

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
WESTERN ZONE BENCH, PUNE  
APPLICATION NO. 106 (THC) OF 2017 (WZ)**

**IN THE MATTER OF:**

**SANJAY ANNAJI JIWANE & ORS.**

**APPLICANTS**

**VERSUS**

**STATE OF MAHARASHTRA & ORS**

**RESPONDENTS**

**BRIEF NOTE ON BEHALF OF CENTRAL POLLUTION CONTROL BOARD W.R.T.  
DISPOSAL OF HAZARDOUS WASTE LYING AT THE PREMISES OF BHOPAL**

The erstwhile M/s Union Carbide India Ltd. was involved in production of carbamate pesticides and associated intermediate chemicals at Bhopal during 1969 to 1984. The unit was closed down in December 1984 after the incidence of leakage of Methyl Iso-Cyanate (MIC) in the form of vapors.

The premises of M/s. Union Carbide Ltd., measuring 87.74 acres were taken over by Government of Madhya Pradesh on 09/07/1998. Presently, Bhopal Gas Tragedy Relief and Rehabilitation Department (BGTRRD), M.P. Govt. is the occupier of said premises.

The remediation of UCIL premises requires (i) Disposal of UCIL waste (hazardous waste) lying in the premises; and (ii) Remediation of contaminated soil and groundwater in and around UCIL premises.

**Disposal of UCIL waste (hazardous waste) lying in the premises:**

- (i) In compliance to orders of Hon'ble High Court date 10/01/2008, BGTRRD (Bhopal Gas Relief and Rehabilitation Department), Government of MP in the year 2004-2005 had disposed about 33.31 of lime sludge at a common hazardous waste Treatment, Storage and Disposal Facility (TSDF) located at Pithampur, MP on 30.06.2008. During the same period, about 346 MT of hazardous waste was collected and stored under secured shed within the premises of UCIL.
- (ii) The Union Cabinet's in its meeting held on 24/06/2010 constituted an Oversight Committee under MoEF&CC to recommend on release of funds for remediation and waste disposal works to Department of Expenditure (DoE) as and when specific project proposals is submitted by GoMP.

- (iii) The earlier proposals of Disposal of UCIL waste through common hazardous waste incinerator in Gujarat State and followed by another proposal of disposal of UCIL waste through DRDO waste destruction facility at Nagpur in the year 2014 could not be materialize since the respective States have got the matter stayed from Hon'ble High Courts.
- (iv) In compliance to order dated 17/4/2014 of the Hon'ble Supreme Court of India, in the matter of Special Leave to Appeal (Civil) No. 9874 of 2012 (Union of India Versus Alok Pratap Singh and others), CPCB had undertaken a successful trial incineration of UCIL waste at common TSDF, Pithampur during August 13-18, 2015. During the trial run, CPCB carried out comprehensive monitoring of source emission as well as at receptor areas. Government of MP has provided local security to monitoring team. Officials of MPPCB were also associated with CPCB in trial incineration.
- (v) During trial run, all the monitored parameters of stack emissions complied with the prescribed emission norms. Ambient air quality around incinerator was also found within the National Ambient Air Quality standards. Presence of nickel in ambient air was noticed exceeding in one of the samples, however, the same could not be attributed to trial incineration of UCIL waste.
- (vi) The trial run was successful and demonstrated that UCIL waste can be disposed by incineration safely with the help of TSDFs available in the country.
- (vii) Outcome of the successful trial run of UCIL waste submitted to the Hon'ble Supreme Court by MoEF&CC and also communicated to the Department of Chemicals and Petrochemicals (DCPC), Ministry of Chemicals & Fertilizers.
- (viii) The matter of disposal of remaining 337 MT of UCIL waste has been taken over by the Department of Chemicals & Petrochemicals. Details of remaining hazardous waste stored UCIL premises is as below:

S. No.	Waste Type	Stored quantity
1.	Sevin residue and Naphthol residues	92 MT
2.	Process/ Reactor Waste	29 MT
3.	Semi processed Pesticides	54 MT
4.	Excavated Waste/ Contaminated Soil	162 MT
	<b>Total (approx.)</b>	<b>337 MT</b>

- (ix) During the meetings held on 17.02.2016 and 06.09.2017, under chairmanship of Secretary, Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt., it was decided that remaining 337 MT HW shall be disposed by incineration by Government of MP based on CPCB trial run. CPCB was directed to provide the technical guidance and support.
- (x) CPCB had provided a draft Request for Proposal (RFP) to Government of MP on 04/12/2017 so that Government of MP could invite competitive bids from the Operators of common HW incinerators (TSDFs).
- (xi) BGTRRD has floated the final RFP on 26.04.2021 and constituted a technical committee comprising of representatives from BGTRRD, CPCB, MPPCB and MANIT-Bhopal for disposal of said waste. The committee has evaluated the technical bids on 01.12.2021 and financial bids on 07.12.2021 & 17.12.2021. Officials of CPCB have assisted BGTRRD in the technical evaluation of bids.
- (xii) The matter related to delay in disposal of UCIL waste and remediation of UCIL site was also filed in the Hon'ble NGT (Principle Bench), New Delhi in OA No. 362 of 2021 (R.K. Gupta Vs State of Madhya Pradesh). The matter was disposed of vide orders dated 09.03.2022 with following directions:
- “ 5. The above undisputed facts show serious unsatisfactory state of affairs and apathy and failure of the concerned authorities to perform their responsibility under public trust doctrine which calls for prompt action by *BGTRRD, Govt. of MP, which further needs to be monitored by the Chief Secretary, M.P. personally in view of long time failure to take such requisite steps, to the detriment of environment and public health. This should be in a time bound manner, not beyond six months. As already noted, trial has already been held in the year 2015 and thus there can possibly be no reason for any further delay. Oversight Committee in the MoEF&CC and in the Ministry of Chemical and Fertilizer may grant necessary sanctions in terms of directions of the Hon'ble Supreme Court on the subject within one month....*”
- (xiii) In the meeting held on 20/06/2022, Oversight Committee of MoEF&CC requested Govt of MP to prepare a proposal in thorough manner to address all environmental issues while handling the waste, incineration and disposal of residues.

- (xiv) CPCB vide letter dated 22/11/2022 provided point wise comments to the proposal of BGTRR dated 02/09/2022 for disposal of UCIL waste.
- (xv) The Oversight Committee of MoEF&CC discussed the proposal of BGTRR MP State on 19/06/2023 and recommended the proposal for disposal of remaining 337MT of UCIL waste through common Hazardous waste incinerator located at Pithampur, Dhar, MP State. The Minutes of the meeting is appended at Annexure-I.



(Bharat K Sharma)  
**Regional Director**  
**Central Pollution Control Board**  
**Regional Directorate, Pune**

Date: 30/07/2023

भरत कुमार शर्मा / Bharat Kumar Sharma  
क्षेत्रीय निदेशक / Regional Director  
केन्द्रीय प्रदूषण नियंत्रण बोर्ड  
Central Pollution Control Board  
क्षेत्रीय निदेशालय, पुणे / Regional Directorate, Pune  
पर्यावरण, वन एवं जलवायु परिवर्तन विभाग, भारत सरकार  
Min. Environ. & Climate Change, Govt. of India  
सर्वे नं. 110, हिंदवाडी अग्रगुंठे हॉल, कान्हेर रोड, कान्हेर, पुणे - 411005  
Dir. No. 110, Hindawadi Agragunthe Hall, Kanher Road, Kanher, Pune-411005

**F. No. 14/7/2021- HSM  
Government of India  
Ministry of Environment, Forest and Climate Change  
(HSM Division)**

Indira Paryavaran Bhawan,  
Jorbagh Road,  
New Delhi-110 003.

Dated: 06<sup>th</sup> July, 2023

**OFFICE MEMORANDUM**

**Sub: Minutes of the Oversight Committee meeting held on 19<sup>th</sup> June, 2023  
on remediation and waste disposal works related to Bhopal Gas Leak  
Disaster - reg.**

The undersigned is directed to enclose herewith the minutes of the Oversight Committee meeting held on 19<sup>th</sup> June, 2023 at 10:00 AM under chairmanship of Hon'ble Minister for Environment, Forest and Climate Change at Indira Paryavaran Bhawan, New Delhi on providing oversight and support the State Government in taking remedial and waste disposal works related to Bhopal Gas Leak Disaster.

2. This issues with the approval of the Competent Authority

**Encl.:** As above.

Yours sincerely,



(Dr. Satyendra Kumar)

Director

E-mail: satyendra.kumar07@nic.in

To

1. **Shri Vishvash Sarang** - Co-Chairman  
**Hon'ble Minister of Medical Education,**  
**Bhopal Gas Relief & Rehabilitation Department**  
**Govt. of Madhya Pradesh**  
112, First Floor, Mantralaya,  
Vallabh Bhavan, Bhopal.
2. **Shri Hardeep Singh Dang** - Member

**Hon'ble Minister of Environment  
Govt. of Madhya Pradesh**  
Mantralaya,  
Vallabh Bhavan, Bhopal.

3. **Shri Arun Baroka** - Member  
**Secretary, Dept. of Chemicals & Petrochemicals  
Govt. of India**  
501, 5th Floor, Shastri Bhawan,  
New Delhi, Delhi 110001.
4. **Dr. Srivari Chandrasekhar** - Member  
**Secretary, Department of Science & Technology**  
Technology Bhavan, New Mehrauli Road,  
New Delhi-110 016.
5. **Smt. Leena Nandan** - Member  
**Secretary, Ministry of Environment, Forest and  
Climate Change**  
Indira Paryavaran Bhawan, New Delhi-03.
6. **Shri Pravir Pandey** - Member  
**Additional Secretary and Financial Advisor  
Ministry of Environment, Forest and Climate Change,**  
Indira Paryavaran Bhawan, New Delhi-03.
7. **Shri Tanmay Kumar** - Member  
**Chairman, Central Pollution Control Board**  
Parivesh Bhawan, East Arjun Nagar, Delhi-110032.
8. **Shri Mohammad Suleman** - Member  
**Additional Chief Secretary, Dept. of Bhopal Gas  
Tragedy Relief & Rehabilitation, Govt. of Madhya  
Pradesh, Mantralaya, Vallabh Bhavan, Bhopal.**
9. **Shri Ajeet Kesari** - Member  
**Additional Chief Secretary (Finance)  
Govt. of Madhya Pradesh**  
Room 218, 2nd Floor, Ministry, Vallabh Bhawan, Bhopal.
10. **Shri Gulshan Bamra** - Member  
**Chairman, Madhya Pradesh Pollution Control Board,**  
Govt. of Madhya Pradesh, Bhopal.
11. **Shri Mal Singh Bhaydiya** - Member  
**Commissioner, Bhopal Division  
Govt. of Madhya Pradesh**  
Old Secretariat, Bhopal, Madhya Pradesh.

13. **Dr. A.N. Vaidya** - Member  
**Director, National Environmental Engineering**  
**Research Institute,**  
Nagpur.
14. **Dr. Prakash Kumar** - Member  
**Director, National Geophysical Research Institute,**  
Hyderabad.
15. **Shri Naresh Pal Gangwar** - Convenor  
**Additional Secretary, HSM Division, MoEF&CC**

Copy to :-

1. Addl. PS to Hon'ble Minister, EF&CC, Govt. of India, IPB, New Delhi-03.
2. Senior Advisor to Hon'ble Minister of State, EF&CC, Govt. of India, IPB, New Delhi-03.
3. PPS to Secretary, MoEF&CC
4. SO, HSM Division, MoEF&CC
5. Guard File

**MINUTES OF THE FOURTH MEETING OF THE OVERSIGHT COMMITTEE HELD  
ON 19<sup>th</sup> JUNE, 2023 AT 10:00 AM**

The fourth meeting of the Oversight Committee was held on 19<sup>th</sup> June, 2023 at 10:00 AM under the co-chairmanship of Shri Bhupender Yadav, Hon'ble Minister for Environment, Forest and Climate Change and Shri Vishvash Sarang, Hon'ble Minister of Medical Education, Bhopal Gas Relief & Rehabilitation Department, Govt. of Madhya Pradesh. The list of participants is placed at **Annexure I**.

2. At the outset, Hon'ble Minister, EFCC welcomed all the members of the Oversight Committee. Secretary, Environment, Forest and Climate Change briefed the members of the Oversight Committee on the matters related to remediation and environmental activities of Bhopal Gas Tragedy.

3. Additional Secretary, MoEF&CC presented about the important remediation issues relating to Bhopal Gas Tragedy. A presentation was made on all such matters. The presentation is placed at **Annexure II**.

4. During the meeting, the following agenda items were considered:

- i. **Consideration of the proposal by Government of Madhya Pradesh for remediation and disposal of approximately 337 MT of toxic waste lying at erstwhile M/s Union Carbide India Limited (UCIL) site and recommendation to Department of Expenditure (DoE) for release of funds to Government of Madhya Pradesh for disposal of the toxic waste.**

It was informed that nearly 347 MT of toxic and hazardous waste is lying at UCIL site comprising various categories of wastes, viz. pesticide waste, sevin and naphthol residue, reactor residue, excavated waste. Trial incineration of 10 MT out of 347 MT of toxic and hazardous waste carried out at Pithampur treatment and disposal facility, Indore for five days in August, 2015 based on the directions of Hon'ble Supreme Court. CPCB has reported that all environmental parameters were within the prescribed standards. In addition, 40 Tons of lime sludge was disposed off at Pithampur landfill site, Indore in June, 2008.

The present proposal of incineration will test three feed rates, viz. 135 kg/hr, 180 kg/hr and 270 kg/hr and the optimum feed rate for actual incineration will be decided based on the report of trial runs. It is estimated to generate approx.900 MT of residue out of incineration of 337 MT of toxic and hazardous waste.

**Secretary, DCPC** mentioned that the toxic and hazardous waste was lying at the UCIL site for long time and the proposal of GoMP will facilitate incineration and disposal of waste so that contamination to soil and groundwater was prevented.

**Additional Chief Secretary, BGTRRD, Govt. of Madhya Pradesh** informed that the proposal has been further examined by the committee headed by Chief

Secretary, Govt. of Madhya Pradesh and recommended the proposal for consideration of Oversight Committee.

**Chairman, CPCB** mentioned that the CPCB had provided its recommendations in respect of technical comments sent by Madhya Pradesh Pollution Control Board on the proposal of GoMP for remediation of toxic and hazardous waste. **AS&FA** mentioned that there would be creation of infrastructure and asset. It was mentioned that State Govt. should take necessary steps for sustained use of assets created under the project.

It was also mentioned that Madhya Pradesh Pollution Control Board should develop protocols for sustained use of the facility with the concurrence of CPCB. The facility created may continue to be utilised for treatment and disposal of other categories of waste.

**Director, NEERI** told that the toxic waste was lying at UCIL site for long time and it was important to dispose that off. He also mentioned that the pilot study conducted on incineration of 10 MT hazardous waste at Pithampur treatment facility had shown the emissions were within the prescribed norms. He expressed his concurrence with the proposal submitted by Govt. of M.P.

**Director, NGRI** mentioned that they have conducted groundwater study, hydro-geological studies and leaching studies at the waste storage site of UCIL. He had agreed with the proposal of GoMP for remediation and disposal of hazardous waste.

**Head (TDT) and Adviser, DST** mentioned the concurrence with the proposal of GoMP for remediation of 337 MT toxic and hazardous waste.

**Director, IICT** concurred with the State Govt. proposal for remediation of hazardous and toxic waste.

**Commissioner, Bhopal** stated that he would ensure the law and order during handling and transportation of waste from UCIL site, Bhopal to Pithampur facility, Indore.

It was deliberated that the waste residue generated from incineration should be disposed in a separate compartment at Pithampur TSDF to distinguish from the other disposed wastes. All environmental parameters shall be monitored for longer period to ensure that there was no adverse impact on environment due to disposal of waste residue.

ii. **Assessment and remediation of contaminated soil and groundwater in and around the erstwhile UCIL premises**, including actions for the following:

- a) **Revalidation of the data by CSIR- NEERI on groundwater and soil contamination levels**
- b) **Constitution of Technical Advisory Group for appointing an agency/consortium of agencies for quantification of soil and ground water contamination**

- c) Remediation of mercury spillage
- d) Remediation of underground dumps

It was noted that the NEERI and NGRI conducted a joint study in 2009 and have reported approx. 1 million tonne of contaminated soil, mercury spillage of approx. 1 tonne and underground dumps of approximately 150 tonnes. Subsequently, Peer Review Committee after examinations of reports of NEERI and NGRI has recommended for a comprehensive assessment.

Oversight Committee in its 3rd meeting held on 25.05.2011, recommended GoMP to invite Expressions of Interest for appointing an agency for quantification of soil and ground water contamination.

IITR was engaged to re-validate the NEERI report on monitoring of groundwater and soil samples and IITR submitted its report in January, 2012.

**Director, NEERI** mentioned that the re-assessment of contamination is to be carried out afresh to estimate the present contamination, as the studies conducted by NEERI and NGRI were more than 10 years old.

**Secretary, DCPC** mentioned that the studies for estimation of contamination may take approx. 10-12 months and Madhya Pradesh Govt. may identify the agency immediately to commence these studies.

iii. **Detoxification and decontamination of corroded plant structure at erstwhile UCIL site**

IICT Hyderabad estimated that 1500 MT of the corroded plant structure and machinery is contaminated. Further, IICT prepared 'Technical and Tender document for Detoxification, Decommissioning and Dismantling of UCIL Plant' and suggested the technical process for decommissioning of the corroded plant structure.

Madhya Pradesh State Govt. has earlier prepared a tender document for decontamination of corroded plant structure and machinery. Subsequently, State Govt. has revised the tender document in 2018.

**Madhya Pradesh Govt.** informed that the three issues namely corroded plant structure, hazardous waste and contaminated soil may be dealt separately as it may take more than 5 years to treat and dispose these wastes.

**Madhya Pradesh Govt.** was of the opinion that the corroded plant structure and machinery may not be required to be removed as it was planned to be made part of memorial.

It was deliberated that the decision may be taken by Govt. of Madhya Pradesh in this regard.

iv. **Action plan for complete remediation of UCIL site**

Based on the recommendations made in the meeting held on 27.1.2023 under the chairmanship of Ld. Attorney General (AG) for India, timelines for complete remediation activities may be provided by Madhya Pradesh Govt.

5. After deliberations, the following decisions were made:
- i. **Agenda item: Remediation and Disposal of 337 MT of Toxic Waste lying at erstwhile UCIL site: Proposal of GoMP**
    - a. It was decided to recommend to Department of Expenditure for release of Rs. 126,08,50,365/- to Government of Madhya Pradesh for remediation and disposal of 337 MT of toxic waste lying at erstwhile UCIL site.  
(Action: Oversight Committee and DoE)
    - b. It was also decided that Government of Madhya Pradesh may examine the sustained use of the assets created under the proposal in alignment with conditions laid down in RFP.  
(Action: Government of Madhya Pradesh)
    - c. Govt. of Madhya Pradesh shall ensure the following environmental and health safeguards during and after the remediation and disposal operations:
      - i. Optimum feed rate for actual incineration will be decided based on the successful trial runs for three proposed feed rates and meeting environmental compliance.  
(Action: Government of Madhya Pradesh)
      - ii. Trial runs & incineration and disposal operations shall be carried out under the continuous supervision of CPCB and MPPCB to ensure environmental compliance and safeguards are taken care off.  
(Action: Government of Madhya Pradesh and CPCB)
      - iii. Installation and functioning of Pollution Control Systems for air pollution & waste water treatment shall be ensured.  
(Action: Government of Madhya Pradesh)
      - iv. Separate compartment will be created and labelled at TSDF for disposal of residue generated through incineration operations and no other waste will be mixed.  
(Action: Government of Madhya Pradesh)
      - v. All environmental parameters at the TSDF and zone of influence shall be monitored at the beginning, during disposal and at least one year after the completion of incineration operations  
(Action: Government of Madhya Pradesh)
      - vi. All environmental parameters at the facility of remediation operations and surrounding areas shall be continuously monitored under the supervision of CPCB and MPPCB.  
(Action: Government of Madhya Pradesh and CPCB)

- vii. Transportation of waste from the UCIL site to Pithampur facility shall be carried out in closed containers as per provisions under the Hazardous Wastes Rules.

**(Action: Government of Madhya Pradesh and CPCB)**

- viii. Sufficient insurance and emergency preparedness plan for handling emergency, if any, during handling and transportation of waste shall be put in place as per conditions laid down in the RFP.

**(Action: Government of Madhya Pradesh)**

- ix. Working personnel involved in handling, transportation, incineration and disposal operations shall be provided adequate training and insurance coverage to ensure occupational health safety.

**(Action: Government of Madhya Pradesh)**

- ii. **Agenda item: Assessment of remediation of contaminated soil and groundwater in and around the erstwhile UCIL premises.**

Government of Madhya Pradesh may undertake fresh studies with the assistance of NEERI and NGRI to quantify the soil and groundwater contamination, as well as the mercury spillage and the underground dumps. In this regard, Government of Madhya Pradesh to submit the action plan including identification and finalization of an agency/consortium of agencies to carry out the studies by 19.07.2023.

**(Action: Government of Madhya Pradesh)**

- iii. **Agenda item: Detoxification and decontamination of corroded plant structure at erstwhile UCIL site.**

Government of Madhya Pradesh mentioned that existing plant structure may become part of the Memorial. In this regard, Government of Madhya Pradesh may submit the action plan by 19.07.2023.

**(Action: Government of Madhya Pradesh)**

- iv. **Agenda item: Formulation of an action plan for remediation of UCIL site**

Government of Madhya Pradesh may submit a time bound action plan in this regard.

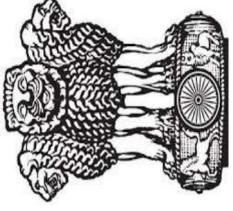
**(Action: Government of Madhya Pradesh)**

- 6. The meeting ended with a vote of thanks to the Chair and all the participants.

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**List of Participants**

1. Shri Bhupender Yadav, Hon'ble Minister for Environment, Forest and Climate Change, Govt. of India
2. Shri Vishvash Sarang, Hon'ble Minister of Medical Education, Bhopal Gas Tragedy Relief & Rehabilitation Department (BGTRRD), Govt. of Madhya Pradesh
3. Smt. Leena Nandan, Secretary, MoEF&CC, Govt. of India
4. Shri Arun Baroka, Secretary, Department of Chemical and Petrochemicals, Govt. of India
5. Shri Pravir Pandey, Additional Secretary and Financial Advisor, MoEF&CC, Govt. of India
6. Shri Tanmay Kumar, Chairman, Central Pollution Control Board
7. Shri Mohammad Suleman, Additional Chief Secretary, BGTRRD, Govt. of Madhya Pradesh
8. Shri Naresh Pal Gangwar, Additional Secretary, MoEF&CC, Govt. of India
9. Dr. Anita Agarwal, Head (TDT) and Adviser, Department of Science and Technology, Govt. of India
10. Dr. D. Srinivasa Reddy, Director, Indian Institute of Chemical Technology (IICT), Hyderabad
11. Dr. A. N. Vaidya, Director, National Environmental Engineering Research Institute (NEERI), Nagpur
12. Dr. Prakash Kumar, Director, National Geophysical Research Institute (NGRI), Hyderabad
13. Shri Gulshan Bamra, Chairman, Madhya Pradesh Pollution Control Board
14. Shri Mal Sing Bhaydiya, Commissioner, Bhopal Division, Govt. of Madhya Pradesh
15. Shri Susanta Kumar Purohit, Joint Secretary, Department of Chemical and Petrochemicals, Govt. of India
16. Smt. Caralyn Deshmukh, Principal Secretary, BGTRRD, Govt. of Madhya Pradesh
17. Dr. Satyendra Kumar, Director, MoEF&CC



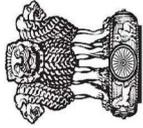
**Annexure II**



**Presentation  
for  
Oversight Committee  
on  
Bhopal Gas Tragedy's  
Remediation and Environment Related Issues**

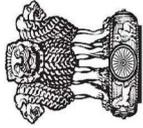
**HSM Division  
Government of India  
Ministry of Environment, Forest & Climate Change**

**19<sup>th</sup> June, 2023**



## Oversight Committee: Constitution

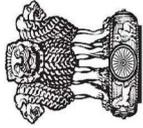
- MoEF&CC notified Oversight Committee on 15.7.2010 under the chairmanship of Hon'ble Minister, E&F and Hon'ble Minister, Dept. of Bhopal Gas Tragedy Relief and Rehabilitation, GoMP to provide oversight and support to remedial actions.
- Oversight Committee held meetings on:
  - 27th September, 2010
  - 24th March, 2011
  - 25th May, 2011
- Oversight Committee made recommendations for taking up remediation activities of wastes lying in UCIL premises, soil and groundwater contamination, and corroded plant.



### 3. Remediation and Disposal of Toxic Waste: Proposal of GoMP

- Based on the directions of Hon'ble Supreme Court, trial incineration of 10 MT of toxic waste was carried out at Pithampur TSDF, Indore, from 13.08.2015 to 18.08.2015.
- CPCB reported that all environmental parameters are within the standards and recommended the remaining waste be incinerated based on the demonstration<sup>184</sup> of trial run.
- GoMP submitted the proposal of remediation and disposal of approximately 337 MT toxic waste on 14.02.2022 for consideration by the Oversight Committee and sanction of Rs. 126.08 crore to carry out the remediation work.



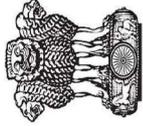


### 3. Proposal of Govt. of M.P.

Proposal dated 14.02.2022 was received for remediation and disposal of 337 MT of hazardous waste. M/s Pithampur Industrial Waste Management Private Limited was selected with the offer of Rs. 126,08,50,365.00/-.

#### Offer Break-up:

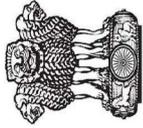
Sl. No.	Type of Activity	Estimated Quantity	Rate Quoted	Total Amount
1.	Stage-1: Incineration of waste	35.64 MT	~Rs.24.2 lakh/ MT	Rs.8.63 crore
2.	Stage-2: Incineration of waste	301.36 MT	~Rs.29.5 lakh/MT	Rs.88.91 crore
3.	Sample analysis and monitoring			Rs.4.75 crore
4.	Blending and feed menu preparation	337 MT	Rs.45,287/MT	Rs.1.53 crore
5.	Collection and packaging and incidental expenses	337 MT	Rs.53,433 / MT	Rs.1.8 crore
6.	Disposal of wastes generated after incineration (Kiln bottom ash: 150 MT, APCD residue: 120 MT, MEE or ETP residue: 30 MT)	300 MT	~Rs. 15000/MT	Rs.45 lakh
7.	Transportation, loading and unloading	337 MT	Rs.23,388/MT	Rs.78.82 lakh
<b>Total</b>			Rs.106.85 crore	
<b>GST (@18%)</b>			Rs.19.23 crore	
<b>Grand total</b>			Rs.126.08 crore	<b>185</b>



### 3. Remediation and Disposal of Toxic Waste: Proposal of GoMP

#### (i) Feed rates of waste

- 10 MT waste incinerated at the feed rate of 90 kg/hr (~5 days/115 hrs)
- Present proposal will test the feed rates of 135 kg/hr, 180 kg/hr, 270 kg/hr and best will be taken for incineration.
- Time taken to incinerate 330 MT at the following feed rates:
  - 90 kg/hr (trial runs): 153 days (5.1 months)
  - 135 kg/hr (proposed option-1): 102 days (3.4 months)
  - 180 kg/hr (proposed option-2): 77 days (2.6 months)
  - 270 kg/hr (proposed option-3): 51 days (1.7 months)
- Based on the report of trial runs, an optimum feed rate will be decided for actual incineration.



### 3. Remediation and Disposal of Toxic Waste: Proposal of GoMP

#### **(ii) Supervision of trial runs for proposed feed rates**

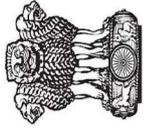
- Trial runs will be conducted for 3 days (135 kg/hr), 3 days (180 kg/hr) and 2 days (270 kg/hr)
- CPCB and MPPCB will ensure monitoring of all environmental parameters by bidder/third party consultant and compliance of environmental standards.

#### **(iii) Supervision of incineration of remaining waste (300 MT) after trial runs**

- Incineration to be carried out under the continuous supervision of CPCB, & MPPCB along with bidder and third party consultants for monitoring all environmental parameters.

#### **(iv) Pollution Control systems for air emissions waste water treatment**

- CPCB & MPPCB to ensure installation and functioning of pollution control systems during incineration.



### 3. Remediation and Disposal of Toxic Waste: Proposal of GoMP

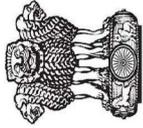
#### **(v) Waste/residue management**

- 900 MT of residue is expected to be generated from incineration of 300 MT of waste.
- Separate Compartment at Pithampur TSDF shall be created and labelled to dispose the generated residue and shall not mix with any other waste at TSDF.
- Environmental parameters at the TSDF and zone of influence shall be monitored at the beginning, during disposal and at least one year after the completion of incineration operations.

#### **(vi) Occupational health and safety**

- Workers involved in handling, transportation, incineration operations shall be provided training and insurance coverage.





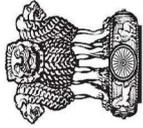
### 3. Remediation and Disposal of Toxic Waste: Proposal of GoMP

#### **(vii) Handling and transportation of waste from Bhopal to Pithampur (225 km)**

- Waste shall be transported in closed containers and to be approved CPCB & MPPCB.
- Insurance to be obtained and shall cover damages for environmental and human health.
- Emergency response plan covering environment and safety protocols shall be prepared to deal with spillages or evacuation of personnel, if any.
- Necessary approvals to be obtained from MPPCB and CPCB.

#### **(viii) Monitoring of environmental parameters**

- All environmental parameters at the operations and surrounding populated areas shall be continuously monitored under the supervision of CPCB and MPPCB.
- In case of any deviation, incineration operations shall be stopped to rectify the problem.

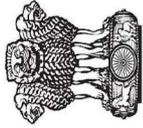


### **3. Remediation and Disposal of Toxic Waste: Proposal of GoMP**



**Discussion Point: To recommend to Department of Expenditure (DoE) for release of funds to GoMP for remediation and disposal of the UCIL waste.**

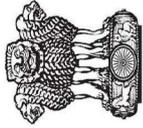




## 4. Assessment and Remediation of Contaminated Soil and Groundwater in and around UCIL Premises

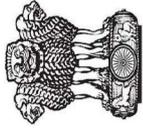
### a) Revalidation of the Data by NEERI on Groundwater and Soil Contamination Levels

- Based on the directions of High Court of Madhya Pradesh, GoMP appointed a joint study of NEERI and NGRI in March, 2009 for assessment of contamination and delineation of suitable strategies for remediation of contaminated areas.
- The following reports were submitted:
  - i. NEERI – Assessment and Remediation of Hazardous Waste Contaminated Areas in and around M/s Union Carbide India Ltd., Bhopal
  - ii. NGRI- Geophysical investigations to assess industrial waste dumped at UCIL, Bhopal
- PRC constituted by DST reviewed the reports of NEERI & NGRI and concluded that the assessment of NEERI and NGRI is not comprehensive and recommended various remediation methods.
- IITR was engaged to validate NEERI report on extent of soil and groundwater contamination.
- IITR re-validated the NEERI report on monitoring of groundwater and soil samples to CPCB in January, 2013.



## 4. Assessment and Remediation of Contaminated Soil and Groundwater in and around UCIL Premises

- b) Constitution of Technical Advisory Group for appointing an agency for quantification of soil and ground water contamination
- Hazardous/contaminated waste quantification at the UCIL site as reported in NEERI & NGRl reports
    - i. Contaminated soil: Approx. 1.1 Million Tonne
    - ii. Contamination of soil and groundwater in and around premises is solely due to dumping of various wastes during 1969-1984. Methyl Iso Cyanate (MIC) gas leak has no relevance.
  - Oversight Committee, in its 3rd meeting held on 25.05.2011, recommended GoMP to invite Expressions of Interest for appointing an agency for quantification of soil and ground water contamination.
  - Committee also recommended GoMP to constitute a Technical Advisory Group (TAG) for this purpose headed by Chairman, CPCB for helping in preparation of scope of work and bid documents, evaluating the bids and making recommendations to GoMP based on which the agency will be appointed.



## 4. Assessment and Remediation of Contaminated Soil and Groundwater in and around UCIL Premises



### c. Remediation of mercury spillage

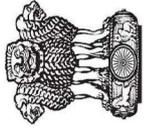
- Approximately 1 tonne of mercury spillage within UCIL premises was reported.

### d. Remediation of underground dumps

- Approximately 150 MT of underground dumps was reported.

**Discussion Point: Status and way forward (Action: GoMP)**



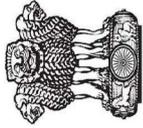


## 5. Detoxification and Decontamination of Corroded Plant Structure at UCIL Premises

- IICT, Hyderabad submitted the report: ‘Technical and Tender document for Detoxification, Decommissioning and Dismantling of UCIL Plant’
- IICT has observed that 1500 MT of the corroded plant and structures are unsafe and contaminated.
- Oversight Committee, in its 3rd meeting, recommended that the matter of detoxification and decontamination of UCIL structure may be taken up in the GoM meeting.
- GoM, in its meeting held on 13.01.2012, recommended GoMP to make a presentation on the method of in-situ decontamination of the structures.
- PRC recommended to modify the technical and tender documents for detoxification and decontamination of the plant. PRC has given comments for it.

**Discussion Point: Status and way forward (Action: GoMP)**





## 6. Implementation of Recommendations by Ld. Attorney General for India



- Meeting under the chairmanship of Ld. Attorney General for India held on 27.01.2023 and inter-alia recommended the following:

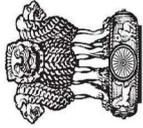
(i) **GoMP to furnish its comments on the technical issues raised by MoEF&CC on their proposal for disposal of toxic waste lying at UCIL site. MoEF&CC will take further necessary action in this regard.**

GoMP has provided the justification on their proposal of remediation of the toxic waste on 06.04.2023. **Accordingly, the proposal has now been placed before the Oversight Committee.**

(ii) **A protocol may be formulated for complete remediation of UCIL site.**

GoMP has informed that water quality monitoring at the UCIL site is being carried out by the Court appointed Monitoring Committee. **Oversight Committee may provide further directions.**

**Discussion Point: Submission of time bound action points for implementation of all environmental and remediation related activities at UCIL site (Action: GoMP)**



## Implementation of Recommendations by Ld. Attorney General for India



(iii) Fresh scientific studies may be conducted on removal of toxic waste, soil remediation, decommissioning of UCIL plant by concerned institutes for assessing the amount of liability of UCC for remediation on the basis of the principles of “polluter pays” .

GoMP may be requested to appoint an agency for reassessing the extent of contamination (waste / soil / groundwater and corroded plant) and remediation.

**Discussion Point: Status and way forward on Points (i), (ii) and (iii) (Action: GoMP)**



# THANKS

