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PEOPLE'S REPUBLIC OF CHINA**

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**Technical standard for operation, maintenance and safety
management of urban utility tunnel**

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1 General

1.0.1 This standard is formulated in order to standardize the operation and maintenance of urban underground comprehensive utility corridors, unify technical standards, and ensure the integrity, safe and stable operation of comprehensive utility corridors.

1.0.2 This standard is applicable to the operation, maintenance and safety management of the main body of the urban underground comprehensive utility corridor, ancillary facilities and pipelines entering the corridor.

1.0.3 The operation management unit and the corridor pipeline unit should have a clear division of labor, a clear interface, mutual cooperation, and smooth communication.

1.0.4 The utility tunnel must implement 24h operation maintenance and safety management.

1.0.5 The operation and management unit should have relevant professional ability and experience, and the operation, maintenance operations and safety management personnel should meet the relevant job requirements.

1.0.6 Qualified equipment, tools and materials should be selected for the operation, maintenance and safety management of the integrated utility tunnel, and the instruments, meters and measuring tools used should be regularly verified or calibrated within the validity period.

1.0.7 Records should be made during the operation, maintenance and safety management of the utility tunnel, and the problems found should be analyzed and dealt with in time.

1.0.8 The operation, maintenance and safety management of urban underground comprehensive utility corridors shall not only comply with this standard, but also comply

with the current relevant national standards.

2.0.1 utility tunnel

Structures and ancillary facilities built underground to accommodate two or more engineering pipelines.

2.0.2 utility tunnel pipeline

Various urban engineering pipelines such as water supply, rainwater, sewage, reclaimed water, natural gas, heat, electricity, and communications laid in the comprehensive pipe gallery.

2.0.3 Ownership section of utility tunnel pipeline

The operation or ownership unit of the corridor pipeline.

2.0.4 Operation and maintenance management section

The unit responsible for the operation, maintenance and safety management of the main body of the urban underground comprehensive utility corridor and its auxiliary facilities.

2.0.5 The main body of utility tunnel

The structural main body of the comprehensive pipe gallery and structures such as personnel entrances and exits, hoisting openings, escape openings, ventilation openings, pipeline branch openings, supports and hangers, waterproof and drainage facilities, maintenance roads and air ducts.

2.0.6 Accessorial works

In order to ensure the stable operation of the main body of the comprehensive utility corridor, the internal environment, and the pipelines entering the corridor and the safety of personnel, supporting facilities such as fire protection, ventilation, power supply, lighting, monitoring and alarm, water supply and drainage, and identification are constructed.

2.0.7 normal monitoring

Use means and methods such as instrument measurement, on-site inspection or remote video monitoring to collect information reflecting the daily operation status, changing characteristics and development trends of the comprehensive utility corridor, and conduct analysis and feedback activities.

2.0.8 Special monitoring special monitoring

Targeted monitoring activities for diseases and environmental factors that may affect the

operation safety of comprehensive utility corridors refer to activities that continuously monitor certain indicators during a certain period of time.

3.1.1 The comprehensive utility gallery shall be accepted for acceptance before it is put into operation.

3.1.2 The operation management of the comprehensive utility gallery shall include on-duty, patrol inspection, daily monitoring, access management, operation management, etc.

3.1.3 The operation management of the comprehensive utility gallery should formulate a sound management system, working standards and operating procedures, and revise them regularly.

3.1.4 The operation and management of the comprehensive utility gallery shall be equipped with on-duty personnel, and the content of on-duty work shall include monitoring, control, dispatching and liaison.

3.1.5 The patrol inspection shall comply with the following regulations.

1 The inspection objects should include the main body of the pipe gallery, auxiliary facilities, pipelines entering the gallery, and the internal and external environment of the comprehensive pipe gallery;

2 Inspection personnel should carry professional inspection equipment and take protective measures;

3 The patrol inspection scope should cover the safety protection area and safety control area;

4 The inspection method should be manual, information technology or a combination of the two;

5 In case of emergency, emergency measures shall be taken in accordance with relevant national regulations.

3.1.6 The daily monitoring objects should include the main body of the pipe gallery, auxiliary facilities, environment inside the gallery and pipelines entering the gallery.

3.1.7 The personnel, equipment, tools, materials and carrying items entering and leaving the utility corridor shall be controlled and registered.

3.1.8 Inspection, testing, maintenance, construction and other operations shall comply with the following regulations.

1 Relevant procedures should be completed for fire, electricity, temporary dismantling of facilities or storage of tools and materials in the utility corridor;

2. Work within the allowed time and scope;

- 3 The branch opening of the pipeline opened during the operation should be blocked in time;
- 4 The job site should be cleaned up in time;
- 5 After the operation is completed, the acceptance should be carried out in time;
- 6 It is strictly forbidden to bring flammable, explosive and dangerous chemicals into the corridor without permission.

3.2 Maintenance Management

3.2.1 The maintenance and management of the comprehensive utility gallery shall include facility maintenance, testing, major and medium repairs and renovations, spare parts management, etc.

3.2.2 A maintenance plan shall be prepared for facility maintenance, and the whole-process tracking management shall be carried out on the initiation time, initiation reason, operation process, quality acceptance, etc. of the maintenance work.

3.2.3 Facility maintenance shall include the following main contents.

- 1 Periodic testing or testing of the main performance of the facility;
- 2 Periodic lubrication, anti-corrosion, fastening, dredging and replacement of consumables and other maintenance work;
- 3 Maintenance of facility defects, repair or replacement of substandard equipment and its components;
- 4 Cleaning, clearing, dust removal and other cleaning work of internal and external environment and facilities and equipment.

3.2.4 The main body of the pipe gallery, auxiliary facilities and pipelines entering the gallery shall be tested regularly according to the provisions of this standard, and the test results shall be processed in a timely manner.

3.2.5 When one of the following situations occurs, the inspection shall be carried out in time.

- 1 Reach the design service life of the facility;
- 2 After several small-scale repairs, the same disease or failure occurs repeatedly, and the scope or degree of influence gradually increases;
- 3 Due to natural disasters, environmental impacts, pipeline accidents, equipment accidents, etc., causing relatively large damage to the facilities;