



STATE LEVEL MOCK EXERCISE



EARTHQUAKE, INDUSTRIAL (CHEMICAL) & FIRE HAZARD

PREPAREDNESS ♦ RESPONSE ♦ RELIEF

Uttar Pradesh State Disaster Management Authority

✉ upsdma@gmail.com



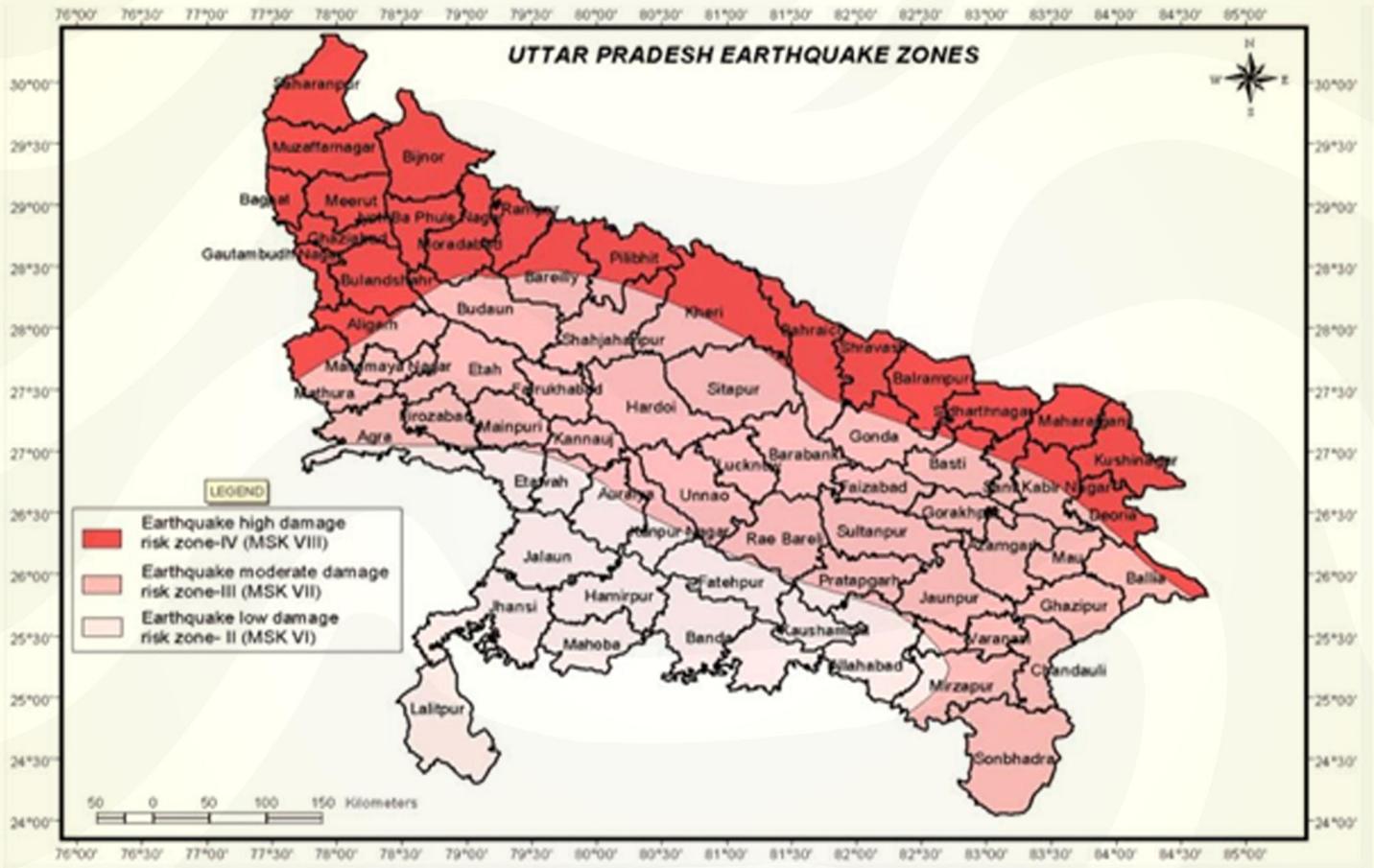
🌐 www.upsdma.up.nic.in

AFTER ACTION REPORT – TABLE TOP EXERCISE & MOCK EXERCISE ON EARTHQUAKE, INDUSTRIAL (CHEMICAL) & FIRE HAZARDS

09TH – 19TH SEPT 2025

INTRODUCTION

1. Uttar Pradesh is classified into three Seismic Zones, viz, II, III & IV based on the expected maximum earthquake intensity. A significant portion of the State lies within Zones III and IV.



The State is intersected by various fault lines and ridges, including the Delhi-Haridwar Ridge (DHR), which extends in an NNE-SSW direction from New Delhi to the Garhwal region, and the Delhi-Muzaffarnagar Ridge (DMR), which runs east-west from New Delhi to Kathgodam in Nepal.

Of the 75 districts in the State, 34 districts lie in Seismic Zones III and IV. In light of the State's vulnerability to seismic activity, a comprehensive state-level Table Top Exercise & Mock Exercise was conducted, integrating Earthquake, Chemical (Industrial) and Fire hazard scenarios. Given that Chemical (Industrial) spills and fire hazards often accompany earthquakes, as cascading effects, these drills were aimed at reviewing and refining the preparedness, response and relief

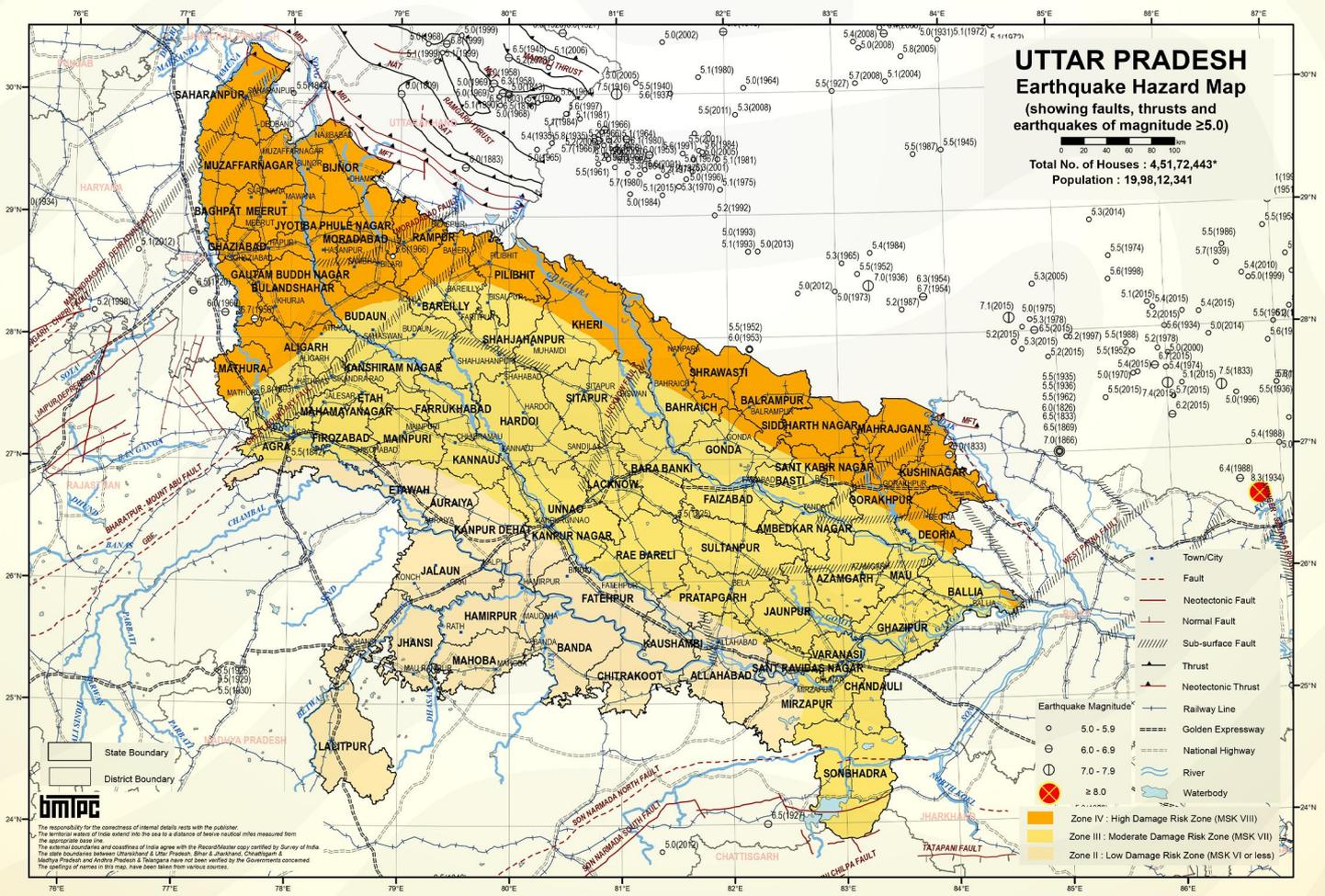
mechanisms for disaster management. 34 districts participated in the simulations to ensure that efficient disaster mitigation strategies are in place for Earthquake, Chemical (Industrial) and Fire-related emergencies.

EARTHQUAKE HAZARD

2. Earthquake Seismicity in Uttar Pradesh

Earthquakes have impacted nearly all regions of Uttar Pradesh with tremors, often originating from significant seismic events in neighbouring states, such as New Delhi, Uttarakhand, Bihar and across the Indo-Nepal border. These earthquakes have frequently echoed through various parts of Uttar Pradesh, contributing to the State's seismic vulnerability.

Within Uttar Pradesh, there are a total of **ten major fault lines** that play a critical role in influencing the region's seismic hazards. These fault lines, detailed in the table below, are key contributors to the seismic activity experienced in the State.



BMTPC : Vulnerability Atlas - 3rd Edition : Peer Group, MoHUA, GOI; Map is Based on digitised data of SOI; Seismic Zones of India Map IS: 1893 (Part I); 2002, BIS; Earthquake Epicentre from IMD; Seismotectonic Atlas of India and Its Environs, GSI; Houses/Population as per Census 2011; *Houses including vacant & locked houses. Disclaimer: The maps are solely for thematic presentation.

The Fault Lines running through Uttar Pradesh are: -

S.No.	Name of Fault	Length (KM)
a	Lucknow Fault	100
b	Prayagraj Fault	60
c	Great Boundary Fault	300
d	Moradabad Fault	120
e	Azamgarh Fault	170
f	Gorakhpur Fault	120
g	Shahjahanpur Fault	130
h	Deoria Fault	110
i	Main Central Thrust (MCT)	854
j	Main Boundary Thrust (MBT)	1144

3. Earthquake Sensitivity in Uttar Pradesh

The districts of Uttar Pradesh falling in Earthquake Seismic Zones II - IV are as under: -

S.No.	Districts Completely in Zone IV (19)	Districts Partly in Zones IV & III (15)	Districts Completely in Zone III (19)	Districts Partly in Zone III & II (14)	Districts Completely in Zone II (8)
a	Amroha	Aligarh	Ambedkar Nagar	Agra	Banda
b	Baghpat	Bahraich	Ayodhya	Amethi	Chitrakoot
c	Balrampur	Ballia	Azamgarh	Auraiya	Hamirpur
d	Bijnor	Bareilly	Barabanki	Bhadohi	Jalaun
e	Bulandshar	Basti	Chandauli	Etawah	Jhansi
f	G.B. Nagar	Budaun	Etah	Fatehpur	Kausambhi
g	Ghaziabad	Deoria	Farrukhabad	Firozabad	Lalitpur

S.No.	Districts completely in Zone IV	Districts partly in Zones IV & III	Districts completely in Zone III	Districts partly in Zone III & II	Districts completely in Zone II
h	Hapur	Gonda	Ghazipur	Kanpur Dehat	Mahoba
i	Kushinagar	Gorakhpur	Hardoi	Kanpur Nagar	
j	Maharajganj	Lakhimpur Kheri	Hathras	Mainpuri	
k	Meerut	Mathura	Jaunpur	Mirzapur	
l	Moradabad	Pilibhit	Kannauj	Pratapgarh	
m	Muzaffarnagar	Shahjahanpur	Kasganj	Prayagraj	
n	Rampur	Sitapur	Lucknow	Raebareli	
o	Saharanpur	Sant Kabir Nagar	Mau		
p	Sambhal		Sonbhadra		
q	Shamli		Sultanpur		
r	Shravasti		Unnao		
s	SiddharthNagar		Varanasi		

CHEMICAL (INDUSTRIAL) HAZARD

- 4.** Uttar Pradesh, with its diverse industrial base, encompasses both Major Accident Hazard (MAH) and non-MAH units spread across several districts. Among these, Gautam Buddha Nagar and Bulandshahr are identified by the National Disaster Management Authority (NDMA) as significant MAH districts at the national level due to the presence of high-risk chemical and industrial facilities.

The diverse Industrial base of Uttar Pradesh is ranging from mineral processing plants in Vindhyan region, bauxite-based aluminium plants in Bundelkhand region, cottage industries in Varanasi and Lucknow, leather industries in Agra and Kanpur, as well as the largest gold market of Asia in Meerut. Apart from this, the Uttar Pradesh-Delhi NCR and Lucknow-Kanpur corridors have thriving electronics industries. The state also holds the distinction of being the largest exporter of sports items and musical instruments.

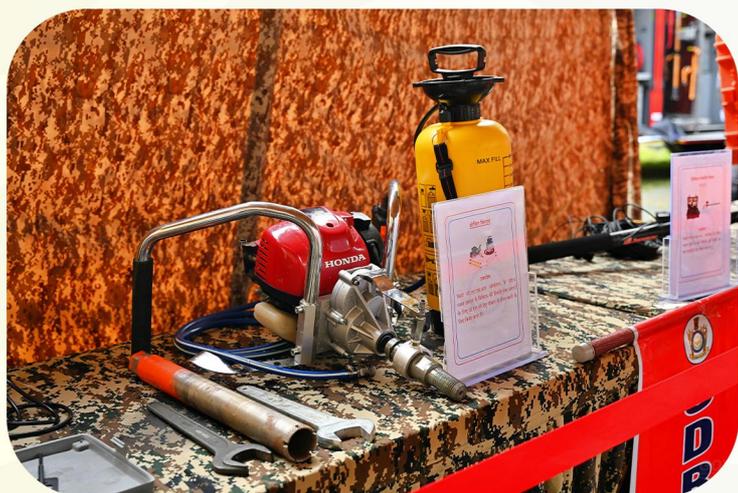
A total of 2,456 hazardous factories exist in 38 Districts of the State. As per the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules

(1996), Districts Crisis Groups in all the 38 Districts have been constituted under the chairmanship of the District Magistrate of respective Districts. To strengthen preparedness, off-site Mock Exercises are conducted across These districts of the State, covering both MAH and non-MAH areas.

FIRE HAZARD

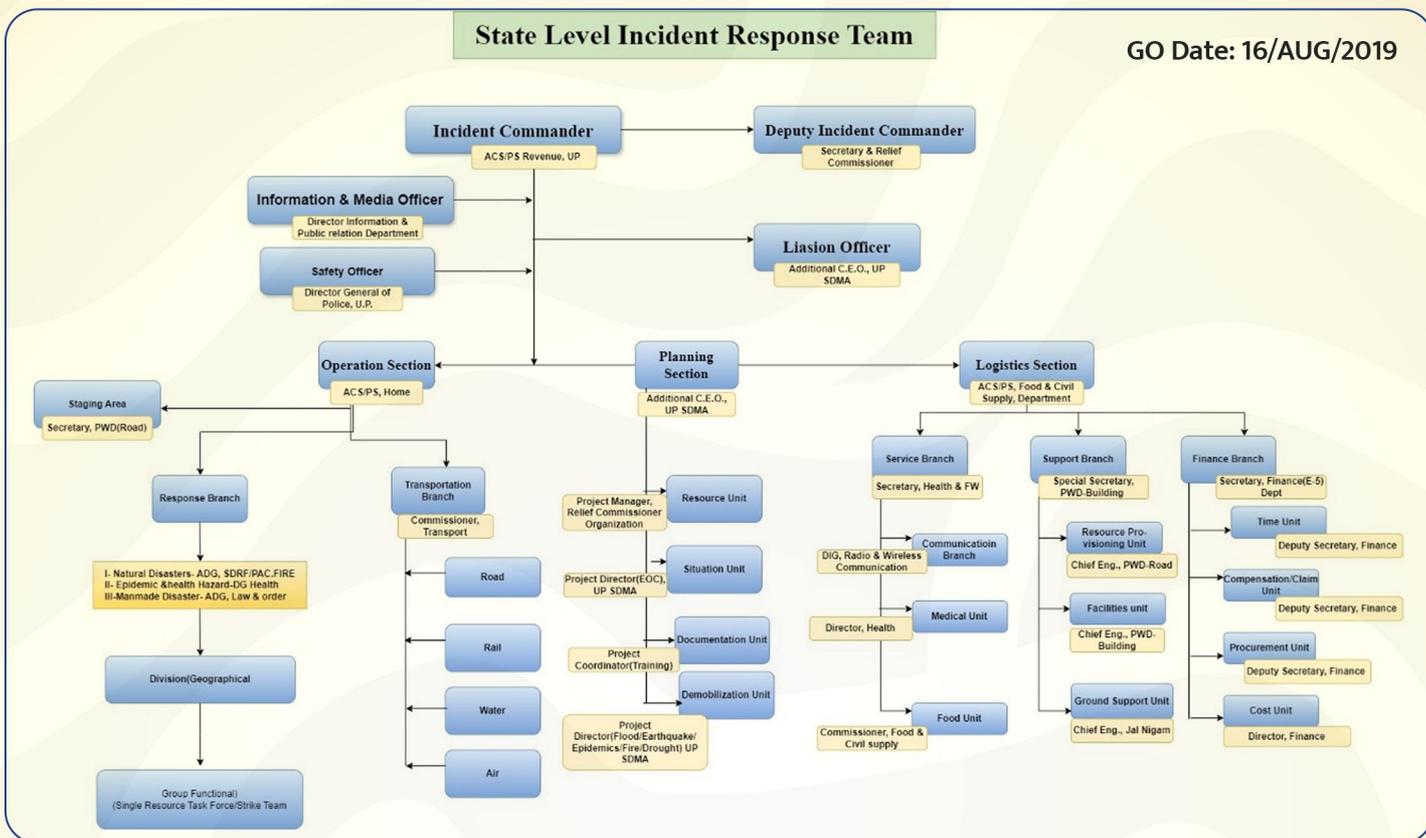
5. Fire is the most Common disaster in urban as well as rural areas. Rapid urbanization, overcrowding and unregulated commercial activities are often responsible for urban fires. Also, unplanned structures and improper electrical installations lead to fire events in urban areas.

In Uttar Pradesh, a majority of the population lives in rural areas and many of them still live in thatched roof houses. During the summer season, fire incidents are very common because of the use of fossil fuel for cooking purposes. Also, electrical short circuits during the summer season may result in fires in fields having crops that are ready to be harvested.

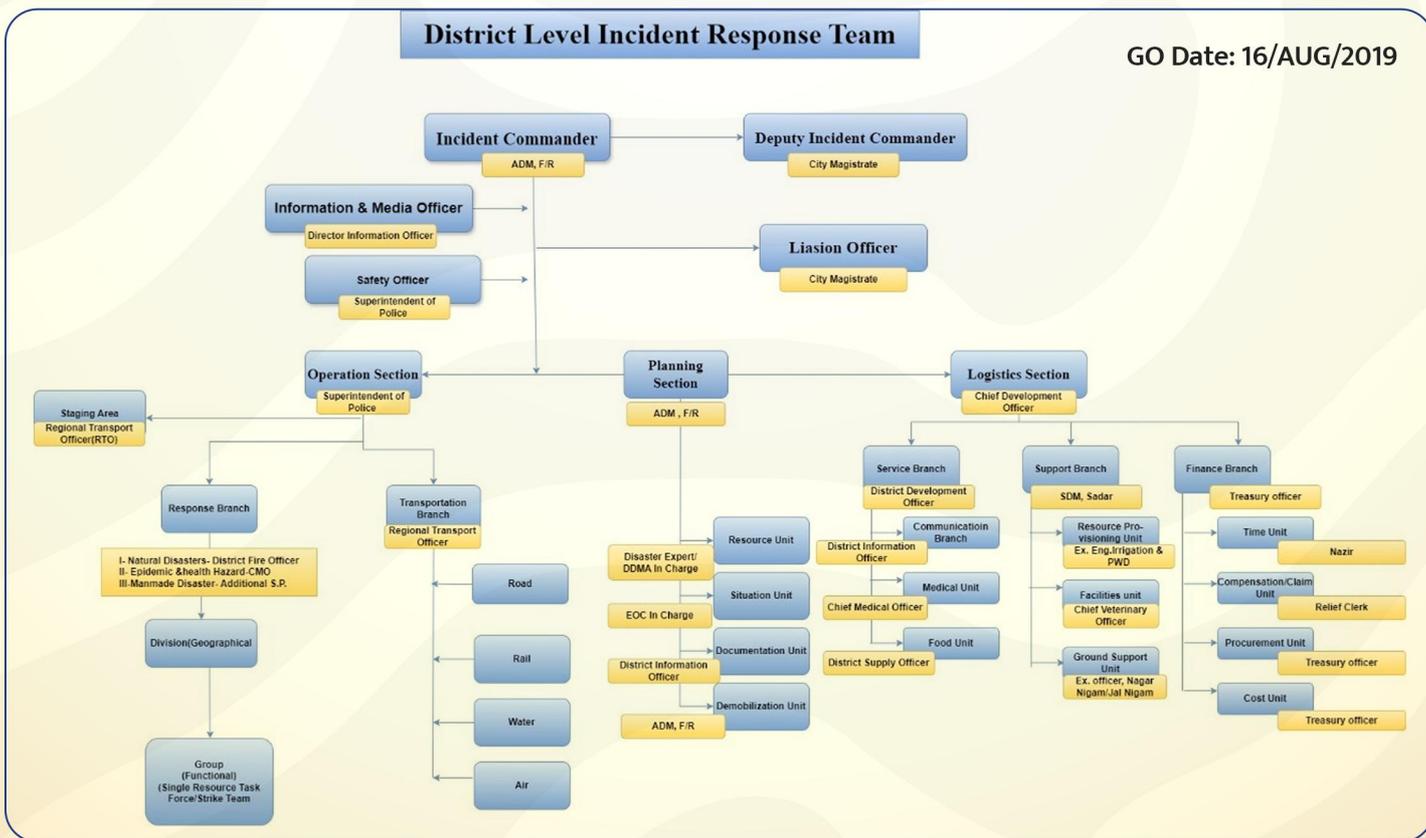


INCIDENT RESPONSE SYSTEM

6. Mandated Response Mechanism- The Incident Response System (IRS) serves as the mandated framework for disaster management in India. In line with this, the State has notified Incident Response Teams (IRTs) at both the State and District levels.



State Level



District Level

TABLE TOP EXERCISE & MOCK EXERCISE

7. The Table Top Exercise & Mock exercises aim to evaluate the readiness of district administrations, industrial management and emergency support agencies in responding to earthquake, chemical, fire and industrial emergencies—ensuring a coordinated and effective approach to mitigate risks and protect lives and the environment.

8. Objective

The Table Top Exercise and the Mock Exercise were conducted in accordance with the IRS in all 34 districts and 157 tehsils. As per general instructions issued to districts and stakeholders. The objectives of the Earthquake, Chemical (Industrial) and Fire Hazard Mock Ex were outlined as follows:

- a. To engage key disaster management officials of various departments in their designated roles and responsibilities during various simulated emergency scenarios.
- b. To evaluate the Disaster Management (DM) plan and associated Standard Operating Procedures (SOPs) at the State, Departmental, District levels & Tehsil level.
- c. To facilitate effective coordination among Emergency Support Functions at the district level & Tehsil level.
- d. To enhance public awareness by actively involving the media, Local Governing Bodies (LGBs), Non-Governmental Organizations (NGOs), and community stakeholders.
- e. To identify any existing gaps in resources, manpower, communication, and response capabilities at the district level & Tehsil level.

9. Participation

The Table Top Exercise at the State level conducted at Meerut Cantt. under the overall Supervision of by Lt. Gen Yogendra Dimri, PVSM, AVSM, VSM (Retd), Vice Chairperson UP SDMA. The exercise coordinator was Col Sandeep Mehrotra, Sr. Consultant, UP SDMA. The Exercise included all line departments, viz, **Health, Telecom, Labour & Employment, PWD and Railways**. Response forces including the **Army, NDRF, SDRF, F&ES, Police** and other Volunteers such as Civil Defence, Home Guards, NCC and NGOs participated in the State level exercise. The early warning agencies such as NCS, IMD also attended.

EXERCISE SET UP

- 10.** The Exercise engaged all 34 districts that lie in Seismic Zones IV & III. Each District Disaster Management Authority (DDMA), in collaboration with their respective line departments, emergency response organizations, NGOs, civil society organizations (CSOs), and other stakeholders, actively participated in the Exercise.
- 11.** The exercise scenarios were articulated for the 34 districts at their 157 tehsils categorized for Seismic risk, Chemical MAH & Non-MAH emergencies as well as Fire hazard, and all participants responded accordingly to the outlined situations.
- 12. Phases.** The Mock Ex on Earthquake, Industrial (Chemical) and Fire Safety was conducted in three phases as follows: -
 - a. Phase 1. Orientation & Coordination Conference -09 Sept 2025
 - b. Phase 2. Table Top Exercise -16 Sept 2025
 - c. Phase 3. Physical Conduct of Mock Exercise -19 Sept 2025

EXERCISE EXECUTION

- 13. Exercise Scenario** Multiple Situations were rehearsed during the Table Top and Mock Ex. The general scenario for the Exercise was as under: -
 - a. **Time: 10:03 AM, Event Day:** Strong tremors were felt, accompanied by visible damage in the immediate vicinity. Landline communications ceased, and mobile phone connectivity was severely degraded.
 - b. **Widespread Destruction and Casualties:** Reports emerged of significant devastation across numerous areas, with many buildings having collapsed, developed deep cracks, and been rendered unsafe.
 - c. **Secondary Fire incidents:** A series of fire outbreaks occurred in the district as a secondary consequence of the earthquake. Formal fire fighting resources proved insufficient, and several Major Accident Hazard (MAH) units were affected, leading to chemical incidents and fires in some facilities.
 - d. **Chemical (Industrial) Leakage:** Following the earthquake, multiple incidents of chemical spills were reported involving overturned and damaged tankers carrying hazardous substances such as ethanol and other industrial chemicals. Several storage facilities also sustained structural damage, resulting in leaks and potential contamination in nearby areas. These chemical spills posed additional threats to public safety and the environment, further complicating response operations and necessitating immediate containment and mitigation measures.

- e. **Infrastructure Damage:** Extensive damage was reported to roadways, resulting in multiple road accidents. Railway tracks sustained damage, disrupting railway traffic.
- f. **Impact on lifeline Infrastructure:** Essential infrastructure, including hospitals, Schools and government buildings, was adversely affected.
- g. **Activation of State IRS infrastructure:** The State Emergency Operations Centre (SEOC) and District Emergency Operations Centres (DEOCs) were activated and began assuming command.
- h. **Telecommunication Failures:** There was widespread damage to telecommunication infrastructure, with cellular communication severely impacted in most districts within zone IV. The remaining network became heavily congested, while wireless radio communication systems remained operational.
- i. **Displacement of the population:** A large segment of the population was rendered homeless, necessitating the relocation of individuals to safe areas and the provision of basic necessities. An evacuation plan required immediate implementation.
- j. **Field Hospital:** As many hospitals have faced infrastructure damage and due to earthquake many serious emergency and injuries with many of these being emergency situation there is a need for establishment of field hospital with resources pooled in from the hospital.
- k. **Debris and Sanitation Issues:** An enormous volume of debris was generated, damaging utilities and posing significant hygiene and sanitation challenges. Efficient disposal of the debris would be crucial.

14. Phase 1 - Orientation & Coordination Conference

The Orientation & Coordination Conference was conducted via video conferencing from UPSDMA, PICUP Bhavan on 09 Sep 2025. The Conference was chaired by Lt. Gen Yogendra Dimri PVSM, AVSM, VSM (Retd), Vice Chairperson UPSDMA. The Meeting was attended by the ADM (F/R) of all the 34 districts via Video Conferencing and all the stakeholders and line dept. at State level participated physically. The Schedule of Orientation & Coordination Conference is at Annexure A.

The conference served as a precursor to the upcoming Table-Top and Mock Exercises, outlining the detailed scenarios, situational developments, and the specific responsibilities of all participating stakeholders. It established a clear framework and unified direction for the effective planning and execution of the exercises, ensuring coherence and coordination across all levels of participation.

15. Phase 2 – Symposium cum Table Top Exercise

The Symposium cum Table Top Exercise was inaugurated by the Hon'ble Vice Chairman of the Authority, Lieutenant General Yogendra Dimri, PVSM, AVSM, VSM (Retd.). On this occasion, the dignitaries included Shri Rajendra Singh, Member and Head, NDMA; Dr. Dinesh Kumar Aswal, Member, NDMA; Lieutenant General D. G. Mishra, AVSM, GOC, UBA; Shri Bhanu Bhaskar (IPS), Additional Director General of Police (Meerut Zone); and Major General Sumit Rana, GOC, PUPSA, all of whom delivered special addresses.

In his address, Shri Rajendra Singh stated that earthquakes are a type of disaster for which there is no prior warning; however, we must be prepared in advance for such situations. He further mentioned that this disaster can also lead to various secondary incidents, such as fire accidents and chemical leakages in factories, the impact of which is felt by all of us.

- a. The sessions began with a discussion on the Management of Earthquake, Chemical, and Fire hazards presented by Ms Ranu Chauhan, Sr Consultant, NDMA.
- b. Dr H. S. Mandal, Scientist-F, NCS delivered a lecture on earthquake monitoring and Early Warning Systems.
- c. Dr Aditi Umrao, Project Director (Emergency Operations), UP SDMA, highlighted the role of the State's HRVCA, response mechanisms, and the Incident Response System (IRS).
- d. Shri Chetan Taneja, IRTS, Indian Railways, spoke on the vulnerability of the railways and their disaster response capacities.
- e. Shri Manoj Kumar Sharma, Commandant, 11th Battalion, NDRF, presented the specialised capabilities of the NDRF (CSSR, Chemical & Fire).
- f. Dr Anuj Tripathi, Consultant, Health Department, Uttar Pradesh, spoke on medical emergency planning during large-scale disasters.
- g. Dr Ajay Chaurasiya, Chief Scientist and Coordinator, CBRI, Roorkee, shared insights on structural resilience and urban safety.
- h. Dr Mihir Palit, Scientist-F, DRDO, discussed response mechanisms and challenges in industrial (chemical) accidents.
- i. Colonel KDS Shaktawat from HQ Central Command elaborated on the role of the Army in Uttar Pradesh and the Terai region.
- j. Shri Pramod Sharma, Chief Fire Officer, Bulandshahr, Fire and Emergency Services, shared lessons learned from the case study of the Jhansi Hospital NICU fire incident (2024).
- k. Lieutenant Colonel Niyal Bhavya Sirohi spoke on medical support during disasters, and Colonel Rakesh Khattar shared his experience of providing engineering assistance Post the Myanmar earthquake. The Schedule of the Symposium cum TTE is at Annexure B.

The Table Top Exercise (TTEEx) was Coordinated by Col Sandeep Mehrotra, Sr Consultant, UP SDMA on 16th Sept 2025, at Meerut Cantt.

- a. Besides the physical participation of representatives from 34 districts, various Reps from the State departments, as well as all important Stakeholders like IMD, NCS, Dept. of Telecom etc. attended.
- b. Observers from NDMA which included Member & HoD Shri Rajendra Singh, PTM, TM, Member NDMA Prof. Dinesh Kumar Aswal and two Sr Consultants Col Nadeem Arshad & Ms Ranu Chauhan from NDMA, NCS and also from neighbouring states including Delhi attended.
- c. To observe and gain from hands on experience of similar situations of Earthquake a session was conducted by Indian Army which gave insights of Rescue ops by them in recent Myanmar Earthquake that provided a in depth insight need for response and rescue in case of such drastic disaster scenario.
- d. All stakeholders actively contributed to the proceedings. District representatives provided updates on their preparedness and response plans and confirmed activation of their Incident Response Teams (IRTs).
- e. During the conduct of Table Top Exercise, Speakers from various organizations and departments such as NDMA, NCS, CBRI, DRDE, UP F&ES and NDRF etc. also presented their respective views, capabilities and experience.
- f. Towards the end, participants from districts were given a comprehensive briefing regarding their roles and responsibilities in the Mock Ex. Observers for Mock Ex were briefed on evaluation of the Mock Ex and to put forward their constructive suggestions on any short comings.

16. Phase 3 - Physical Conduct of Mock Exercise

The Conduct of the Mock Exercise was viewed by Lt. Gen Yogendra Dimri PVSM, AVSM, VSM (Retd), Vice Chairperson UPSDMA from HQ PUPSA at Meerut Cantt. He also physically saw all activities in Meerut District. The Mock Exercise was conducted by Col Sandeep Mehrotra, Sr. Consultant, UP SDMA. In attendance were the State Emergency Operation Center (SEOC) and all District Emergency Operations Centers (DEOCs) which were activated in response to the Mock Exercise. The Schedule of Mock Ex is at Annexure C.

- a. Observers from Response Agencies like Army, NDRF, F&ES, RAF and SDRF were nominated and provided with a specific assessment format.
- b. Observers rendered a valuable feedback.
A self-assessment template was also distributed to all stakeholders for their evaluation. Scenarios were tailored for earthquake, Chemical (Industrial) as well as Fire hazard for Districts to respond, and the Mock Exercise was
- c. executed accordingly.
NDRF 8th Battalion at Ghaziabad demonstrated a Rescue Operation for a building collapse scenario caused by an earthquake, which was broadcasted through video conferencing to all districts.

- d. On ground actions were initiated by relevant stakeholders following directives from the Responsible Officer/Incident Commander which included situations given below :
- I. Activation of DEOC in response to Earthquake
 - II. Evacuation drill in Schools & Hospitals.
 - III. Safety & Fire drill from a multi-storey building showcasing IRS (ICP, Staging Area, Medical Post and Relief Camp)
 - IV. Chemical Spill drill for a Major Accident Hazard unit (MAH) & Non-MAH Chemical Hazard at Off-site
 - V. A field hospital demonstration
 - VI. Specialized response was carried out by the National Disaster Response Force (NDRF) 8th Bns for CSS&R.
 - VII. Specialized response was carried out by the Railways for Search & Rescue in case of Derailment.
- e. A debriefing/Hot wash session was conducted via video conference with all districts following the conclusion of the Mock Exercise.

EVALUATION OF EXERCISE

17. Areas of Strength

A number of strong points and good practices were observed during the TTEEx and the ME. These are summarized below: -

a. Coordination

- I. A strong sense of responsibility and motivation was evident among the response forces and the participating line departments throughout the exercise.
- II. The Table-Top Exercise provided valuable, practical insights that significantly contributed to the smooth and effective execution of the subsequent mock drill.
- III. The physical presence and active participation of the ADM (F/R) during the Table-Top Exercise greatly enhanced the quality and coordination of mock drill activities across all District and Tehsil locations.
- IV. Crowd management and on-site safety measures were effectively implemented at most mock drill locations, ensuring orderly evacuation and response.

- V. The exercise demonstrated commendable inter-departmental collaboration and coordination among various line agencies.
- VI. Active participation was observed across all levels, with notable efforts to involve the local community in the proceedings — including evacuation drills from schools, Hospitals & high-rise buildings — thereby reinforcing community-based preparedness.
- VII. In addition, the exercise incorporated scenarios related to Major Accident Hazard (MAH) units, effectively testing off-site response mechanisms for chemical leaks and industrial emergencies triggered as cascading effects of the earthquake.

b. Resource Management

- I. A detailed Table Top Exercise resulted in clarity regarding Mock Ex and optimum resource availability and utilization.
- II. Response regarding fire Hazard scenarios saw UP F&ES showcasing their skills and equipment and also helped with the Off-site Chemical emergency scenarios.
- III. Health dept. did a commending job setting up field hospitals with limited resources available to them at the tehsil levels.
- IV. The ICP, staging area, medical post and relief camp was set up astutely.
- V. Response time of the forces could be decreased with regular mock drills at districts as well as Tehsil level.

c. Use of Drones

- I. Drones were effectively utilized in select districts to conduct damage assessments and monitor the movement and deployment of response forces, thereby enhancing situational awareness and operational coordination during the exercise.

b. Resource Management

- I. The State Emergency Operations Center (SEOC) and District Emergency Operations Center (DEOC) were promptly activated and remained on alert throughout the exercise.
- II. The Department of Telecom actively participated in the Table Top Exercise (TTEEx), discussing alternative communication strategies to address such large-scale disasters.
- III. The Bhookamp and Sachet apps were employed effectively, to disseminate information to community and helped in creating awareness about these important Mobile applications.

- VI. The Emergency Operations Centre (EOC) effectively utilized the **India Disaster Resource Network (IDRN)** to identify, mobilize, and deploy critical resources and equipment. This integration enhanced real-time coordination, ensured optimal use of available assets, and strengthened the overall efficiency of the emergency response mechanism.

e. Media and Awareness

- I. The execution of the exercise generated significant awareness within the communities and instilled a strong sense of confidence.
- II. Media coverage at the district & Tehsil level was notably positive, with extensive reporting by electronic media, which greatly contributed to widespread public awareness.
- III. Effective use of various media channels—print, electronic, and social—enhanced public knowledge, engagement & Awareness.
- IV. Newcomers at the district & Tehsil level gained valuable insights through their participation in the exercise.
- V. As a result, communities are now better mentally prepared for Earthquake, Chemical (Industrial) and Fire hazard and are willing to cooperate with the administration.

f. Participation

- I. The TTEEx and The Mock drill saw comprehensive participation by DDMAAs, Stakeholders at state level as well as central levels participated actively, line departments were also present in TTEEx and Mock drill.
- II. Urban Population where the population density is high was taken as an ideal demonstrator for the Mock Ex. As it is more prone to destruction in scenario of Earthquake, Chemical as well as Fire Hazard.
- III. Participation of Schools, high rise building and MAH units with Off-site scenarios enhanced the productivity of the Mock Ex by manifold.
- IV. Aapda Mitra, NCC Cadets, Civil Defense etc. participated in the mock drill as a major help to the Response forces showing appreciable coordination.

18. Areas of Improvement

A number of Strong points and good practices were observed during the TTEEx and the ME. These are summarized below:-

a. Training

- I. Officials from line departments, alongside members of the National Cadet Corps (NCC) and Scout Guide organizations, require comprehensive training to fit their roles and responsibilities within the Incident Response System (IRS), as many were unfamiliar with essential technical knowledge.
- II. Officials from line department were mixed among the crowd. They need training regarding roles and responsibilities of each line department officials.
- III. Co-ordination can be better amongst the line departments increasing efficiency of response.
- IV. Response forces should routinely assess and refine their skills to ensure ongoing proficiency and readiness for emergencies.
- V. Training required for proper response to save as many lives as possible adhering to the golden Hour.
- VI. SDRF, NDRF, ARMY, POLICE are 2nd Responders the First responder is always the Community itself and awareness at Community level is necessary.
- VII. F&ES should expand its training with CSSR, Gas Leaks, and Earthquakes etc.
- VIII. Information about Storage of Chemicals & Transportation for eg Fertilizer and pesticides factories.

b. Resource Management

- I. List of equipment used for CSS&R, Heavy earth movers etc. needs to be updated on IDRN portal of the Districts.
- II. As for early response F&ES capability and equipment including trained man power should be available at DEOC.
- III. List of human resources should also be updated like NCC, NYKS, AAPDA MITRA, Civil Defence, Police Personnel and Fire & Emergency Services etc.
- IV. A list of NGOs that are present in the district and their expertise in case of Earthquake, Chemical (industrial) and Fire hazard must be kept updated.

c. Early Warning & Communication

- I. The telecom department must actively engage in strategic planning to establish a more effective alert system during emergencies.
- II. Satellite phone connectivity should be enhanced. As there are no satellite phones available at Tehsil level.
- III. Available Satellite Phones should be tested twice a month to ensure Connectivity.

- V. HAM radio sets should be utilized as they can be essential for communication in case of TSP network failure due to disasters.
- VI. PA systems in Malls and shopping complex and other Public buildings need to be installed.
- VII. RWAs should be given training on Earthquake and Fire fighting.
- VIII. The Google Android Earthquake Early Warning System is a feature built into Android devices that provides real-time earthquake alerts to users and should be advertised to the community.

d. EOC

- I. EOCs should be activated at more decentralized levels, such as the sub-divisional level, to improve coordination and resource mobilization.
- II. The use of satellite phones and wireless radio sets, integrated into a well-established communication network that includes Police and Army as outstations, is essential for the efficient operation of the Emergency Operations Center (EOC).
- III. Equipped and trained staff for EOC operations is necessary.

e. Plan and SOPs

- I. A detailed plan for conducting a Mock exercise should be developed.
- II. A state-level Standard Operating Procedure (SOP) for fire hazards needs to be developed.
- III. Crowd control at the sites of mock exercise needs to be done and movement should be restricted.
- IV. Regarding Off-site Chemical Emergency awareness and training of officials should be conducted regularly with a designated SOP and Time Frame.

f. Use of Technology

- I. Use of Drones in case of Earthquake, Chemical (Industrial) and Fire hazard could be a monumental addition it has been underutilized by districts and tehsils.
- II. The deployment of drones was limited during the Mock Ex, with their use confined to only a few locations. Wider utilization could have significantly enhanced situational awareness, damage assessment, and real-time monitoring during the exercise.
- III. Mapping with Proper study and identification of Critical lifeline structures for areas falling in seismic zone IV.

- IV. iv. Districts should have their Seismic Micro zonation with help of Institutes & Departments like CSIR-CBRI.
- V. Use of digital platforms and social media to increase awareness amongst the community.

g. Miscellaneous

- I. It is essential that industries especially MAH units, hospitals, schools, and government buildings maintain up-to-date Disaster Management Plans that are rehearsed regularly in collaboration with district administration.
- II. Empowering local communities can serve as a significant force multiplier, as community being the first responder demonstrates that local populations often play a pivotal role in initial search and rescue operations during crisis.
- III. Traffic management and crowd control with separate escape routes and entry & exit points were missing at some of the mock drill sites and needs to be rectified.
- IV. At some of the mock drill sites, the Incident Commanders (IC) were not particularly informed about their roles. It's essential to provide training to ensure they understand their responsibilities with clarity.
- V. The police department, due to its close proximity to the community during a disaster, is often underutilized compared to other response forces and should play a more active role in such situations.
- VI. Police should be trained for disaster response as they are a commendable and most nearby resource to the community.
- VII. SOPs/Guidelines for the conduct of Mock exercise should be prepared for Flood, CBRN, Earthquake & Fire mock drills.
- VIII. Aapda Mitra, Civil Defence, NCC etc. were unclear on their roles they can be an asset with clarity in their roles and responsibilities.
- IX. At few locations medical camp & Field Hospital were set up at first floor of existing hospitals before conducting a rapid damage assessment of the building.
- X. At some locations Mock Ex was carried out on some other establishment away from the designated locations.

OBSERVATIONS AND SUGGESTIONS

19. Conduct of Mock Exercise

- a. This marked the second state-wide Earthquake Mock Exercise after Sep 2024 that was conducted across all 34 districts located in Seismic Zones III and IV. The exercise aimed to institutionalize a structured response mechanism and reinforce disaster response protocols within the operational fabric of officials, thereby embedding preparedness into their functional practice.
- b. This Practice should be done on yearly basis to keep the awareness and check the preparations of the districts trickling down to Tehsil level against earthquake.
- c. Several districts and tehsils demonstrated active and effective participation in the mock drills, while others require considerable improvement. Conducting mock exercises of this scale is crucial for enhancing disaster preparedness and ensuring readiness at all administrative levels.
- d. Information regarding IRS is still unknown to many stakeholders and officials and needs to be exercised more and more in the districts to make them aware of IRS at Tehsil levels to ensure a proper response in case of Disasters.
- e. Presence of Incident Commander was not on Mock drill sites and that resulted in chaos and unregulated crowd management scenarios.
- f. Districts should conduct regular mock drills at their own capacity and keep a check on preparedness and awareness at their Tehsils.
- g. The roles and responsibilities of line departments regarding disaster management need to be clearly defined and coordinated to ensure an effective response.
- h. Interagency coordination needs to be done more frequently.
- i. The role of aapda mitra needs to be identified so they can be of better use if divided to agencies for deployment with specific roles such as Fire, Building collapse, Crowd management etc.
- j. Districts should conduct Mock Exercises like this regularly on their own capacity to keep up the readiness and preparedness against disasters.
- k. Civil Defence did a commendable job in the mock ex and should be given more engagement by districts to be utilized as a defining force.

20. Resource Management

- a. Alternate mode of communication rather than telecom should be available for communication like satellite phones, Walkies or HAM in every DEOC & at every Tehsil.

- b. In case of Communication Failure in case of disaster like Earthquake a provision for Runner/Rider can be utilized to have a current understanding of the Locality.
- c. IDRN portal should be updated regularly.
- d. NGOs and their specialty regarding disaster response should be updated with the DEOC and a meeting with NGOs should be done on Quarterly basis to increase coordination.
- e. A list of available Human resource like F&ES, police personnel, SDRF, NCC etc. at the DEOC.

21. Coordination

- a. Districts should conduct Civil-Military Liaison Conferences (CMLCs) frequently to enhance coordination.
- b. Collaboration with NGOs and CSOs for relief efforts is crucial and should be updated regularly.
- c. Participation of agencies such as the RAILWAYS, NDMA, NCS, CBRI and DRDE is essential in mock exercise simulations and creates a healthy Rapport for any future emergency situation.
- d. Drones can play a crucial role in relief as well as rescue operations.
- e. Inter departmental coordination is of utmost importance so proper Liaison can be done in case of Disaster.

22. Participation

- a. There is a pressing need for more active involvement from senior leadership at both the state and district levels. In some districts, the entire coordination and execution of various mock exercise activities were solely managed by the DDMA disaster expert.
- b. It is essential that all State and District Incident Response Team (IRT) officials participate fully in both the Table Top Exercise (TTEEx) and the Mock Exercise (ME), actively practicing their designated roles in disaster scenarios and have a trickling down effect upto tehsil level.
- c. A number of line departments, and Essential Support Function (ESF) organizations were absent from the Tabletop and Mock Exercise sessions. It is important that each participating department, and organization formally designate representatives and communicate the details of those nominated to attend and actively participate in the exercise.
- d. ESF agency teams must actively engage in the mock exercise, practicing their roles, mobilizing resources, and rehearsing disaster response drills and Standard Operating Procedures (SOPs).

- e. Key teams that should participate includes: Telecommunications Service Provider (TSP), Electricity Dept., PWD, Municipal Corporations, Animal Husbandry, Health Dept., etc.
- f. Police is a major dept. which goes underutilized in these Mock exercises and should be actively used and trained to respond in case of disasters.

23. EOC

- a. Emergency Operations Centers (EOCs) at the district level must be upgraded with robust communication infrastructure and sufficient staffing.
- b. They should be equipped with adequate space to enable full operational capacity during emergency situations.

24. Capacity Building for Emergency Responders

- a. A systematic assessment of the training needs for emergency responders, including community volunteers, is essential to tackle emergency in case of disasters.
- b. Additional specialized courses covering various aspects of disaster management should be introduced as needed for emergency responders.
- c. Key resources, such as the Fire & Emergency Services, Police dept., State Disaster Response Force (SDRF), Civil Defence (CD) volunteers, Home Guard personnel, and Aapda Mitras, must have their capabilities continuously enhanced.
- d. Incident Response System (IRS) training programs are necessary for district-level Incident Response Teams (IRTs) and associated line departments to ensure comprehensive preparedness IRTs should also be created at tehsil level.

CONCLUSION

- 25.** The Mock Exercise on Earthquake, Chemical (Industrial) & Fire Hazard in the 34 Districts with 157 tehsils has highlighted critical learnings that require immediate attention, particularly for the industrial sector MAH units. Such mock exercises present valuable opportunities to identify and address existing gaps in case of Off-site response.
- 26.** The Incident Response System (IRS) has proven to be an effective mechanism for responding to such emergencies with minimal delay, owing to clearly defined roles. IRS needs to be promoted more at lower levels i.e. Tehsils, of the administration to enhance capabilities regarding disaster response efficiently.
- 27.** The Mock Ex was conducted in coordination with HQ Paschim Uttar Pradesh Sub Area consecutively for the 2nd year which along with the Civil Administration contributed extensively, Thereby enhancing the capabilities of State to undertake Mock Exercises in the future.



Uttar Pradesh State Disaster Management Authority

B-1 Block, First Floor, PICUP Bhawan, Gomti Nagar, Lucknow

Website: upsdma.up.nic.in, Email: upsdma@gmail.com



Program : Orientation & Coordination Conference for
“State Mock Exercise on Earthquake, Industrial- (Chemical)
and Fire Hazards”.

Date : 09 September 2025 (Tuesday)

Venue : Conference Hall, UP SDMA
Online - Districts.

Time	Duration	Events	Remarks
10:30 – 10:45	15 min	Welcome and Introduction	UP SDMA
10:45 – 11:00	15 min	State HVRCA (Earthquake, Industrial - Chemical & Fire Hazards)	UP SDMA
11:00 – 11:45	45 min	Briefing on Mock Exercise: - TTEx & Symposium - Physical Conduct of ME - Role & Responsibilities of Districts and Stakeholders.	Sr Consultant, UP SDMA, Lucknow.
11:45 – 12:15	30 min	Discussion on Conduct of ME activities.	- State EOC, GoUP - Health Dept, GoUP - Factory, UP - UP F& ES, GoUP - NDRF - SDRF (05 mins each)
12:15 – 01:00	45 min	Discussion – Districts and stakeholders.	Sr Consultant, UP SDMA, Lucknow.
13:00 – 13:15	15min	Coordination & Arrangements for TTEx & Symposium.	HQ PUPSA (Online)
13:15 – 13:45	30 min	Administration Support for TTEx, Symposium & ME: - Boarding & Lodging. - Local Transport. - Liaison Officers.	ADM (F/R), DDMA, Meerut (Online)
13:45 – 13:55	10 min	Special Remarks.	GOC, HQ PUPSA. (Online)
13:55 – 14:00	05 min	Closing Remarks.	VC, UP SDMA.



Uttar Pradesh State Disaster Management Authority

B-1 Block, First Floor, PICUP Bhawan, Gomti Nagar, Lucknow

Website: upsdma.up.nic.in, Email: upsdma@gmail.com



Program : Symposium cum Table Top Exercise (TTEX)
“State Mock Exercise on Earthquake, Chemical and Fire Hazards”

Date & Time : **16 September 2025** (Tuesday), 9.00 am to 5.00 pm

Venue : **Meerut Cantt.**

Time	Event	Remarks
0900-0930h	Registration	UPSDMA
Inaugural Session		
0930-1000h	Initiation	VC, UPSDMA
	Special Remarks	Member NDMA, New Delhi
	Special Remarks	Member & HoD, NDMA, New Delhi
	Key Note Address	Chief Secretary, UP
	Special Remarks	GOC-in-C, HQ Central Command
Context Setting		
1000-1100h	Management of Earthquake, Chemical & Fire Hazards in India	Sr Consultant, NDMA, New Delhi
	Earthquake Monitoring, Early Warning and Dissemination	Scientist-F, NCS, New Delhi
	HRVCA, Response Mechanism & IRS for Earthquake, Chemical & Fire hazards in UP	UPSDMA
1100-1130h	Tea Break & Equipment Display	
Session 1 – Capabilities & Challenges		
1130-1330h	Capabilities of UP F&ES to handle Earthquake, Chemical & Fire Hazards	DG, F&ES, UP
	Vulnerability to Earthquakes and response capabilities of Railways	Indian Railways
	Specialist capabilities of NDRF for CSSR, Chemical & Fire Hazard	Commandant, 8 Bn NDRF
	State Medical Emergency Plan for large scale disasters (Earthquake, Chemical & Fire Hazard)	DG Health, UP
	Enhancing Structures Resilience & Urban Safety	CBRI, Roorkee
	Response, Capability & Challenges in Industrial (Chemical) disasters	DRDE, DRDO, Gwalior, MP
	Role & Capabilities for Earthquake, Chemical & Fire Hazards in HQ Central Command (Western UP & Tarai specific)	HQ, Central Command
	Case Study	
	Jhansi Hospital NICU Fire (2024) : Response, Challenges and Learnings	DG, F&ES, UP
1330-1415h	Working Lunch & Equipment Display	
Session 2 – TTEX (Earthquake, Chemical & Fire Hazard)		
1415-1615h	Situation 1 – Immediate Actions Post Earthquake Situation 2 – Schools, Hospitals & Administrative Offices Post Earthquake Situation 3 – Chemical Gas Leak, Liquid Spill, LNG Leak etc Situation 4 – Fire Emergency	- 8 Mandal-wise Syndicates - 2 Response Forces Syndicates
1615-1630h	Open House	Sr Consultant, NDMA, New Delhi
Closing Session		
1630 -1700h	Special Remarks	ACEO, UPSDMA
	Special Remarks	GOC, PUPSA, Meerut
	Closing Remarks	VC, UPSDMA



Uttar Pradesh State Disaster Management Authority

B-1 Block, First Floor, PICUP Bhawan, Gomti Nagar, Lucknow
Website: upsdma.up.nic.in, Email: upsdma@gmail.com



Program : “State Mock Exercise on Earthquake, Industrial (Chemical) and Fire Hazards”

Date & Time : 19 September 2025 (Friday), 10:00 am to 4:00 pm

Control : Meerut Cantt.

Time	Event	Remarks
1000-1005h	Welcome and introduction	Mock Ex control est at HQ PUPSA
1005-1030h	DEOC & IRT activation	All 34 DEOCs
1030-1100h	School Evacuation Drill	One school per district
1100-1145h	Fire Fighting Drill (Mall / Office Building etc.)	One building per district
1145-1215h	Establishment of a Field Hospital	One Field hospital per district
1215-1245h	Off Site & On-Site Response at MAH Unit	One MAH per district
1245-1300h	Demo on S&R in Collapsed Structure	8 th Bn Ghaziabad
1300-1320h	Railway Accident Response	To be conducted by Railways (Moradabad)
1320 -1345h	Hot wash	-
1345-1430h	Lunch	-
1430-1545h	Debriefing and Lessons Learnt	From DEOCs (34 Districts)
1545-1600h	Closing Remarks	-

Symposium - cum - Table Top Exercise



EVACUATION



MEDICAL





PREPAREDNESS ♦ RESPONSE ♦ RELIEF

Uttar Pradesh State Disaster Management Authority

✉ upsdma@gmail.com



www.upsdma.up.nic.in

