

Criteria Governing Methods of and Facilities for Storage, Clearance and Treatment of Industrial Wastes

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*English Translation*¹

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Chapter 1: General Provisions

¹ Translators' note: This translation is for informational purposes only and does not represent the binding law of the Republic of China. The binding law appears only in the national language--Chinese. Therefore, for purposes other than acquiring information, reference must be made to the original Chinese version of these Criteria.

In translating these Criteria, the translators did not depart from the original Chinese text. Accordingly, ambiguities present in the translation are also present in the original.

In the Chinese version of these Criteria, each paragraph is referred to as a "section" (*hsiang*). Bracketed text indicates translator additions for the purpose of increasing clarity.

Article 1

These Criteria are promulgated in accordance with Article 15 of the Waste Disposal Act (hereinafter “the Act”).

Article 2

Particular terms used in these Criteria are defined as follows:

1. Storage: refers to the storage of industrial wastes at a specific site, storage container or storage facility, prior to clearance or disposal;
2. Clearance: refers to the collection and transportation of industrial wastes;
3. Treatment: includes the following activities:
 - 1) Intermediate treatment: refers to all activities that, by way of physical, chemical, biological, thermal or other treatments, result in an alteration of the physical, chemical, or biological character or components of industrial wastes for the purpose of separation, volume reduction, de-toxification, solidification or stabilization prior to final disposal;
 - 2) Final disposal: refers to the sanitary landfilling, sealed landfilling, stabilized landfilling or marine dumping of industrial wastes;
 - 3) Re-use: refers to the re-use of industrial wastes either by the generating enterprises themselves, or through the sale, transfer or entrusting to others for re-use as raw materials, [materials],² fuels, filler, or for other purposes approved by both the Responsible Agency for the Act at the central government level and the Responsible Agency for the Enterprise Associated with the Industry at issue³ as consistent with these Criteria.

² Translators' note: The original Chinese text uses the vague term “materials” [*ts'ai liao*].

³ Translators' note: For example, the Ministry of Economic Affairs for a power plant project or the Ministry of Finance in the case of a financial project.

4. Management:⁴ refers to the storage, clearance and disposal of industrial wastes.
5. Compatibility: refers to [the characteristic of] industrial wastes that, when in contact with containers or other materials, or mixed with other industrial wastes, will not result in one of the following effects:
 - 1) Heat;
 - 2) Strong reactions, fire or explosion;
 - 3) Flammable or hazardous fluids; or
 - 4) Deterioration of the [waste] container material so as to reduce its pollution control effect.
6. Construction wastes: refer to wastes resulting from construction, demolition or other engineering work;
7. Solidification: refers to the treatment which petrifies industrial wastes by mixing them with a solidifying agent;
8. Stabilization: refers to a treatment which stabilizes the industrial wastes by mixing them with, or causing them to react with, chemicals.
9. Thermo-treatment:
 - 1) Incineration: refers to a treatment which transforms the industrial wastes into a stable gas or other substance by combustion under high temperatures;

⁴ Translators' note: "Management" [*ch'ing li*], as translated in the Waste Disposal Act [*Fei Ch'i Wu Ch'ing Li Fa*] may also be translated as "disposal." "Management" is used in this Article to avoid the confusion associated with the recurrence of the Chinese term [*ch'ing li*] in these Criteria.

- 2) Pyrolysis: refers to a treatment by which the wastes are pyrolyzed in a low or no-oxygen environment, thereby transforming the industrial wastes into gas, liquid or ash form;
 - 3) Other thermo-treatments.
10. Sterilization: refers to a treatment which, by physical or chemical means, within definite time period, destroys microorganisms contained in infectious industrial wastes and is approved by the Responsible Agency at the central government level;
11. Landfilling:
- 1) Stable landfilling: refers to the disposal of general industrial wastes in a landfill site with facilities or measures preventing loss of lateral or subjacent support, as well as measures facilitating water-soil conservation;
 - 2) Sanitary landfilling: refers to the disposal of general industrial wastes in a landfill site that is constructed with non-porous material or soil with low porosity and equipped with leachate and evaporate collection and treatment facilities and a groundwater monitoring system; and
 - 3) sealed landfilling: refers to the disposal of hazardous industrial wastes in a landfill site that is constructed with a double, non-porous layer of pressure-resistant material, and equipped with facilities for the prevention of the leaching of pollutants and a groundwater monitoring system;
12. Ocean dumping: refers to the discarding of general industrial wastes via marine dumping or disposal;
13. Deterioration Reduction Efficiency (DRE): refers to the percentage of the deterioration of POHCs⁵ after thermo-treatment; and

⁵ Translators' note: The Chinese version employs the English acronym "POHC" without providing the English term. The Chinese characters may be translated as "hazardous organic substances."

14. Combustion Efficiency (CE): refers to the ratio of the emission density of CO₂ compared with the sum of the emission density of CO₂ and CO at the end of the emission pipes.

Article 3

For the purpose of [waste] management, the Responsible Agency may order enterprises or publicly or privately owned waste management organizations to report, within a specific time period via the Internet or other specified means, the type, amount, storage, clearance and treatment methods of those industrial wastes generated or managed by the enterprises [or organizations]; enterprises [or organizations] may not refuse such orders.

The categories of covered enterprises and organizations bearing the reporting obligation mentioned in the preceding Section, the methods of storage, clearance or treatment or reporting, the reporting time period, and the date of implementation shall be designated and publicly announced by the Responsible Agency.

Article 4

The enterprises designated and publicly announced by the Responsible Agency at the central government level shall, prior to applying to the Responsible Agency for the Enterprise Associated with the Industry at issue for incorporation submit an industrial waste management plan to the Responsible Agency at the municipal or county (city) government level for approval. Such enterprises shall, prior to commencing operation, submit necessary documents to the Responsible Agency at the municipal or county (city) government level for approval.

Should the enterprises mentioned in the preceding Section have “corporate changes” in one of the following situations, the provisions of the preceding Section shall apply where appropriate:

1. Change of enterprise location;
2. Increase or change in major raw materials;

3. Increase or change in major products;
4. Increase or change in major production processes, or a change in waste management methods or facilities; or
5. Other changes which may alter the quality or quantity of wastes.

Article 5

The waste management plan mentioned in the preceding Article shall include [information on] the following items:

1. Product production or consumption processes;
2. Industrial waste sources, component and quantity;
3. Industrial waste management means;
4. Industrial waste reduction plan;
5. Undisposed industrial waste [plan], should the enterprise suspend business or declare bankruptcy; and
6. An emergency plan, for enterprises [or organizations] that conduct storage, clearance or treatment of hazardous industrial wastes, including the department responsible for [and a description of] measures for emergency response and emergency medical relief.

The enterprises mentioned in Item 4 of the preceding Section shall be publicly announced by the Responsible Agency at the central government level.⁶

⁶ Translators' note: The Chinese version appears to contain an incorrect reference. This Section should refer to "Item 5." No enterprises are referred to in Item 4.

Article 6

The general wastes generated by enterprises or managed by publicly or privately owned waste management organizations, when designated as recyclables in accordance with Article 10-1 of the Act, shall be managed in accordance with relevant recycling measures.

Hazardous industrial wastes shall not be mixed with general wastes or general industrial wastes.

Article 7

“An enterprise managing self-generated wastes” refers to one of the following situations:

1. An enterprise manages the wastes generated by itself or collectively with other enterprises;
2. An enterprise cooperates with others who are willing to jointly manage the generated wastes;⁷ or
3. Other activities designated and publicly announced by the Responsible Agency at the central government level.

The collective and joint (management) organizations referred to in Items 1 and 2 of the preceding Section respectively are “enterprises” prescribed in these Criteria.

Chapter 2: Storage of Industrial Wastes

Article 8

Hazardous and general industrial wastes shall be separately stored.

⁷ Translators’ note: The meanings of the characters used in the Chinese versions of Items 1 and 2 are substantially similar.

Article 9

The storage of general industrial wastes shall meet the following requirements:

1. The [general industrial waste] storage site, containers and facilities shall be maintained in a clean and good condition, free from airborne or seeping wastes, ground surface pollution and malodors;
2. The [general industrial waste] storage containers and facilities shall be compatible with the wastes stored; incompatible wastes shall be stored separately;
3. Names of the [general industrial] wastes shall be identified in Chinese at a conspicuous point at the storage site, and on containers and at facilities.⁸

Article 10

The storage of hazardous industrial wastes, not including infectious industrial wastes, shall meet the following requirements:

1. The wastes shall be contained in sealed, stable packaging materials or containers, be deposited in storage facilities, be classified and numbered, and be labeled with the name of the generator, date of storage, quantity and constituents of the wastes, as well a hazardous waste logo;⁹
2. The storage container and [related] facilities shall be compatible with the hazardous industrial wastes stored; when necessary, internal linings or protection devices shall be adopted in order to reduce the impact of deterioration or erosion;

⁸ Translators' note: The specific "facilities" [at which the names shall be identified] in this Item are not evident in the Chinese version.

⁹ Translators' note: The hazardous waste logo is described generally in Article 14, Item 4.

3. The storage container or packaging materials shall always be maintained in good condition; should there exist a danger of serious rusting, destruction or exposure, the storage container or packaging materials shall be replaced immediately;¹⁰ and
4. The storage time period shall not be longer than 2 years; should wastes be stored more than 2 years, an application for a 3-month extension shall be made prior to the date of [storage period] expiration at the Responsible Agency at the local government level at the location where the storage facilities are located.

Article 11

The storage of infectious industrial wastes shall meet the following requirements:

1. Industrial wastes listed below shall be stored in sealed, red, flammable containers and be labeled with an infectious industrial waste logo; storage at room temperature shall not exceed one day and refrigerated storage at temperatures below 5 degrees Centigrade shall not exceed 7 days:
 - 1) Waste physical examination samples, specimens and body parts, organs or other derivatives of human bodies or animals generated from operating rooms, delivery rooms, examination rooms, pathology departments, anatomy rooms and laboratories;
 - 2) Industrial wastes generated from infectious sickrooms or isolation wards;
 - 3) Waste dialysis equipment, waste blood or blood products;
 - 4) Other flammable wastes that have come in contact with patients' blood, body fluids, drained body fluids or excreta; and

¹⁰ Translators' note: The Chinese version of this Item is unclear at this point. Immediate replacement appears to refer to the need to replace materials that may be subject to rust, destruction or waste exposure with materials that do not present these possibilities.

- 5) Other flammable infectious industrial wastes defined in Item 5, Article 3 of the Identification Standards for Hazardous Industrial Wastes;
2. The following industrial wastes shall be stored in sealed in a yellow, impenetrable container and be labeled with an infectious industrial waste logo:
 - 1) Waste needles, blades, suture needles, glass injection tools, culture plates, test tubes and microscope slides;
 - 2) Other inflammable wastes that have come in contact with patients' blood, body fluids, drained body fluids or excreta; and
 - 3) Other inflammable infectious industrial wastes defined in Item 5 of Article 3 of the Identification Standards for Hazardous Industrial Wastes;

The time and temperature of storage, as well as the logo, for infectious industrial wastes mentioned in Item 2 of Section 1 of this Article, shall be indicated in a conspicuous location on the waste containers.

When the infectious industrial wastes mentioned in Item 2 of Section 1 of this Article are to be incinerated, they may be stored in accordance with the provisions of Item 1 of Section 1 of this Article. Nevertheless, [in such a case,] the [infectious industrial waste] containers shall be constructed of impenetrable materials.

Article 12

The storage facilities for general industrial wastes shall meet the following requirements:

1. [The facilities] shall have equipment, or equivalent measures, to prevent the infusion or infiltration by surface water, rainfall or ground water; and
2. [The facilities] shall have equipment, or equivalent measures, to collect waste liquids, gases or malodors and to prevent it from polluting surface water, ground water, air or soil pollution.

Article 13

In addition to those requirements prescribed in the preceding Article, the storage facilities for infectious industrial wastes shall also meet the following requirements:

1. [The facilities] shall indicate at a conspicuous place an infectious industrial waste logo and provide emergency response [equipment]; the storage facilities shall be solid and be isolated from curing areas, kitchens and restaurants; a clinic, however, may maintain sealed storage facilities in the curing area;
2. [Facility] storage containers of different colors shall be stored separately;
3. [The facilities] shall possess good water discharge and washing equipment;
4. [The facilities] shall possess safety equipment and apparatus to prevent people or animals from trespassing; and
5. [The facilities] shall have equipment, or equivalent measures, to prevent the breeding of mosquitoes, flies or other disease vectors.

Article 14

The storage facilities for hazardous industrial wastes, not including infectious industrial wastes, shall meet the following requirements:

1. [The facilities] shall maintain storage areas comprising solid, lined ground equipped with anti-erosion and water-proof materials;
2. [The facilities] shall have equipment, or equivalent measures, to prevent the infusion or infiltration of surface water, rainfall or ground water;
3. [The facilities] shall have equipment, or equivalent measures, to prevent waste fluids, gases, and malodors, etc., from polluting surface water, groundwater, air or soil;

4. [The facilities] shall indicate in a conspicuous location warning signs consisting of a white background with red characters¹¹ and black frame and provide disaster prevention equipment;
5. [Facility] under-ground containers shall possess [container] status check equipment and provide for leachate prevention and detection; and
6. [The facilities] shall provide monitoring, security, extinguishing, lighting and emergency showering equipment, in accordance with the type of industrial wastes stored.

Chapter 3: Clearance of Industrial Wastes

Article 15

The vehicles, vessels and other transporting tools for clearing industrial wastes shall prevent the wastes from becoming airborne, scattered, exposed, malodorous, explosive or otherwise pollutive so as to endanger human health during transportation.

Should any exposure of wastes occur during transportation, persons [entrusted with] clearing the wastes shall immediately respond with emergency measures and report the exposure to the relevant responsible agencies; the enterprises generating the wastes and the waste clearance organization shall be responsible for all clearance work and damages resulting therefrom.

Article 16

Incompatible industrial wastes shall not be mixed during clearance.

Article 17

Enterprises clearing self-generated wastes, or contracting out [to other

¹¹ Translators' note: The nature of these red characters is not indicated in the Chinese version.

organizations] for clearance to external locations, shall record the date, type and quantity of the wastes, the licenses of transporting vehicles, [names of] the waste clearance organization, cleaners, the waste disposal organization and retain evidence of waste disposal.

The documents mentioned in the preceding Section shall be maintained for 3 years for inspection checks.

Article 18

The vehicles for transporting hazardous industrial wastes shall meet the following requirements:

1. [The vehicles] shall carry indication of the name and telephone number of the [owner's] organization and a hazardous industrial waste logo indicating the characteristics thereof; and
2. [The vehicles] shall carry instructions for emergency response and [related] necessary equipment.

Article 19

Enterprises clearing self-generated hazardous industrial wastes, or contracting out [to other organizations] for clearance to external locations for storage or treatment, not including those enterprises designated [by the Responsible Agency at the central government level] in accordance with Article 3 of these Criteria that are obligated to report clearance of industrial waste via the Internet, shall submit a six-part delivery note.

[The waste clearance organization], upon receipt of the delivery note mentioned in the preceding Section, shall submit the first part for reference to the Responsible Agency of the local government where the [generating] enterprise is located and return the sixth part to the [generating] enterprise for reference and transfer the second through fifth part of the delivery note within 10 days to the

disposal organization.¹² Upon receipt of the delivery note, the disposal organization shall return the fifth part of the delivery note to the clearance organization and, within 30 days of receipt of the waste, return the third part of the delivery note to the [generating] enterprise. [Thereafter, the disposal organization shall] submit the fourth part of the delivery note to the Responsible Agency at the local government level where the [generating] enterprise is located and retain the second part of the delivery note for reference. Should a hazardous industrial waste disposal organization adopt solidification, stabilization, or other treatment methods designated by the Responsible Agency at the central government level by public announcement, a certificate of wastes for final disposal shall also be submitted.

[Enterprises] temporarily storing hazardous industrial wastes in anticipation of exportation of such wastes for disposal are exempted from the requirement to submit the second and third parts of the delivery note; clearance organizations [in waste export situations] shall submit the fourth part of the delivery note upon the arrival of hazardous industrial wastes at the storage site.

Should the clearance organizations or disposal organizations mentioned in the preceding Section contract out [to other organizations] for clearance or disposal of hazardous industrial wastes, the provisions of the preceding Section shall apply. Disposal organizations discovering that the constituents, characteristics and quantities of the entrusted hazardous industrial wastes are different from those described in the delivery note shall, within 10 days of this discovery, report the situation to the Responsible Agency at the local government level for reference and request the clearance organizations or generating enterprises to correct the mistakes.

Should the generating enterprises fail to receive the third part of the delivery note within 45 days of the waste clearance, these enterprises shall voluntarily trace the movements of the entrusted hazardous industrial wastes and report [these movements] to the Responsible Agency at the local government level for reference. This Section shall also apply, where appropriate, to the clearance and disposal organizations mentioned in Section 2 of this Article.

¹² Translators' note: The reference to the 10-day time limit in the Chinese version of this Section does not indicate the act that commences the time limit counting period.

Enterprises clearing or disposing of self-generated hazardous industrial wastes shall fill out a six-part delivery note, have this note signed by the individuals conducting clearance or disposal and then follow the procedures prescribed in Section 1 of this Article.

The delivery note mentioned in Section 1 and the preceding Section shall be retained for 3 years for inspection checks.¹³

Article 20

Except for those enterprises designated and publicly announced by the Responsible Agency for reporting via the Internet in accordance with Article 3, an enterprise generating general industrial wastes up to the amount publicly announced by the Responsible Agency at the central government level while, either by itself or contracting out for, clearing the wastes for storage or disposal outside the its plant shall fill, submit and safe-keep the delivery note in accordance with Sections 2, 4, 5, 6 and 7 of the preceding Article.

Article 21

Clearance methods for construction wastes shall be promulgated by the Responsible Agency at the municipal or county (city) government level.

Article 22

Clearance methods for infectious industrial wastes shall meet the following requirements, in addition to the provisions concerning transportation prescribed in Articles 15 to 18:

1. Wastes stored in different colored containers may not be mixed during clearance; this provision does not apply to those wastes stored in yellow containers to be disposed by incineration;¹⁴

¹³ Translators' note: The text in the Chinese version does not indicate who or what organization must retain the referenced delivery note.

2. No compacting or willful exposing of the wastes is allowed during transportation;
[I assume this is an example of another drafting problem? Tad: I'd say so!]
3. The inflammable, infectious industrial wastes shall be treated by sterilization prior to clearance and delivery for final disposal; and
4. [The wastes shall be] refrigerated during transportation.

Chapter 4: Intermediate Treatment of Industrial Wastes

Article 23

The following industrial wastes shall undergo intermediate treatment in accordance with the methods described below, unless designated for re-use or other [purposes] by the Responsible Agency at the central government level:

1. Sludge: inorganic sludge shall be dehydrated or dried to a water content of less than 85%; organic sludge shall be treated by way of dehydration or pyrolysis;
2. Toxic heavy metals listed in the Identification Standards for Toxic Industrial Wastes shall be treated by way of solidification, stabilization, electronic decomposition, membrane separation technique, thermal evaporation, or melting; those [listed toxic heavy metals] containing cyanide shall be treated by way of oxidation decomposition, incineration, or wet oxidation; dry deposition [containing] mercury or its compounds with a density concentration of more than 260 micrograms shall be treated by way of thermo-treatment to recollect the mercury;
3. Waste lubricants shall be treated by way of separation, distillation, or direct incineration;

¹⁴ Translators' note: The provision regarding yellow waste containers is unclear in the original Chinese version.

4. Waste acids or alkalines shall be treated by way of evaporation, distillation, or neutralization; those containing cyanide shall be pretreated by way of oxidation, and then be treated by way of neutralization or be decomposed by way of wet oxidation;
5. Waste plastics or rubber shall be destroyed and cut into pieces of less than 15 centimeters, or shall be directly treated by way of distillation, recycling by category, melting, or thermo-treatment;
6. Waste solvents shall be treated by way of extraction, water and oil-separation or evaporation, or direct thermal-treatment;
7. Wastes containing pesticides, polychlorinated biphenyls (PCBs) or dioxin: Pyrolysis or direct thermal-treatment;
8. Wastes containing asbestos shall, after moisturization, be contained in double-layer plastic bag with a thickness of 0.0075 centimeters and be disposed in a solid container and, after bagging, subjected to solidification [using] devices that will prevent [friable asbestos] from escaping;
9. Wastes containing chlorofluorocarbons (CFCs) shall be treated by way of recycling;
10. Steel industry bag filter dust shall be recollected;
11. Waste leather strips and grindings from leather industry shall be recycled by steaming the leather grindings; and
12. Other wastes/methods publicly announced by the Responsible Agency at the central government level.

Article 24

Unless otherwise regulated by the Responsible Agency at the central government level, infectious industrial wastes shall undergo intermediate treatment in accordance with the following methods:

1. Infectious wastes stored in red containers shall be treated by incineration;
2. Infectious wastes stored in yellow containers shall be treated by either sterilization or incineration; and
3. Waste needles and syringes shall be treated by incineration or crushing after sterilization.

Article 25

[Enterprises intending to] treat hazardous industrial wastes by thermo-treatment shall submit a Trial Combustion Plan to the Responsible Agency at the municipal or county (city) government level for approval. Enterprises may then entrust an inspection and testing organization approved by the Responsible Agency at the central government level, or an academic or consulting institute approved by the Responsible Agency at the central government level, with responsibility for conducting the trial combustion in accordance with the Trial Combustion Plan under the inspection of Responsible Agencies at the municipal or county (city) governments. Upon completion of the trial combustion, the enterprises shall submit a Trial Combustion Report to the Responsible Agency at the municipal or county (city) government level for approval prior to thermo-treatment.

The format of the Trial Combustion Plan and the Trial Combustion Report mentioned in the preceding Section shall be publicly announced by the Responsible Agency at the central government level.

A trial operation prior to the trial combustion shall be approved in advance by the Responsible Agency at the municipal or county (city) government level. A trial operation may last no more than three months unless approved by the Responsible Agency at the municipal or county (city) government level for extraordinary situations.

Article 26

Unless otherwise regulated by the Responsible Agency at the central government level, industrial waste intermediate treatment facilities shall meet the following requirements:

1. [The facilities] shall possess solid infrastructure;
2. The surface of the facilities which come into contact with the wastes shall be constructed of erosion- and water-proof materials;
3. [The facilities] shall possess equipment, or equivalent measures, for preventing infusion or infiltration of surface water, rainfall or ground water;
4. Actions shall be taken [at the facilities] to prevent airborne or other flow of wastes, malodors and other [waste-related] pollution; and
5. [The facilities] shall possess pollution control equipment and provide for anti-erosion measures.

Article 27

Incineration facilities for hazardous industrial wastes shall meet the following requirements in addition to those prescribed in the preceding Article:

1. The pipe center temperature in the combustion room shall be maintained at no less than 1000 degrees Centigrade; [the detention period] for combusted gas shall be no less than 1 second for infectious industrial wastes, and no less than 2 seconds for other hazardous industrial wastes;
2. The combustion efficiency for flammable infectious industrial wastes shall be no less than 99.9%;
3. For hazardous industrial wastes other than flammable infectious industrial wastes, the total deterioration reduction rate (DRE) for organic chlorides shall be no less

than 99.99%; the total deterioration reduction rate for polychlorinated biphenyls (PCBs), 2,3,7,8 TCDD (tetrachlorodioxin) and 2,3,7,8 TCDF (tetrachlorodibenzofuran) shall be no less than 99.999%; and [the total deterioration reduction rate] for other hazardous industrial wastes shall be no less than 99.99%;

4. [The facilities] shall possess automatic and emergency equipment;¹⁵ and
5. Other requirements publicly announced by the Responsible Agency at the central government level.

Fluidized bed incinerators are not subject to the restrictions prescribed in Items 1 and 2 of the preceding Section.

Article 28

Where [an enterprise] conducts treatment of industrial wastes by way of thermo-treatment not involving incineration, the treatment facilities shall be in compliance with the provisions of Article 26 and Items 3 to 5, Section 1 of Article 27.

Article 29

The thermo-treatment facilities for general industrial wastes shall be in compliance with the provisions of Article 26 and Items 4 and 5, Section 1 of Article 27.

Article 30

Solidification and stabilization treatment facilities shall, in addition to meeting the requirements prescribed in Article 26 of these Criteria, possess equipment which can evenly mix wastes with solidifying or chemical agents.

¹⁵ Translators' note: The original Chinese version does not indicate the nature of the required "automatic" equipment.

Chapter 5: Re-Use of Industrial Wastes

Article 31

The types of and management methods for re-use of general industrial wastes shall be publicly announced by the Responsible Agency at the central government level after consultation with the Responsible Agency for the enterprise associated with the industry at issue.

Should an enterprise intend to re-use the industrial wastes which [were not the subject of previous] public announcement [by the Responsible Agency] for re-use, the enterprise may submit a Re-Use Plan to the Responsible Agency at the local government level for transmittal to the Responsible Agency at the central government level for approval.

Article 32

General industrial waste re-use shall meet the following requirements:

1. The re-use [of general industrial waste] shall comply with relevant regulations promulgated by the Responsible Agency and the Responsible Agency for the enterprise associated with the industry at issue; where the wastes are [to be] exported abroad or to the Mainland China, the re-use shall [also] meet the regulations [of the receiving country or region]; and/or
2. Where the general industrial wastes are re-used as raw materials or fuels, the re-users shall be legally registered enterprises; where the general industrial wastes are re-used as fuels, the combustion equipment and emissions [levels] shall be approved by the Responsible Agency at the local government level.

Article 33

The storage and clearance of industrial wastes prior to re-use shall be conducted in compliance with the relevant provisions of these Criteria.

Article 34

Unless otherwise prescribed, the enterprises which provide general industrial wastes for re-use shall, at the end of June and December of each year, report for reference the name, type, quantity of the wastes, [specific] uses for the re-used wastes and name(s) of the re-users to the Responsible Agency at the local government level where the enterprise is located.

Chapter 6: Final Disposal of Industrial Wastes

Article 35

Unless approved by the Responsible Agency at the central government level, the following industrial wastes may not be finally disposed in a landfill, or diluted with and spread through soil:

1. [Industrial wastes] lacking intermediate treatment in situations where intermediate treatment is required for the wastes;
2. Liquid industrial wastes;
3. [Industrial wastes] lacking pre-treatment or in violation of soil treatment requirements prescribed in accordance with the Water Pollution Control Act; and
4. Other [industrial wastes] publicly announced by the Responsible Agency at the central government level.

Incompatible industrial wastes may not be land-filled together.

Article 36

The industrial wastes that are preferable for re-use to sustain resources, as determined by the Responsible Agency at the central government level and the

Responsible Agency for the enterprise associated with the industry at issue, may not be disposed by any method other than re-use.

Article 37

Landfill sites for hazardous industrial wastes shall be in compliance with the regulations of the Responsible Agency at the central government level.

Article 38

Glass residues, porcelain residues, construction wastes, natural stone fragments, or other general industrial wastes publicly announced by the Responsible Agency at the central government level may be disposed of in a stable landfill. The [disposal] facilities [for such wastes] shall meet the following requirements:

1. A sign shall be installed at the entrance of the landfill site indicating the type of wastes [disposed] and the duration of utilization and the manager [of the site];
2. Walls or barriers shall be erected around the landfill site;
3. Preventive measures shall be taken where the site might be subject to loss of lateral or subjacent support;
4. Water-and-soil conservation measures shall be taken in accordance with the character of the wastes disposed, and the topography and geology of the landfill site;
5. Preventive measures against airborne dispersal or spreading of the wastes shall be taken; and
6. Other measures publicly announced by the Responsible Agency at the central government level.

Article 39

When terminating use of a stable landfill, [the landfill site] shall be covered by a layer of sandy or muddy clay to a depth of no less than 50 centimeters.

Article 40

General industrial wastes which require no intermediate treatment may be disposed by way of sanitary landfilling. The [landfilling] facilities shall meet the following requirements in addition to the provisions of Items 2 to 6, Section 1 of Article 38:

1. A sign shall be erected at the entrance [to the landfill site] indicating the manager [of the site], type of the wastes [disposed], and the geographical location, area, depth and final altitude of the landfill;
2. Where the landfilled wastes are organic, facilities for collecting waste gases shall be installed;
3. The base of the bottom layer of the landfill site shall be constructed of a layer of sandy or muddy clay of a depth of no less than 60 centimeters with a water penetration parameter of less than 10^{-7} centimeters/second, compatible with the wastes or their [leachate permeability], or other equivalent materials; or be made of a layer of artificial water-proof material of a water penetration parameter of less than 10^{-10} centimeters/second at a unit depth of more than 0.2 centimeters compatible with the wastes or their [leachate permeability];
4. [The landfill] shall be equipped with facilities of collecting and treating leachate;
5. More than one [groundwater] monitoring well shall be installed around the landfill site, upstream and downstream, according to the direction of the groundwater flow;
6. Extinguishers or other effective fire-prevention equipment shall be available unless the landfilled wastes are inflammable; and

7. Other requirements publicly announced by the Responsible Agency at the central government level.

The preceding Section shall apply to general industrial wastes that have undergone intermediate treatment and hazardous industrial wastes designated by the Responsible Agency at the municipal or county (city) government level as general industrial wastes following intermediate treatment.

Article 41

At the completion of daily operations, a sanitary landfill site shall be covered by tightly compressed soil of a depth of no less than 15 centimeters; when terminating use of a sanitary landfill, the landfill site shall be covered by a layer of sandy or muddy clay of a depth of no less than 50 centimeters.

Article 42

Should a stable sanitary landfill be covered more effectively by means other than daily coverage, [those responsible for the site] may apply for an approval (allowance) form [to engage in the more effective coverage] at the Responsible Agency at the municipal or county (city) government level.

Article 43

Hazardous industrial wastes shall be disposed in a sealed landfill. Such landfilling facilities shall meet the following requirements, in addition to those prescribed in Items 2 to 6 of Section 1 of Article 38 and Items 1, 4 and 5 of Section 1 of Article 40:

1. [The landfill] shall be equipped with pressure- and vibration-resistant facilities;
2. [The landfill] shall be equipped with a paved entry road of more than 5 meters in width;
3. [The landfill] shall be equipped with facilities for preventing the infusion or infiltration of surface water, rainfall or ground water;

4. The surrounding facilities and base of the landfill site shall be made of concrete with a [uni-axial pressure resistance intensity] of more than 245 kilograms per square centimeter and a depth of more than 15 centimeters, or of other materials with equivalent sealant functions;
5. Each time the landfill site expands 50 square meters or the landfill volume reaches 250 cubic meters, an interval barrier shall be installed; the interval barrier and the completed sides of the landfill shall be made of concrete with a [uni-axial pressure resistance intensity] of more than 245 kg/square centimeters and a depth of more than 10 centimeters, or of other materials with equivalent sealant functions;
6. Measures shall be taken to prevent erosion and leaching in accordance with the types and characters of the landfilled industrial wastes and the landfill site soil characteristics;
7. The base of the bottom layer of the landfill shall be made of a layer of sandy or muddy clay to a depth of no less than 60 centimeters as compatible with the wastes or their [leachate permeability], and with a water penetration parameter of less than 10^{-7} centimeter/second; [the landfill] also shall be lined with a layer of artificial water-proof material of a depth of no less than 0.2 centimeters as compatible with the wastes or their [leachate permeability], and with a water penetration parameter of less than 10^{-10} centimeter/second;
8. [The landfill] shall be equipped with facilities for collecting and treating leachate; and
9. Other requirements publicly announced by the Responsible Agency at the central government level.

A sealed landfill site which is equipped as follows is not subject to the restrictions prescribed in Items 4, 5 and 7 of the preceding Section:

1. The bottom layer and the surrounding facilities of the landfill site are covered by a layer of clay to a depth of no less than 90 centimeters with a water penetration

parameter of less than 10^{-7} centimeter/second that is then covered by double layer of artificial water-proof material with a unit depth of more than 0.076 centimeters;

2. The intermediate layer of the landfill site is covered by a layer of sand or crushed stone to a depth of more than 30 centimeters with a water penetration parameter of more than 10^{-2} centimeter/second, or by other equivalent materials, includes leachate monitoring and collection facilities and is covered by a layer of clay to a depth of more than 30 centimeters with a water penetration parameter of less than 10^{-7} centimeter/second; and
3. The top layer of the landfill site is covered by a layer of sand or crushed stone to a depth of more than 30 centimeters with a water penetration parameter of more than 10^{-2} centimeter/second, or by other equivalent materials, includes leachate monitoring and collection facilities and is covered by a layer of sandy or muddy clay with a depth of more than 30 centimeters.

Article 44

When terminating use of a sealed landfill, the landfill site shall be first covered by a layer of sandy or muddy clay to a depth of no less than 15 centimeters, then be covered by a layer of artificial water-proof material to a depth of more than 0.2 centimeters with a water penetration parameter of less than 10 centimeter/second, and finally be covered by a tightly compressed layer of sandy or muddy clay to a depth of no less than 60 centimeters.

The landfill site mentioned in the preceding Section may not be utilized as a construction site or workplace.

Article 45

Marine dumping of general industrial wastes may not be conducted until an enterprise submits the following information to the Responsible Agency at the municipal or county (city) government level and acquires an approval from the Responsible Agency at the central government level:

1. [Corporate] license of the enterprise or the publicly or privately owned organization;
2. Type and quantity of the wastes;
3. Composition report and sample of the wastes;
4. Location, date and time of dumping;
5. Methods of dumping;
6. Reason for dumping; and
7. Marine ecology impact assessment report and monitoring plan for the dumping.

The [duration of] the approval for marine disposal mentioned in the preceding Section shall not be valid for more than one year [from the date of approval]. The same enterprise may apply for an extension [of the period of validity] two (2) months prior to the expiration date by submitting all documents prescribed in the preceding Section as well as a monitoring and analysis report [of the marine conditions] for the period of marine dumping to the Responsible Agency at the municipal or county (city) government level for approval and for transmittal to the Responsible Agency at the central government level for reference. Each extension period shall not be valid for more than five (5) years; *[the same enterprise] shall re-apply for an approval when such an extension expires.*

Article 46

Marine dumping of general industrial wastes shall meet the following requirements:

1. The disposing ships shall be equipped with a system to control the dumping rate and maintain consecutively [dated] records for inspection by the Responsible Agency;
2. The dumping site may not be within 3 miles of a government-designated marine

product, animal and plant conservation zone or artificial fishery reef zone; and

3. Other requirements approved in accordance with the preceding Article.

Article 47

The following industrial wastes may not be disposed by way of marine dumping:

1. Hazardous industrial wastes and hazardous industrial waste post-solidification treatment solids;
2. Ash not subject to ready precipitation, millings, plastic chips, rubber chips, paper chips, wood chips and fiber chips, or insoluble inorganic sludge;
3. Waste lubricants;
4. Sludge containing 100 micrograms/liter of phenols or oils, waste acids or waste alkaline; and
5. Other materials publicly announced by the Responsible Agency at the central government level.

Article 48

Solidified articles [of industrial wastes] that underwent solidification treatment, when being disposed in a sanitary landfill, shall have a [uni-axial pressure resistance intensity] of more than 10 kg/square centimeter.

Where the hazardous industrial wastes are disposed by way of solidification, stabilization or other treatment methods designated by public announcement of the Responsible Agency at the central government level, the [stripping] test results [for these wastes] shall fall below those prescribed in Appendix 3 of the [Stripping] Test Standards [contained in] the Identification Standards for Hazardous Industrial Wastes. Additionally, such wastes shall be disposed in a sealed or sanitary landfill; where these wastes are disposed in a sanitary landfill, they shall be landfilled and managed in isolated zones.

Should [the wastes] mentioned in the preceding two Sections be re-used, their re-use shall be approved in accordance with relevant re-use regulations.

Chapter 7: Supplementary Provisions

Article 49

Should an enterprise or publicly or privately owned organization be able detoxify and reduce the quantity and volume of their generated and managed industrial wastes in ways more effective than those prescribed in these Criteria, the enterprise or publicly or privately owned organization may submit the following information [or follow the following procedures for submission] to the Responsible Agency at the municipal or county (city) government level for transmittal by the Responsible Agency at the municipal or county (city) government to the Responsible Agency at the central government level for approval, to [apply for] exemption from application of the limitations prescribed in Articles 23 and 24 of these Criteria:

1. Analysis of the character, composition and constituents of the wastes;
2. Methods, principles and procedures of disposal;
3. Explanation of major equipment and equipment functions;
4. Pollution control plan;
5. Evidence of business operations: where the enterprise is located abroad, the evidence shall be translated into Chinese and verified by the organization authorized by the [Republic of China (R.O.C.)] Ministry of Foreign Affairs or the [R.O.C.] government overseas offices, and then confirmed by the Ministry of Foreign Affairs; where the enterprise is located in Mainland China, the evidence shall be verified by Straits Exchange Foundation; where the enterprise is not actually operated in the Taiwan area, a product warranty may be submitted; and

6. For the information that shall be delivered in accordance with this Act, the provisions of the Civil Procedures Act shall apply where appropriate.

Article 50

Enterprises that fail to clear and treat wastes in accordance with the provisions of Section 1 of Article 13 shall be deemed in violation of these Criteria.

Enterprises that intend to entrust their industrial wastes to a licensed publicly or privately owned organization or an implementing agency for clearance or disposal, shall first execute a written contract or an [equivalent] document approved by the Responsible Agency at the central government level indicating clearly the type and amount of the wastes as well as the time-period entrusted for clearance and disposal.

Article 51

Enterprises established prior to the revisions to these Criteria shall, within one year from the date of the promulgation of these Criteria, complete necessary improvements [to waste disposal operations]. Those failing to complete the improvements within the [stipulated] time period may, two months prior to the lapsing of such time period, apply at the Responsible Agency at the local government level for an extension.

The enterprises may apply for only one [time period] extension for necessary improvements. The time period extension may only be up to 2 years unless otherwise approved by the Responsible Agency for extraordinary circumstances.

The enterprises may be exempt from punishment during the time period for necessary improvements prescribed in the preceding two Sections.

Article 52

The labels mentioned in these Criteria shall be publicly announced by the Responsible Agency at the central government level.

Article 53

The test methods mentioned in these Criteria shall be publicly announced by the Responsible Agency at the central government level.

Where [pertinent] test methods are promulgated by other relevant agencies at the central government level, the Responsible Agency for these Criteria shall follow the test methods publicly announced by these relevant agencies.

Article 54

These Criteria shall come into force upon the date of promulgation.