Revised Regulation for Boiler and Pressure Vessel Manufacture Licensing

Since the“ Supervision Administration Regulation for Manufacture of Boiler and Pressure Vessel” and “Requirement for Boiler and Pressure Vessels Manufacture Licensing” came into effect on Jan.1st,2004,AQSIQ has made revisions and interpretations to same of the provisions, which are summarized as following.

1. NDE person requirement(Article 11 and 19 of “Requirement for Boiler and Pressure Vessels Manufacture Licensing”)

“RT Ⅲ and UT Ⅲ” person required by the manufacturer of boiler A level , pressure vessels A1 and C level was adjusted from “Level Ⅲ” to “ holding the certificate of RT and UT Ⅱ(or above level) not less than four years”

2. Requirement of heat treatment and rolling machine (Article 22 of “Requirement for Boiler and Pressure Vessels Manufacture Licensing”

Heat treatment equipment required by high pressure vessels manufacturer of A1 level in “Requirement for Boiler and Pressure Vessels Manufacture Licensing” has been changed to below:

For the high pressure vessels manufacturer of A1 level, heat treatment performed by outsourcing through corresponding qualified sub-contractor is acceptable.

Rolling machine required in “Requirement for Boiler and Pressure Vessels Manufacture Licensing” has been changed to follow:

Manufacturer of pressure vessels shall have the bending ability suitable for its main products. Sub-contacting of steel plate bending is permitted if the machine can’t roll some individual products. However, the final weld for longitudinal seam shall be completed by the manufacturer of pressure vessel .

On the situation of above mentioned ,the corresponding quality control procedure or document for sub-contracting shall be submitted together with the application documentation while manufacturer begin to apply for the manufacture license.

3. Lifting ability

Lifting activity may be sub-contracted if the crane can’t meet the requirement for lifting.

4. Design safety factor for cast steel in table 1 of Article 54 in “Requirement for Boiler

and Pressure Vessels Manufacture Licensing" shall be selected as follow:

Material \ Conditions		Lower limit of tensile strength(σ_b)	Yield limit at design temp. $\sigma^t_{0.2}$	Average endurance strength at design temp. σ^t_d	Average creep limit at design temp. σ^t_n
Cast steels	Design temp.≤ 300℃	nb ≥4.0/ casting factor	/	/	/
	Design Temp.＞ 300℃（Note 1.）	nb ≥4.0/ casting factor	ns ≥1.5/ casting factor	/	/

Note 1 : The safety factor for allowable stress of cast steels pressure vessels which design Temp. higher than 300℃ shall use lower calculation between n_b and n_s

5. Article 55 in "Requirement for Boiler and Pressure Vessels Manufacture Licensing"

(1) Item 4 of article 55 in "Requirement for Boiler and Pressure Vessels Manufacture Licensing", for those quenched and tempered high-strength steel, the welding cracking sensitivity coefficient Pcm shall meet the following requirement:

540Mpa≤ σ_b（Note 2）≤570 Mpa， Pcm≤0.25％；

570Mpa＜ σ_b≤610 Mpa， Pcm≤0.28％；

σ_b＞610Mpa， Pcm≤0.30％。

Note 2: σ_b is the lower limit of tensile strength at the ordinary temperature specified in steel standard.

(2) Item 5 of Article 55 in "Requirement for Boiler and Pressure Vessels Manufacture Licensing"

"For the steel plate used for the tank of transportable pressure vessels, the sampling

quantity of the impact test is two steel plate per batch and the test temperature should be -20 ℃ or per instruction on the drawing. The requirements for impact test and acceptable impact toughness value should conform to Table 3.

6. Shell of the pressure vessels

The shell is the main pressure part of pressure vessel, the manufacturer shall have the capability of producing the shell of pressure vessel and normally the sub-contracting is not permitted. However, for the forged or foundry pressure vessels without longitudinal seam, shell fabricating performed by the subcontractor who have the adequate production conditions is also acceptable. Under the outsourcing, the subcontractor's production conditions, quality assurance measures, etc. shall be evaluated in accordance with the pressure vessel manufacturer' own quality guaranty systems. The subcontractor shall be responsible for the shell quality of the pressure vessel, such as geometric dimension, chemical composition, mechanical properties, the results of impact test (if require) and NDE ,etc.

7. Qualification and classification for small size pressure vessel

The term "small size pressure vessel" refer to the pressure vessel which diameter less than 150 mm or the content less than 25 liters. The pressure vessels aforementioned is subjected to "Regulations of Safety Supervision of Special Equipment", but are not applicable to the" Supervision Regulation on Safety Technology for Pressure Vessel", so these vessels may be designed and fabricate by any manufacturer holding the license of A1,A2,A3,D1,or D2 level. Simultaneity, small size pressure vessels are not classified in accordance to "Supervision Regulation on Safety Technology for Pressure Vessel".

8. Manufacturer of boiler parts.

（1）Parts of boiler A level

The term "Parts of boiler A level" refer to the following pressure parts used on steam boiler(including waste heat boiler) with the rated output steam pressure greater than 2.5Mpa,such as the boiler drum, membrane water-cooled wall, economizer, superheater, reheter and header, etc. The manufacturer fabricating the aforementioned pressure parts shall obtain corresponding manufacture license of "part of boiler A level".

According to the Article 10 of "Requirement for Boiler and Pressure Vessels Manufacture

Licensing", the manufacturing resource requirements for parts of boiler A level please refer to corresponding condition of boiler A level. Among these condition, basic requirements shall meet the Section 1 of Chapter 2, and specific requirements performed as follows.

A. Technical resource

Technical resource shall comply to Article 11 of "Requirement for Boiler and Pressure Vessels Manufacture Licensing". For the boiler parts manufacturer who doesn't fabricate the boiler drum, RT and UT level Ⅲ examiner required by NDE allow to be exempted.

B. Requirement for the tool and equipment

Manufacturer of boiler drum shall meet the requirement of Article 11 of "Requirement for Boiler and Pressure Vessels Manufacture Licensing". Among these equipment, the subcontract of hydraulic (oil) pressure and heat treatment equipment is permitted if the products quality is ensured under subcontracting.

Membrane water-cooled wall manufacturer shall have the especial equipment such as auto-welding machine with multi head, flattening and panel bending machine, finishing equipment for flat steel .

For the boiler manufacturer fabricating economizer, superheater and reheater, the equipment and tool which suitable for tube butting welding are required ,such as automatic hot wire TIG or TIG plus MIG welding machine etc. Simultaneity, the argon arc welding machine, tube end forming machine, chamfer machines, groove preparation, tube bender, cutting and rack for tube, etc. are also required.

For the manufacturer of boiler pressure piping and header of boiler ,the necessary equipment ,such as cutting, bending ,gas-shield welding ,Arc welding, submerged arc welding of girth seam(applicable only for the header fabrication), preheating and heat treatment equipment(allow to subcontract),etc. shall be available.

C. Inspection and test equipment

Inspection and test equipment shall meet the requirements of Article 11 in "Requirement for Boiler and Pressure Vessels Manufacture Licensing", and the manufacturer of alloy steel products shall have the equipment for the spectral inspection

（2）Cast iron economizer

No manufacture license required to the foundry which produce the casting pieces only,

and which doesn't fabricate and assemble the parts to the economizer.

（3）Other boiler parts

The boiler parts ,such as the internal furnace (including expansion joints of the internal furnace), food ring, tube sheet, etc. may produced by the manufacture license holder of pressure vessel head.

9. Gas cylinder container

Manufacturer of gas cylinder container with whole assembling volume no less than one cubic meter shall obtain manufacture license of C3 level(assembling for gas cylinder container only).

The basic requirement for pressure vessel C3 (assembling for gas cylinder container only)shall be as follow:

(1) In order to guaranty the efficient performance of quality systems ,the quality management systems shall be established, the quality control documents and regulation shall be completed too.

(2) The workshop is required to meet the production of assembling the gas cylinder container.

(3) The gas cylinder container shall pass the corresponding inspection by China Classification Society(Briefed as the CCS).

(4) The facility for pressure test and gas tightness test is required to assemble the gas cylinder container.

(5) The professional technician and operator is needed and not less than 3 person

Manufacture license of C3(assembling for gas cylinder container only) is not required for the license holder of B1(Seamless gas cylinder). However, above mentioned containers of gas cylinder shall pass the corresponding inspection by CCS, and the inspection report shall be submitted to the license-issue organ for registration.

10. Addition the boiler and pressure vessel production site.

The manufacturer of boiler and pressure vessel, who desire to add another production site beyond the approved address under the same company name due to the increase of production ability, shall deliver the application to the license-issue organ. Upon the application accepted and approved, the applicant require to invite the audit organ to conduct the

manufacturer survey to the additional production site. After the assessment passed, the name, address, manufacturing level, products variety approved at the additional production site will be merged into the license scope of general factory(head office), and no independent license issued only to the additional production site.

11. Change of manufacture address

With the reference to the Article 20 of “Supervision Administration Regulation for Manufacture of Boiler and Pressure Vessel”, refer to the change of production site, the form of “Application form for the change of special equipment manufacture license” shall be filled out and delivered to the license-issue organ. After the application accepted and approved, the manufacturer shall invite the audit organ to perform the manufacturer survey for this change confirmation and the revised license will be issued after the assessment passed finally. Production activities of boiler and pressure vessels shall be suspended while site moving. Any production at the same time of removal is not permitted in principle.

12. Scope extension of license

The license holder of pressure vessel including D level, or pressure vessel manufacture holding level B,A3,A4 or A5 , shall deliver the application to the AQSIQ for the adding of D level. Upon the application accepted and approved, audit organ who has the assessment qualification applicable for manufacture licensing of D level shall be invited to perform the manufacturer survey and the corresponding audit report shall be submitted to AQSIQ for approval.

13. Expiry date of boiler and pressure vessel manufacture license

The manufacture license of boiler and pressure vessel is valid for a period of 4 years since the date of issue. If license upgraded from level D to level A,B,or C, the license expiration shall be re-calculated from the date of upgrading approved. Within the license’s approved scope, if add the level or products variety ,the license’s expiration date remain unchanged.

14. Regulation of sample products for trial-manufacture

The sample/demo products for trial-manufacture describing in Article 10 of “Supervision Administration Regulation for Manufacture of Boiler and Pressure Vessel ”refer to the typical products or major components corresponding to the applied level.

SELO(Special Equipment Licensing Office) of AQSIQ

Feb.8,2007