

Boiler Design Documents Appraisal Procedure

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Chapter 1 General Provision

Article 1 According to the Regulations on Safety Supervision of Special Equipment (hereinafter referred to as the “Regulations”) and the Boiler Design Documents Appraisal Administration Regulation, design documents of boilers that will be used within the territory of the P. R. China and within the scope stipulated in the “Regulations” shall be appraised.

Article 2 The Procedure is applicable to design documents appraisal of boilers which are fabricated by manufacturers outside the territory of the P. R. China and will be used inside the territory of the P. R. China and within the scope stipulated in the “Regulations”.

Article 3 The **China Special Equipment Inspection and Research Center** (hereinafter referred to as the “CSEI”) has been authorized by General Administration of Quality Supervision Inspection and Quarantine of the P. R. China (hereinafter referred to as the “AQSIQ”) to appraise design documents of boilers fabricated by manufacturers outside the territory of the P. R. China.

Article 4 Design Documents Appraisal defined in the Procedure refers to review and assess whether the safety performance of boiler appointed for appraisal meet the requirements of Chinese safety technical standards and codes. Generally, it does not include manufacture process, operation performance, economic performance, environmental performance etc.

Article 5 Any boiler manufacturers applying for design document appraisal (hereinafter referred to as “Applicant”) must hold Manufacture License of Special Equipment (Boilers) (hereinafter referred to as “Manufacture License”) with corresponding levels. Manufacturers, who are applying for Manufacture License, can apply for Boiler Design Documents Appraisal if their Manufacture License application have been accepted and within the term of validity.

Article 6 The technical requirements for Boiler Design Documents Appraisal are based on the Chinese safety technical regulations, national standards and trade standards such as the Technical Supervision Regulation for Safety of Steam Boilers, the Technical Safety Supervision Regulation for Hot Water Boilers, the Technical Safety Supervision Regulation for Organic Fluid Heaters, etc.

Manufacturers outside the territory of the P. R. China, who have difficulties to completely carry out the above-mentioned Chinese boiler safety technical regulations and standards in short time, are allowed to adopt the technical codes and standards, which are conventional and complete in system and are used by most countries, after having been approved by the Bureau of Safety Supervision of Special Equipment of AQSIQ of the P. R. China (hereinafter referred to as the “SESA”). However, in this case, they must meet the requirement as stipulated from Article 45 to 50 of the Requirements for Boiler and Pressure Vessel Manufacture Licensing simultaneously.

Chapter 2 The Contents of Appraisal

Article 7 The scope of Appraisal for Boiler Design Documents shall include boiler proper's safety performance of materials, structures, strength of pressure parts and safety appurtenances, etc.

Article 8 For the boiler design which is first applying for appraisal, the Applicant shall submit design documents according to the requirements of Appendix 1. For the design documents which have passed appraisal, the Applicants shall submit the changed design documents only.

Article 9 If the structure of boiler parts and spares is a standard model described in relevant codes and standards of boiler, the detailed drawings and concerned calculations of these boiler parts and spares do not need to be submitted, but concerned code and standard and adopted structure must be described clearly in the related drawings and design documents.

Article 10 According to the different structures, the appraisal institution may ask the Applicant to submit other relevant technical documents and data needed for appraisal.

Article 11 The main contents of Boiler Design Documents Appraisal

1. To verify whether the level classification of the boiler in design documents submitted is in conformity with the level classification of Applicant's Manufacture License.

To verify whether boiler design documents meet the requirements of Appendix 1 of the Procedure.

To verify whether it has been approved by SESA, in cases that the Applicant adopts foreign technical codes and standards.

2. To verify whether the units of data and parameters for boiler design documents and design drawings are SI system, or whether the units of parameters have been converted into SI system.

To verify whether the views of boiler drawings can exactly and completely describe the shape, composition, dimensions and main welding seams.

To verify whether the written description can express clearly the main technical characteristics, parameters and the standards, codes or/and technical requirements for the boiler design, manufacturing, inspection, installation and acceptance.

To verify whether there are clear identifications on design modification or change in drawings.

3. To verify whether the boiler pressure components (including staying components) are made of killed-steels, whether the designations of the steels are listed in foreign boiler steel standards or are conventional boiler steels.

To verify whether the metallic materials used for pressure components meet the applied ranges and requirements of relevant regulations, codes and standards.

To verify whether the hydraulic test, items and proportion of NDT, the heat treatment, etc. meet the applied ranges and requirements of relevant regulations, codes and standards.

4. To verify whether the boiler structures are in complete accordance with the Chinese safety technical regulations for boilers.

5. To verify whether strength calculations of pressure parts is standardized and the results

meet the requirements of relevant safety technical codes and standards.

6. To verify whether the quantity, specification, category, parameter, type and installation location of safety appurtenances, instruments and safeguard devices (such as safeguard of over-temperature, over-pressure, ignition and flame failure, etc.) meet the requirements of relevant safety technical codes and standards.

7. To verify whether the calculation of relief capacity of safety valves meets the requirements of relevant safety technical codes and standards.

8. To verify whether design of the boiler furnace and flue pass of the boiler proper is in accordance with the requirements of relevant safety technical codes and standards.

9. To verify whether the boiler water circulation calculation, thermal calculation and calculation for the temperature of the walls of superheater and reheater tubes have been done based on relevant stipulations.

Chapter 3 Appraisal Procedure

Article 12 Before fabrication of boilers which will be exported to the P. R. China, Manufacture License holder outside the territory of the P. R. China can download from CSEI's website (www.csei.org) or directly ask the International Division of CSEI for the "Application Form of Boiler Design Documents Appraisal" and relevant documents (See Appendix 2 for the form and filling out requirements of the "Appraisal Application Form of Boiler Design Documents").

On design appraisal fee rates and payment way, please directly ask the International Division of CSEI.

Article 13 the "Application Form of Boiler Design Documents Appraisal" shall be filled out in Chinese or English in triplicate, and mail to CSEI together with the following documents:

1. The copy of the Applicant's Manufacture License (or the copy of the application form for manufacture license which has been accepted by SESA);
2. For boilers ,which are first applying for appraisal, design documents stipulated in Appendix 1 should be submitted; For boiler which have passed appraisal, only the changed documents need to be submitted. The category A of design documents in the Appendix 1 should be submitted for two copies, the category B is one copy only.
3. Other necessary complementary documents.

Article 14 Manufacturers outside territory of the P. R. China, who have difficulties to completely carry out Chinese Boiler safety technical regulations and codes, shall also submit the copy of approval documents issued by SESA for its adopting technical codes and standards other than Chines.

Article 15 The Applicant outside the territory of the P. R. China can invite also the design appraisers to conduct design appraisal at the manufacturer's location if there are difficulties to supply all the design documents to CSEI. In this case, in addition to the appraisal fees, the Applicant shall bear costs for the airfare, board and lodging, accident insurance and communication of the appraisers arising from the design appraisal.

Article 16 After receipt of manufacturer's boiler design documents and Application Form of Boiler Design Documents Appraisal, the CSEI will check application documents, appoint the

serial No. of appraisal item and collect fees for appraisal according to regulations. The CSEI will endorse on the application form and return one copy to the Applicant, submit one copy to SESA, and keep one copy by CSEI.

Article 17 The CSEI shall complete the appraisal within 15 working days (30 working days for separated boilers), and issue to the Applicant the “Report of Boiler Design Document Appraisal” (see Appendix 3) and give one of the following appraisal conclusions:

1. To modify design

The parts of the design, which are in unconformity with requirements of relevant safety technical codes and regulations, should be modified. Appraiser shall point out the parts need to be modified by Applicant and re-appraise the modified documents according to the procedures of this Chapter.

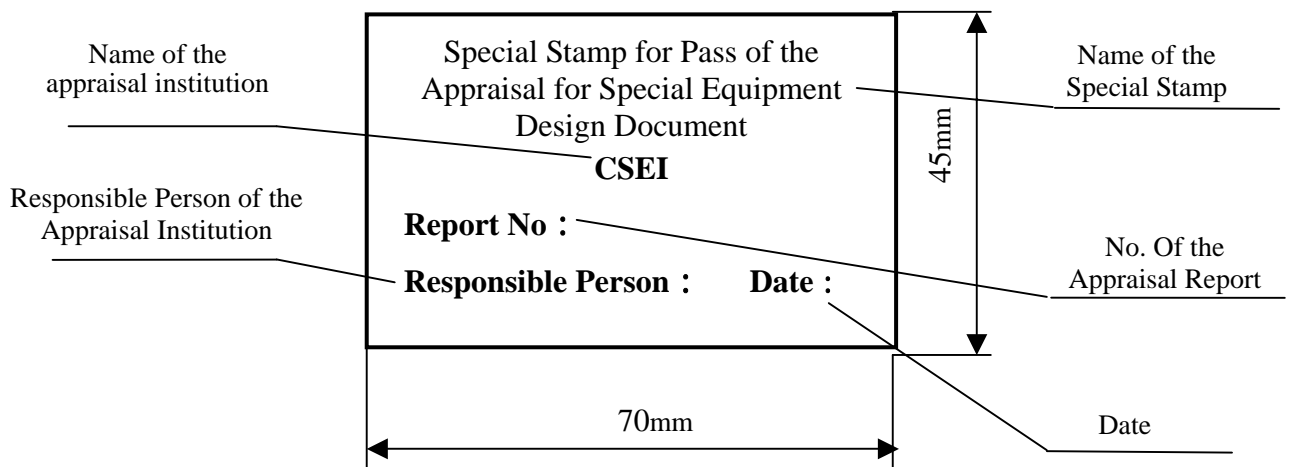
2. Pass the appraisal (agree to register)

The design conforms to requirements of relevant safety technical regulations and codes, and manufacturer can proceed with manufacture according to the design.

3. Not pass the appraisal (refuse to register)

The design, which has big safety problems, seriously violates relevant safety technical regulations and codes, is completely denied, and the appraiser shall state the reasons meanwhile.

Article 18 After the design documents pass the appraisal, CSEI shall stamp on the main design documents with “Special Stamp for Pass of the Appraisal for Special Equipment Design Document”(see picture 1).



Picture 1: Special Stamp for Pass of the Appraisal for Special Equipment Design Document

For design of assembly boilers, the Special Stamp shall be stamped on the boiler proper drawings and the summary for data of the pressure parts strength calculation. For design of separated boilers, the Special Stamp shall be stamped on the boiler proper drawings or general drawings, the drawings of main pressure parts including drums, water cooled walls, economizers, superheaters, reheaters and attemperators, etc., and the summary for data of the pressure parts strength calculation.

Special Stamp for Pass of the Appraisal for Special Equipment Design Document shall be stamped at the upper or right side of the caption column of the design drawings.

The CSEI shall file and register the above mentioned stamped documents (see Appendix 4).

Article 19 If the Applicant want to use the design documents which are provided by other

company and the documents have been appraised and passed appraisal, the original applicant's information (such as the caption column) shall be retained, and stamp of the documents supplier should be affixed, whereas no re-appraisal is required, but above-mentioned design documents should be registered in the CSEI before fabrication. The copy of contract on supplying document, a copy of the related Report of Boiler Design Documents Appraisal and documents required in the Appendix 1 should be submitted for registration.

Article 20 For any Change to the boiler design documents, which have passed appraisal, the Applicant can not change the original boiler type and numbers of the design drawings.

Under following situations, the changed parts of design documents shall be re-appraised as per the Procedure:

1. Any change of design documents to boiler pressure parts and components, main supporting parts, and suspending parts.
2. To substitute high strength material with low strength material.
3. To substitute thick material with thin material (except for heat piping of boilers with rated steam pressure no more than 1.6MPa).
4. The nominal outer diameter of the substituted steel pipes and tubes are different from the original.
5. When applied safety technical codes and standards are modified or revised, the design documents shall make corresponding changes.

The Applicant should apply to CSEI for name change registration with name change certification while changing the applicant name (including the supplier's name for supplying design documents) on boiler design documents.

Article 21 The Applicant should apply to CSEI for re-appraisal for any design documents change on the article 20 of this Procedure, otherwise design documents would be appraised as a first applying for appraisal.

Article 22 The International Division of CSEI is responsible for Appraisal Acceptance. The Boiler Division of CSEI is responsible for Implementation and Registration of Appraisal.

Chapter 4 Responsibilities and Supervision Administration

Article 23 CSEI should keep objective and impartial position when conducting the appraisal, and issue the appraisal conclusion without delay. The CSEI should take good care of the technical documents submitted by the Applicant and keep its secret of any concerned information.

Article 24 For any dispute between the CSEI and Applicant, or if Applicant finds some members of CSEI violate the rule or have any dereliction of duty during the appraisal, Applicant have right to appeal to AQSIQ or other related departments.

Article 25 When applicant violates the Regulation, the CSEI shall report to AQSIQ and impose administrative penalty on the violation according to Regulations on Safety Supervision of Special Equipment and relevant stipulations.

Article 26 The CSEI should report the affairs of boiler design documents appraisal for Applicants outside the territory of the P. R. China to AQSIQ every six months, and publish

on its website.

Chapter 5 Supplementary Provisions

Article 27 The Procedure is also applicable to single-handed boiler parts design.

Article 28 The CSEI is responsible for the interpretation of the Procedure.

Article 29 The Procedure will become effective as January 1, 2005.

Note: The item “modification or modify” and “change” in the Procedure are defined as following:

Modification (modify) refers to the required actions proposed by appraisers, and should be done by Applicants for the purpose of meeting the relevant Chinese technical codes and regulations.

Change refer to self-initiated action made by Applicants to design documents.

Appendix 1

Boiler Design Documents Submitted by Applicants

No	Name of Documents		Category	Remark	
1	Description Documents of Design	List for submitted documents	B		
2		Design specification for the boiler	B		
3		Installation and operation instruction for the boiler	B		
4	Design Drawing	General drawing for the boiler	A	Two copies should be submitted	
5		Boiler proper drawing	A	Two copies should be submitted	
6		Drawings for assembly unit (drum, superheater economizer, etc.)	A	Two copies should be submitted	
7		Drawings of main pressure parts	A	Two copies should be submitted	
8		Drawings of main part for supporting and suspending	B		
9		Drawings for the piping system	A	Two copies should be submitted	
10		Drawing for medium flowing	B		
11		Arrangement drawing for safety appurtenances or instruments	A	Two copies should be submitted	
12		Drawings of main system for supporting and suspending	B		
13		Thermal expansion system drawings	A	Only for separated boilers. Two copies should be submitted	
14		System drawing of thermal insulation	A	Two copies should be submitted	
15		Design Documents	Strength calculation sheets of pressure parts or summary of calculations	A	Two copies should be submitted
16			Relieving capacity calculation sheet of safety valve or summary of calculations	A	Two copies should be submitted
17			Set value of all safetyguard devices	B	
18	Strength calculation sheets or summary for main parts of supporting and suspending		B		
19	Water circulation calculation sheet (including resistance of water and/or steam flow) or summary of calculations (except shell type boiler in nature circulation)		B	The organic heat boilers should calculate flow resistance of mediums	
20	Thermal calculation sheet or summary of calculations		B	For the boilers with rated steam pressure of 3.8MPa and above	
21	Superheater tube wall temperature calculation sheet or summary of calculation		B	For the boilers with rated steam pressure of 3.8MPa and above and organic fluid boiler with rated power more than 7MW	
22	Draft resistance calculation sheet or summary of calculations		B	For the boilers with rated steam pressure of 3.8MPa and above	
23	Thermal expansion values calculation sheet or summary of calculations		B	For the boilers with rated steam pressure of 3.8MPa and above	
24	Reheater tube wall temperature calculation sheet or summary of calculations		B	For the boilers with rated steam pressure of 9.8MPa and above	

Note: 1. The documents of category A should be appraised, the documents of category B are only for supply of date and not for appraisal.

2. The category A of design documents in the Appendix 1 should be submitted for two copies, one will be returned to Applicant, the other one should be kept by CSEI for registration. The category B is one copy only.

Application Form of Boiler Design Documents Appraisal

Name of Applicant			
Address of Applicant			
Tel. No.		Fax No.	
e-mail No.		Responsible Person for Design Documents	
Manufacturer License No.		Classification of the Level for Manufacturer Licensing	
Date of Expiration of Manufacturer License		Appraisal Attribution	First Applying for Appraisal Design Change
General Situation of the Boiler			
Name of the Boiler		Design Date	
Sort of Boiler	Steam Boiler	Hot Water Boiler	Organic Fluid Boiler Others
Type of Boiler		General Drawing No.	
Rated Outlet Pressure	MPa	Rated Outlet Temperature	
Rated Output(t/h) or Rated Power (MW)		Mode of Structure	
Type of Fuel		Mode of Combustion	
Comments of the Last Appraisal and Modification by Applicant			
<p>Note: 1. To indicate the non-conforming parts and the items needed to be modified by the appraiser in the last appraisal.</p> <p style="padding-left: 40px;">2. The modified contents made by Applicant.</p> <p style="padding-left: 40px;">3. If this design documents are first applying for appraisal, please type "Null" here.</p>			
Change for Design Documents			
Last Design Appraisal Institution		Serial No. of Appraisal Item of Last Appraisal	
<p>Note:</p> <p>1. The reasons and contents changed.</p> <p>2. Other description.</p> <p>If this form is not enough to filling out, please attach sheets with title "Description of Design Change"</p>			
<p>Signature of Technical Responsible Person of the Applicant:</p> <p style="text-align: right;">Date:</p>			
<p>Signature of Acceptance Person :</p> <p style="text-align: right;">Date:</p>			

Note: Fill in this application form in triplicate. One will be returned to applicant, one should be sent to the SESA, and one should be kept by CSEI

Report of Boiler Design Documents Appraisal

Report No.: XXXXXX-GK XX

Name of Applicant			
Address of Applicant			
Manufacture License No.		Classification of the Level for Manufacturer Licensing	
Appraisal Attribution	First Applying for Appraisal Design Change		
General Situations of the Boiler			
Name of Boiler		Serial No. of Appraisal Item	
Sort of Boiler	Steam Boiler Organic Fluid Heaters	Hot Water Boiler Others	
Type of Boiler		General Drawing No.	
Rated Outlet Pressure	MPa	Rated Outlet Temperature	
Rated Output(t/h) or Rated Power (MW)		Name of Structure	
Type of Fuel		Mode of Combustion	
<p>Conclusion:</p> <p style="text-align: center;"> Require modifications Pass the Appraisal (Approval for Registration) Not Pass the Appraisal (Disapproval for Registration) </p> <p>Note: The Appraisal Conclusion:</p> <p>1 Require design modifications The boiler designs have following problems: (the attached sheets can be added if there are many contents) Please modify the above problems, and then send the modified design documents to our office to be re-appraised.</p> <p>2 Pass the Appraisal The boiler designs (or repair and alteration program) conform to the requirements, and can be put for fabrication.</p> <p>3 Not Pass the Appraisal The boiler designs have big safety problems, seriously violates relevant safety technical regulations and codes, the situation is as follows:(the attached sheets can be added if there are many contents) In view of the above problems, the designs do not be pass the appraisal.</p>			
Appraiser: Date:	(Stamp of the Appraisal Institution)		
Team Leader of Appraisal: Date:			
Approver: Date:			

Note: Fill in this form in duplicate. One will be returned to applicant, one should be send to the SESA, and one other should be kept by CSEI.

