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Service specification for used traction battery recycling

废旧动力蓄电池回收服务规范

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Table of Contents

Service specification for used traction battery recycling

1 Scope

This document specifies the requirements for recycling party, service requirements, abnormality handling, information feedback, evaluation and improvement of used traction battery recycling services.

This document applies to used lithium-ion traction battery recycling service activities.

This document does not apply to used lead-acid batteries.

2 Normative references

The following documents are normatively referenced in this document and are indispensable for its application. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB 12463, General specifications for transport packages of dangerous goods

GB/T 19038, Guidelines for model and methods of customer satisfaction measurement

GB/T 19039, General rules of customer satisfaction measurement

GB/T 19596, Terminology of electric vehicles

GB/T 33598-2017, Recycling of traction battery used in electric vehicle - Dismantling specification

GB/T 38698.1-2020, Recycling of traction battery used in electric vehicle - Management specification - Part 1: Packing and transporting

GB 39800.1, Specification for the provision of personal protective equipment - Part 1: General requirement

GB 50140, Code for Design of Extinguisher Distribution in Buildings

HJ 2025, Technical specifications for collection, storage, transportation of hazardous waste

JT/T 617.4, Regulations concerning road transportation of dangerous goods - Part 4: Provisions for the use of transport packaging

JT/T 617.5-2018, Regulations concerning road transportation of dangerous goods - Part 5: Consignment

JT/T 617.6, Regulations concerning road transportation of dangerous goods - Part 6: Provisions concerning the conditions of carriage, loading, unloading and handling

WB/T 1061, Management specification for waste secondary battery recycling

WB/T 1105, Technical requirements of metal logistic bin for used traction battery

3 Terms and definitions

Terms and definitions determined by GB/T 19596 and the following ones are applicable to this document.

3.1 Traction battery

The batteries that provide energy for the power system of electric vehicles and other equipment.

[Source: GB/T 19596-2017, 3.3.1.1.1.1, modified]

3.2 Used traction battery

The traction batteries of which the residual capacity, charge and discharge performance, and safeguard cannot guarantee the normal operation of the original product, or traction battery that is no longer used due to other reasons.

Note: Used traction battery includes battery pack, battery module (group) and cell.

3.3 Used traction battery recycling

The process of collection, classification, inventory, handling, packaging, loading and unloading, transportation, storage and other activities for used traction batteries.

3.4 Recycling service

The activity where the used traction battery recycling party (referred to as “recycling party”) carries out used traction battery recycling according to the needs of the used traction battery provider (referred to as “provider”).

3.5 Service plan

The document formulated to regulate the used traction battery recycling service.

4.3 Facilities and equipment

4.3.1 There shall be facilities and equipment suitable for the scale of recycling services such as testing, packaging, storage, waste liquid collection, and emergency disposal, as well as special equipment for emergency treatment such as safety protection and rescue.

4.3.2 The recycling workplace shall be equipped with fire-fighting equipment such as fire-fighting sandboxes, fire extinguishers, and the battery storage area shall be provided with fire-fighting equipment that meets the requirements. The number of fire-fighting equipment and the type of fire extinguishers shall meet the requirements of GB 50140.

4.3.3 The logistics boxes used for recycling used traction batteries shall meet the relevant requirements of GB 12463, GB/T 38698.1-2020, and JT/T 617.4; the metal logistics boxes shall meet the requirements of WB/T 1105.

4.4 Recycling service outlets

4.4.1 Recycling service outlets are responsible for collecting, sorting, counting, storing, transporting and packaging used traction batteries, and shall not perform any dismantling treatment of the collected used traction batteries other than safety inspection.

4.4.2 Recycling service outlets shall set up schematic diagrams of operation procedure and other guidance information, such as schematic diagrams of storage operations, schematic diagrams of waste liquid collection and treatment operations.

4.4.3 Recycling service outlets shall record relevant information such as battery code, type, quantity, source, and whereabouts in detail, and keep the records for three years for future reference.

4.5 Safety and environmental protection

4.5.1 Contingency plans shall be formulated and emergency drills shall be conducted for possible safety and environmental accidents in the various processes of used traction battery recycling.

4.5.2 The safety and environmental protection in the recycling service process shall meet the following requirements:

a) Used traction batteries shall not be discarded or landfilled at will;

b) Personnel responsible for safety shall pay attention to the safety status of used traction batteries, and shall pay attention to the safety and health status of professional service personnel;

c) The waste liquid and waste generated shall be collected and handed over to enterprises with treatment qualifications for harmless treatment;

d) Hazardous wastes produced or included, or identified as hazardous wastes according to the national hazardous waste identification standards and identification methods, shall meet the relevant requirements of HJ 2025;

e) In the event of a sudden safety and environmental protection incident, the emergency plan shall be activated immediately for rescue, the safety management department of the recycling party shall be contacted in time, and the consignor shall be informed.

5 Service requirements

5.1 Recycling preparation

5.1.1 Information confirmation

5.1.1.1 The provider shall provide relevant information, including but not limited to: provider unit name, unit address, unit type (such as vehicle manufacturer, battery manufacturer), recycling form, to-be-recycled used traction battery location, quantity, weight, type, positive electrode material type, safety status (such as normal decommissioned battery, accident battery), material safety data sheet (MSDS), battery code, etc.

Note: The types of used traction battery include but are not limited to used traction battery pack, module (group), and cell.

5.1.1.2 After receiving the recycling service information, the recycling service personnel shall confirm the information, inform the provider of the recycling service process specified in Appendix A, and negotiate to determine the recycling form of used batteries. Recycling forms are divided into:

a) Door-to-door recycling, where the recycling party directly or indirectly transports the used traction battery back from the provider;

b) Fixed-point recycling, where the provider directly or indirectly transports the used traction battery to the location designated by the recycling party.

5.1.2 Plan formulation

The service personnel shall negotiate with the provider to determine the following recycling service plan:

a) packaging plan;

b) loading and unloading plan;

c) handling plan;

5.2.3.1 The quantity of used traction batteries shall be counted, the quality of used traction batteries shall be verified, and the codes of used traction batteries shall be checked.

5.2.3.2 Recycling records shall be established in the links of packaging, loading and unloading, storage, etc., and the recycling list shall be filled out according to the counting results. See Appendix B for a sample of the recycling list.

5.2.4 Handling

According to the loading and unloading plan, the handling personnel and handling tools shall be dispatched in advance; the handling personnel shall be organized to move the used traction battery and the processing package to the designated operation area; the following requirements shall be met during the handling.

a) Forklifts can be used to transport batteries over a short distance. Where the distance is long or the road surface is uneven, special machinery and tools shall be used for handling, and straps shall be used properly for fixing.

b) Batteries with safety risks shall not be transported together with other batteries.

c) A forklift should be used to move the batteries, where the batteries shall be placed in a special container or on an insulating pallet. A dump truck or a tractor shovel should not be used to move the batteries.

d) If hoisting is required during battery transport, non-metallic chains and ropes shall be used to bind and lift the battery, and non-electromagnetic lifting equipment shall be used. When mechanical lifting equipment is used for lifting bulk batteries, the batteries shall be placed in special containers and fixed.

e) When dangerous situations such as battery smoke and fire are found during transportation, the transportation personnel shall deal with it in time according to the emergency plan.

f) After transporting the battery to the destination, the battery shall be placed on flat ground.

5.2.5 Packaging

5.2.5.1 Safety judgment, safety protection and classification shall be carried out through visual inspection before the battery is packaged.

5.2.5.2 Battery packaging shall be in accordance with the packaging requirements in GB/T 38698.1-2020.

5.2.6 Loading and unloading

5.2.6.1 The used traction battery shall be loaded and unloaded according to the loading and unloading plan, and the loading and unloading shall meet the requirements of JT/T 617.6.

5.2.6.2 During loading and unloading operations, check the type, specification and quantity of used traction batteries against the waybill, and check their packaging. Used traction batteries whose safety label, identification, mark, etc. do not match the waybill, or whose packaging is damaged or does not comply with the provisions of GB/T 38698.1 shall not be loaded into the vehicle.

5.2.6.3 Loading and unloading operations shall not be carried out alone, but shall be carried out under the supervision and command of the command personnel.

5.2.6.4 After loading and unloading, the working site shall be cleaned up. Residue cleaning shall be carried out on vehicles and tools where electrolyte leakage occurs during loading, unloading and transportation.

5.2.7 Transportation

5.2.7.1 According to the transportation plan, departure shall not be permitted unless pictures are taken and files are kept after observing that the used traction batteries are in good condition, the stacking method is reasonable, the transport vehicle is normal, and the driver’s license is complete.

5.2.7.2 Transportation service personnel shall transport used traction batteries according to the requirements in Chapter 7 of GB/T 38698.1-2020.

5.2.7.3 Vehicles that meet the driving regulations for dangerous goods transport vehicles shall be used for transportation, and signs that meet the requirements in Chapter 7 of JT/T 617.5-2018 shall be hung on the front, rear and both sides of the transport vehicle.

5.2.8 Storage

5.2.8.1 The storage of used traction batteries shall be carried out according to the storage plan, and shall comply with the storage requirements in WB/T 1061.

5.2.8.2 Used traction batteries shall be stored independently, shall not be stored together with other goods and wastes, shall not be placed sideways or upside down, and shall not be stacked directly.

5.2.8.3 According to the classification results of used traction batteries in 5.2.2, the used traction batteries shall be treated accordingly, and then stored in different storage methods and storage containers.

a) Class A used traction batteries shall be cleaned and insulated; the charged used traction batteries that do not meet the echelon use conditions shall be discharged first; the charged used batteries that have not been discharged shall be insulated.

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