Translated English of Chinese Standard: GB/T50319-2013

<u>www.ChineseStandard.net</u> → Buy True-PDF → Auto-delivery.

<u>Sales@ChineseStandard.net</u>

UDC GE

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

P GB/T 50319-2013

Code of construction project management

建设工程监理规范

Issued on: May 13, 2013 Implemented on: March 01, 2014

Issued by: Ministry of Housing and Urban-Rural Development of PRC;

General Administration of Quality Project management,
Inspection and Quarantine of PRC.

Table of Contents

Foreword	6
1 General provisions	9
2 Terms	11
3 Project management department and facilities	16
3.1 General requirements	16
3.2 Project management staff obligations	17
3.3 Project management facilities	19
4 Project management planning and detailed rules	20
4.1 General requirement	20
4.2 Project management planning	20
4.3 Detailed rules for project management	21
5 Controlling for construction quality, cost, schedule and site	safety
management	23
5.1 General requirement	23
5.2 Controlling for construction quality	25
5.3 Controlling for construction cost	29
5.4 Controlling for construction schedule	30
5.5 Site safety management	31
6 Settlement of construction changes, claims and construction	contract
disputes	34
6.1 General requirement	34
6.2 Construction stoppages and resumptions	34
6.3 Construction changes	35
6.4 Cost claims	36
6.5 Construction duration extension and period delay	38
6.6 Construction contract disputes	39
6.7 Construction contract termination	39
7 Project document & data management	41

7.1 General requirement	41
7.2 Project document & data contents	41
7.3 Project document & data filling	43
8 Procurement and manufacturing supervision for equipment	44
8.1 General requirements	44
8.2 Equipment procurement	44
8.3 Equipment manufacturing supervision	45
9 Related services	48
9.1 General requirements	48
9.2 Survey & design services	48
9.3 Maintenance services	50
Appendix A The table types used by project management enterprise	52
Appendix B The table types used by contractor's report	60
Appendix C The table types in common use	74
Explanation of wording in this code	77

Code of construction project management

1 General provisions

- **1.0.1** To standardize construction project management and related service activities, improve construction project management and related service levels, this Code is hereby developed.
- **1.0.2** This Code is applicable to the project management and related service activities of newly built, expanded, re-built construction project.
- **1.0.3** Before the implementation of construction project management, the construction organization shall entrust a project management department which has corresponding qualifications, conclude a construction project management contract with the project management department in written form. The contract shall include the scope, content, service period, remuneration of the project management work, as well as the relevant clauses on the obligations and liability for breach of contract of both parties.

When the construction project management contract is concluded, if the construction organization entrusts the relevant services in such stages as survey, design, warranty as a whole, it shall specify the relevant scope of the service scope, content, service period, remuneration of the relevant services in the contract.

- **1.0.4** Before the commencement of construction, the building organization shall notify the construction organization in writing of the name of the project management department, the scope, content, authority of the project management, the name of the chief supervisory engineer.
- **1.0.5** Within the scope of construction project management work, the contact activities involving construction contracts between the building organization and the construction organization shall be carried out via the project management department.
- **1.0.6** The implementation of construction project management shall be based on the following main basis:
 - 1. Laws, regulations and engineering construction standards;
 - 2. Survey- design documents of construction project;
 - 3. Project management contract and other contract documents of

2 Terms

2.0.1

Construction project management enterprise

The service institute which is established in accordance with the law and obtains the qualification certificate of engineering management enterprise issued by the competent construction department, is engaged in the construction project management and related service activities.

2.0.2

Construction project management

The service activities of the project management department, as entrusted by the building organization and according to the laws and regulations, engineering construction standards, survey-design documents and contracts, in the construction phase, such as controlling the quality, cost, progress of the construction project; managing the contract and information; coordinating the relationship with the relevant parties of the project construction; fulfilling the legal obligations of the Safety production management law on construction project.

2.0.3

Related services

The service activities as provided in phases such as the survey, design, warranty of the construction project by the project management department as entrusted by the building organization according to the requirements of the construction project management contract.

2.0.4

Project management department

The organization as assigned by the project management department for the project to be responsible for the construction project management contract.

2.0.5

Registered project management engineer

The personnel who obtained the "Registration practice certificate of registered project management engineer of People's Republic of China" as issued by the construction authority under the State Council and the practice

The guiding documents of the project management department to fully carry out the construction project management work.

2.0.11

Detailed rules for project management

An operational document for the construction project management work for a particular specialty or aspect.

2.0.12

Engineering measuring

According to the engineering design documents and the construction contract, the verification of the project management department on the work quantity of the qualified project as declared by the construction organization.

2.0.13

Key works supervising

The project management activities of the project management department on the construction quality of key parts of the project or key processes.

2.0.14

Patrol inspecting

Regular or irregular inspection activities as carried out by the project management department on the construction site.

2.0.15

Parallel testing

At the same time as the self-inspection of the construction organization, the testing activities as carry out by the project management department in accordance with relevant regulations and construction project management contracts on the same inspection project.

2.0.16

Sampling witness

The project management work as carried out by the project management department on the construction organization in terms of the site sampling, sample sealing, delivery for inspection of the test blocks, test pieces, engineering materials as related to structural safety.

3 Project management department and facilities

3.1 General requirements

- **3.1.1** When the project management department implements project management, it shall arrange the project management department to station at the construction site. The organization form and scale of the project management department may be determined according to the service content, service period, engineering characteristics, scale, technical complexity, environment as specified in the construction project management contract.
- **3.1.2** The supervisory personnel of the project management department shall be composed of the chief project management engineer, specialty project management engineer, supervisor; its professional support and quantity shall meet the needs of construction project management work; if necessary, it may arrange the representative of the chief project management engineer.
- **3.1.3** After the construction project management contract is signed, the project management department shall promptly notify the construction organization of the organization form and personnel composition of the project management department as well as the appointment of the chief project management engineer.

The appointment letter of the chief project management engineer shall be filled in accordance with the requirements of Table A.0.1 of this Code.

- **3.1.4** When the project management department exchanges the chief project management engineer, it shall obtain the written consent from the construction organization; when replacing the specialty project management engineer, the chief project management engineer shall notify the building organization in writing.
- **3.1.5** A registered project management engineer may serve as the chief project management engineer of a construction project management contract. When it is necessary to serve as the chief project management engineer of a number of construction project management contracts at the same time, it shall obtain the written consent from the building organization. However, the maximum number shall not exceed 3.
- **3.1.6** When the project management work at construction site is finished completely or the construction project management contract is terminated, the project management department may withdraw from the construction site.

engineering quality safety incidents.

- **15**. Organize the preparation of the monthly project management report, project management work summary; organize the sorting of project management documents.
- **3.2.2** The chief project management engineer shall not delegate the following work to the representative of the chief project management engineer:
 - **1**. Organize the preparation of the project management plan; approve the detailed implementation rules for project management.
 - **2**. According to the progress of the project and the project management work, deploy the supervisors.
 - **3**. Organize the review of the construction program and (special) construction plan.
 - **4**. Sign-off a project commencement order, suspension order, resumption order.
 - **5**. Sign-off the project payment certificate; organize the audit of completion settlement.
 - **6**. Reconcile the contract dispute between the building organization and the construction organization; handle the project claim.
 - **7**. Review the completion application of the construction organization; organize the pre-acceptance of the project completion; organize the preparation of the project quality assessment report; participate in the project completion acceptance.
 - **8**. Participate in or cooperate with the investigation and handling of engineering quality safety accidents.
- **3.2.3** Specialty project management engineers shall perform the following duties:
 - **1**. Participate in the preparation of the project management plan; be responsible for the preparation of the detailed rules for project management.
 - **2**. Review the application documents for review involving the specialty as submitted by the construction organization; report to the chief project management engineer.
 - **3**. Participate in the review of subcontractor's qualifications.

3.3.2 The project management department shall, according to the construction project management contract, provide the testing equipment and tools to meet the requirements for project management work.

4 Project management planning and detailed rules

4.1 General requirement

- **4.1.1** The project management planning shall, based on the actual situation of the project, clarify the work objectives of the project management department, determine the specific project management work system, content, procedures, methods, measures.
- **4.1.2** The detailed rules for project management shall comply with the requirements of the project management planning and shall be operable.

4.2 Project management planning

- **4.2.1** The project management planning can be prepared by the chief project management engineer after signing the construction project management contract and receiving the engineering design documents. It shall be submitted to the building organization before the first meeting at site.
- **4.2.2** The project management planning shall be prepared and reviewed according to the following procedures:
 - **1**. The chief project management engineer organizes the specialty project management engineers for preparation.
 - 2. After the signature of the chief project management engineer, the technical supervisor of the construction project management enterprise will be responsible for its approval.
- **4.2.3** The project management planning shall include the following main contents:
 - 1. Project overview.
 - **2**. The scope, content, objective of the project management work.
 - 3. Project management work basis.
 - **4**. Project management organization form, staffing, mobilization-demobilization plan, project management personnel duties.

5 Controlling for construction quality, cost, schedule and site safety management

5.1 General requirement

- **5.1.1** The project management department shall, based on the agreements of the construction project management contract, according to the principle of dynamic control, adhere to the principle of focusing on prevention, formulate and implement the corresponding project management measures, use such methods as key works supervising, patrol inspecting, parallel testing to manage the construction project.
- **5.1.2** The project management personnel shall be familiar with the engineering design documents and participate in the joint drawing review and design disclosure meeting as hosted by the construction organization. The meeting minutes shall be signed by the chief project management engineer for confirmation.
- **5.1.3** Before the commencement of the project, the project management personnel shall attend the first site meeting as hosted by the construction organization. The minutes of the meeting shall be organized by the project management department, signed jointly by the representatives of the participating parties.
- **5.1.4** The project management department shall hold regular project management meetings; organize relevant organizations to study and solve problems related to project management. The project management department may, according to the engineering needs, preside over or participate in the special meeting, to solve the special engineering problems within the scope of project management work.

The meeting minutes of the regular project management meeting and the special meeting held by the project management department shall be organized by the project management department, signed jointly by the representatives of the participating parties.

5.1.5 The project management department shall coordinate the relationship between the relevant parties of the project construction. The working relationship between the project management department and the relevant parties of the engineering construction shall, unless otherwise specified, be carried out in the form of a work contact form.

The work contact form shall be completed in accordance with the requirements of Table C.0.1 of this Code.

- **5.1.9** The application-for-review form of project commencement shall be filled in accordance with the requirements of Table B.0.2 of this Code. The project commencement order shall be filled in accordance with the requirements of Table A.0.2 of this Code.
- **5.1.10** Before the commencement of subcontracting work, the project management department shall review the application-for-review form of the qualification of the subcontractors as reported by the construction organization. After the specialty project management engineer submits the review opinion, it shall be reviewed and signed by the chief project management engineer.

The qualification review of the subcontractors shall include the following basic contents:

- 1. Business license, enterprise's qualification certificate.
- 2. Safety production license documents.
- 3. Similar project performance.
- **4**. Qualifications of full-time management personnel and special operations personnel.
- **5.1.11** The application-for-review form of qualifications of subcontractors shall be filled according to the requirements of Table B.0.4 of this Code.
- **5.1.12** The project management department shall, according to the project characteristics, construction contract, engineering design documents and approved construction program, analyze the engineering risk. Meanwhile it should propose preventive measures for controlling of project quality, cost, schedule target, safety production management.

5.2 Controlling for construction quality

- **5.2.1** Before the project commencement, the project management department shall review the quality management organization, management system, the qualifications of full-time management personnel and special operations personnel on the site of the construction organization.
- **5.2.2** The chief project management engineer shall organize a specialty project management engineer to review the construction plan as submitted by the construction organization for review. After reaching to requirements, it shall sign off it.

The review of construction plan shall include the following basic elements:

1. The preparation and review procedures shall comply with relevant

- **4**. Qualification certificate of testing personnel.
- **5.2.8** The laboratory's application-for-review form of the construction organization shall be filled in according to the requirements of Table B.0.7 of this Code.
- **5.2.9** The project management department shall examine the quality certification documents for the materials, components, equipment used in the project as submitted by the construction organization. It shall, according to relevant requirements and the requirements of the construction project management contract, conduct sampling witness and parallel testing of the materials for the project.

The project management department shall require the construction organization to withdraw from the construction site within a time limit for the engineering materials, components, equipment that have failed to pass the inspection.

The application-for-review form of engineering materials, components, equipment shall be filled in accordance with the requirements of Table B.0.6 of this Code.

- **5.2.10** The specialty project management engineer shall review the inspection and verification report of the measuring equipment that affect the quality of the project as submitted by the construction organization regularly.
- **5.2.11** The project management department shall, according to the characteristics of the project and the construction program as submitted by the construction organization, determine the key parts and key processes for key works supervising; arrange the project management personnel to carry out the key works supervising, record the situation of the key works supervising in time.

The key works supervising records shall be filled in as required by Table A.0.6 of this Code.

- **5.2.12** The project management department shall arrange for the project management personnel to conduct patrol inspecting of the construction quality of the project. The patrol inspecting shall include the following main elements:
 - 1. Whether the construction organization is constructed according to engineering design documents, engineering construction standards, approved construction program and (special) construction plan.
 - 2. Whether the engineering materials, components, equipment used are qualified.
 - 3. Whether the construction site management personnel, especially

a quality accident investigation report and a treatment plan as approved by the relevant units such as the design, carry out follow-up inspection for the handling process of the quality accidents, conduct inspection and acceptance of the handling results.

The project management department shall submit a written report on the quality accident to the construction organization in a timely manner, sort and archive the complete quality accident handling record.

5.2.18 The project management department shall review the application-for-review form of completion checklist and completion data as submitted by the construction organization, organize the pre-acceptance of the completion of the project. If there is a problem, it shall require the construction organization to make corrections in time. If it is qualified, the chief project management engineer shall sign-approve the application-for-review form for completion acceptance of unit work.

The application-for-review form for completion acceptance of unit work shall be filled in accordance with the requirements of Table B.0.10 of this Code.

- **5.2.19** After the acceptance of project completion is completed, the project management department shall prepare a project quality assessment report, which shall be reviewed and signed by the chief project management engineer and the technical responsible person of the project management department, before being reported to the building organization.
- **5.2.20** The project management department shall participate in the completion acceptance as organized by the construction organization. For the corrections as proposed in the acceptance, it shall urge the construction organization to make correction in time. If the project quality complies with requirements, the chief project management engineer shall sign the opinion in the project completion acceptance report.

5.3 Controlling for construction cost

- **5.3.1** The project management department shall conduct engineering measuring and signing of payment certificate in accordance with the following procedures:
 - 1. The specialty project management engineer reviews the amount of work and the amount of payment as submitted by the construction organization in the application-for-review form for project payment, determines the actual amount of work completed, proposes the amount due to be paid to the construction organization, proposes corresponding supporting materials.

reviewed by the chief project management engineer and reported to the construction organization.

The review of construction schedule shall include the following basic elements:

- **1**. The construction schedule shall conform to the agreement on the construction period in the construction contract.
- 2. There is no miss of the key work items in the construction schedule. It shall meet the needs of putting into trial operation in batches and putting into use in batches. The staged construction schedule shall meet the requirements of the objectives of overall schedule control.
- **3**. The construction sequence shall be arranged in accordance with the construction process requirements.
- **4**. The resource supply plan for construction personnel, engineering materials, construction machinery, etc. shall meet the needs of the construction schedule.
- **5**. The construction schedule shall comply with the construction conditions, such as funds, construction drawings, construction sites, materials as provided by the construction organization.
- **5.4.2** The application-for-review form of construction schedule shall be filled in accordance with the requirements of Table B.0.12 of this Code.
- **5.4.3** The project management department shall check the implementation of the construction schedule. When it finds that the actual progress seriously lags behind the planned progress and affects the contract period, it shall sign-off a project management notice, to require the construction organization to take adjustment measures to speed up the construction progress. The chief project management engineer shall report the risk of delay of construction period to the construction organization.
- **5.4.4** The project management department shall compare and analyze the actual progress of the project construction and the planned progress of the project, predict the impact of the actual progress on the total construction duration, report the actual progress of the project to the construction organization in the project management monthly report.

5.5 Site safety management

5.5.1 The project management department shall perform the project management duties of construction project safety production management in accordance with laws and regulations and mandatory standards for engineering

6 Settlement of construction changes, claims and construction contract disputes

6.1 General requirement

- **6.1.1** The project management department shall conduct construction contract management in accordance with the construction project management contract, handle such issues as the stoppage and resumption of work, project changes, claims, construction contract disputes, dismissal.
- **6.1.2** When the construction contract is terminated, the project management department shall assist the building organization to handle the termination of the construction contract according to the requirements in the construction contract.

6.2 Construction stoppages and resumptions

- **6.2.1** When the chief project management engineer issues a project stoppage order, it may, according to the impact range and impact degree of the cause of stoppage, determine the scope of stoppage; according to the requirements of the construction contract and the construction project management contract, sign-off the project stoppage order.
- **6.2.2** When the project management department discovers one of the following circumstances, the chief project management engineer shall issue a project stoppage order in time:
 - **1**. When the building organization requests suspension of construction and the project needs to be suspended.
 - **2**. The construction organization starts construction without approval or refuses the management by the project management department.
 - **3**. The construction organization does not follow the engineering design documents which had passed the review.
 - **4**. The construction organization violates the mandatory standards for engineering construction.
 - **5**. There are major quality, safety accidents or quality and safety accidents in the construction.
- **6.2.3** The chief project management engineer shall, when signing off the project

documents shall be transferred by the building organization to the original design organization to modify the engineering design documents. When necessary, the project management department shall recommend that the building organization organize the design, construction and other organizations to hold a special meeting to demonstrate the revision plan of the engineering design documents.

- 2. The chief project management engineer organizes the specialty project management engineer to evaluate the project change costs and the impact on the construction period.
- 3. The chief project management engineer organizes the building organization and the construction organization to jointly determine the project change cost and the construction period change, jointly sign the project change order.
- **4**. The project management department supervises the construction organization to implement the project change according to the approved project change document.
- **6.3.2** The project change order shall be filled in according to the requirements of Table C.0.2 of this Code.
- **6.3.3** The project management department may, before implementing the project changes, negotiate with the building organization and the construction organization to determine the pricing principle, pricing method or price of the project change.
- **6.3.4** When the building organization and the construction organization fail to reach an agreement on the project change cost, the project management department may propose a tentative price, which is agreed by the building organization, as the basis for the temporary payment of engineering cost. In case of final settlement of the project change cost, it shall be based on the agreement which is reached between the building organization and the construction organization.
- **6.3.5** The project management department may put forward assessment opinions on the project changes as required by the construction organization. It shall urge the construction organization to organize the construction according to the jointly signed project change order.

6.4 Cost claims

6.4.1 The project management department shall collect and sort out the original data of the project cost in time to provide evidence for handling the cost claims.

- **3**. The claim event causes direct economic losses to the construction organization.
- **6.4.6** When the construction organization's requirements for cost claim is related to the project extension request, the project management department may submit a comprehensive opinion on the cost claim construction extension, consult with the building organization and the construction organization.
- **6.4.7** If the loss of the building organization is caused by the reasons of the construction organization, when the building organization proposes a claim, the project management department shall negotiate with the building organization and the construction organization to deal with it.

6.5 Construction duration extension and period delay

- **6.5.1** When the construction organization proposes the project extension request and meets the requirements of construction contract, the project management department shall accept it.
- **6.5.2** When the event affecting the construction period is continuous, the project management department shall review the application-for-review form of staged temporary project extension as submitted by the construction organization, sign the review opinions on the temporary project extension, report to the building organization.

After the event affecting the construction period ends, the project management department shall review the application-for-review form of final extension of the project as submitted by the construction organization, sign the review opinions on the review opinions on final project extension, report to the building organization.

The application-for-review form of temporary project extension and the application-for-review form of final project extension shall be filled in accordance with the requirements of Table B.0.14 of this Code.

- **6.5.3** When the project management department approves the temporary extension of the project and the final extension of the project, it shall consult with the building organization and the construction organization.
- **6.5.4** The project management department may approve the project extension under the following conditions:
 - **1**. The construction organization proposes the project extension within the time limit stipulated in the construction contract.
 - 2. The construction progress is delayed due to other reasons than the

- **1**. The amount due for the finished work by the construction organization according to the construction contract.
- **2**. The payment for the engineering materials, components, equipment as purchased by the construction organization according to the approved procurement plan.
- **3**. The reasonable cost of the construction organization to demobilize the construction equipment to the original place or other destination.
- **4**. Reasonable repatriation costs for construction organization's personnel.
- **5**. The reasonable profit compensation for the construction organization.
- **6**. The liquidated damages payable by the building organization as stipulated in the construction contract.
- **6.7.2** When the construction contract is terminated due to the reasons of the construction organization, the project management department shall, according to the construction contract, determine the amount due for the construction organization or the amount payable back to the building organization, consult with the building organization and the construction organization, submit a written proof of the amount due for the construction organization or the amount payable back to the building organization:
 - The amount due and the amount paid for the work which has been actually finished by the construction organization according to the construction contract.
 - **2**. The value of the materials, components, equipment, temporary works that the construction organization has provided.
 - **3**. The cost required for inspection and acceptance of completed work, handover of engineering materials, repair of quality defects of completed work, etc.
 - **4**. The liquidated damages payable by the construction organization as stipulated in the construction contract.
- **6.7.3** When the construction contract is terminated due to reasons other than the building organization or the construction organization, the project management department shall handle the relevant matters after the contract is terminated according to the construction contract.

- **10**. Application-for-acceptance documents & data on project quality inspection and related data on project inspection and acceptance.
- **11**. Documents & data on project changes, cost claims, project extension.
- **12**. Documents & data on project measuring, payment of project cost.
- **13**. Project management notice, work contact list, project management report.
- **14**. Meeting minutes of the first site meeting, the regular meeting of project management, the special meeting.
- **15**. Project management monthly report, project management daily record, key works inspecting records.
- **16**. Documents & data on project quality or handling of production safety accident.
- **17**. Project management documents & data on project quality assessment report and completion acceptance.
- **18**. Summary of project management work.
- **7.2.2** The project management daily record shall include the following main contents:
 - 1. Weather and construction environment.
 - 2. Construction progress on the day.
 - **3**. Project management work on the day, including key works supervising, patrol inspections, sampling witness, parallel testing, etc.
 - **4**. Problems on the day and corresponding treatments.
 - 5. Other related matters.
- **7.2.3** The project management monthly report shall include the following main contents:
 - **1**. Implementation of the project in this month.
 - **2**. Project management work of this month.
 - **3**. Problems in the construction of this month and corresponding treatment.
 - **4**. The focus of project management work next month.
- 7.2.4 The summary of project management work shall include the following

8 Procurement and manufacturing supervision for equipment

8.1 General requirements

- **8.1.1** The project management department shall allocate the project management personnel according to the equipment procurement and manufacturing supervision of equipment as stipulated in the construction project management contract, clearly define the duties of the post.
- **8.1.2** The project management department shall prepare the plan of procurement and manufacturing supervision of equipment, assist the building organization to prepare the plan of procurement and manufacturing supervision of equipment.

8.2 Equipment procurement

- **8.2.1** When the procurement of equipment is carried out by means of bidding, the project management department shall assist the building organization to organize bidding for equipment procurement in accordance with relevant requirements. When using other methods for equipment procurement, the project management department shall assist the building organization to make an inquiry.
- **8.2.2** The project management department shall assist the building organization in negotiating the equipment procurement contract and shall assist in signing the equipment procurement contract.
- **8.2.3** Equipment procurement documents shall include the following main contents:
 - **1**. Construction project management contract and equipment procurement contract.
 - **2**. Equipment procurement bidding documents.
 - 3. Engineering design documents and drawings.
 - **4**. Market research and investigation reports.
 - **5**. Equipment procurement plan.
 - **6**. Equipment procurement work summary.

- **8.3.9** Before the equipment is transported to the site, the project management department shall check the protection and packaging measures taken by the equipment manufacturer for the equipment to be transported, check whether it meets the requirements for transportation, handling, storage, installation, as well as the completeness of random documents, packing lists, accessories.
- **8.3.10** After the equipment is delivered to the site, the project management department shall participate in the handover between the equipment manufacturer and the receiving organization as agreed in the contract.
- **8.3.11** The specialty project management engineer shall review the payment application as submitted by the equipment manufacturer according to the requirements of the equipment manufacturing contract, submit the review opinion. After review and by the chief project management engineer, the payment certificate is signed off.
- **8.3.12** The specialty project management engineer shall review the claim documents as submitted by the equipment manufacturer, propose the opinions, report to the chief project management engineer. The chief project management engineer, building organization, equipment manufacturer shall reach an agreement through negotiation and sign the opinions.
- **8.3.13** The specialty project management engineer shall review the equipment manufacturing settlement documents as submitted by the equipment manufacturer, propose the review opinions. After the chief project management engineer signs off opinions, it is reported to the building organization.
- **8.3.14** The manufacturing supervision of equipment shall include the following main contents:
 - **1**. Construction project management contract and equipment procurement contract.
 - 2. Work plan of manufacturing supervision of equipment.
 - **3.** Application-for-review data of equipment manufacturing process plan.
 - **4**. Inspection plan and inspection requirements for equipment manufacturing.
 - **5**. Application-for-review data of qualifications of subcontractors.
 - **6**. Inspection report of raw materials and spare parts.
 - **7**. Application-for-review data of project stoppage order, commencement, or resumption.
 - 8. Inspection records and test reports.

9 Related services

9.1 General requirements

- **9.1.1** The project management department shall, according to the relevant service scope as stipulated in the construction project management contract, carry out relevant service work and prepare relevant service work plans.
- **9.1.2** The project management department shall summarize and sort out the documents & data related to the service work according to the requirements.

9.2 Survey & design services

- **9.2.1** The project management department shall assist the building organization in preparing the engineering survey-design task book and selecting the engineering survey-design organization, assist in signing the engineering survey-design contract.
- **9.2.2** The project management department shall review the survey plan as submitted by the survey organization, propose the review opinion, report it to the building organization. When changing the survey plan, it shall be reexamined according to the original procedure.

The application-for-review form of survey plan for may be filled in accordance with the requirements of Table B.0.1 of this Code.

- **9.2.3** The project management department shall check the qualifications of the operators at the survey site and the key posts of indoor testing, as well as the verification of the metering equipment and instrument used.
- **9.2.4** The project management department shall check the implementation of the survey schedule, supervise and urge the survey organization to complete the work content as agreed in the survey contract, review the payment application form for the survey fee as submitted by the survey organization, sign-off the payment certificate of survey fee, report to the building organization.

The project management notice in the engineering survey stage may be filled in according to the requirements of Table A.0.3 of this code. The reply form of the project management notice may be filled in according to the requirements of Table B.0.9 of this Code. The payment application for the survey fee may be filled according to the requirements of Table B.0.11 of this Code. The payment certificate of survey fee may be filled in according to the requirements of Table A.0.8 of this Code.

- 2. Design depth and compliance with design standards.
- **3**. The completion of the design task book.
- **4**. Implementation of the review opinions of relevant departments.
- **5**. Problems existed and suggestions.
- **9.2.11** The application-for-review form of the results in the design stage be filled in according to the requirements of Table B.0.7 of this Code.
- **9.2.12** The project management department shall review the filing of new materials, new processes, new technologies, new equipment as proposed by the design organization in the relevant departments. If necessary, it shall assist the building organization to organize expert review.
- **9.2.13** The project management department shall review the design budget and work drawing budget as proposed by the design organization, propose the review opinions, report to the building organization.
- **9.2.14** The project management department shall analyze the reasons for the possible claims and shall formulate preventive measures.
- **9.2.15** The project management department shall assist the building organization to organize experts to review the design results.
- **9.2.16** The project management department may assist the building organization to report the relevant engineering design documents to the relevant government departments, supervise and urge the design organization to make improvements according to the approval opinions.
- **9.2.17** The project management department shall, according to the survey-design contract, coordinate the handling of such issues as delay of survey-design, cost claim.

The application-for-review form of the delay of survey-design may be filled according to the requirements of Table B.0.14 of this Code. The application-for-review form of the survey-design cost claim may be filled according to the requirements of Table B.0.13 of this Code.

9.3 Maintenance services

- **9.3.1** When undertaking the service work during the engineering warranty phase, the engineering project management organization shall return to the project regularly.
- 9.3.2 For the quality defects of the project as proposed by the building

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. https://www.ChineseStandard.us

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. https://www.ChineseStandard.net

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies https://www.ChineseStandard.us).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): https://www.chinesestandard.net/AboutUs.aspx

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: https://www.linkedin.com/in/waynezhengwenrui/

----- The End -----