

Response to the report of Central Pollution Control Board (CPCB) as per the direction of Honorable NGT (South Zone) Order dated July 7, 2020 in the case of O. A. No. 123 of 2017 in the matter of Krithika Gokulnath Vs. Registrar, Anna University and 8 Others, submitted on 16-11-2020.

Pondicherry University Remarks and Action Taken to the Observation (2.4), Views on best practices and Suggestions (3.0) and Recommendations (4.0) made by CPCB to the Honorable NGT (South Zone) submitted on 16.11.2020.

2.4 Observations

| Sl.No | Observations | Remarks | Action Taken |
|-------|--|----------------------------|--------------|
| i. | On the day of inspection (November 5, 2020), the university was not fully operational, many departments were closed. It was informed that due to the COVID-19 pandemic situation, classes for Post Graduate students are conducted through online. It was also informed that from October 15, 2020 onwards, about 30 research scholars are doing the research activity and each laboratory is being utilized by average of 3-4 students per day. | Noted and Accepted by CPCB | - |
| ii. | Pondicherry University, Kalapet, Puducherry has obtained one time Authorisation from Puducherry Pollution Control Committee (PPCC) under sub – rule 1 of Rule 10 of Bio-Medical Waste Management Rules, 2016 on June 19, 2020. The copy of the authorization is attached as Annexure 3. | Noted and Accepted by CPCB | - |
| iii. | Pondicherry University is authorized for generation, segregation, collection, storage and disposal of yellow category waste of 6 kg/day, 2 kg/day of red category waste, 0.5 kg/day of white category and 0.5 kg/day of blue category waste. | Noted and Accepted by CPCB | - |
| iv. | Pondicherry University has entered into MoU with M/s Pondicherry Solid Waste Management Company Pvt. Ltd., Thuthipet, Puducherry on March 17, 2020 valid up to March 16, 2021 for the disposal of BMW generated from four Schools through incineration. | Noted and Accepted by CPCB | - |

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| v. | During visit to Biotechnology department, it was noticed that, in one of the cell culture laboratory there was no color coded bins for disposing the waste. The waste was not segregated and disposed together in one bin. (Photograph no. 2) | <ul style="list-style-type: none"> • Since the lockdown from 21st March 2020, the cell culture lab was shutdown and was in the process of cleaning, fumigation and maintenance when the inspectors came for inspection on 5th November 2020. • The Department is functioning with the special assistance funding of Department of Biotechnology, GoI, and follows guidelines and SOPs of DBT, GoI. • The wastes are segregated before disposal, monitored by lab attendant/ authorized person • As mentioned in observation Sl. No i, the university is not fully functional and the faculties/ students perform their duties /classes online. | Presently the color coded bins are kept in place and necessary SOPS are being followed |
| vi. | There was no display of poster for disposing different category of waste in all the four laboratories. No records have been maintained for the generation of BMW to quantify. | Biological wastes from the department are duly autoclaved and disposed and to mention no pathological biomedical waste is generated in the Biotechnology Department. | As advised, the display poster for disposing different category of waste is in place |

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| | | <p><u>Refer Sl. No. iv of the Observation:</u></p> <ul style="list-style-type: none"> • Pondicherry University has entered into MoU with M/s Pondicherry Solid Waste Management Company Pvt. Ltd., Thuthipet, Puducherry on March 17, 2020 valid up to March 16, 2021 for the disposal of BMW. • Proceeding the, MoU with authorized recycler, on 17-03-2020, the register for waste generation is in place. • Since the lockdown was announced by 21-03-2020 (until further notice), till date the labs are not operative and the researchers are working on publications and literature review rather than analysis (faculties are scheduled for online classes). • The Log book, User Register, Accident Reporting Register are in place since then. | |
| vii. | One dedicated person has been identified for the disinfecting or treating the bio-medical waste. The generated from the laboratories is collected and disinfected. | The lab attendant is carrying out this part. | |


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| viii. | <p>During inspection, it was informed that the metal rack outside the autoclave room is used as an area for storing the BMW before treatment. The autoclave used for disinfecting is kept along with the other two autoclave used for sterilization. (Photograph no. 2)</p> | - | Measures will be taken for separation |
| ix. | <p>The Department of Biotechnology has one vacuum type autoclave of capacity 150 litres of Technico make. During inspection, the autoclave was operating with a temperature of 105°C, pressure of 12 psi with residence time of 14 minutes. This indicates that the autoclave is not used for decontamination.</p> | <ul style="list-style-type: none"> • The Department of Biotechnology has 3 functional autoclaves in the centralized facility. Two for autoclaving (for PG and Research scholars independently) and one for decontamination purpose. During the time of visit by the inspectors, the autoclave used for the decontamination was not on and has been wrongly interpreted. • It was mentioned over 40 minutes not 14 minutes. Language & Pronunciation is the root cause for misinterpretation (regional accent/ slang). | - |


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| | | <ul style="list-style-type: none"> Since the department is functioning as per the Department of Biotechnology, Gol, Protocol, the researchers and lab attendant work together complementing the specifications as mentioned in the standard operating procedures. As per Sl. No. xiv observation (due to prevailing COVID -19 situation, the department labs were not operational.) | - |
| x. | As per the Schedule II of BWM, Rules 2016 the vacuum type autoclave, the waste should be subjected to the following conditions; | | |
| | <ul style="list-style-type: none"> a temperature of not less than 121°C and pressure of 15 psi per an autoclave Report of the CPCB in the matter of O A No. 123 of 2017 residence time of not less than 45 minutes; or | As mentioned in Sl. No: ix, temperature not less than 121°C, and pressure of 15 psi, the waste will be decontaminated over 40 minutes as per standard operating procedure. | - |
| | <ul style="list-style-type: none"> a temperature of not less than 135°C and a pressure of 31 psi for an autoclave residence time of not less than 30 minutes; | <ul style="list-style-type: none"> Yes. Standard operating procedure is followed, because the department follows DBT, Gol., guidelines. | - |

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| xi. | This clearly indicates that the department is not disinfecting the waste according to the conditions mentioned in the schedule II of the BWM, Rules 2016. The log book for operating the autoclave is not maintained. | <ul style="list-style-type: none"> Refer Sl. No ix and x The observation was made when the lab was under cleaning, fumigation and maintenance. Moreover, the Inspecting Officer visited the university when it was not fully operational, and many departments were closed. | - |
| xii. | It was informed that spore test for the validation of autoclave is conducted every year, but according to the Schedule II of BWM Rules, 2016, every week the test has to be conducted to ensure that the autoclave is carried out effectively. The records of the validation test have to be maintained for atleast five years. | <ul style="list-style-type: none"> The university is NOT A MEDICAL UNIVERSITY and no clinical material is disposed except for minimal cotton swabs used for injection purpose in the Health Centre. The researchers in the Life Science Departments do not use pathological microorganisms and the DNA/RNA isolated does not lead to any hazard and research work is followed as per the Institutional Biosafety Committee in place in the University as per Dept. of Biotechnology, Govt. of India rules and regulations. | <ul style="list-style-type: none"> Even though this university is NOT A MEDICAL UNIVERSITY and does not generate any clinical/pathological material, as suggested by the CPCB the spore test will be conducted every week. The records of the validating spore test will be maintained for five years. |
| xiii. | The treated waste is stored in a room along with other materials and has no dedicated storage facility/area. | The autoclaved waste is isolated for disposal from the waste to be treated in the Biotechnology Department. | In addition, a new storage area was identified as the common collection point to enable smooth functioning of the MoU, with the Authorized Recycler. |


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| Sl.No | Observations | Remarks | Action Taken |
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| xiv. | The university till today has not sent the waste to M/s Pondicherry Solid Waste Management Company Pvt. Ltd., it was informed that after obtaining the authorization, the nationwide lockdown was imposed and due to prevailing COVID -19 pandemic situation, the departments were not operational. | <ul style="list-style-type: none"> • Yes, due to prevailing COVID - 19 pandemic situation, the departments were not operational. • 'No waste generation' and 'no waste is sent' to the M/s Pondicherry Solid Waste Management Company Pvt. Ltd. for disposal | - |
| xv. | However few quantity of wastes generated is disposed of in a deep burial pit after disinfection. | It was mentioned to the inspectors orally that the animal waste in the Central Animal House would be disposed as per CPSCEA guidelines. However, due to the pandemic situation No waste was generated till date as the Animal Facility is shut down till date. | - |
| xvi. | In the other departments/laboratories were BMW/ biotechnological research waste are generated, there is no practice of segregation, storage and disinfection as per the BWM, Rules 2016. laboratory Autoclave for disinfection | <ul style="list-style-type: none"> • Since this university is NOT A MEDICAL UNIVERSITY, the clinical BMW are not generated. • However, as mentioned in the observation Sl. No. xiv.: due to prevailing COVID -19 pandemic situation, the departments were not operational (the nationwide lockdown). • In addition, the laboratory wastes are segregated, disinfected as per the procedure by the departments concerned | <ul style="list-style-type: none"> • To comply with the NGT Order and to maximize the efficient handling and disposal of wastes, the university has increased the facility and provided additional color coded bins to all the Central Labs and also to the individual faculty analytical labs. • Apart from this, the university also had signed MoU with the 'Project Management Consultancy Services' for the proper management of solid wastes, BMW, housekeeping, resource management. |
| xvii. | Photograph no. 1: | It was not Anna University, rather Pondicherry University. | - |

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3.0 Views on best practices submitted by the applicant.

| Views on best practices submitted by the applicant | Action Taken by Pondicherry University |
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| <p>The applicant in the suggestions for the best practices to be adopted for the DNA recombinant research waste issued by the Department of Biotechnology (DBT), Ministry of Science and Technology, Govt was reviewed. The guidelines titled "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" is applicable for research, development and handling of genetically engineer organisms and non-genetically engineered hazardous microorganisms. The regulations 2.3.5 titled decontamination and disposal is par with the CPCB Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016. In the regulation, after the regulation 2.3.5, DBT has mentioned that Selection of appropriate decontamination and disinfection strategies for biomedical waste treatment and disposal facilities should be in accordance to those mentioned in the "Revised Guidelines for Common Bio-medical Waste Treatment and Disposal Facilities" (2016) developed by Central Pollution Control Board (CPCB).</p> | <p>All SOPs are being followed in the Biotechnology Department as per IBSC regulations. However, it will be monitored on a routine basis in the days to come by the other Life Sciences departments of Pondicherry University.</p> |
| <p>During inspection, the Anna & Pondicherry universities informed that, the department of Biotechnology has an Institutional Biosafety Committee (IBSC) and reviews the day to day activity related to biotechnology research projects. The regulation and guidelines for Recombinant DNA Research and Biocontainment, 2017 is adopted and practised. However there are no indications that the universities followed the regulations issued by DBT in Decontamination and disposal of biotechnological research wastes.</p> | <ul style="list-style-type: none"> • The remarks have been wrongly recorded as of Pondicherry university is concerned, from our end. • All records are maintained by the IBSC Committee. |
| <p>The applicant has suggested the best practices document by the National Research Council of the National Academies, Washington DC titled "Prudent Practices in Chemical Laboratory – Handling and Management of Chemical Hazards" This document prescribes the guidelines for collection, storage and disposal of Hazardous, radioactive, biology hazards and chemical waste generated by the chemical laboratories in an research/educational institutes. These best practices may be adopted by the universities/ research laboratories for safe disposal of chemical, hazardous and radioactive wastes.</p> | <ul style="list-style-type: none"> • Currently, the DBT, Govt., guidelines and compliance to BMWM Rules 2016, are practiced by the Departments concerned of the Pondicherry university. |

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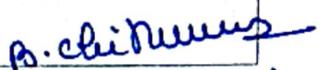
| Views on best practices submitted by the applicant | Action Taken by Pondicherry University |
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| | <p>In addition to other efforts, DC titled "Prudent Practices in Chemical Laboratory - Handling and Management of Chemical Hazards" - for the collection, storage and disposal of hazardous, radioactive, biology hazards and chemical waste generated by the chemical laboratories in an research/educational institutes, would be adopted by Pondicherry University for the safe disposal of chemical, hazardous and radioactive wastes.</p> |

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4.0 Suggestions and Recommendations

| Sl. No. | Suggestions and Recommendations | Action Taken for Compliance |
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| i. | The universities have to strictly follow the "Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017" and Bio Medical Waste Management Rules, 2016 for handling, decontamination and disposal of the Bio Medical Waste generated from the departments. | Yes. From our end - Pondicherry University |
| ii. | Anna university has obtained one time authorisation from TNPCB for the M/s SPIC BIOPROCESS LABORATORY, Taramani Campus, Chennai. The university has to identify the departments generating the Bio Medical Waste and authorisation has to be obtained. | -NA- |
| iii. | While obtaining the authorisation, the universities have to identify the category of waste generated from each department and clearly mention in the application. | The waste will be inventoried and will obtain the authorization. |
| iv. | In case of M/s SPIC BIOPROCESS LABORATORY, authorisation is issued only for the yellow category of waste, whereas the red, yellow, blue and white category of waste is disposed to the M/s G. J. Multiclave Pvt. Ltd., | -NA- |
| v. | TNPCB may once again review the category of waste generated by Anna university as per the schedule I of the BWM Rules, 2016 and accordingly authorisation may be issued. | -NA- |
| vi. | The universities generating the BMW have to install a small weighing machine to quantify the waste generated from each laboratory/ departments and recorded. So that the exact quantity of BMW generated, treated & disposed shall be submitted to SPCBs/PCCs in the Annual report. | <ul style="list-style-type: none"> The weighing machine will be used to quantify the waste generated from each laboratory/ departments and recorded. The exact quantum of BMW generated, treated & disposed shall be maintained and submitted to SPCBs/PCCs in the Annual report. |
| vii. | The universities have to maintain log book/ records for the segregation, collection, treatment and disposal of BMW. The records maintained should be made available for the monitoring team. | The log book/ records for the segregation, collection, treatment and disposal of BMW is in place. |


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| Sl. No. | Suggestions and Recommendations | Action Taken for Compliance |
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| viii. | Treatment of BMW through autoclave should be followed according to the schedule II of the BWM, Rules 2016. The validation test should be done every week to ensure that the waste is disinfected effectively and as per the methods mentioned in schedule II of the BWM, Rules 2016. | <ul style="list-style-type: none"> • Treatment of BMW through autoclave is followed since the inception of the departments concerned. • Additional measures will be taken to strictly adhere to the schedule II of the BWM, Rules 2016. • Even though, this university is NOT A CLINICAL UNIVERSITY, as suggested the validation test would be done every week to ensure that the waste is disinfected effectively and as per the methods mentioned in schedule II of the BWM, Rules 2016. |
| ix. | The universities shall identify one dedicated person responsible for segregation, collection, treatment and disposal of BMW. The concerned person responsible should be trained accordingly to manage & handle the BMW efficiently. | <ul style="list-style-type: none"> • Dedicated unit: Currently, the university had signed MoU with the 'Project Management Consultancy Services' for the proper management of all kinds of solid wastes, housekeeping and resource management. • Dedicated Office: Awareness & Training on the management & handling of the BMW is provided to the employees, staff, researchers, students, lab attendant and contract workers/handlers by the Office of Green Campus, PU. |
| x. | As per the Bio Medical Waste Management Rules, 2016, it is mandatory that all the employees, staff and students need to be trained to handle & manage the BWM. | Periodically it would be done. |

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| Sl. No. | Suggestions and Recommendations | Action Taken for Compliance |
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| xi. | A designated central storage room shall be identified within the premises for storage of bio-medical waste, till the waste is treated and disposed to Common Biomedical Waste Treatment Facility. The room should be under the responsibility of a designated person and should be under lock & key. | Yes, it is in place. |
| xii. | Pondicherry University to stop using the deep burial pit for disposing the BMW and sent the treated waste to the CBMTF as per the authorization. | The Pondicherry university, sends the treated BMW Wastes to the CBMTF (Central Bio-Medical Treatment Facility – i.e. MoU with M/s Pondicherry Solid Waste Management Company Pvt. Ltd., Thuthipet, Puducherry). |
| xiii. | <p>Most of the biotechnological waste generation is from externally funded projects funded by various Govt. funding agencies. However, funding essentially support research infrastructure development and currently no emphasis is given on disposal and waste management needed in these funded research projects.</p> <p>It is suggested that the funding agencies should ensure that the institutes being funded by them have proper waste disposal/ management facilities (Proper waste disposal/ management facilities shall be made mandatory for getting research grants/ funds) and adequate portion of grant/ fund shall be earmarked exclusively for the management/ disposal of biotechnological/ research wastes.</p> | The IBSC (Institutional Biosafety Committee), IAEC (Institutional Animal Ethics Committee) and HEC (Human Ethics Committee) follows all SOPs as per ICMR/DBT Guidelines. Hence funded projects are sanctioned based on the clearance of the above Institutional Committees |

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**BEFORE THE NATIONAL GREEN
TRIBUNAL SOUTHERN ZONE,
CHENNAI**

O.A. No. 123 of 2017

Krithika Gokulnath

Vs.

Registrar, Anna University and Ors.

**RESPONSE TO THE REPORT OF
CENTRAL POLLUTION CONTROL
BOARD (CPCB)**

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