on the response mechanism was given by Mr. Rehan Sajjad Mughal of Engro Corporation and by the representative of District Administration Ghotki. Later on, Participants and Observers were distributed into three groups:-

<b><u>Serial</u></b>	<b><u>Group</u></b>	<b><u>Locations</u></b>
a.	Group-1	Engro Fertilizer Plant.
b.	Group-2	Control Room.
c.	Group-3	Emergency Response Cell.

8. During the Exercise, three different scenarios were simulated i.e. Ammonia Gas Leakage at two different locations of the plant and a fire incident. However during the conduct of Exercise a number of additional injects were introduced by Chairman NDMA to determine the response of Engro Administration for dealing with unexpected situations / scenarios. Program of Works is attached at **Annex B.**

9. **Methodology of Conduct**

- a. Contingency Scenarios were generated by Observer Teams.
- b. Response was generated as under:-
  - (1) **Tier 1.** By Engro Corporation in coordination with neighboring industries and District Administration as per exercise settings.
  - (2) **Tier 2.** By District Administration in coordination with Engro Corporation and representatives from local community.
- c. Additional contingencies were injected by Chairman NDMA against which Engro and District Administration initiated their response.
- d. Observations during the conduct of exercise were recorded by following:-
  - (1) Team of Observers during Tier-1 Response.
  - (2) Team of Observers during Tier-2 Response.
  - (3) By Chairman NDMA during his visit to all important locations including Crisis Management Centre, site of Engro Plant and Kalu Burero Village.

10. **Contingency Situations and Response Plan**

a. **Tier 1- Scenarios and Response**

- (1) **Originally Planned Scenario.** Heavy Ammonia Gas Leakage from V-05 / T-3001 Tank.
- (2) **Response Actions Initiated.** Following actions were initiated after receipt of planned scenarios:-
  - (a) Sounding of warning sirens and alerting all stations about the emergency.
  - (b) Activation of Crisis Management Centre (CMC) of the Plant.
  - (c) Employment of water spray curtains with the help of hydrants to absorb the released gas.
  - (d) Reinforcement of On-site Response by deploying additional resources of Engro Corporation i.e. Fire Brigade vehicles and ambulances.
  - (e) Calling of additional Fire Brigade vehicles and ambulances from nearby industries and District Government.
  - (f) Evacuation of personnel from incident site by paramedical staff.
  - (g) Alerting nearby Village(s) (depending upon the wind direction) by Plant Authorities and District Management.



(3) **Additional Injects by NDMA**

- (a) Fire incident close to V-05 / T-3001 Tank.
- (b) While response of the Engro Corporation was under way in dealing with both the situations at different locations, another Ammonia Gas leakage at new location close to V-05 / T-3001 tank was initiated.
- (c) Response actions in case of opposite wind direction were exercised.
- (d) On-site causalities were simulated, seeking contingency response by employment of reserve human resources.
- (e) Testing of District Government response for the evacuation of casualties and firefighting.
- (f) Managing and absorbing additional resources originally not catered.

b. **Tier 2- Scenarios and Response**

(1) **Originally Planned Scenario.** Alerting residents of Bagho Bhutto Village (nearby village) by Engro, keeping in view the wind direction.

(2) **Response Actions Initiated**

- (a) Gathering of all designated residents of the Village at ear marked places for further instructions.
- (b) Cordoning off the area by local Police / Community Volunteers.
- (c) Evacuation of casualties by District Government.

(3) **Additional Injects by NDMA**

- (a) Opposite wind direction was simulated because of which all response actions were generated at Village Kalu Burero instead of Bagho Bhutto Village (originally planned).
- (b) Causality of Village In-charge was assumed, seeking response of the deputy / second In-Charge and other team members.
- (c) Evacuation of affected population by District Government using local transport was tested.

c. **Composition of Observers Team.**      **Annex C.**

11. **Analysis of Exercise.** Chemical accidents and release of toxic gas is a reality and in the backdrop of prevailing security environment, an act of sabotage may also lead to such a situation. The competencies / expertise displayed by Engro Corporation were satisfactory, whereas the awareness of civil machinery and public for handling of such emergency situation needs more improvement. It is highlighted that some Observers from Government Departments (MoFA, PDMA Punjab and KP) and few from other industries did not attend the Exercise despite confirmation. After the commencement of Exercise, Tier 1 Response actions by Engro Corporation were satisfactory till the initiation of multiple scenarios. Generation of unexpected situations by Chairman NDMA and Facilitators led to more challenging response actions by the responders of Engro Corporation and District Government. It seems that responders were not prepared well for unexpected scenarios and therefore most of the weaknesses observed were after injecting additional scenarios. Important observations during the Tier 1 response are as under:-

Serial	Observations
a.	Engro Corporation has formulated very comprehensive mechanism for dealing with disasters related to the Plant. This was also evident from the safety standards achieved by Engro over a period of time. However, regular practices and a set pattern of rehearsals have increased faith of responders on their capability to deal with envisaged scenarios. At times, over dependence on procedures, can be fatal as any unexpected situation (which may be beyond the capability of the response mechanism) can be faced during accidents. Thus, there is a need for constant evaluation and innovative conception of additional / likely contingency scenarios with matching response as per evolving environment / situations.
b.	On initiation of additional scenario i.e. Ammonia leakage from tank, reinforcement in the form of ambulances and Fire Brigade vehicles were called from neighbouring factories and District Administration. During this response, vehicles arriving at the Scene of Incident (Sol), did not assemble at any pre designated marshaling / assembly point as it was not already part of the response plan. Most of the drivers were trying to park the vehicles closer to the Sol unaware of toxic gas / danger. There was also lack of information sharing by CMC and Site In-Charge with all concerned / additional response resources arriving for assistance.

Serial	Observations
	Important aspects of absorbing the additional resources including guiding arrangements, traffic control and on-site management of the incident was also lacking.
c.	Fire tenders of District Ghotki (called for help) were not capable enough to overcome the fire,
d.	Most of the drivers and workers of Fire tenders and ambulances were not wearing Personal Protective Equipment (PPE).
e.	Communication gap between Civil Administration and Crisis Management Cell of Engro was observed at various occasions.
f.	Decontamination Station (place to wash the affectees with fresh water) was not established at the Sol. Casualties were transported to ambulances and subsequently to hospitals in a contaminated state.
g.	Maintenance of records of causalities / damages caused and damage assessment was also lacking.

12. **Response Actions During Tier 2.** Important observations during Tier 2 response are as under:-

Serial	Observations
a.	All ambulances, Fire Brigade vehicles arrived at the Village without considering the direction of wind i.e. they follow the path of contaminated zone.
b.	Entry / exit points of the Village were not cordoned off by Local Police and District Administration which led to the uncontrolled movement of persons and vehicles resulting overcrowding / blockage of roads.
c.	Police arrived at the Village to regulate evacuation had no knowledge about the procedures to be adopted in case of Ammonia leakage and its consequent fallout.
d.	The causality of Village In-charge created panic among the villagers as no suitable replacement was available to coordinate / execute further evacuation / plan.
e.	To warn the population about industrial accident, repeated announcements were made in local mosque. Instead of closing doors and windows, the residents were curious to observe the on going situation

Serial	Observations
	rather than taking preventive measures as per SOPs.
f.	Mechanism to regulate the evacuation process was missing as local Police was completely unaware of the situation.
g.	Most of the rescuers including Police, drivers and guides were not wearing PPE.
h.	First aid equipment, wet towels and water buckets were not available in any rescue / Police vehicles.
i.	Proper evacuation plan of Village was missing.
j.	Fire trucks obstructed electric cables while making way to the Village.

13. **Recommendations for Future**. The Exercise was very useful, practical and rich in experience for all participants. Engro Corporation deserves a lot of appreciation for mounting a comprehensive and well-coordinated response. Some recommendations for future are:-

- a. Direction of wind must be kept in view while initiating rescue / evacuation response during such disasters in areas contaminated due to gas leakage.
- b. A wholesome response mechanism may be designed and practiced in a manner to cater for all possibilities of multiple / unprecedented industrial accidents.
- c. Comprehensive SOPs be formulated to strengthen Intra-Industry coordination mechanism within the Industrial Area / Zone and coordination with Civil Administration by sharing plans, regular exercises and joint meetings.
- d. All ambulances and fire tender vehicles must have PPE for the crew / drivers. PPE and water buckets may also be made part of every vehicle likely to be employed for rescue / response action.
- e. On the onset of any accident leading to a disaster situation, containment area must be established / marked by concerned industry. It may also indicate marshaling / assembly areas and duties of individuals detailed as guides. SOPs in this regard may also be amended accordingly.
- f. On receipt of an industrial accident alert, management of traffic, cordoning off the area and control of entry / exit points of the populated area may be carried out simultaneously by Police in coordination with staff of the concerned industry / plant.

- g. Evacuation of residents to hospitals should only be done by trained paramedical staff.
- h. The evacuation plan and response actions for local population should be displayed at prominent points in all population centers near industry / plant while each house should be provided with handouts and charts of evacuation plans and actions required to be taken in case of emergency.
- i. Sufficient protective masks must be provided to the residents of most vulnerable area in proximity of the industry likely to experience gas leakage
- j. Separate exit and entry plans for ambulances and Fire Brigade vehicles may be defined for each village by District Administration in coordination with the management of industry. The same plan may also be made part of every rescue vehicle.
- k. Frequent awareness campaigns and joint training seminars may be arranged for local population by the concerned industry.
- l. Training of Civil Administration doctors, community school teachers and ambulances drivers may also be undertaken by District Administration and industries, jointly.
- m. SOPs forwarded by Engro Corporation (Annex D) should be amended / improved in the light of observations / recommendation of this Mock Exercise. Engro Corporation is requested to forward amended SOPs after incorporating changes by 20 August 2016.
- n. Each chemical factory / plant must plan one major Exercise each year alongside minimum one routine Exercise per month to strengthen response SOPs against any accident. Plan of exercise by all industries may be shared with NDMA by 20 August 2016.
- o. All industries are requested to plan and conduct similar exercise regularly at their plant sites involving all relevant stakeholders. Schedule of the exercise may also be shared with NDMA by 20 August 2016.

14. **Conclusion**. The Exercise provided a good opportunity to highlight the importance of coordinated response in managing industrial disasters effectively. Similar exercises by all other industries will also help in making them more safe and productive in future. NDMA will always be forthcoming in providing any assistance / help in making our industries safer, resilient and productive.

Government of Pakistan  
Ministry of Climate Change  
**National Disaster Management Authority**  
(Prime Minister's Office), Islamabad.  
Dated: 1 August 2016



Lieutenant Colonel  
For Chairman NDMA  
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**Distribution List.** Attached.

**Annexes**

- A - List of Participants
- B - Programme of Work
- C - Observer Team Composition

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139.	Ahmed Fine Textile Mills (Pvt) Ltd, 1st Floor, International Plaza, Bohra Street, Multan Cantt	1
140.	Al-Abid Silk Mills (Pvt) Ltd, Sindh Industrial Trading Estate, Karachi	1
141.	Al-Qadir Textile Mills (Pvt) Ltd, 6 Km Jhelum Road, Chakwal-Jhelum Road, Daab	1
142.	Allahwasaya Textile Mills (Pvt) Ltd, Dunyapur Road, District Multan	1
143.	Amjad Textile Mills (Pvt) Ltd, 43/17, Tipu Sultan Road, Multan Cantt	1
144.	Amsons Textile Mills (Pvt) Ltd, D14/B Manghopir Road, Karachi	1
145.	Artistic Fabric Mills (Pvt) Ltd, 472 Deh Landhi, Bin Qasim Town, Karachi	1
146.	Arzoo Textile Mills (Pvt) Ltd, People's Colony No. 1, Faisalabad	1
147.	Ashabi Textile Mills (Pvt) Ltd, Plot No D-24, South Ave, SITE Industrial Area, SITE Karachi	1
148.	Bari Mills (Pvt) Ltd, National Highway - Super Highway Link Road, Pir Sarhandi, Karachi	1
149.	Bhanero Textile Mills (Pvt) Ltd, E/2 Bhanero Site, Kotri	1
150.	Bisma Textile Mills (Pvt) Ltd, Commercial Building No. 279, Block Q, Phase 3, DHA Lahore	1
151.	Brewala Textile Mills (Pvt) Ltd, Burewala	1
152.	CA Textile Mills (Pvt) Ltd, Lahore Sheikhpura Road	1
153.	Chaudhry Brothers Textile Mills (Kamiley Spinning Mills), District Muzaffargarh	1
154.	Cofcot Textile Mills (Pvt) Ltd, Hyderabad	1
155.	Crestex (Pvt) Ltd, Faisalabad	1
156.	DEWAN Textile Mills No. 2 (Pvt) Ltd, Kotri	1
157.	Din Textile Mills (Pvt) Ltd, Multan	1

<b>Ser</b>	<b>Departments / Agencies</b>	<b>No of Copies</b>
158.	DM Textile Mills (Pvt) Ltd, Dhoke Hasu Road, Rawalpindi	1
159.	Eastern Spinning Mill 2 (Pvt) Ltd, Manga Road, Lahore	1
160.	Ebrahim Textile Mills (Pvt) Ltd, Landhi Industrial Area, Karachi	1
161.	Faisal Mustafa Textile (Pvt) Ltd, 22 Km Sheikhpura Road, Raowala, District Faisalabad	1
162.	Fateh Textile Mills (Pvt) Ltd, District Hyderabad	1
163.	Fazal Sardar Textile Mills (Pvt) Ltd, Sec 28, Karachi	1
164.	Gadoon Textile Mills (Pvt) Ltd, Gadoon Amazai Industrial Estate, Khyber Pakhtunkhwa	1
165.	Ghafori Masjid (Pvt) Ltd, Landhi Industrial Area, Karachi	1
166.	Glamour Textile Mills (Pvt) Ltd, Manga - Raiwind Road	1
167.	Gohar Textile Mills (Pvt) Ltd, 3-Km Chak Jhumra Road, Khurianwala, District Faisalabad	1
168.	Gul Ahmed Textile (Pvt) Ltd, Landhi Industrial Area, Karachi	1
169.	J. K. Spinning Mills (Pvt) Ltd, 29 Km Shiekhupura Road, Khurrianwala, District Faisalabad	1
170.	Kohat Textile Mills (Pvt) Ltd, Canal Road, District Kohat	1
171.	Kohinoor Textile Mills (Pvt) Ltd, 42, Lawrence Road, Lahore	1
172.	Kohinoor Textile Mills Limited (Pvt) Ltd, Peshawar Road, Rawalpindi	1
173.	Kohinoor Textile Mills (Pvt) Ltd, Gulyana Road, Gulyana	1
174.	Liberty Mills Limited (Pvt) Ltd, A/51-A, S.I.T.E, Karachi	1
175.	Lucky Textile Mills (Pvt) Ltd, A-8/C S.I.T.E, Karachi	1
176.	Mahmood Textile Mills, (Pvt) Ltd, District Multan	1
177.	Masood Textile Mills (Pvt) Ltd, 32 Km Lahore - Sheikhpura - Faisalabad Road	1
178.	Master Textile Mills (Pvt) Ltd, 3-Km Off Raiwind, Manga Mandi Road, District Kasur	1
179.	Mohammad Farooq Textile Mills (Pvt) Ltd, 6&7, Sector 21, Karachi	1
180.	Moiz Textile Mills (Pvt) Ltd, Lahore Road, District Kasur	1
181.	N.R. Textile Mills (Pvt) Ltd, District Faisalabad	1
182.	National Textile Mills (Pvt) Ltd, National Highway, Karachi	1
183.	Noon Textile Mills (Pvt) Ltd, Phularwan Bhalwal Road, Bhalwal	1
184.	Olympia Group (Pvt) Ltd, 23 Davis Road, Lahore	1
185.	Orient Textile Mills, Plot # 501, National Highway, Karachi	1
186.	Prosperity Weaving Mills (Pvt) Ltd, District Sheikhpura	1

<b>Ser</b>	<b>Departments / Agencies</b>	<b>No of Copies</b>
187.	Quetta Textile Mills (Pvt) Ltd, I.I Chundrigar Road, Karachi	1
188.	Riaz Textile Mills (Pvt) Ltd, Lahore - Sheikhpura - Faisalabad Road	1
189.	Saad Textile Mills (Pvt) Ltd, 6 Km, Manga - Raiwind Road Manga Mandi, Punjab, Pakistan	1
190.	Saif Textile Mills (Pvt) Ltd, Kulsum Plaza, 4 <sup>th</sup> Floor, 2020, Jinnah Ave, Islamabad	1
191.	Salfi Textile Mills (Pvt) Ltd, Landhi Industrial Area, Karachi	1
192.	Sapphire Textile Mills (Pvt) Ltd, 7, Multan - Raiwind Link Road, Bobhtiyar, Jubilee Town	1
193.	Standard Textile Mills (Pvt) Ltd, Kotri	1
194.	Star Textile Mills Limited (Pvt) Ltd, Metroville, Plot No A-41, Fakhrudin Valika Road, SITE Karachi, 75700	1
195.	Superior Textile Mills (Pvt) Ltd, Manga - Raiwind Road, Raiwind	1
196.	The National Silk and Rayon Mills (Pvt) Ltd, Jaranwala Road, Dhuddi Wala, Faisalabad	1
197.	Yunus Textile Mills (Pvt) Ltd, C101-130 S.I.T.E, Nooriabad, 09 Nooriabad	1
198.	Yunus Textile Mills (Pvt) Ltd, Landhi Industrial Area, Karachi	1
199.	Zahidjee Textile Mills (Pvt) Ltd, District Faisalabad	1
200.	Zahidjee Textile Mills (Pvt) Ltd, Lahore - Sheikhpura - Faisalabad Road	1
201.	Zaman Textile Mills (Pvt) Ltd, Street 2, District Hyderabad	1
202.	Zaman Textile Mills (Pvt) Ltd, Bazar No. 1, District Faisalabad	1
<b>Internal</b>		
203.	Senior Capacity Building Specialist, NIDM	1
204.	Deputy Director (Coord), NDMA	1
205.	NEOC, NDMA	1

**Annex A**

To Post Industrial Exercise held  
on 29 March 2016.

**LIST OF PARTICIPANTS**

<b>Ser</b>	<b>Departments</b>
1.	Pakistan Air Force, CBRNe Defence School (Masrur)
2.	Pak Arab Fertilizer Private Limited
3.	Fatima Fertilizer Limited
4.	Pakistan Navy, NBCD School, PNS Karsaz, C/O ACNS (Maint), Naval Headquarters
5.	Civil Defence Sindh
6.	PDMA Sindh
7.	DESTO
10.	Fauji Foundation Power, Daharki
12.	Pakistan American Fertilizer Corporation, Lahore
13.	Mari Petroleum Company Private Limited, Islamabad
14.	TNB Liberty Power Plant, Mirpur Mathelo
16.	Headquarters 5 Corps, Karachi
17.	Headquarters 16 Division, Pano Aqil
20.	Engro Corporation
21.	Engro Powergen Qadirpur Limited
23.	Pakistan Ordinance Factory (POF), Wah
24.	Ghotki Sugar Mill
26.	Deputy Commissioner Ghotki
28.	SPD
29.	Pakistan Chemical Manufacturers Association (PCMA)
30.	Sunder State
31.	Olympia Chemicals
32.	Itehad Chemicals

## **Annex B**

To Post Industrial Exercise held  
on 29 March 2016.

### **PROGRAMME OF WORK**

<b>Ser</b>	<b>Date / Time</b>	<b>Activities</b>
1.	0830-0900 hrs	a. Guest reception at Engro Fertiliser, Daharki. b. Gathering at Management Club (Engro Fertiliser) for Safety Orientation.
2.	0915 hrs	Recitation of Holy Quran.
3.	0920 hrs	Welcome Remarks by Vice President Engro.
4.	0925 hrs	Opening Remarks by Chairman NDMA.
5.	0930 hrs	Drill Briefing by Engro.
6.	0945 hrs	Briefing by District Government.
7.	1000-1015hrs	Discussion.
8.	1015-1030 hrs	Dispersal of Facilitator, Observers and Participants Teams at Emergency Site.
9.	1035 hrs	Generating of scenario by Facilitator Team 1.
10.	1040 hrs	1 <sup>st</sup> Tier Drill exercise & casualty Handling (Heavy Ammonia Leakage from V-05 / T-3001) by Engro.
11.	1050 hrs	Generating of additional scenarios (Ammonia leakage from other tank and fire breakout at new site) by Chairman NDMA.
12.	1055 hrs	Response procedures commenced by Engro.
13.	1115 hrs	Causality of on site In-Charge assumed as per the instructions of Chairman NDMA.
14.	1145 hrs	Media briefing.
15.	1145-1159 hrs	a. Generating of scenario for Tier 2 response by Facilitator Team 1. b. Dispersal of remaining facilitator teams at District Control Room and nearby Village.
16.	1215-1245 hrs	Initiation of Tier 2 & 3 response drill by District Government and ex 16 Division (Army).
17.	1245 hrs	For exercise casualty of village leader assumed as per the direction of chairman NDMA.
18.	1305 hrs	Evacuation of villagers in District government vehicles commenced
19.	1345 hrs	Sounding of Sirens.
20.	1350 hrs	Exercise Terminates.
21.	1350-1430 hrs	Gathering of all participants at Management Club for Lunch.
22.	1440 hrs	Arrival of Chief Guest for De-Briefing Session.
23.	1445-1515 hrs	a. De-Briefing Session. b. Facilitator Teams remarks.
24.	1530	Closing remarks by the Chief Guest.
25.	1540 hrs	Group Photograph of all participants.



### **Annex C**

To Post Industrial Exercise held  
on 29 March 2016.

#### **OBSERVER TEAM COMPOSITION**

<b>Ser</b>	<b>Facilitator Team</b>	<b>Members</b>
1.	Team 1	a. Lt Col Khuda Bakhsh, NDMA. b. Mr Zulfiquar, Engro. c. Cdr Muhammad Mazhar Hayat, Pakistan Navy NBCD School. d. Mr Anwar Ali Naich, Distt Government Ghotki. e. Muhammad Souhail, Itehad Chemicals.
2.	Team 2	a. Dr. Farhan Farooq, Distt Government Ghotki. b. Mr Rehan, Engro. c. Flt Lt Adnan, PAF CBRN Defence School. d. Mr Tariq Shouq, POF WAH. e. M Maqsood ul Hassan, Olympia Chemicals.
3.	Team 3	a. Mr Javaid, DESTO. b. Mr Mati ur Rab Siddiqui, Pak Arab Fertilizer. c. Mr Shayan Shah, DD Ops, PDMA Sindh. d. Mr. Ghulam Nabi, Fauji Fertilizer. e. Major Muhammad Arif, Sunder State.

