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NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007

NATIONAL ENVIRONMENTAL (BATTERY CONTROL) REGULATIONS, 2024

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S. I. No. 11 of 2024

NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007

NATIONAL ENVIRONMENTAL (BATTERY CONTROL) REGULATIONS, 2024

[21*st Day of March*, 2024] Commencement.

In exercise of the powers conferred on me by Section 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007, and all other powers enabling me in that behalf, I, BALARABE ABBAS LAWAL, Honourable Minister of Environment, make the following Regulations —

PART I — OBJECTIVE AND APPLICATION

Objective

1. The objective of these Regulations is to prevent and minimize pollution and waste emanating from batteries to the Nigerian environment.

Application

2. These Regulations shall apply to —

(*a*) new and used batteries ;

(*b*) the life cycle of a battery from cradle to cradle ; and

(*c*) categories of batteries contained in the Sixteenth Schedule to these Regulations.

PART II — GENERAL PROVISIONS

Statutory requirements

3.—(1) A person shall submit to the National Environmental Standards and Regulations Enforcement Agency ("Agency") —

(*a*) an Environmental Impact Statement (EIS) for a new project or modification of an existing project before commencement of the project ;

(*b*) an Environmental Audit Report (EAR) of an existing facility every three years to be conducted by a Consultant accredited by the Agency ; and

(*c*) an Environmental Management Plan (EMP) as prescribed in the First Schedule to these Regulations.

(2) Without prejudice to sub-regulation (1) (*b*) of this regulation, where a facility is to be decommissioned or transferred for any reason, an Environmental Assessment shall be conducted by a Consultant accredited by the Agency and the report of such assessment shall be submitted to the Agency for verification and approval.

Emergency response plan

4.—(1) A person shall —

(*a*) reduce pollution to a minimum by applying up-to–date Best Practicable Environmental Option, Cleaner Production and Green Technologies ;

(*b*) plan and set up machinery for combating pollution hazards and maintain equipment in the event of an emergency ;

(*c*) have an Emergency Response Plan and pollution response equipment which shall be readily accessible and available to combat pollution hazards in the event of accidental discharges as prescribed in the Second Schedule to these Regulations ; and

(*d*) prepare and implement a functional Emergency Response Plan which shall include measures to be taken —

(*i*) in the discharge of deleterious substances,

(*ii*) to prevent any deposit or discharge out of the normal course of events of such substance, and

(*iii*) to mitigate the effects of such deposit or discharge.

(2) A person shall take steps to ensure that accidental discharges such as spills or leaks, shall not pollute the storm water system, local waterways or water bodies by —

(*a*) keeping chemicals such as fuels, solvents, oils, electrolyte, and coolants, on a chemical resistant floor, within a bund wall and a covered storage area ;

(*b*) having adequately stocked spill kits ; and

(*c*) training staff on the use of spill kits.

Pollution abatement technology

5.—(1) A person shall install anti-pollution equipment for the detoxification or treatment of effluent and emission according to the prescribed effluent and emissions standards in the Third Schedule to these Regulations.

(2) The installation of anti-pollution equipment made pursuant to sub-regulation (1) of this regulation shall be based on the Best Available Technology (BAT) or the Best Practicable Technology (BPT).

Polluter Pays Principle

6.—(1) The Polluter-Pays-Principle shall apply to every facility.

(2) The collection, treatment, transportation and final disposal of wastes shall be the responsibility of the facility generating the wastes within the specified standards and guidelines.

(3) In the event of an incident resulting in an adverse impact on the environment whether socio-economic or health wise, the facility shall be responsible for —

(*a*) the cost of damage, assessment and control ;

(*b*) remediation ; and

(*c*) reclamation.

Litter prohibition

7.—(1) A person whether as a producer, distributor, end-user, or recycling facility, shall not, except at designated areas —

(*a*) dispose a battery at a dumpsite or open place ; or

(*b*) engage in open burning or incineration.

(2) All slag and residues from recycling of used batteries shall be handled by the recycler in collaboration with the Producer Responsibility Organisation and relevant waste management authority for environmentally sound disposal.

Best practices and waste minimisation

8.—(1) A person shall implement cleaner production processes and pollution prevention measures which yield economic, social and environmental benefits as prescribed in the Seventh Schedule to these Regulations.

(2) All damaged and disused components including protective plastic casing, waste electrodes, and dilute such as waste sulphuric acid, terminals, shall be amenable to recovery under the Extended Producer Responsibility (EPR) Programme.

(3) Any waste from the manufacturing of batteries with hazardous properties shall be clearly labeled, stored separately from the general waste and placed in storage areas that are chemically resistant, before disposal in an environmentally sound manner.

Pollution control organisational system

9. A person shall put in place an organisational system for pollution control and assign a qualified Environmental Manager (EM) or Pollution Control Manager (PCM) as prescribed in the Eight Schedule to these Regulations.

Banned and restricted chemicals

10.—(1) The Agency shall issue a clearance for the use of restricted chemicals.

(2) The lists of banned or restricted chemicals are set out in the Ninth Schedule to these Regulations.

Extended producers responsibility

11.—(1) An importer, exporter, manufacturer, distributor, retailer, collector or recycler involved in battery handling shall subscribe to the Extended Producer Responsibility Programme including the Buy Back as specified in Tenth Schedule to these Regulations.

(2) A contractor who uses batteries for public and private renewable energy projects shall comply with the Extended Producer Responsibility Programme.

(3) A person who manufactures or imports batteries shall register and work with the Agency on the Extended Producer Responsibility Programme within one year of commencement of these Regulations.

(4) A manufacturer, importer, distributor or retailer of batteries shall put in place a collection system for the collection of used batteries for recycling.

(5) A person shall work with a Producer Responsibility Organisation for the purpose of ensuring safe collection, treatment, transportation and disposal of used batteries in line with specified standards and guidelines.

(6) A person who —

(*a*) deals, trades or disposes used batteries shall pay battery disposal fees to the Producer Responsibility Organisation ; and

(*b*) imports or produces new batteries shall pay battery recycling fees to the Producer Responsibility Organisation.

(7) A person who intends to dispose used batteries by sale shall inform the Agency two weeks before the sale of the used batteries.

(8) The PRO shall, on behalf of the Agency, assess and collect the fees imposed by this Regulation.

(9) The fees payable under this Regulation are —

(*a*) registration fee ;

(*b*) administrative fee ;

(*c*) battery recycling fee ; and

(*d*) battery disposal fee.

(10) The Agency shall monitor and supervise the activities of a PRO.

(11) The PRO may access the monies realized in these Regulations including fees under subregulation (9) of this regulation in accordance with the guidelines for the Battery Sector.

Management of chemical, oil station and fuel dumpsite.

12. A person shall —

(*a*) ensure that there is no contamination from the leakage of surface and underground oil, used oil, used sulphuric acid, fuel or chemical storage tank which may likely cause pollution of the environment ;

(*b*) have an impermeable base for any ancillary equipment and provide an appropriate bund wall in the event of any unanticipated discharge or spillage ; and

(*c*) install an underground tank and a fuel dump with leak detection equipment which shall be regularly inspected for leakages to prevent seepage into ground water.

Community relations

13. A person shall have a sustainable community relations programme as part of its corporate social responsibility.

Effluent limitation standards

14.—(1) The National Environmental Standards in relation to Effluent Limitations shall be as prescribed in the Third Schedule to these Regulations.

(2) An effluent shall be deemed to be polluted where —

(*a*) the concentration of any of its parameters exceeds the permissible limits as prescribed in Third Schedule to these Regulations ; and

(*b*) it is discharged without appropriate pre-treatment.

(3) Effluent as described in sub-regulation (2) of this regulation shall, before discharge, be treated to attain the minimum standard as prescribed in the Third Schedule to these Regulations.

Restriction on the release of toxic effluent

15.—(1) A person shall not discharge effluent or discard spent oil, grease, sulphuric acid, wash-water, debris, flammable liquids on land; into a water course ; or a water body, except treated to the permissible limits as prescribed in the Third Schedule to these Regulations

(2) A person shall not wash a spill down the drain.

(3) Notwithstanding the provisions sub-regulation (1) of this regulation, any person using an influent shall ensure that the concentration or value of any of the parameters of the effluent conforms to the standard prescribed in the Third Schedule to these Regulations.

Effluent treatment.

16.—(1) A person who discharges effluent into the environment shall treat the effluent to the permissible limits as prescribed in Third Schedule to these Regulations.

(2) A person shall —

(*a*) carry out effective treatment of residues, when operating a plant ;

(*b*) ensure that effluent is treated to achieve the standards prescribed in the Third Schedule to these Regulations ; and

(*c*) ensure that wastes containing toxic substances are treated with Best Available Technology (BAT) and Best Environmental Practices (BEP).

Sludge and wastewater disposal

17.—(1) A person shall not discharge sludge and waste water directly into a water body or the environment, except such person is carrying out the discharge under a sludge disposal permit.

(2) Any sludge except purely domestic and purely agricultural or organic sludge shall be considered as hazardous waste and subject to the provisions of the Harmful Waste Act (Special Criminal Provisions, etc.) Cap. H1 LFN, 2004.

(3) Hazardous Sludge or waste water shall be treated and disposed of as prescribed in the Fourth Schedule to these Regulations.

Emission standards

18.—(1) A person, who carries out smelting operations shall comply with the Air Emission Standards as prescribed in the Fifth Schedule to these Regulations and the Soil contamination standards as prescribed in the Sixth Schedule to these Regulations.

(2) A person who carries out lead smelting, refining operations, or battery manufacturing with any emission or potential source of emission shall be required to routinely conduct soil and dust contamination analysis, and shall comply with the standards for lead in soil as prescribed in the Sixth Schedule to these Regulations.

Priority air pollutants

19.—(1) A person with any source or potential source of emission shall be required to measure the emission, develop and implement a plan to control it in accordance with the standards prescribed in the Fifth Schedule to these Regulations.

(2) A person shall be required to report the emission data, including the sources with a view to undertaking its reduction in accordance with the implementation plan which shall be reviewed every three years by the Agency.

(3) A person shall ensure that it measures the odour detection threshold and the odorous dilution ratio of the working environment or emissions.

(4) A person using the dilution method of testing odours shall adopt the American Society for Testing Materials (ASTM) or any other method as may be prescribed by the Agency to safeguard the health of the workers.

Burning of fuels

20.—(1) A person shall not burn, or be permitted to burn light fuel oil containing over 0.5 percent sulphur by weight, in a new source or an existing source.

(2) A person shall not burn, or be permitted to burn medium fuel oil containing over 1.1 percent sulphur by weight.

(3) Notwithstanding the provisions of sub–regulation (1) and (2) of this regulation, heavy fuel oil with no more than 3 per cent sulphur may be burnt at a new or existing fuel combustion source or a combination of both where —

(*a*) one or more of such sources operate in a manner that sulphur dioxide is absorbed by coming into contact with the product or with a scrubbing device or other material ; and

(*b*) the actual total sulphur dioxide emissions from the source is less than the allowable sulphur dioxide emissions.

Abatement technologies for air emissions

21.—(1) A person who discharges gaseous substances shall treat such subtances to the permissible limits prescribed in the Fifth Schedule to these Regulations.

(2) The treatment mentioned in sub-regulation (1) of this regulation may be achieved through the use of appropriate pollution abatement technologies for minimizing the release of significant pollutants to the air, including the following —

(*a*) stack gas scrubbing, carbon adsorption or combustion for toxic organics ;

(*b*) bag houses or cyclone for particulate matter removal ; and

(*c*) biological filters or any other appropriate technology.

Noise standards

22. Noise standards shall be subject to the National Environmental (Noise Standards and Control) Regulations, S.I No 35 2009.

PART III — SAMPLING PROCEDURES

Collection and analysis of samples

23. A person shall collect and analyse effluent samples in accordance with the guidelines prescribed in the Third Schedule to these Regulations.

Spot sampling for physical or chemical parameters

24. A spot sample for the purpose of analysis for all the tests including oil and grease, dissolved oxygen, pH, chlorine and sulphide shall be taken as follows —

(*a*) the whole sample volume is to be taken at one time, at the point of discharge or, where the discharge has stopped, at the nearest practicable point within one kilometer upstream and downstream of the point of discharge ; and

(*b*) the sample shall be analysed immediately after collection, where possible, but not later than 24 hours after taking the sample.

Composite sampling for physical or chemical parameters

25. A composite sample for the purpose of analysis for all tests, other than those for temperature and pH, shall be taken by combining individual samples as follows —

(*a*) a minimum of five samples of equal volume of not less than 500 ml each shall be taken at the point of discharge or, where the discharge has stopped, at the nearest practicable point within one kilometer upstream and downstream of the point of discharge, at approximately equal intervals of time over a minimum period of four hours within any 24-hour period ;

(*b*) two of the composite samples collected when the discharge has been stopped, shall be used to prove the source and extent of pollution ;

(*c*) the samples shall be kept as cool as at site conditions ;

(*d*) sample analysis shall commence not later than 24 hours after taking the last sample ; and

(*e*) where the discharge stops or is intermittent, two grab samples shall be collected at the nearest practicable point within one kilometer upstream and downstream of each point of discharge.

Sampling for licence classification

26. The whole volume of spot samples for further laboratory analysis shall be taken one time at the point of discharge.

Sampling of other parameters

27. The oxygen in the sample shall be determined following the Best Practicable Method as prescribed in the Standard Methods for Examination of Water and Wastewater —

(*a*) where full laboratory facilities do not exist on the site ; or

(*b*) in the absence of a calibrated Dissolved Oxygen (DO) meter.

Air sampling for analysis

28.—(1) Measurements of air quality parameters shall take place at any facility, downwind and upwind.

(2) Measurement of total suspended particulate shall be by gravimetric method using air sampler or by any other recommended scientific method and the following shall be observed —

(*a*) a three-hour sampling period of morning 8-10am, afternoon 12-2pm and evening 4-6pm, shall be adopted ; and

(*b*) the heavy metals level of total suspended particulate shall be determined by any referenced standard method using atomic absorption spectrometer.

(3) Gaseous pollutants shall be measured in a manner as may be approved by the Agency in any of the following ways —

(*a*) passive sampling method which shall require the submission of analysis certificate along with results ;

(*b*) a 3- hour sampling period of morning 8-10am, afternoon 12-2pm and evening 4-6pm, shall be adopted ;

(*c*) active sampling for NO^x shall use the Saltzman or any other recommended standard method ;

(*d*) active sampling for SO^2 shall use the West-Gaeke, hydrogen peroxide or conductimetry or any other recommended standard method ;

(*e*) active sampling for hydrocarbons shall use the adsorption on activated charcoal method ; and

(*f*) continuous sampling of any gaseous air pollutant shall use instrument with detection range accommodating the maximum allowable limit of measured parameter.

(4) Measurement as mentioned in sub-regulation (3) of this regulation shall last for at least one hour in every sampling location.

Soil and dust sampling for analysis

29.—(1) Soil and dust samples shall be collected and sent to a laboratory for analysis, or concentrations shall be measured in situ using X-ray fluorescence (XRF) device that reports results almost immediately or any other standard recommended laboratory methodology.

(2) A person shall adopt a sampling strategy that ensures collection of a representative set of samples.

(3) A person shall use standard sampling protocol to collect surface soil from the top 0-3 cm at representative locations within a 0.5 km radius from each facility and at each sample location, 5 to 10 sub-samples from bare soil shall be collected within a one square meter area as a composite and this shall be placed in a labeled and sealed plastic sampling bag for laboratory analysis.

(4) A person shall have Geographical positioning system (GPS) reading at each sample location which assists in documenting mapping areas of high and low contamination.

(5) Standards for lead in soil, and standards for lead in household dust shall be in line with the global review of standards for lead in residential soil which shall range from 50-400mg/kg.

Noise measurements

30.—(1) Noise levels shall be measured as prescribed in the National Environmental (Noise Standards and Control) Regulations, S.I No 35 2009.

(2) Measurement shall be taken at least 3 meters from any barrier or other sound reflecting sources, at about 1.2 - 1.5 meters above ground level or working platform and shall last for at least 10 seconds.

(3) Daytime and nighttime measurements shall be taken at the fence line of any facility.

(4) For the purpose of this regulation —

(*a*) daytime means 07:00 to 22:00 hours ; and

(*b*) nighttime means 22:00 to 7:00 hours.

PART IV — USED BATTERY GENERATION, COLLECTION, TRANSPORTATION AND STORAGE

Handling of used batteries

31.—(1) A person who :

(*a*) generates ;

(*b*) discards ;

(*c*) collects ;

(*d*) transports ;

(*e*) stores ; and

(*f*) recycles,

used batteries shall carry out their activities in line with extant laws, guidelines, standards as prescribed in the Schedules to these Regulations.

(2) A person who generates used batteries shall handover the waste to a used battery collector or a used battery recycler who is registered with the Agency and subscribed to the Extended Producer Responsibility Programme.

Registration of used battery collection

32. A person involved in battery collection shall register with a Producer Responsibility Organisation and obtain a Registration Certificate from the Agency.

Battery collection infrastructure

33.—(1) A person who produces imports or recycles a battery shall install an appropriate and efficient collection infrastructure.

(2) The collection infrastructure process mentioned in sub regulation (1) of this regulation shall be done in an environmentally sound manner prescribed in the Tenth Schedule to these Regulations.

Registration of used battery transportation

34. A person involved in battery transportation shall register with a Producer Responsibility Organisation and obtain a used Battery Transport Registration Certificate from the Agency.

Environmentally sound transportation of used batteries

35.—(1) A used battery transporter shall ensure that —

(*a*) Used Lead Acid Batteries (ULABs) are separated from Li-ion batteries as prescribed in the Thirteenth Schedule to these Regulations ;

(*b*) ULABs are stacked upright on wooden pallets according to size and wrapped with a cellophane material before placing in a covered transport vehicle ;

(*c*) Li-ion Batteries are stacked in a similar manner to ULABs, but in addition, the terminals of the batteries shall be short-circuited or insulated to prevent charge transfer in order to avoid explosion ;

(*d*) ULABs and Li-ion batteries are transported in a covered vehicle to prevent contact with water and heat ;

(*e*) leaking ULABs are placed upright in a sealed water and acid resistant container to avoid leakage of the electrolyte to the environment ;

(*f*) the sealed containers are wedged and stacked properly inside the transport vehicle to avoid the containers moving while being transported ;

(*g*) portable Li-ion batteries such as batteries from mobile handsets, laptops, are placed in an acid, water and heat resistant container during transportation ; and

(*h*) the container is placed in a covered vehicle to avoid contact with water and heat from the sun.

(2) A transport vehicle conveying the used batteries shall be registered as a collector or transporter and shall be properly labeled as conveying hazardous materials and identified with symbols in line with international best practices.

(3) A person shall not use a vehicle for the transportation of hazarduous materials to transport food items.

(4) A person shall be responsible for training a driver and auxiliary on emergency procedures, including fire outbreaks and spillages.

(5) A person shall provide appropriate Personal Protective Equipment (PPE) for the transport team and their usage shall be ensured as prescribed in the Fifteenth Schedule to these Regulations.

Registration of used battery storage

36. A person involved in battery storage shall register with a Producer Responsibility Organisation and obtain a registration certificate from the Agency.

Environmentally sound storage of used batteries for recycling

37.—(1) A battery recycler or collector shall ensure that ULABs shall be separated from Li-ion batteries during storage.

(2) Used ULABs and Li-ion batteries shall be stacked upright without draining of acid (in case of ULABs) in a cool dry place under a well-ventilated covered facility specially made for that purpose.

(3) Used Li-ion batteries shall be short-circuited and stored in a similar manner to ULABs before transport to a treatment facility available locally or abroad.

(4) Acid from ULABs shall be drained at a collection centre where —

(*a*) it shall be ascertained that there is an automated battery breaking equipment that separate the components in ESM ; and

(*b*) there is an acceptable procedure for treating the acid according to international best practices.

Segregation of used batteries during storage

38. A battery recycler or collector shall ensure that used batteries are segregated, labeled and stored according to their categories and chemistry as prescribed in the Sixteenth Schedule to these Regulations.

PART V — BATTERY PRODUCTION AND IMPORTATION

Submission of MANCAP and SONCAP

39. A producer or importer of new batteries shall submit their requisite MANCAP or SONCAP certifications to the Agency.

Registration of battery production, distribution and importation

40. A producer, distributor and importer of new batteries shall register with a Producer Responsibility Organization.

Take back of portable battery

41. A producer, distributor and importer of portable batteries shall ensure the following —

(*a*) take-back used batteries at no cost to the end-user ; and

(*b*) sensitize end-users about the possibility of such take-back at the distributor's sales points.

Take back of industrial and automotive batteries

42.—(1) A producer, distributor and importer of industrial and automotive batteries shall take-back the used batteries within fourteen 14 days notice from an end-user where the —

(*a*) end-user is supplied by the producer, distributor and importer with new industrial batteries ; and

(*b*) end-user is for any reason unable to return used industrial batteries to a producer, distributor and importer.

(2) The used industrial batteries which is the subject of request shall be of the same chemistry type as the new industrial batteries that the producer placed on the market.

(3) The producer or a third party on-behalf of the producer shall publish details of how an end-user of industrial or automotive batteries shall request the collection or take-back of used industrial and automotive batteries by that producer under sub-regulation (2) of this regulation.

(4) The details required to be published under sub-regulation (3) of this regulation shall be published in such a manner as shall reasonably likely bring them to the notice of the end-user of industrial and automotive batteries.

Prohibition of used battery import and export

43.—(1) Used batteries and their components are prohibited from being imported into Nigeria.

(2) Export of used batteries and their components are prohibited except with relevant permit from the Federal Ministry of Environment.

Treatment and recycling

44. A producer or distributor of battery shall ensure that all identifiable used batteries taken back or collected are delivered and accepted by an —

(*a*) approved used battery treatment facility ; or

(*b*) approved used battery exporter with permit from the Federal Ministry of Environment.

Record keeping

45. A producer or distributor of battery shall keep up-to- date records of —

(*a*) quantity of batteries produced or supplied ; and

(*b*) quantity of used batteries collected in tonnes by reference to —

(*i*) each category of batteries,

(*ii*) the composition of each category of battery, and

(*iii*) quantity of used batteries delivered to a recycling facility.

PART VI — USED BATTERY RECYCLING

Registration and approval for battery recycling

46. A person operating a recycling facility shall —

(*a*) register with an approved Producer Responsibility Organisation ;

(*b*) obtain a Registration Certificate from the Agency ; and

(*c*) provide information as specified in the Fourteenth Schedule to these Regulations.

Used battery recycling

47.—(*a*) A person operating a used battery recycling facility shall ensure that they are segregated according to their categories ;

(*b*) not disposed of in trash receptacles or at dump-sites ; and

(*c*) not disposed of by open burning.

Pollution Abatement

48.—(1) A person who operates a used battery recycling plant shall —

(*a*) install engineering controls to ensure that operations are carried out in an Environmentally Sound Manner ;

(*b*) install an Effluent Treatment plant to treat all wastewater or acid generated in the facility ;

(*c*) install the Best Available Technology that ensures gaseous, dust and particle emissions are trapped ;

(*d*) ensure regular and effective environmental monitoring control measures ;

(*e*) ensure bag house dust is discharged into sealed drums and the drums when full shall be reintroduced directly to the furnace to recover the lead in the dust ;

(*f*) capture the fume and dust particles generated during melting, smelting and refining operations by passing the off gases through a filter plant, or bag house ;

(*g*) ensure that all off gases from lead smelting, melting and refining operations are ventilated to dust particles ;

(*h*) ensure that the filter plant or bag house is constantly monitored and maintained to ensure that dust particles are captured during operations and no visible smoke or dust shall be released during operations ;

(*i*) ensure that operators working in or around a bag house filter plant wears the appropriate PPE, including overalls, hats, boots, gloves, safety glasses and not less than an N95/FFP2 dust mask or equivalent neoprene cartridge filter ; and

(*j*) carry out blood lead test on the facility workers at least twice every year.

(2) An operator of a used battery recycling facility including scavengers, collectors or transporters shall dispose waste in an environmentally sound manner and shall not —

(*a*) burn used batteries in the environment;

(*b*) dispose used batteries alongside domestic or municipal waste ; and

(*c*) dispose used batteries, or its by-products, into a dump-site or water body.

Use of PPE

49. A person involved in the handling of used batteries recycling plants shall ensure that the technicians, collectors, transporters, scavengers, or as may be applicable, wear appropriate Personal Protective Equipment (PPE) as prescribed in the Fifteenth Schedule to these Regulations.

Citizens obligation

50.—(1) It shall be the responsibility of a person to —

(*a*) deposit used batteries at registered battery collection centres ;

(*b*) not disposed of used batteries in dumpsites or drain battery contents to the environment ;

(*c*) report any fly tipping and disposal of used batteries in an undesignated location to the appropriate authority ;

(*d*) handover leaking batteries to the registered battery collectors or recyclers as soon as such leakage is detected ; and

(*e*) incorporate sound environmental practice by ensuring that necessary precautions are made to contain the leaking batteries during handling, storage and transportation.

(2) All registered battery recycling facilities shall ensure that —

(*a*) capacity is available to treat the actual number of used batteries that are allocated to the facility ;

(*b*) where necessary, transportation of used batteries from one recycling facility to an alternative recycling facility is carried out in accordance with the provisions of these Regulations ; and

(*c*) battery recycling facilities are reasonably accessible to any person who wishes to deliver used batteries.

Furnishing of record to the Agency

51.—(1) A battery producer, distributor and importer shall keep up to date records and furnish the Agency in writing, the quantity of all batteries which have been imported in the preceding year on or before 30th of June of every year.

(2) An operator of any collection centre, storage facility and recycling plant shall keep up to date records and furnish the Agency quarterly in writing the quantity of used and recycled batteries received, and shall maintain such records.

Insurance policy

52. An applicant for a permit issued under these Regulations shall satisfy the Agency of an appropriate subscription to insurance policies for the staff and the public covering risks likely to arise, out of the activity for which the permit is required.

PART VII — PERMITS, MONITORING AND REPORTING

General permits

53.—(1) A permit shall be in writing and as set out in the National Environmental (Permitting and Licensing Systems) Regulations, 2009 and shall include —

(*a*) sludge disposal Permit ;

(*b*) hazardous waste and toxic substances Permit ;

(*c*) biodiversity Permit ; and

(*d*) air quality Permit.

(2) All used battery recyclers shall apply for technology permit from the Federal Ministry of Environment prior to installation of used battery recycling plants.

Effective date and validity

54. A permit shall become effective from the day of issuance and shall expire after 12 months and renewable yearly.

Reporting requirements

55.—(1) A Permit holder shall subject to categorical standards comply with reporting requirements under the Agency's Permit including, Incident Report and Monthly Effluent Data Sheet by submitting these documents to the Agency.

(2) A Permit holder shall, on a specified date, at least quarterly, submit to the Agency, a description of the nature, concentration, volume, flow rate and direction of all pollutants in the Monthly Effluent Data Sheet.

(3) The report shall be —

(*a*) based on sampling analysis performed in the period covered ; and

(*b*) in compliance with the format contained in the Twelfth Schedule to these Regulations.

(4) A permit holder shall report all sample results for parameters listed on the Effluent Limitations and Monitoring Requirement, on the Industrial or Commercial Discharge Monitoring Report forms as contained in the Seventeenth Schedule to these Regulations.

(5) A permit holder shall install, at its own cost, monitoring equipment approved by the Agency to facilitate the accurate observation, sampling and measurement of wastes as required by the permit and the equipment shall be in working order and kept safe and accessible to all authorized officials at all times with valid calibration certificate.

(6) A permit holder discharging or proposing to discharge effluent to a general sewer or treatment plants shall maintain the following —

(*a*) records of production in volume or kilogram as the case may be ;

(*b*) water consumption and discharge flow records in cubic meters ;

(*c*) complete monitoring records as specified in these Regulations ;

(*d*) process monitoring records ;

(*e*) incident reports ; and

(*f*) any other record necessary to demonstrate compliance with these regulations.

(7) A permit holder shall be required to file reports with the Agency for explanation where the permit holder —

(*a*) commits a serious violation or fails to submit a completed Effluent Data Sheet ;

(*b*) exceeds an effluent limitation for the same pollutant at the same discharge point source by any amount for 4 out of 6 consecutive months ; and

(*c*) has emergency discharges that may cause problems to the Environment, including any sludge loadings.

Authorised signatory

56.—(1) A permit holder shall sign the report and attach a copy of the Certificate of analysis from the Agency's accredited laboratory.

(2) Each report shall be signed by an appropriate officer.

(3) All reports shall include certification statement as indicated in the Seventeenth Schedule to these Regulations.

Confidential information and access to public record

57. Without prejudice to any extant law, public access to records shall be governed by the Act, but effluent constituents and characteristics, shall not be recognized as confidential information.

PART VIII — ENFORCEMENT

Enforcement notices

58.—(1) An enforcement notice shall be served where the Agency is of the opinion that an operator has contravened, is contravening or is likely to contravene any condition of a permit.

(2) An enforcement notice shall specify the —

(*a*) matters constituting the contravention or the matters making it likely that the contravention may arise, as the case may be ;

(*b*) steps that shall be taken to remedy the contravention or to remedy the matters making it likely that the contravention may arise, as the case may be ; and

(*c*) period within which those steps shall be taken.

(3) An officer of the Agency shall, in the course of his duty under these Regulations, at any reasonable time —

(*a*) enter and search any premises or facility to take samples or specimen for analysis, and measurements in length or of levels of standards to which these Regulations relate ; and

(*b*) seize and detain for such time as may be necessary, for the purpose of these Regulations, any article by means of or in relation to which the officer reasonably believes any provision of these Regulations has been contravened.

Mode of delivery

59. An enforcement notice shall be delivered by hand, registered post, electronic transmission, newspaper publication, or pasted at the facility or registered premises of the organisation.

Enforcement notice reminder

60.—(1) Where a person fails to comply with the enforcement notice within the specified period as contained under regulation 57(2) (*c*) of these Regulations, a second notice shall be served.

(2) Failure to comply with the second notice in sub-regulation (1) of this regulation within the specified time limit as prescribed in the notice may lead to issuance of a suspension notice or any other punitive action as may be necessary.

(3) Where a suspension notice is served pursuant to these Regulations, operations shall, on the service of such notice cease.

Withdrawal of suspension notice

61. The Agency may withdraw a suspension notice after verifying that the operator has complied with these Regulations.

Sealing of facility

62.—(1) Notwithstanding the provisions of regulation 57 of these Regulations the Agency shall have the power to enter and seal with court order any facility which contravenes any of the provisions of these Regulations.

(2) Without prejudice to regulations 57 and 58 of these Regulations, where a contravention is of imminent danger to the environment and human health, the Agency shall have the power to enter and seal such contravening facility before obtaining a court order.

Equity

63. A person shall be given equal treatment with respect to inspection and enforcement of relevant laws.

PART IX — OFFENCES

Offences

64.—(1) It shall be an offence where a facility, manufacturer, organisation, importer, distributor fails to subscribe to the Extended Producer Responsibility programme of the Agency.

(2) It shall be an offence for a facility to manufacture, import or distribute batteries without making provision for its end-of-life collection.

(3) It shall be an offence for a facility, organization, manufacturer, importer, distributor or a person to —

(*a*) discard or dispose of used batteries at dump sites, landfills, water bodies, water courses or any such place except at authorized collection centres ;

(*b*) sell or hand over used batteries to collectors who are not registered with the Agency ;

(*c*) burn used batteries and its plastic components ;

(*d*) discharge sulphuric acid electrolyte from used batteries on land or water bodies without appropriate treatment ;

(*e*) decommission a treatment facility without complying with the requirements of regulation 3 (2) of these Regulations ;

(*f*) receive used batteries at the facility without reporting to a Producer Responsibility Organization within the specified period as prescribed in the Eleventh Schedule to these Regulations ;

(*g*) import or manufacture new battery without paying battery recycling fees to the Producer Responsibility Organisation ;

(*h*) sell used batteries without paying battery disposal fees to the Producer Responsibility Organisation ;

(*i*) sell or dispose used battery without informing the Agency ; and

(*j*) generate, collect, transport store and recycle used batteries without following the EPR Guidelines and any other guidance document approved by the Agency.

(4) It shall be an offence for a facility, organization, manufacturer, importer, distributor or a person to —

(*a*) transport or convey used batteries to unregistered recycling plant :

(*b*) transport or convey used batteries in contravention of regulation 34 of these Regulations ;

(*c*) transports used batteries, effluent and sludge in an unsound environmental manner ; and

(*d*) transports hazardous effluent and sludge in bulk without prior authorization from the Agency.

(5) It shall be an offence for a facility, organisation, manufacturer, importer, distributor or a person to operate —

(*a*) a used battery collection facility without complying with the requirements listed in regulations 32 and 33 of these Regulations ;

(*b*) a used battery storage facility without complying with the requirements listed in regulations 36 of these Regulations ;

(*c*) a used battery recycling facility without complying with the requirements listed in regulations 47, 48 and 50 of these Regulations ;

(*d*) a treatment facility in an environmentally unsound manner ;

(*e*) without conducting Environmental Audit as required by these Regulations.

(6) It shall be an offence for a facility, body corporate, manufacturer or organisation to operate without obtaining the requisite Environmental Documents pursuant to regulation 3 of these Regulations.

(7) It shall be an offence where a person fails to comply with —

(*a*) the provisions of any condition stipulated under any permit issued by the Agency ; and

(*b*) the requirements of an enforcement notice under these Regulations.

(8) It shall be an offence for a facility, body corporate, manufacturer or organisation to —

(*a*) obstruct enforcement officers from performing their normal course of duty ; and

(*b*) dismiss, suspend, sanction or impose penalty on its employees who report to the Agency or any relevant authority any contravention to these Regulations.

False statement

65. It shall be an offence to submit to the Agency any document that is misleading, or likely to be misleading, or provide information which is false where such information is made —

(*a*) in pursuance to the compliance with the provisions of these Regulations ;

(*b*) for the purpose of obtaining, transferring or altering a permit for a facility, body corporate or organisation ; and

(*c*) to intentionally make a false entry on the permit or any record pertaining to the permit.

Discharge of effluent above permissible level

66. It shall be an offence where a facility, body corporate, manufacturer or organisation fails to —

(*a*) treat to the permissible limit before disposal of any effluent to minimize adverse effects ;

(*b*) remediate the environment to the standard prescribed by the Agency in the event of an accidental discharge ;

(*c*) handle effluent in an environmentally sound manner; and

(*d*) report release of effluent and sludge into the environment in excess of permissible level as contained in these Regulations.

Failure to use PPE

67. It shall be an offence where a facility, body corporate, manufacturer or organisation fails to enforce the use of Personal Protective Equipment (PPE) in the course of operational activities.

Records of discharges

68. It shall be an offence where a facility, body corporate, manufacturer or organisation fails to maintain adequate records, or file quarterly or annual reports of all discharges to the Agency.

PART X — PENALTIES

Penalties

69.—(1) A facility, body corporate, manufacturer or organisation that commits an offence under regulations 63-67 of these Regulations is liable upon conviction to a fine not less than ₦2,000,000.00 and an additional fine of ₦50,000.00 for every day the offence subsists.

(2) An individual who commits an offence under regulations 63-67 of these Regulations is liable upon conviction, to a fine not less than ₦200,000.00 or imprisonment for a term not less than six months or both and an additional fine of ₦5,000.00 for every day the offence subsists.

(3) A person who violates the provisions of these Regulations for which no specific penalty is prescribed in these Regulations is liable on conviction —

(*a*) in the case of facility, body corporate, manufacturer or organisation to a fine not less than ₦1,000,000.00 and an additional fine of ₦50,000.00 for every day the offence subsists ; and

(*b*) in the case of an individual, to a fine not less than ₦100,000.00 or imprisonment for a term not less than six months or both and an additional fine of ₦5,000.00 for every day the offence subsists.

(4) A PRO who contravenes the provisions of regulation 11(11) of these Regulations commits an offence.

(5) A PRO who commits an offence under these Regulations shall upon conviction be liable —

(*a*) in the case of a body corporate, to a fine of not less than ₦2,000,000.00 and an additional fine of ₦200,000 for everyday the offence subsists ; or

(*b*) in the case of an individual, to a fine of not less than N200,000 or a term of imprisonment of not more than one year or to both and an additional fine of ₦20,000.00 for every day the offence subsists.

PART XI — MISCELLANEOUS

Performance criteria and ratings

70. The environmental performance requirements shall be based upon agreed criteria and rating for each sector.

Interpretation

71. In these Regulations, —

"*Act*" means the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 as amended ;

"*Agency*" means the National Environmental Standards and Regulations Enforcement Agency (NESREA) ;

"*air emission*" means any emission or entrainment process emanating from a point, non-point or mobile source that results in air pollution ;

"*air pollution*" means any change in composition of the air caused by smoke, soot, dust including fly-as, cinders, solid particle of any kind, gases, fumes, aerosols and odorous substances ;

"*ambient air*" means air occurring at a particular time and place out of structure ;

"*appropriate authority*" means NESREA or any other relevant Government body ;

"*appropriate officer*" means the Facility Health, Safety and Environment (HSE) Manager, Pollution Control Manager, or any officer in charge of environmental activities ;

"*bag house*" means a baghouse filter, bag filter or fabric filter which is an air pollution control device and dust collector that removes particulates or gas released from commercial processes out of the air ;

"*battery*" means a device consisting of one or more electrochemical cells with external connections for powering electrical, electronic and

mechanical devices such as motor vehicles, mobile phones, flash lights, computers, solar energy devices, inverters, or as may be applicable ;

"*battery breaking*" means a process of cutting the casings of a battery in order to remove lead plates, terminals and electrolyte solution ;

"*Best Available Technology (BAT)*" means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges ;

"*Best Available Technology or Best Practicable Technology*" is the technology approved by legislators or regulators for meeting output standards for a particular process, such as pollution abatement or pasteurization ;

"*Best Environmental Practices (BEP)*" means actions carried out to mitigate environmental impact of a facility ;

"*body corporate*" means an artificial person with perpetual succession and common seal who may sue and be sued in its corporate name ;

"*collection centre* "means a point where used batteries are collected and stored temporarily for the purpose of recycling ;

"*disposal fees*" means fees paid for the purpose of environmental sound disposal of end-of-life or used batteries ;

"*distributor*" means any person who makes available batteries on a commercial basis to another seller or the party who is going to use it ;

"*effluent*" means waste water treated or untreated that flows out of a treatment plant, sewer, or industrial outfall resulting from the commercial or industrial use of water, generally refers to wastes discharged into surface waters ;

"*electrolyte*" means a substance that produces an electrically conducting solution when dissolved in a polar solvent, such as water ;

"*end-of-life*" means batteries that have attained end of their usefulness ;

"*enforcement*" means actions to obtain compliance with environmental laws, rules, regulations and agreements or obtain penalties or criminal sanctions for violations ;

"*enforcement officer*" means —

(*i*) an officer of NESREA who is authorized in writing by NESREA to act as an enforcement officer for these Regulations, or

(*ii*) a person appointed by the Minister responsible for Environment matters, authorizing him in writing to act as an enforcement officer for these Regulations ;

"*environment*" means the sum of all external conditions affecting the life, development and survival of an organism ;

"*environmental assessment report*" means a report prepared for an organization or body corporate which identifies potential or existing environmental contamination liabilities ;

"Environmental Audit (EA)" means —

(*i*) an independent verification of current status of a party's compliance with applicable legislative requirement, and

(*ii*) an independent evaluation of a party's environmental compliance, policies, practices and control ;

"*Environmental Impact Assessment* (*EIA*)" means the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made ;

"*Environmental Impact Statement* (*EIS*)" means a document issued by Federal Ministry of Environment responsible for Environment matters after duly completed Environmental Impact Assessment process ;

"*Environmental Management Plan* (*EMP*)" means a plan that describes the process that an organization shall follow to maximize its compliance and minimize harm to the environment, this plan also helps an organization map its progress toward achieving continual improvements ;

"*Environmentally Sound Manner* (*ESM*)"means the best management practices for used battery recyclers that is used in conjunction with recycling Industry operating standards to ensure compliance with all applicable regulations and ensure environmental and workers protection ;

"*Environmentally Unsound Manner*" means any condition, resulting from the methods of operation or design of a facility, which impairs the quality of the environment when compared to the surrounding background environment or any appropriate promulgated federal, state, county or municipal standard ;

"*expansion*" means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated ;

"*extant document*" means any official publication of the Agency for the purposes of managing used batteries ;

"*Extended Producer Responsibility*" means an environmental policy approach in which a producer's responsibility, physical and financial, for a product is extended to the post-consumer stage of a product's life cycle ;

"*facility*" means any battery manufacturing, collection, storage, treatment and reprocessing or recycling outfit ;

"*generate*" means the process of producing used batteries ;

"*hazardous wastes*" means substances which in low concentrations are harmful to animals, plants, human health and the environment and may take the form of solids, liquids or sludge ;

"*imminent danger*" means activity that may lead to risk of death or serious physical harm to human health and the environment within a short time ;

"*importer*" means a person or body corporate who, in the ordinary course of conduct of a trade, occupation or profession, imports batteries ;

"*influent*" means processed waste water or raw water from a river, stream, spring or canal, or water abstracted from underground and used by a facility ;

"*large quantity*" means above 10 units of batteries ;

"*management*" means collection, transportation, storage and recycling of used batteries ;

"*manufacturer*" means an entity that makes or produces batteries through a process involving raw materials, components or assembles ;

"*Minister*" means the Minister responsible for environment matters or the approprite government structure operating at that time ;

"*modification*" means a change in any activity that may cause an adverse effect if not properly mitigated and includes, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use ;

"*NESREA accredited consultant*" means a consultant accredited by the Agency pursuant to these Regulations ;

"*organisation*" means an entity such as a company, an institution or an association comprising one or more people and having a particular purpose ;

"*permit*" means an official document, authorization, license, or equivalent control document issued by the Agency to implement the requirements of these Regulations to discharge effluent especially for a limited period of time ;

"*permit holder*" means a person authorized by a permit to carry out a specific function ;

"*person*" means a natural or juristic personality, including a facility, organisation or corporation who imports, produces, transports, collects, stores or recycles batteries ;

"*Personal Protective Equipment*" means any cloth, material or device that provide protection from pesticide exposure during handling and application, it includes both specifically designed protective equipment and clothing reserved for pesticide application and handling ;

"*Persistent Organic Pollutants (POPs)*" means a group of organic chemicals that are resistant to environmental degradation ;

"*Polybrominated Diphenyl Ethers (PBDEs)*" mean hazardous chemicals that may be added to many consumer products found in homes, office, automobile amongst others ;

"*producer*" means an individual or a body corporate including brand owner, manufacturer, franchisee, assembler, distributor, retailer or importer of batteries who sells, offers for sale or uses large quantity of batteries for personal or commercial purposes ;

"*producer Responsibility Organisation*" means an entity setup in collective Extended Producer Responsibility (EPR) schemes and registered

by the Agency to implement the EPR principle on behalf of all the participating producers ;

"*5Rs*" means Reduce, Repair, Reuse, Recycle and Recover ;

"*recovery*" means any operation leading to the creation of value of material ;

"*recycling*" means the reprocessing in a production process of the waste materials for its original purpose or for other purposes ;

"*recycling fees*" means fees paid for the purpose of recycling of new batteries at their end-of-life ;

"*reuse*" means any operation by which batteries or components of it are used for the same purpose for which they were conceived, including the continued use of the equipment or components of it which are returned to collection points, distributors, recyclers or manufacturers ;

"*scavenger*" means a person who searches and picks waste that may be useful for 5R purposes by people that may convert them to other useful forms ;

"*sealed containers*" means a closed container that is physically and chemically suitable for long-term containment of used batteries, and from which there is no human exposure to, or environmental release of content leakages during transport and storage ;

"*slag*" means a by-product formed during smelting which contains ash, chemical cleaning agents and impurities from the metals being treated ;

"*sludge*" means liquid or solid sediments including other residue from a municipal sewage collection treatment system and liquid or solid and other septic from septic or holding tank pumping from commercial, industrial or residual establishments ;

"*smelting*" means a process of applying heat and a chemical cleaning agent such as, coke, or limestone to lead containing components from used batteries in order to extract lead ;

"*standards*" means a consensus document with limits ;

"*treatment*" means any activity after a used battery has been handed over to a facility for battery breaking, lead reduction and lead refining or any other operation carried out for the recovery or disposal or both of the used battery ;

"*used batteries*" means old, end-of-life or discarded batteries ;

"*water bodies*" include underground water, ground water, river, stream, spring, canal, reservoir, well, lake, lagoon and ocean ;

"*water course*" means any natural or artificial channel, pipe or conduit (excluding the sewerage system), carrying, or that may carry, and discharges water directly or indirectly into a water body ;

"*writing*" includes text that is —

(*i*) transmitted by electronic means,

(*ii*) received in legible form, or

(*iii*) capable of being used for subsequent reference ; and

"*year*" means a calendar year commencing on 1st January.

72. These Regulations may be cited as the National Environmental (Battery Control) Regulations, 2024. Citation

FIRST SCHEDULE

[*regulation* 3(1)(*c*)]

GUIDELINES FOR PREPARING ENVIRONMENTAL MANAGEMENT PLAN (EMP)

An Environmental Management Plan (EMP) describes the process that an organization shall follow to maximize its compliance and minimize harm to the environment.

This plan also helps an organization map its progress toward achieving continual improvements.

Regardless of the organization's situation, all environmental plans shall include the following elements —

(*a*) Policy ;
(*b*) Planning ;
(*c*) Implementation and Operation ;
(*d*) Impact Characterisation ;
(*e*) Checking and Corrective Action ; and
(*f*) Management Review and commitment.

(1) *Policy.* — Policy statements are important to an organisation because the organisation relies on a core set of beliefs, these environmental guiding principles shall enable all members of an organisation to focus on the same objective, they provide an opportunity for outside interests to understand the operation of the organisation, the policy shall be focused, concise and easy to read, the environmental policy shall address the following —

(*a*) compliance with legal requirements and voluntary commitments ;
(*b*) minimising waste and preventing pollution ;
(*c*) continual improvement in environmental performance, including areas not subject to regulations ; and
(*d*) sharing information on environmental performance with the community.

(2) *Planning.* — The planning shall define the organisation's environmental footprints and set goals, goals and objectives shall be focused on maximising their positive impacts on the environment, and when evaluating, the following elements shall be considered —

(*a*) impacts on the environment through its activities, products and services ;
(*b*) legal requirements associated with protecting the environment ; and
(*c*) meaningful and focused environmental objectives and targets.

(3) Implementation and Operation-Implementation and operation shall define the activities that the organisation shall perform to meet its environmental objectives and targets, this section shall identify the activity that each person

is responsible for, ensure completion and set targets for each of the identified activity and in addition, this area shall specify employee training, communication and outreach activities that are necessary to ensure successful implementation of the plan.

(4) Checking and Corrective Action-The EMP shall describe the process that shall be followed to verify proper implementation and how problems shall be corrected in a timely manner and routine evaluation and continual improvement on the process is necessary to make sure that the plan successfully leads towards the completion of environmental objectives and targets.

(5) Management Review and Commitment to Improvement- Routine management review and support is a necessary and meaningful tool for the organization and this shall identify the routine management evaluations that shall be conducted to ensure that the plan is appropriately implemented to meet its environmental objectives.

SECOND SCHEDULE

[*regulation* 4(1)(*c*)]

GUIDE TEMPLATE FOR EMERGENCY PROCEDURES IN USED BATTERY RECYCLING FACILITY

CONTENTS :

STEP 1 — ESTABLISH A PLANNING TEAM

There shall be persons responsible for developing the emergency management plan, and the following actions taken—

(*a*) form the Team to include the local Community likely to be affected ;
(*b*) establish Authority ;
(*c*) issue a Mission Statement in English and local language ; and
(*d*) establish a Schedule and Budget.

STEP 2 — ANALYZE CAPABILITIES AND HAZARDS

This step entails gathering information about current capabilities and about possible hazards and emergencies, and then conducting a vulnerability analysis to determine the facility's capabilities for handling emergencies, and includes the following actions —

(*a*) where do you stand right now ;
(*b*) meet with outside groups ;
(*c*) identify codes and regulations ;
(*d*) identify critical products, services and operations ;
(*e*) identify internal resources and capabilities ;
(*f*) identify external resources ;
(*g*) conduct an insurance review ;
(*h*) conduct a vulnerability analysis ;
(*i*) list potential emergencies ;
(*j*) estimate probability ;
(*k*) assess the potential human impact ;
(*l*) assess the potential business impact ;
(*m*) assess the potential property impact ;
(*n*) assess internal and external resources ; and
(*o*) evaluate the capabilities and hazards.

STEP 3 — DEVELOP THE PLAN

(1) Emergency planning shall become part of the corporate culture.

(2) Look for opportunities to build awareness; to educate and train personnel ; to test procedures; to involve all levels of management, all departments and the community in the planning process; and to make emergency management part of what personnel do on a day-to-day basis.

STEP 4 — IMPLEMENT THE PLAN

Implementation means more than simply exercising the plan during an emergency, it also means acting on recommendations made during the vulnerability analysis, integrating the plan into company operations, training employees and evaluating the plan, and this includes the following actions —

(*a*) integrate the plan into facility or organisation's operations;
(*b*) conduct training, drills and exercises ; and
(*c*) activate the plan when necessary.

STEPS 5 — RISK ASSESSMENT

How to assess the risks in your work place entails the following —

(*a*) identifying the hazards ;
(*b*) deciding who may be harmed and how ;
(*c*) evaluating the risks and deciding on precautions ;
(*d*) recording your findings and implementing them ; and
(*e*) reviewing your assessment and updating where necessary.

THIRD SCHEDULE

[*Regulations* 14(1 - 3), 15(1)(3), 16(1-2),]

EFFLUENT LIMITATIONS FOR USED BATTERY SECTOR

S/N	*Parameter*	*Unit*	*Guideline value*
1.	pH	S.I	6 - 9
2.	COD	mg/l	250
3.	TSS	mg/l	50 25 (electroplating)
4.	Oil and grease	mg/l	10
5.	Aluminium	mg/l	3.0
6.	Arsenic	mg/l	0.1
7.	Cadmium	mg/l	0.1
8.	Chromium (total)	mg/l	0.1
9.	Chromium (hexavalent)	mg/l	0.5
10.	Copper	mg/l	0.1
11.	Iron	mg/l	3.0
12.	Lead	mg/l	0.2
13.	Mercury	mg/l	0.01
14.	Nickel	mg/l	0.5
15.	Silver	mg/l	0.2
16.	Tin	mg/l	2.0
17.	Zinc	mg/l	2.0
18.	Cyanides (total)	mg/l	1.0
19.	Cyanides (free)	mg/l	0.2
20.	Ammonia	mg/l	10.0 20.0. (electroplating)
21.	Flourides	mg/l	20.0
22.	Phenols	mg/l	0.5
23.	Total Nitrogen	mg/l	15.0
24.	Total Phosphorus	mg/l	5.0
25.	Sulphides	mg/l	1.0
26.	VOCs	mg/l	0.1
27.	Toxicity	To be determined on a case specific basis	
28.	Temperature increase	℃	<3a*

*a At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity. The effluent shall result in a temperature increase of not more than 3°C at the edge of the zone where initial mixing and dilution takes place. Where the zone is not defined, use 0 -500 meters from the point of discharge.

EFFLUENT LIMITATIONS FOR RECYCLING FACILITIES

Parameters	*Guideline Value*
Copper, total	0.030 mg/l
Aluminum, total	1.2 mg/l
Iron, total	1.3 mg/l
Lead, total	0.010 mg/l
Zinc, total	0.16 mg/l
TSS	100 mg/l
COD	60 mg/l

EFFLUENT LIMITATIONS FOR FOUNDRIES

Parameter	*Units*	*Guideline values*
pH	—	6-9
Total suspended solids	mg/L	35
Oil and grease	mg/L	10
Temperature increase	℃	3a
COD	mg/L	125
Phenol	mg/L	1
Cadmium	mg/L	0.01
Chromium (total)	mg/L	0.5
Copper	mg/L	0.5
Lead	mg/L	0.2
Nickel	mg/L	0.5
Zinc	mg/L	0.5
Tin	mg/L	2.0
Ammonia	mg/L	(as N) 5
Fluoride	mg/L	(as F) 5
Iron	mg/L	5.0
Aluminium	mg/L	0.02b

Note :

(*a*) - At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity.

(*b*) - Aluminum smelting and casting.

FOURTH SCHEDULE

[*regulation* 17(3)]

TREATMENT AND DISPOSAL OF HAZARDOUS SLUDGE

SLUDGE DISPOSAL PERMISSIBLE LIMIT

Dry Sludge (DS) Generation from Wastewater Treatment		
S/N	Parameters	Sludge production, kg DS/tonne
1.	Sludge (Total)	200
Primary treatment		
2.	Mixing-sedimentation	80
3.	Mixing-chemical treatment+ sedimentation	150 - 200
4.	Mixing-chemical treatment+ flotation	150 - 200
5.	Heavy metals	

FIFTH SCHEDULE

[*regulations* 18(1), 19(1), 21(1)]

AIR EMISSION/EMISSION CONTROL GUIDELINES

The ambient air quality standards of the Agency shall be strictly complied with the Ambient Air Quality for Nigeria.

S/N	*Parameter*	*Duration*	*Concentration* (µg/*m*3)
1.	Sulphur Dioxide (SO2)	1 Hour	425
2.	Nitrogen Dioxide (NO2)	1 Hour	313
3.	Particulate Matter (PM)	1 Hour	250
4.	Carbon Dioxide (CO2)	1 Hour	30,000
5.	Hydrogen Sulphide (H2S)		5.0
6.	Ammonia (NH3)		0.28
7.	Methane (CH4)		5.0

SIXTH SCHEDULE

[*regulation* 18(1-2)]

SOIL CONTAMINANTS STANDARDS FOR HUMAN HEALTH

Land use scenarios	*As*	*Cd*	*Cr III*	*Cr IV*	*Cu*	Pb*inorganic*		Hg*inorganic*
Rural residential area (25% produce)[1]	17	0.8	>10⁴	290	>10⁴	160		200
Residential (10% produce)[2]	20	3.0	>10⁴	460	>10⁴	210		310
High-density residential[3]	45	230	>10⁴	1500	>10⁴	500		1000
Recreation[4]	80	400	>10⁴	2700	>10⁴	880		1800
Commercial/industrial outdoor worker (unpaved)[5]	70	1300	>10⁴	6300	>10⁴	3,300		4200

[1] Rural residential land use, including home-grown produce consumption (25 per cent). Applicable to the residential vicinity of farm houses for protection of farming families, but not the productive parts of agricultural land. Note: Consumption of eggs, milk and meat from animals raised on site is excluded. Produce consumption is limited to home-grown vegetables. Sites for which consumption of home-grown eggs, milk or meat is important shall need to be evaluated on a site-specific basis.

[2] Standard residential lot, for single dwelling sites with gardens, including home- grown produce consumption (10 per cent).

[3] Urban residential with limited soil contact, including small ornamental gardens but no vegetable garden (no home-grown produce consumption); applicable to urban townhouses, flats and ground-floor apartments with small ornamental gardens, but not high-rise apartments.

[4] Public and private green areas and reserves used for active sports and recreation. This scenario is intended to cover playing fields and suburban reserves where children play frequently. It can also reasonably cover secondary school playing fields but not primary school playing fields.

[5] Commercial/industrial site with varying degrees of exposed soil. Exposure of outdoor workers to near-surface soil during routine maintenance and gardening activities with occasional excavation as part of maintaining subsurface utilities (ie, a caretaker or site maintenance personnel). Also conservatively applicable to outdoor workers on a largely unpaved site.

SEVENTH SCHEDULE

[*regulation* 8 (1)]

BEST PRACTICES

(1) Every industry shall develop a data base for all effluent generated.

(2) Every industry shall install —

(*a*) anti-pollution equipment for the detoxification and treatment of effluent and sludge ;

(*b*) efficient effluent treatment plant based on the Best Available Technology (BAT) and Best Environmental Practices ; and

(*c*) containment equipment for spills in case of accidental discharge.

(3) Every person, body corporate or organisation shall adopt in-plant waste and energy reduction and pollution prevention strategies.

(4) Every person, body corporate or organisation shall —

(*a*) provide a buffer zone between a facility and the nearest human settlement in accordance with the Planning Permit ;

(*b*) provide appropriate bund walls around tank farms for containment in case of accidental discharges ;

(*c*) provide adequate protection (such as Shield) for ionizing radiations emanating from manufacturing processes ; and

(*d*) report an unusual or accidental discharge of waste from a facility to the nearest office of the Agency within 24 hours of the discharge.

EIGHT SCHEDULE

[*regulation* 9]

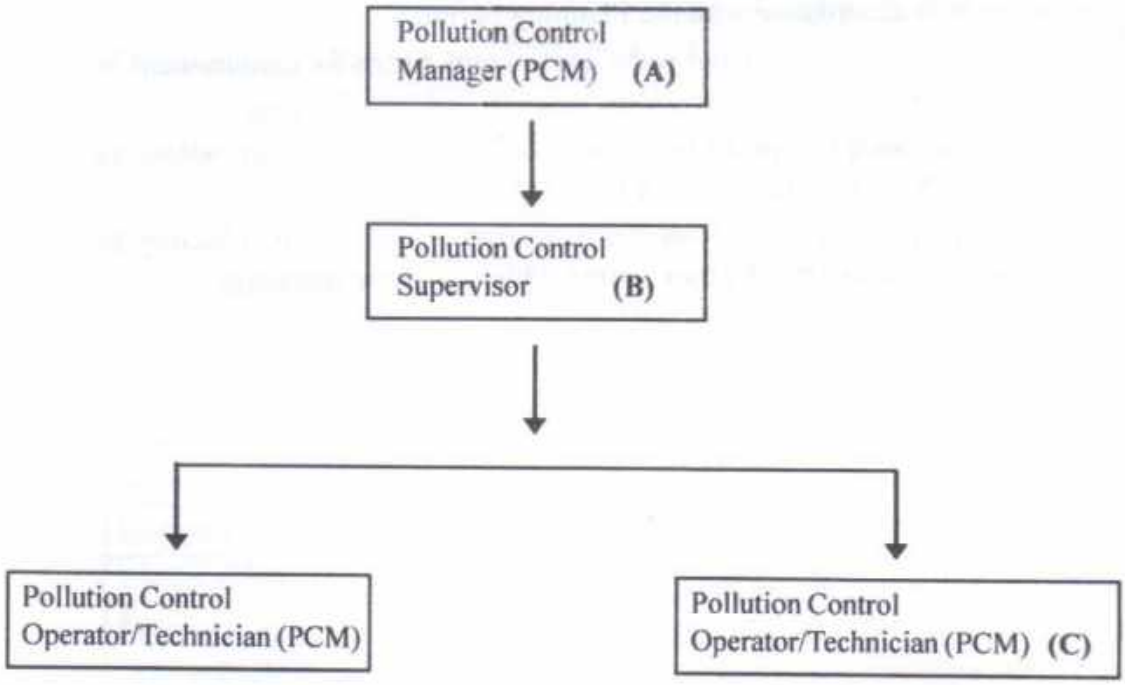
ORGANIZATIONAL SYSTEM AND FUNCTIONS OF POLLUTION CONTROL MANAGERS

(1) Each facility shall be mandated by the Agency to have an organizational system that shall carry out Internal Environmental Auditing of the facility as well as liaise with NESREA and other relevant Government Authorities.

(2) The organizational system shall have Pollution Control Supervisor, Pollution Control Manager and Pollution Control Chief Manager which shall be elected, appointed or outsourced to a NESREA accredited consultant and these shall be certified by the Agency through a National qualifying examination.

ORGANIZATION FOR POLLUTION PREVENTION

(1) Functions —



(A) Manages the pollution control issues of the facility.
(B) Assists the Manager and directs the Operators and Technicians.
(C) Deals with technical operations of the pollution abatement equipment.

Note : (C) depends on the size of the facility; for a large facility there shall be PCM for Air, Land and Water.

(2) SPECIFIC DUTIES OF THE POLLUTION CONTROL MANAGER (PCM)

The specific duties of the PCM are —

(*a*) to ensure that the responsibilities are very clear for all the staff involved in pollution control ;

(*b*) to ensure that daily pollution control practices are complied with ; and

(*c*) to maintain smooth and proper environmental and safety communications within the facility and the regulatory authorities as well as the host community.

(3) CONCRETE POLICIES CONCERNING INDUSTRIES' POLLUTION CONTROL

(*a*) Management concerning pollution control of facilities are—

(*i*) improvement and operation of effective environmental management system ;

(*ii*) communication with NESREA's headquarters ;

(*iii*) ability to know when a system is malfunctioning ;

(*iv*) documentation of the environmental management procedure and control of the records and documents ; and

(*v*) cooperation with interested parties such as other related companies.

(*b*) Addressing corporate-wide environmental measures entails —

(*i*) recognition of the business risk relative to the environmental management system ;

(*ii*) recourse management including maintenance of human resources for pollution control and their competency ;

(*iii*) establishing a corporate-wide environmental management system including risk information feed-back system ;

(*iv*) establishing a redundant monitoring, assessment and self-improvement system ; and

(*v*) establishing a contingency plan and its verification.

NINTH SCHEDULE

[*regulation* 9 (1)]

BANNED/RESTRICTED CHEMICALS

Chemical/Pesticide	*CAS Number*
ROTTERDAM CONVENTION PART 1: *Banned Chemicals and Pesticides*	
2,4,5-Trichlorophenoxy-aceticacid and its salts and esters	93-76-5
Aldrin	309-00-2
Binapacryl	485-31-4
Captafol	2425-06-1
Chlordane	57-74-9
Chlordimeform	6164-98-3
Chlorobenzilate	510-15-6
Dichloro-diphenyltrichloroethane (DDT)	50-29-3
Dieldrin	60-57-1
Dinitro-ortho-cresol (DNOC) and its salts (such as ammonium salt, potassium salt and sodium salt)	534-52-1;2980-64-5; 5787-96-2;2312-76-7
Dinoseb and its salts and esters	88-85-7
EDB (1,2-dibromoethane)	106-93-4
Ethylene dichloride	107-06-2
Ethylene oxide	75-21-8
Fluoroacetamide	640-19-7
HCH (mixed isomers)	608-73-1
Heptachlor	76-44-8
Hexachlorobenzene	118-74-1
Lindane (gamma-HCH)	58-89-9
Mercury compounds, including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds	
Monocrotophos	6923-22-4
Parathion	56-38-2
Parathion (all formulations – aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) – of this substance are included, except capsule suspensions (CS))	56-38-2
Pentachlorophenol	87-86-5
Toxaphene (Camphechlor)	8001-35-2

All tributyltin compounds including : -Tributyltin oxide -Tributyltin fluoride -Tributyltin metacrylate -Tributyltin benzoate -Tributyltin chloride -Tributyltin linoleate -Tributyltin naphthenate	 56-35-9 1883-10-4 2155-70-6 4342-36-3 1461-22-9 24124-25-2 85409-17-2
dustable powder formulations containing a combination of benomyl at or above 7%, carbofuran at or above 10% and thiram at or above 15%	17804-35-2;1563-66-2;137-26-8
Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	10265-92-6
Methyl-parathion (emulsifiable concentrates (EC) with 19.5%, 40%, 50%, 60% active ingredient and dusts containing 1.5%, 2% and 3% active ingredient)	298-00-0
Monocrotophos	6923-22-4
Phosphamidon (Soluble liquid formulations of the substance that exceed 1000 g active ingredient/l)	13171-21-6 (mixture, (E)&(Z)-isomers) 23783-98-4 ((Z)-isomer), 297-99-4 ((E)-isomer)
Actinolite asbestos	77536-66-4
Amosite, asbestos	12172-73-5
Anthophylite	77536-67-5
Tetraethyl lead	78-00-2
Tetramethyl lead	75-74-1
Tremolite	77536-68-6
Tris(2,3 dibromopropyl)phosphate	126-72-7
Alachlor	15972-60-8
Aldicarb	116-06-3
PART 2 : SEVERELY RESTRICTED CHEMICALS AND PESTICIDES	
Polybrominated Biphenyls (PBBs)	36355-01-8(hexa-) 27858-07-7(octa-) 13654-09-6(deca-)
Polychlorinated Biphenyls (PCBs)	1336-36-3
Polychlorinated Terphenyls (PCTs)	61788-33-8

STOCKHOLM CONVENTION PART 3 : PERSISTENT ORGANIC POLLUTANTS — (POPs)	
Aldrin	309-00-2
Chlordane	57-74-9
DDT	50-29-3
Dieldrin	60-57-1
Dioxins	
Endrin	
Furans	
Heptachlor	76-44-8
Hexa Chloro Benzene (HCB)	11-74-1
Polychlorinated Biphenyls (PCBs)	1336-36-3
Mirex	
Toxaphene	8001-35-2
a-hexachlorocyclohaxazne	319-84-6
,B- hexachlorocyclohaxazne	319-85-7
Chlordecone	143-50-0
Hexabromobiphenyl	36355-01-8
hexabromodiphenyl ether and heptabromodipheny lindane (gamma- hexachlorocyclohexane)	58-89-9
Pentachlorobenzene	608-93-5
tetrabromodiphenyl ether and pentabromodiphenyl ether	
perfluorooctanesulfonic	
acid (PFOS) its salt and perfluorooctanesulfonyl fluoride (PFOS)	
Hexachlorobutadiene	87-68-3
Chlorinated naphthalenes	70776-03-3
Decabromodiphenyl ether	1163-18-5
Short-chain chlorinated paraffins (C10–13; chlorine content > 48 %)	85535-84-8, 68920-70-7, 71011-12-6, 85536-22-7, 85681-73-8, 108171-26-2

MONTREAL PROTOCOL PART 4 — OZONE DEPLETING SUBSTANCES	
Trichlorofluoromethane	75-69-4
Dicholrodifluoromethane	75-71-8
Trichlorotrifluoroethane	76-13-1
Dichlorotetrafluoroethane	76-14-2
Bromochlorodifluoromethane	76-15-3 353-59-3
Bromotrifluoromethane	75-63-8
Dibromotetrafluoroethane	76-15-3
Chlorotrifluoromethane	75-72-9
Pentachlorofluoroethane	354-56-3
Tetrachlorodifluoroethane	76-12-0
Tetrachloromethane or carbon tetrachloride	56-23-5
Trichloroethane or methyl chloroform	71-55-6
Chlorodifluoromethane	75-45-6
Dichlotrifluoroethane	306-83-2
Chlorotetrafluoroethane	2837-89-0
Dichlorofluoroethane	1717-00-6
Clorodifluoroethane	75-68-3
Methyl Bromide or Bromoethane	74-83-9
1,2-dibromoethane (EDB)	106-93-4
BASEL CONVENTION All wastes arising from the chemicals covered under the Rotterdam and Stockholm Conventions as well as the Montreal Protocol	
Others	
Acetic acid	64-19-7
Acetone	67-64-1, 7217-25-6
Acetyl bromide	506-96-7
Allyl isothiocyanate	57-06-7
Ammonia (35% or greater)	
Ammonia (less than 35%)	7664-41-7
Ammonium Nitrate	6484-52-2
Antimony pentachloride	7647-18-9
Antimony trihydride	7803-52-3
Arsine	7784-42-1
Arsenical substances	

Boric acid; Sodium borate	10043-35-3, 1330-43-4
Boron tribromide	10294-33-4
Boron trichloride	10294-34-5
Boron trifluoride	7637-07-2
Bromine; Bromine solutions	7726-95-6,
Captafol	2939-80-2, 2425-06-1
Carbamates,	598-55-0
Bendiocarb	22781-23-3
BPMC (Fenobucarb)	3766-81-2
Mercaptodimethur (methiocarb)	2032-65-7
Calcium Ammonium Nitrate	
Carbon monoxide	630-08-0
Carbon tetrafluoride	75-73-0
Chlorinated hydrocarbons	85422-92-0
Chlorine	7782-50-5
Chlorine trifluoride	7790-91-2
Chlorobenzenes	108-90-7
Chlorophenols	25167-80-0
Chlorophenoxyacids; their salts, esters, amines	94-74-6
Chlorosilanes	
Chlorosulphonic acid	7790-94-5
Chromic acid	1333-82-0
Cyanides	
Diborane	19287-45-7
Dibromochloropropane	96-12-8
Diethyl sulphate	77-78-1
Epichlorohydrin	106-89-8
Ethyl mercaptan	75-08-1
Ethylene imine	151-56-4
Ferric chloride	7705-08-0
Fipronil	120068-37-3
Fluorine	7782-414
Fluoroacetamide	640-19-7
Formic acid	64-18-6
Germane	
Hydrazine anhydrous; Hydrazine aqueous solutions	302-01-2

Hydrochloric acid	7647-01-0
Hydrofluoric acid	7664-39-3
Hydrogen chloride	7647-01-0
Hydrogen cyanide; Hydrocyanic acid	74-90-8,
Hydrogen Peroxide	7722-84-1
Hydrogen selenide	7783-07-5
Isocyanates	
Mercury compounds including inorganic mercury compounds, alkyl mercury compounds, alkyloxyalkyl and aryl mercury compounds, and other organic compounds of mercury	
Metanil yellow (sodium salt of metanilylazodiphenylamine)	587-98-4
Methyl chloride	74-87-3
Methyl mercaptan	74-93-1
Monomethyltetrachloro diphenyl methane	76253-60-6
Monomethyl-dichloro-diphenyl methane	76253-60-24
Monomethyl-dibromo diphenyl methane	99688-47-8
Neonicotinoid compounds used as pesticides	138261-41-3
Nitric acid (95% or greater)	
Nitric acid (less than 95%)	
Nitric oxide	10102-43-9
Nitrogen trifluoride	7783-54-2
Nitromethane	75-52-5
Oleum	8014-95-7
Orange II [sodium salt of p-(2-hydroxy-1-naphthylazo)	
benzene sulphonic acid]	
Organic peroxides	
Organo-tin compounds	
Perchloromethyl mercaptan	594-42-3
Perfluorooctane sulfonate (PFOS)	29457-72-5
Phenols	
Phenol ethoxylate	9016-45-9
Phosgene	75-44-5
Phosphides	
Phosphine	603-35-0
Phosphorus compounds, excepting Dimethoate, Fenchlorphos, Fenitrothion, Phenthoate, Profenophos, Prothiophos, Quinalphos	

Phosphorus oxybromide	7789-59-5
Phosphorus oxychloride	10025-87-3
Phosphorus pentabromide	7789-69-7
Phosphorus pentachloride	10026-13-8
Phosphorus pentafluoride	7647-19-0
Phosphorus trichloride	7719-12-2
Polybrominated diphenyl ethers	
Potassium hydroxide	1310-58-3
Potassium Nitrate	7757-79-1
Potassium Perchlorate	7778-74-7
Prochloraz	67747-09-5
Pyrethroid compounds used as pesticides	
Sodium azide	26628-22-8
Sodium Chlorate	7775-09-9
Sodium hydroxide	1310-73-2
Sodium Nitrate	7631-99-4
Sulphur tetrafluoride	7783-60-0
Sulphur trioxide	7446-11-9
Sulphuric acid	7664-93-9
Sulphuryl chloride	7791-25-5
Sulphuryl fluoride	2699-79-8
Titanium tetrachloride	7550-45-0
Tungsten hexafluoride	7783-82-6
Urea	57-13-6
PRECURSOR CHEMICALS *Chemicals commonly used as precursor for the manufacture of explosives*	
Ammonium Nitrate	6484-52-2
Ammonium Perchlorate	87110-01-8
Barium nitrate	10022-31-8
Guanidine nitrate	506-93-4
Hydrogen peroxide	7722-84-1
Potassium chlorate	3811-04-9
Potassium nitrate	7757-79-1
Potassium perchlorate	7778-74-7
Sodium chlorate	7775-09-9
Sodium nitrate	7631-99-4
Sodium nitrite	7632-00-0
Sodium perchlorate	7791-07-3

Perchloric acid	95998-58-6
Tetranitromethane	509-14-8
Mercury Fulminate	628-86-4
Arsenic trichloride;	7784-34-1
Benzilic acid;	76-93-7
Diethyl ethylphosphonate	78-38-6
Diethyl methylphosphonite	
Diethyl-N,N-dimethylphosphoroamidate;	2404-03-7
N,N-Diisopropyl-beta-aminoethane thiol;	5842-07-9
N,N-Diisopropyl-beta-aminoethyl chloride hydrochloride	4261-68-1
N,N-Diisopropyl-beta-aminoethanol;	96-80-0
N,N-Diisopropyl-beta-aminoethyl chloride;	96-79-7
Dimethyl ethylphosphonate;	6163-75-3
Dimethyl methylphosphonate	756-79-6
Ethyl phosphonous dichloride [Ethyl phosphinyl dichloride;	1498-40-4
Ethyl phosphonus difluoride [Ethyl phosphinyl difluoride];	430-78-4
Ethyl phosphonyl dichloride;	1066-50-8
Pinacolyl alcohol;	464-07-3
3-Quinuclidinol;	1618-34-7
Thiodiglycol;	111-48-8
Methylphosphonic acid;	993-13-5
Diethyl methylphosphonate	683-08-9
N,N-dimethylamino-phosphoryl dichloride;	677-43-0
Methylphosphonothioic dichloride.	676-98-2
Diethyl phosphate	762-04-9
Dimethyl phosphate	868-85-9
Phosphorus oxychloride	10025-87-3
Phosphorus pentachloride	10026-13-8
Phosphorus trichloride;	7718-12-2
Sulfur monochloride;	10025-67-9
Sulfur dichloride;	10545-99-0
Thionyl chloride;	7718-09-7
Triethanolamine;	102-71-6
Triethyl phosphite;	122-52-1
Trimethyl phosphate	121-45-9
Ethyldiethanolamine.	139-87-7

TENTH SCHEDULE

[*regulations* 11 (1), 31 (3),33 (2)]

GUIDELINES FOR EXTENDED PRODUCERS RESPONSIBILITY PROGRAMME FOR BATTERY SECTOR

(1) As part of the Strategic Sectorial Alliance Programme of the Agency, all private individuals, manufacturers, dealers, recyclers, and importers of batteries and its components shall partner with the Agency to establish an effective Extended Producer Responsibility Programme, the manufacturers and importers shall submit a proposal for an Extended Producer Responsibility Programmeto the Agency for approval; such a proposal shall include —

(*a*) a proof of the existence of a manufacturers and importers process for the collection, handling, transportation and final treatment of post-consumer battery products regardless of who is the original brand owner ;

(*b*) new battery or component but not limited to branded post-consumers products ; and

(*c*) incorporation of the principles of a pollution prevention hierarchy by moving progressively from disposal of used batteries or components to reuse, repair, recover and recycle.

(2) All private individuals, manufacturers, assemblers, dealers, recyclers and importers of batteries or its components shall submit on or before June 30th in each year to the Agency, an annual report on their extended producer responsibility program during the previous fiscal year including, information in respect of —

(*a*) the total amount of consumer batteries sold and post-consumer battery products collected ;

(*b*) the total amount of post-consumer battery products processed or in storage ;

(*c*) the types of processes used to repair, reuse, recycle or recover post-consumer battery products and shall incorporate the priorities of pollution prevention hierarchy by moving progressively from disposal to recovery, repair, reuse, recycling ;

(*d*) the location of any long-term containment or final treatment and processing facilities for post-consumer product ;

(*e*) the process of internal accountability used to monitor environmental effectiveness ; and

(*f*) any other information requested by the Agency.

(3) The manufacture and components dealers shall be responsible for —

(*a*) collecting any battery waste generated during the manufacture of batteries and channeling the same for recycling ;

(*b*) ensuring that all batteries shall be provided with a unique serial number or individual identification code for tracking the products at the End-of-Life (EoL) of Used Battery management system ;

(*c*) collecting used batteries generated at end-of-life of their products in line with the principle of Extended Producer Responsibility (EPR), and to ensure that such batteries are channeled to registered recyclers ;

(*d*) setting up collection centers or take back system individually or collectively for all used batteries at the end of their life ;

(*e*) financing, and organizing a system to meet the costs involved in the environmentally sound management of used batteries generated from the end-of-life of its own products and historical waste available on the date from which these Regulations come into force, such financing system shall be transparent, the producer may choose to establish such financial system individually or by joining a collective scheme ;

(*f*) providing contact details such as address, telephone numbers or helpline number and e-mail of dealers and authorized collection centers to consumer or bulk consumers so as to facilitate return of used EL Batteries ;

(*g*) incorporating the principles of energy efficiency in all manufactured Batteries ;

(*h*) creating awareness through publications, advertisements, posters, or by any other means of communication and information booklets accompanying the equipment, with regard to the following —

(*i*) information on hazardous constituents in batteries,

(*ii*) information on hazards of improper handling, accidental breakage, damage or improper recycling of batteries,

(*iii*) promoting acquisition of battery products with energy efficiency measures, and

(*iv*) affixing the symbol given in this subparagraph on the products to prevent used batteries from being dropped in garbage bins containing waste for disposal,

(*i*) obtaining an authorization from the Agency ;

(*j*) maintaining records of the used batteries handled, such records shall be available for ensuring full compliance by the appropriate authority ; and

(*k*) filing annual returns to the Agency on or before the 30th day of June following to the financial year to which that return relates.

(4) Any person operating a collection centre individually or collectively shall —

(*a*) obtain authorization in accordance with procedures prescribed under the Eleventh Schedule to these Regulations from the Agency as the case may be and provide details such as address, telephone helpline numbers, e-mail, of such collection centres to the general public ;

(*b*) ensure that the used batteries collected by them are stored in a secured manner until it is sent to a producer or registered recycler as the case may be ;

(*c*) ensure safe transportation of the EL batteries ;

(*d*) ensure that no damage is caused to the environment during storage and transportation of EL batteries ;

(*e*) file annual returns to the Agency on or before the 30th day of June following the financial year to which that returns relate ; and

(*f*) maintain records of the EL batteries handled and such records shall be available for scrutiny by the appropriate authority.

(5) Consumers of batteries shall ensure that EL batteries are deposited with the dealer or authorized collection centers.

(6) Every recycler shall —

(*a*) obtain registration from the Agency in accordance with the procedures prescribed in the Tenth Schedule to these Regulations ;

(*b*) ensure that the facility and recycling processes are in accordance with the standards laid down in the guidelines published by NESREA from time to time ;

(*c*) make available all records to the Agency for inspection ;

(*d*) ensure that residue generated is stored in a hazardous waste treatment storage facility for subsequent disposal in an ESM ; and

(*e*) file annual returns to the Agency as the case may be, on or before 30th June following the financial year to which that returns relate.

(7) Where producers are involved in the placing of batteries in the Nigerian market, such producers shall establish —

(*a*) collection system to take back end of life batteries ; and

(*b*) treatment facility where end-of-life batteries shall be collected, stored and treated.

(8) There shall be at least one treatment facility in the six Geo-political zones of the country.

(9) Producers shall ensure that —

(*a*) the treatment facilities are reasonably accessible to any person who wishes to deliver an end-of-life batteries ;

(*b*) the treatment facilities have sufficient capacity to treat the actual number of batteries that are likely to become end of-life batteries ; and

(*c*) where an end-of-life battery is transported from one treatment facility to an alternative treatment facility, the transportation is carried out in accordance with the provisions of these Regulations.

ELEVENTH SCHEDULE

[*regulations* 31(3), 64(2)(*f*)]

BEST ENVIRONMENTAL PRACTICES FOR BATTERY COLLECTION

The following control measures shall be carried out at the collection points to avoid incidences that may produce human and environmental damage —

(*a*) batteries shall not be drained at collection points to avoid spillage of sulfuric acid electrolyte, which may lead to severe threats to human health and the environment ;

(*b*) batteries shall be stored at proper places at collection points, it is appropriate to store used lead-acid batteries inside an acid-resistant container and proper battery storage measures in collection centres include —

(*i*) leaking batteries shall be stored inside acid-resistant containers during collection, transport and storage,

(*ii*) portable Li-ion batteries shall be stored in a sealed water proof container and kept in a cool and dry place,

(*iii*) large scale Li-ion battery shall be stored stacked upright in a cool, dry area,

(*iv*) storage place shall be sheltered from rain and other water sources,

(*v*) storage place shall have a ground cover, preferably acid-resistant concrete or any other acid-resistant material that may retain leakage and direct the spilled acid to a collecting container from where it may be removed afterwards,

(*vi*) storage place shall have an exhaust ventilation system or simply a fast air recirculation system, to avoid gas accumulation, and

(*vii*) storage place shall have restricted access and be identified as a hazardous material storing place ;

(*c*) collection points shall not store large amounts of used batteries to avoid the risk of accidental spillage or leakage of acid ;

(*d*) collectors shall not sell their batteries to unlicensed lead smelters, ; and

(*e*) the collected used batteries with the electrolyte shall be handed over to the licensed battery recyclers for appropriate treatment.

TWELFTH SCHEDULE

[*regulations* 31 (4), 64(3)(*f*)]

REQUIREMENTS FOR ENVIRONMENTALLY SOUND STORAGE OF USED BATTERIES

The following measures shall be put in place to ensure safe storage of used batteries —

(*a*) the storage area shall be impermeable and an acid-resistant floor, that may retain any leakage and direct it to an acid-resistant container from where it may be removed afterwards ;

(*b*) the storage area shall have an efficient water collection system which directs spilled solutions towards the effluent or acid electrolyte treatment plant ;

(*c*) storm water channel shall be different from acid or waste water channel ;

(*d*) the storage area shall be sheltered from rain and other water sources and if possible, away from heat sources ;

(*e*) the storage area shall have one entrance in and one exit, which shall be closed unless otherwise necessary, in order to avoid dust release ;

(*f*) the storage area shall have an exhaust ventilation system and a special gas collection system, which filters the air to remove lead dusts and at the same time renews the air inside the storage area in order to avoid the concentration of toxic gases ;

(*g*) the storage area shall be equipped with a sufficient floor washing system which direct the washed water to a separate container and shall be disposed of after neutralization or dilution ;

(*h*) the storage area shall be provided with appropriate fire-fighting equipment ; and

(*i*) unauthorised personnel shall not be allowed to enter the storage area and it shall be identified as a hazardous material storage area.

THIRTEENTH SCHEDULE

[*regulation* 35 (1)]

REQUIREMENTS FOR ENVIRONMENTALLY SOUND TRANSPORTATION OF USED BATTERIES

The following measures shall be put in place to ensure safe transportation of used batteries —

(*a*) used batteries shall be stacked upright according to size, pelleted and wrapped with polythene material ;

(*b*) leaking batteries shall be transported in a sealed container ;

(*c*) Li-ion batteries shall be transported in a sealed water and fireproof containers and used batteries shall be transported when packed properly as provided in this paragraph ;

(*d*) charge shall be discharged before packing and the terminals insulated to avoid short circuiting ;

(*e*) Li ion batteries shall be separated from ULAB to avoid mixing up during recycling ;

(*f*) collectors and transporters shall be equipped with tools to test and identify the different types of batteries ;

(*g*) the transport vehicle shalld be identified with symbols : the vehicle, whether it is a ship a truck or a van shall be correctly identified, in accordance with international conventions, symbols and colours, identifying the fact that corrosive and hazardous products are being transported ;

(*h*) specific equipment which means that a minimum set of equipment necessary to combat any simple spillage or leakage problems shall be provided and the transport team trained on how to use it ;

(*i*) drivers and auxiliaries shall be trained: people dealing with hazardous wastes shall be trained in emergency procedures, including fire, or spilling, and how to contact emergency response teams and they shall be aware of the specific kind of hazardous material that is being transported and how to deal with it ;

(*j*) PPE shall be provided for the transport team and they shall be trained in the use of the equipment, in case of any accident ; and

(*k*) transport schedule and map shall be used if possible, hazardous waste transport shall always choose routes that minimize the risk of possible accidents or other specific problems, which is possible if they follow a certain predefined path and restrict themselves to a known schedule.

FOURTEENTH SCHEDULE

[*regulation* 46(*c*)]

REQUIREMENTS FOR ENVIRONMENTALLY SOUND RECYCLING OF USED BATTERIES

(*a*) Battery breaking and drainage shall be carried out in a sheltered area and it shall have an acid resistant ground cover, to prevent spilling of acid electrolyte and emission of lead contaminated dust to the environment, the acid electrolyte shall be directed to a collecting sump and it shall be treated in an effluent treatment plant before discharge.

(*b*) Lead reduction shall be carried out in such a manner as to prevent the following—

(*i*) emission of lead and lead compounds derived from the breaking process in dust and water ;

(*ii*) emission of lead contaminated materials from drosses during fusion process ;

(*iii*) emission of lead contaminated dusts from filters used to capture lead dusts formed in the fusion process and these filters shall be recycled ;

(*iv*) emission of tar during the lead reduction process ;

(*v*) emission of sulphur dioxide (SO2) during the reduction process ; and

(*vi*) discharge of leachate that may be produced if an unstable water-soluble slag comes in contact with water or moist air.

(*c*) Lead refining shall be carried out in such a manner as to prevent the following—

(*i*) emission of lead fumes when the lead from the reduction process is introduced directly into the refining kettle ;

(*ii*) emission of slag while refining unwanted metals from crude lead ; and

(*iii*) emission of sulphur dioxide (SO2) during refining and emission of chlorine gas (Cl2) during tin (Sn) removal and recovery.

FIFTEENTH SCHEDULE

[*regulations* 35(5), 49]

PERSONAL PROTECTIVE EQUIPMENT

Eye and Face Protection

Type	Use
General safety glasses	• Shall have side shields, or a one-piece lens that wraps around the temple. • Are the minimum level of eye protection that shall be worn in the laboratory. • Are not effective in protecting the eyes from splashes, and are recommended for use with solutions that are not likely to damage the eye, such as some buffers and salts.
Laser safety glasses	• Selection is based on the laser wavelength and power. • Protective properties may be found printed on the eyewear. • Are not as effective as laser safety goggles at filtering all light entering the eyes. • EH&S does not provide laser safety glasses or goggles for use in the laboratory, but may assist in selecting the correct laser safety goggles or glasses for your application, which may be purchased by the PI as needed.
Chemical splash goggles	• Are recommended any time a splash of chemicals or infectious substances may reach the eyes. • May act as impact goggles to prevent flying debris from reaching the eyes. • May be purchased from the campus bookstore or obtained from EH&S in accordance with LHAT recommendations.
Impact goggles	• Offer protection from flying debris. • Often have ventilation holes on the sides that render the user susceptible to chemical splashes and dust or small debris. • EH&S does not offer impact goggles, but chemical splash goggles may often be used in substitution. Feel free to contact EH&S with any questions regarding this substitution.
Face shields	• Required when splashes from chemicals that may cause immediate skin damage are handled (such as working with concentrated acids, dispensing liquid nitrogen or sonicating tissue samples). • Shall be worn in conjunction with chemical splash goggles. Respiratory protective equipment may be required, depending on the task ; contact EH&S if you have any questions regarding face shield use. • All new PIs receive two complimentary face shields from EH&S. Existing PIs received two face shields during the 2013 PPE distribution event. Additional or replacement face shields may be purchased by PIs.

Type		Use
Light latex, vinyl or nitrile gloves	Disposable latex (powdered or unpowdered)	Working with biological hazards (human blood, body fluids, tissues, bloodborne pathogens, specimens), BSL1, BSL2, BSL2+, BSL3
	Disposable nitrile (puncture and abrasion resistant, protection from splash hazards)	Working with biological hazards and chemical splash hazards
	Disposable vinyl (economical, durable, similar to latex)	Working with biological hazards, BSL1, BSL2, BSL2+, BSL3
Light chemical resistant gloves	Natural rubber latex (chemical resistant, liquid-proof)	Working with small volumes of corrosive liquids, organic solvents, flammable compounds
Light to heavy chemical resistant gloves	Nitrile (chemical resistant, good puncture, cut and abrasion resistance)	Using apparatus under pressure, air or water reactive chemicals
Heavy chemical resistant gloves	Butyl (high permeation resistance to most chemicals)	Working with large volumes of organic solvents; small to large volumes of dangerous solvents, acutely toxic or hazardous materials
	Viton® II (high permeation resistance to most chemicals)	Same as butyl gloves, plus hazardous material spills
	Silver shield (extra chemical and mechanical protection)	Same as butyl and Viton® II gloves, added mechanical protection, hazardous material spills
Insulated gloves	Terrycloth autoclave (heat resistant)	Working with hot liquids and equipment, open flames, water bath, oil bath
	Cryogen (water resistant or water proof, protection against ultra-cold temperatures)	Handling cryogenic liquids
Wire mesh gloves	Wire mesh (cut resistant)	Working with live animals and exposed to potential cuts

Body Protection

Type	Use
Traditional (cotton/cotton-polyester blend - protects skin and clothing from dirt, inks, non-hazardous chemicals)	General use; chemical, biological, radiation and physical hazards
Flame resistant (such as Nomex or other flame-resistant cotton — resists ignition)	Working with water or air reactive chemicals, large volumes of organic solvents, and potentially explosive chemicals
Barrier (predominantly polyester — offers splash protection, not flame resistant)	Working with infectious materials

Respiratory Protection

Type		Use
Surgical masks	Protect against large droplets and splashes (*does not require fit-testing*)	Working with live animals; working with infectious material in BSL-2+ level labs but protects your sample from you, not the other way around.
N-95 respirators	Protects against dusts, fumes, mists, microorganisms (*requires fit-testing*)	Working with live animals or infectious materials in BSL-2 level labs with known airborne transmissible disease (e.g. tuberculosis, also required for influenza (flu)) ; dusty environments
Half-mask respirators	Purifies air : protects against variety of particulates, vapors, dust, mists, fumes; depends on filter cartridge used (*requires fit-testing*)	Working with live animals or infectious materials with known airborne transmissible disease; dusty environments; chemical vapors; particulates
Full-face respirators	Same as half-mask, with greater protection factor ; eye, mucus membranes and face protection; depends on filter cartridge used (*requires fit-testing*)	Working with live animals or infectious materials with known airborne transmissible disease; dusty environments; chemical vapors; particulates
Respirator cartridges	For use in half-mask respirators and full-face respirators	

Hearing Protection

Disposable earplugs	Polyvinyl chloride (PVC) or polyurethane foam, one-time use design (no cleaning), one size fits all, light weight, low cost, blocks all sound. Useful when working in areas where sound levels average over 85 dBa; EH&S may assist in assessments
Reusable earplugs	Silicone, tapered fit, reusable (needs cleaning), corded or uncorded, light weight, more durable than disposable earplugs. Useful when working in areas where sound levels average over 85 dBa; EH&S may assist in assessments
Hearing band	Earplugs connected to a flexible band that may be worn around the neck when not needed. Useful when working in areas where sound levels average over 85 dBa; EH&S may assist in assessments

SIXTEENTH SCHEDULE

[*regulation* 2 (*c*), 38]

CATEGORIES OF BATTERIES

1. General battery categories shall be —

S/No.	*Categories*	*Description*
1.	automobile	those batteries used as the main energy source for starting, lighting and ignition (SLI batteries) in vehicles such as cars, trucks, tractors, motorcycles, boats or planes.
2.	generic	batteries used in portable tools and devices, domestic alarm systems, emergency lights, or as may be applicable.
3.	industrial	batteries for stationary applications such as telecommunications, electrical power stations, uninterrupted power supplies or no-breaks, load leveling, alarm and security systems, general industrial use and starting of diesel motors.
4.	motive	batteries used to transport loads or people: fork lift trucks, golf carts, luggage transportation in airports, wheelchairs, electric cars, buses, or as may be applicable.
5.	special	batteries used in specific scientific, medical or military applications, and those that are integrated in electric-electronic circuits.
Source : Technical Guidelines for the Environmentally Sound Management of Waste Lead-Acid Batteries (**Basel Convention)**		

2. Types of used batteries covered by these Regulations shall be —

(*a*) used Lead Acid Batteries (ULABs): The regulations shall cover the following value chain ; Identification, Collection, Storage, Transportation, Recycling ; and

(*b*) used lithium ion batteries (Li-ion batteries) : Identification, Collection, Storage, Transportation and Export.

SEVENTEENTH SCHEDULE

regulations (55) (4), (56) (3)

MONTHLY DISCHARGE MONITORING REPORT (MDMR) [NESREA DISCHARGE. MONITORING REPORT]

PLEASE COMPLETE AND SUBMIT ONE COPY EACH MONTH

THIS REPORT MUST BE POSTMARKED NOT LATER THAN THE 28TH DAY OF THE FOLLOWING MONTH.

Facility Name and Address :

Mail to :

National Environmental Standards and Regulations Enforcement Agency (NESREA),

Headquarters,

Abuja.

Sampling Point Location .....

Month : ..... Year .....

Sampling Date and Time : .....

Sampling Dates and Time						
Parameters Weekly		Weekly Results				NESREA's Regulatory Limits
PHYSICAL:	Units	1st	2nd	3rd	4th	Average
Appearance						
Odour						
Temperature	℃					
pH						
Conductivity	*lus/cm*					
Turbidity	NTU					
Dissolved Oxygen (DO)	mg/l					
Total Suspended Solids	mg/l					
Total Dissolved Solids	mg/l					
(TDS)	mg/l					
BOD	mg/l					
COD	mg/l					

B 384

TYPES OF SAMPLING						
Parameters		Weekly Results				NESREA's Regulatory Limits
INORGANIC:	Units	1st	2nd	3rd	4th	Average
Chloride	mg/l					
Nitrate	mg/l					
Sulphate	mg/l					
Sulphite	mg/l					
Cyanide	mg/l					
Nitrites	mg/l					
Chromium (hexavalent)	mg/l					
Copper	mg/l					
Zinc	mg/l					
Lead	mg/l					
Cadmium	mg/l					
Manganese	mg/l					
Nickel	mg/l					
Silver	mg/l					
Mercury	mg/l					
Arsenic	mg/l					
Aluminum	mg/l					
Iron	mg/					
Tin	mg/l					
Fluorides	mg/					
Ammonia	mg/l					
Total Nitrogen	mg/					
Total Phosphorus	mg/l					
ORGANICS:						
Phenols	mg/l					
Oil and Grease	mg/l					
MICRO-BIOLOGICAL:						
Faecal Coli form	CFU.					

Noise Measurement

Locations			Noise Level
		Signature with date of Principal Executive Officer or authorized agent.	I certify that this document and all attachments were prepared under my direction or supervision.
Signature of Certified Operator	Date : (Month, Day, Year)	Date :	
		Signature :	

MADE at Abuja this 21st day of March, 2024.

BALARABE ABBAS LAWAL
Honourable Minister of Environment