GUIDELINES FOR THE REGISTRATION OF PRESSURE VESSEL IN WORKPLACES BY AUTHORISED EXAMINER

Occupational Safety and Health Division, Ministry of Manpower
(Version 1.1 – Feb 2007)
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1. INTRODUCTION

1.1 With effect from Nov 2006, the owner of statutory pressure vessels will only need to approach an Authorised Examiner (Pressure Vessel) who will make an application to the Occupational Safety and Health Division (OSHD) to register for use the pressure vessels.

1.2 The owner will require to submit the required documents as specified in Appendix 2 to an Authorised Examiner (AE) whom will determine the necessary tests to be conducted in accordance with this guidelines.

1.3 The owner shall ensure that the pressure vessel is examined by an AE and had received a valid Report of Examination issued by the AE, prior to the usage of the pressure vessel.

1.4 The owner shall retain the documents as specified in Appendix 2 till the end-of-life of the pressure vessel and to produce them for verification when requested by OSHD.

2. PRESSURE VESSEL TYPE

2.1 A pressure vessel is a container or a vessel which contains a substance under pressure. If a pressure vessel fails in use, it can seriously injure or kill people nearby and cause serious damage to property. It is therefore essential that the design, fabrication and use of pressure vessels be stringently controlled in order to ensure that they are safe for use.

2.2 Statutory pressure vessels can be fabricated overseas or in Singapore. For those fabricated overseas, their design must conform to approved design codes, such as the British Standards (BSI) or American Society of Mechanical Engineers (ASME) Code. Approval for vessels fabricated using other standards or codes will be assessed on a case by case basis. The vessels must also be surveyed during the construction stage by an approved inspection agency to ensure that they are of good construction, sound material and free from defects. The approved inspection agency will issue a third party fabrication survey report certifying that the pressure vessel has been fabricated and tested in accordance with approved design code. Please refer to www.mom.gov.sg for the list of the Approved Overseas Inspection Agencies.

2.3 The categories of statutory pressure vessels are as follows:

(i) Air Receiver - a container of air under pressure, which includes blasting pots, compressor air tanks and headers.

(ii) Steam Boiler - a closed vessel in which steam is generated at a pressure greater than atmospheric pressure which includes autoclaves, steam generating heat exchangers, sterilisers, pressure cookers, economisers and superheaters.

(iii) Steam Receiver – Any vessel or apparatus (other than a steam boiler, steam container, steam pipe or coil or part of a prime mover) used for containing steam under pressure greater than atmospheric pressure

(iv) Refrigerating Plant Pressure Receiver - a container of refrigerant under pressure.

3. REGISTRATION PROCEDURE FOR NEW PRESSURE VESSELS

3.1 Pressure vessel owners shall now apply for approval to use statutory pressure vessels by submitting the required documents as specified in Appendix 2, to the AE. Based on the documents submitted, the AE shall ensure all the necessary tests as specified in Appendix 4 are conducted to his satisfaction before he registers the pressure vessel with OSHD.

3.2 Scanned copies of relevant certificates (eg. fabrication report issued by the inspector who conducted the fabrication survey) shall be submitted online during the registration of the pressure vessel. The flowchart depicting the registration process for a new pressure vessel is attached in Appendix 3.
4. RE-REGISTRATION PROCEDURE FOR EXISTING PRESSURE VESSELS

4.1 Pressure vessels already approved for use in Singapore, i.e. those with a previous report of examination issued by an AE shall be required to be re-registered with this Division when there is a transfer of equipment ownership or when the equipment is being relocated to another premise.

4.2 The AE shall refer to Appendix 5 to determine the necessary tests to be conducted. The AE may also carry out any further examinations he deems necessary to fully satisfy himself the sound integrity of the pressure vessel before he performs a re-registration of the pressure vessel.

4.2 The flowchart depicting the re-registration process for a pressure vessel is attached in Appendix 3.

5. RESPONSIBILITIES OF AUTHORISED EXAMINER (PRESSURE VESSEL)

5.1. For pressure vessels manufactured overseas, the AE shall verify that the pressure vessel had been surveyed by an approved inspector from an Approved Overseas Inspection Agency. The fabrication survey report is not accepted if either the inspector or the overseas inspection agency is not approved by OSHD when the fabrication survey report was made. The list of approved overseas inspection agency is available via:


5.2. The AE shall submit online during registration of pressure vessel, the scanned copies of the relevant certificates (refer to paragraph 3.2) to support his decision in his determination of the necessary tests to be conducted on the pressure vessel.

5.3. By determining and conducting the necessary tests in accordance to this guideline, the AE is deemed to have verified and confirmed that the submitted documents have met the acceptance criteria stipulated in Appendix 4 / 5.

5.4. The AE shall also verify and approve the gas train for gas or dual-fired steam boiler, in accordance to the requirements stipulated in Appendix 6. The AE shall endorse on the gas train layout plan and submit a scanned copy online during the registration / re-registration of the steam boiler. The AE should also remind the owner to retain the endorsed gas train layout plan till the end of life of the steam boiler.

5.5. Disciplinary action will be taken against the AE if it is found that the AE had violated the stipulated tests requirements spelt out in this guideline.

6. RISK ASSESSMENT AND MANAGEMENT

6.1 Risk assessment of the various types of tests to be conducted (such as radiography, hydrostatic test for the pressure vessel etc) shall be conducted to evaluate the risks to the safety and health of employees to which they are exposed while they are at work. Where the risks are significant, appropriate measures must be developed, implemented and maintained to eliminate or reduce the risks.

6.2 The occupier of the workplace is responsible to ensure the risk assessment is conducted by a team comprising representatives from the occupier, the equipment supplier, the equipment operator and etc. The occupier shall also ensure that safe work procedures are developed and implemented before carrying out such work. The safe work procedures shall include the safety precautions to be taken in the course of work and during an emergency; and the provision and use of personal protective equipment.

6.3 The occupier is to ensure that the safe work procedures are effectively communicated to all relevant parties involved in the testing procedures.

6.4 For more information on the conduct of risk assessment, please refer to the MOM website at www.mom.gov.sg.

-End-
APPENDIX 1 - GLOSSARY OF TERMS

**Authorised Examiner (AE)** – The authorised examiner means any person approved by the Commission for the purpose of carrying out any prescribed examination or test of statutory pressure vessels.

**Design check (DC)** – The authorised examiner shall conduct a design review to confirm that the design of the pressure vessel meets requirements of acceptable codes / standards.

**Hydrostatic test (HT)** – The authorised examiner shall witness the hydrostatic test at the test pressure in accordance with the design code to confirm the safe integrity of the pressure vessel.

**Positive material identification (PMI)** – The authorised examiner shall ensure that a non-destructive chemical and strength analysis is performed on the body of the pressure vessel to confirm the material used is of a grade allowed to be used in the construction of the pressure vessel. PMI shall be conducted by SAC–Singlas accredited testing laboratories.

**Pressure vessel (PV)** – Pressure vessel means any container or vessel used for containing any substance under pressure; and includes any steam boiler, steam receiver, steam container, air receiver, refrigerating plant pressure receiver and gas cylinder.

**Radiography (R)** – Radiography shall be conducted to check for inherent defects on welding joints and seams of the pressure vessel. This test shall be conducted by an SAC-Singlas accredited testing laboratories using sophisticated radiography equipment.

**Running test (RT)** – The authorised examiner shall witness the running test to ensure that safety valves installed on the pressure vessel are of adequate design, set at the correct setting and operate as intended or design for.

**Ultrasonic test (UT)** – Ultrasonic test shall be conducted to confirm the thickness of various parts of the pressure vessel conform to minimum thickness specified in the design. This test shall be conducted by either an authorised examiner or an SAC-Singlas accredited testing laboratories using the appropriate equipment.

**Visual inspection (VI)** – The authorised examiner shall conduct a thorough visual inspection of the pressure vessel to ensure that there are no physical defects on the visually accessible parts of the vessel. The AE shall also confirm the minimum safety devices as required under the Workplace Safety and Health (General Provisions) Regulations are installed or supplied with the vessel.
APPENDIX 2 – DOCUMENTS TO BE SUBMITTED TO AUTHORISED EXAMINER AND RETAINED BY OWNER

The owner shall retain, but not limited to, the following documents in the premise where the pressure vessel is being used:

Registration of New Pressure Vessels

a) Construction drawing of statutory pressure vessel, showing welding details.

b) Design calculation (endorsed by Approved Overseas Inspection Agency) made to either ASME, BSI or other approved codes.

c) Layout plan of boiler house/room conforming to Singapore Standard CP27.

d) Steam piping diagram (drawn to ASME 31.1 / 31.3) if applicable.

e) Gas train layout plan in compliance with BS5885 approved by AE, if applicable.

f) Original fabrication survey report issued by:
   • an Approved Overseas Inspection Agency
   • Commissioner for Workplace Safety and Health;
   • an approved authorised examiner; or
   • an approved local inspection agency

Re-registration of Existing Pressure Vessels

a) Previous Report of Examination of the statutory pressure vessel issued by the authorised examiner.

Notes:

1 Accepted Third Party Fabrication Survey Reports includes:
   a) DOSH Inspection Report (from Malaysia’s Department of Occupational Safety and Health);
   b) Pressure vessel manufactured in USA / Canada and surveyed by a National Board Inspector (found in Form U or Form P); or

2 Pressure vessel fabricated outside USA / Canada and surveyed by a National Board Pressure Vessel Inspector not approved by MOM will NOT be recognised.
APPENDIX 3 - PROCESS FLOW FOR REGISTRATION OF NEW PRESSURE VESSELS / RE-REGISTRATION OF EXISTING PRESSURE VESSELS

AE receives application for pressure vessel registration from client/owner

New Registration

Re - Registration

Documents stated in Appendix 1 in order?

NO

AE to request for outstanding documents

AE to check the date of manufacture from the fabrication survey report, to determine the necessary tests based on Table 1.

YES

AE to check the date of previous inspection from the Report of Examination, to determine the necessary tests based on Table 1.

Previous Report of Examination issued by AE?

NO

YES

AE to check the date of previous inspection from the Report of Examination, to determine the necessary tests based on Table 1.

AE will next:
- Make an online registration for the pressure vessel;
- Upload relevant documents/certificates to the system;
- Conduct and witness the necessary tests as determined from Table 1;
- Issue the Report of Examination via the LEAP II.
# APPENDIX 4 – LIST OF REQUIRED TEST FOR NEW PRESSURE VESSEL REGISTRATION

## Table 1: Criteria for new pressure vessel registration

<table>
<thead>
<tr>
<th>Types of Vessel</th>
<th>Required Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Boilers (SB) (Electric &amp; Non-Electric)</td>
<td>1) Construction drawing of statutory pressure vessel, showing welding details</td>
</tr>
<tr>
<td>Economisers (BE) (Electric &amp; Non-Electric)</td>
<td>2) Design calculation (endorsed by Approved Overseas Inspection Agency) made to either ASME, BSI or other approved codes</td>
</tr>
<tr>
<td>Superheater (BS) (Electric &amp; Non-Electric)</td>
<td>3) Layout plan of boiler house/room conforming to Singapore Standard CP27</td>
</tr>
<tr>
<td>Air receiver (AR)</td>
<td>4) Steam piping diagram (drawn to ASME 31.1 / 31.3) if applicable</td>
</tr>
<tr>
<td>Steam receiver (SR)</td>
<td></td>
</tr>
<tr>
<td>Refrigerating plant pressure receiver (PR)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5) Gas train layout plan in compliance with BS5885 approved by AE, if applicable</td>
</tr>
<tr>
<td></td>
<td>6) Original fabrication survey report issued by:</td>
</tr>
<tr>
<td></td>
<td>• an Approved Overseas Inspection Agency;</td>
</tr>
<tr>
<td></td>
<td>• Commissioner for Workplace Safety and Health;</td>
</tr>
<tr>
<td></td>
<td>• an approved authorised examiner; or</td>
</tr>
<tr>
<td></td>
<td>• an approved local inspection agency</td>
</tr>
</tbody>
</table>

### *Issuance of Fabrication Report*

<table>
<thead>
<tr>
<th></th>
<th>Exemptions</th>
<th>Required Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC</td>
<td>PMI</td>
</tr>
<tr>
<td>No fabrication survey report</td>
<td>--</td>
<td>√</td>
</tr>
<tr>
<td>Fabrication survey report issued ≥ 10 years ago as of registration date</td>
<td>--</td>
<td>√</td>
</tr>
<tr>
<td>Fabrication survey report issued &gt; 2 years ago but &lt;10 years ago as of registration date</td>
<td>For electric autoclaves, UT &amp; HT are exempted For AR/SR/PR, HT is exempted.</td>
<td>√</td>
</tr>
<tr>
<td>Fabrication survey report issued ≤ 2 years ago as of registration date</td>
<td>For AR/SR/PR &amp; electric autoclaves, HT is exempted.</td>
<td>√</td>
</tr>
</tbody>
</table>

* Refer to note 1 & 2 of page 6.
### APPENDIX 5 – LIST OF REQUIRED TEST FOR EXISTING PRESSURE VESSEL RE-REGISTRATION

**Table 2a : Criteria for re-registration of pressure vessel**

<table>
<thead>
<tr>
<th>Types of Vessel</th>
<th>Required Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air receiver</td>
<td>Previous Report of Examination of the statutory pressure vessel issued by the authorised examiner</td>
</tr>
<tr>
<td>Steam receiver</td>
<td></td>
</tr>
<tr>
<td>Refrigerating plant pressure receiver</td>
<td></td>
</tr>
<tr>
<td>Autoclaves (only type-approved models)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issuance of Report of Examination</th>
<th>Required Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC</td>
</tr>
<tr>
<td>Air receiver</td>
<td></td>
</tr>
<tr>
<td>Steam receiver</td>
<td>✓</td>
</tr>
<tr>
<td>Refrigerating plant pressure receiver</td>
<td>✓</td>
</tr>
<tr>
<td>Autoclaves (only type-approved models)</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Table 2b : Criteria for re-registration of pressure vessel

<table>
<thead>
<tr>
<th>Types of Vessel</th>
<th>Required Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Boilers (Electric &amp; Non-Electric)</td>
<td>Previous Report of Examination of the statutory pressure vessel issued by the authorised examiner</td>
</tr>
<tr>
<td>Economisers (Electric &amp; Non-Electric)</td>
<td></td>
</tr>
<tr>
<td>Superheater (Electric &amp; Non-Electric)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issuance of Report of Examination</th>
<th>Required Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Boilers (Electric &amp; Non-Electric)</td>
<td>Last inspection conducted &gt; 10 years ago</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Economisers (Electric &amp; Non-Electric)</td>
<td>Last ultrasonic test and hydrostatic test conducted 10 years ago</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Superheater (Electric &amp; Non-Electric)</td>
<td>Last ultrasonic test and hydrostatic test conducted &lt; 10 years ago</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6 – GAS TRAIN REQUIREMENTS FOR GAS OR DUAL-FIRED STEAM BOILER

![Diagram of gas train components](image)

Table 1. Description of Components for Dual-Fuel Gas Train

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Requirement/Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quick acting manual Stop valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strainer/filter (can be integral with upstream safety shut-off valve if valve connection size is DN 15 or greater and valve is not incorporating self-cleaning or shearing action)</td>
<td>Maximum strainer hole shall be not greater than 1.5 mm and the mesh shall not pass a 1 mm pin gauge</td>
</tr>
<tr>
<td>PI</td>
<td>Pressure gauge</td>
<td>Calibrated at least once a year</td>
</tr>
<tr>
<td>NC POC</td>
<td>Safety shut-off valve with proof of closure (with indicators), normally closed, installed in series. (for above 3000 kW system rating) (See note 1 for other system ratings)</td>
<td>Two class-A valves with proving system. They shall be designed and fitted to discourage unauthorised interference. To be tested for proof of closure prior to startup. If check indicates that valve is not closed, startup shall be prevented.</td>
</tr>
<tr>
<td>NO</td>
<td>Vent valve, with proof of closure (with indicator), normally opened. (for above 3000 kW system rating) (See note 1 for other system ratings)</td>
<td>It shall be designed and fitted to discourage unauthorised interference. To be tested for proof of open position. Failure to prove the vent valve in the correct open position shall prevent startup</td>
</tr>
<tr>
<td>PS Max</td>
<td>Pressure switch for maximum gas pressure</td>
<td>To be tested in accordance to BS5885</td>
</tr>
<tr>
<td></td>
<td>Check valve</td>
<td>To prevent reverse flow of fuel into supply line of another fuel.</td>
</tr>
<tr>
<td></td>
<td>Three-way valve</td>
<td>To switch completely from one fuel pipeline to another with proof of isolation of the fuel not in use before startup.</td>
</tr>
</tbody>
</table>
Notes
1. Each main gas supply shall be under the control of 2 safety shut-off valves in series as set out in table 2:

<table>
<thead>
<tr>
<th>System rating (kW)</th>
<th>Valve system requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 7.5 up to but excluding 60</td>
<td>2 safety shut-off valves of at least class-B</td>
</tr>
<tr>
<td>From 60 up to 600</td>
<td>1 class-A and 1 class-B safety shut-off valves</td>
</tr>
<tr>
<td>Above 600 up to 1000</td>
<td>2 class-A safety shut-off valves</td>
</tr>
<tr>
<td>Above 1000 up to 3000</td>
<td>2 class-A safety shut-off valves with a system check</td>
</tr>
<tr>
<td>Above 3000</td>
<td>2 class-A safety shut-off valves with proving system (to prove no leakage of the 2 safety shut-off valves)</td>
</tr>
</tbody>
</table>

BS EN 161: Class A valve has minimum sealing force over closure member orifice area of 150mbar. Class B valve has minimum sealing force over closure member orifice area of 50mbar. The valves shall comply with BS7461 and BS EN 161.

There shall be a proving system for burner with system rating of above 3000 kW to prove no leakage of the safety shut-off valves. These could be by means of:

a) a plug or a solenoid valve (normally open type) on the pipe section between the two safety shut-off valves to channel to a gas sensing or pressure sensing system (with cut-off in the event of a leakage of the safety shut-off valves); or

b) a proving system (also with cut-off) using a safe gas (eg Nitrogen) to pressurise the pipe section between the safety shut-off valves, and subsequent sensing of pressure loss in the event of a leakage in any one of the safety shut-off valves.

2. Gas Boosters
a) Gas boosters shall not be installed without written approval from PowerGas/main gas supplier.

b) Burners fitted with a gas booster shall include means for causing lock-out of the booster in the event of the booster supply pressure falling below the minimum specified by the gas supplier.

3. Start-up gas train shall be of the same design and layout as the main gas train. Not applicable for LPG cylinder as source of start-up gas.

Additional Notes on Dual-Fuel Systems
a) Where it is necessary to have common pipework for more than one gaseous fuel, the pipework shall be so designed that the reverse flow of one fuel into the supply line of the other fuel is prevented.

b) It is essential that the fuel not being fired be proven isolated prior to the commencement of the ignition sequence. The burner design should also ensure that failure of this proof of isolation at any time causes lock-out.

c) On dual fuel burners, a fault condition may occur on a flame safeguard system monitoring one of the two fuels. The burner should be so designed that start-up on that fuel is prevented and a fault condition is indicated.
APPENDIX 7 - SCREENSHOTS FOR PRESSURE VESSEL REGISTRATION

Application for Non-Factory

Successful Application for Non-Factory

Successfully submitted.

The Non Factory No. is: N76137A001.

Please print this page using "Ctrl+P" for your reference and quote the Non Factory No. when making enquiry.
PV Registration Step 1) Enter Factory Number

PV Registration

New PV Registration

Factory No. * N76127C

Is this application for boiler with attached economiser(s) and/or superheater(s)?

NO | YES

If the factory has NOT been registered with MOM, please proceed to:
1) Submit Registration of Factory/Shipyard
2) Submit Registration of Worksites
3) Submit Application for Factory No. (for Non-Factories)
before returning to this page.

Please note that you can only register the PV under the PV class that you are authorised for.

CONTINUE

PV Registration Step 2) Enter PV Particulars

PV Registration

PV Particulars

Previous Registration No. (if any):

Brand Name: Hitachi
Year of Manufacture: 1996
Volume (litres): 400
Design Working Pressure (Kg/SG M): 400
Installability: Stationary
Heating Surface (SQ M): 4.9
Installation: Permanent

Vessel Class: Steam Boiler
Machine No.: 112233
Country of manufacture: AUSTRALIA
Vessel Type: Autoclave
Position: Horizontal
Capacity (kW): 513
Heat Source: Electric
Design Temperature (°C):

Third Party Inspection Authority: BOILER & CRANE SAFETY

Please note that you can only register the PV under the PV class that you are authorised for.

PREVIOUS | SUBMIT | RESET

PV Registration Step 3) Declaration of Supporting Documents

Declaration of Documents

I declare that the following documents were made available to me and I have found them to be in order.

For New Registration:
- Boiler room and steam piping layout plans for Steam Boiler
- Construction Drawings reviewed and approved by Approved Third Party Inspection Agency or Local Professional Engineer
- Design Calculations reviewed and approved by Approved Third Party Inspection Agency or Local Professional Engineer
- Fabrication survey report from Approved Third Party Inspection Agency/Ministry of M'power
- For direct fired boilers, Letter of Approval from National Environment Agency (NEA) for chimney and blowdown pit

For Re-Registration:
- Previous report of examination by Authorised Examiner (previously known as Authorised Boiler Inspector) of Singapore

Please inform the owner to retain all relevant documents stated above till the end-of-life of the pressure vessel.
PV Registration Step 4) Successful Submission

Successfully submitted.
PV Registration No: [BR081820P] Successfully Processed.

Click to print/view submitted PV Registration Application Form

You are required to submit supporting documents for PV Registration as follows:

For New Registration:
- Fabrication survey report from Approved Third Party Inspection Agency/Ministry of Manpower

For Re-Registration:
- Previous report of examination by Authorized Examiner (previously known as Authorized Boiler Inspector) of Singapore

Please print this page for your reference and quote the PV Registration No. when making enquiry.

PV Registration Step 5) Uploading of Supporting Documents

<table>
<thead>
<tr>
<th>Attachment of Supporting Document</th>
<th>Documents Needed</th>
<th>Content of Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document 1</td>
<td>k:\BoilerInspectionCert</td>
<td>Boiler Inspection Cert</td>
</tr>
<tr>
<td>Document 2</td>
<td>Browse</td>
<td></td>
</tr>
<tr>
<td>Document 3</td>
<td>Browse</td>
<td></td>
</tr>
<tr>
<td>Document 4</td>
<td>Browse</td>
<td></td>
</tr>
<tr>
<td>Document 5</td>
<td>Browse</td>
<td></td>
</tr>
<tr>
<td>Document 6</td>
<td>Browse</td>
<td></td>
</tr>
</tbody>
</table>

Please state the content of the softcopy documents you are attaching to this submission, i.e. test certificate, construction drawings, steam piping layout, etc.
Re-Uploading of Supporting Documents After PV Registration

Step 1: Click on Enquiry under Pressure Vessel Menu Item

Step 2: Click on PV Enquiry

Step 3: Enter the PV Registration Number
Step 4: Upload supporting document(s)

Currently, there is not supporting document available. To upload supporting documents, click on the link.

Step 5: PV Supporting Document Upload Page

Please state the content of the softcopy documents you are attaching to this submission, i.e. test certificate, construction drawings, steam piping layout, etc.
Step 6: Document Successfully Uploaded

Step 7: To check uploaded document(s), go to PV Enquiry again

Step 8: PV Enquiry – Supporting Documents section

PV Supporting Document is now uploaded and displayed. To upload additional supporting documents, click on the link and repeat Step 5 and 6. To view documents, access the PV Enquiry page again.
Sample 1: Report from DOSH, Malaysia
Sample 2: Report from Boiler & Crane Safety Association

BOILER & CRANE SAFETY ASSOCIATION
Inspection and Certification Agency of Boiler and Pressure Vessel
authorized by the Minister of Health, Labour and Welfare in Japan
41-20, KAMEIDO 6-CHOME, KOTO-KU, TOKYO, JAPAN.
TEL 03-3685-2141 FAX 03-3685-2189

CERTIFICATE OF PRESSURE VESSEL

1. Applicant: ALP Co., Ltd.
2. Applicant's Address: 3-10, Midorigaoka
   3-chome, Hamura-shi, Tokyo, Japan.
3. Manufacturer: Ditto
4. Manufacturer's Address: Ditto
5. Kind: Autoclave
6. Type: Vertical
7. Manufactured in: Dec 2005
8. Specifications of Construction:
   (1) Design Pressure: 0.380 MPa
   (2) Volume: 0.645 m³
   (3) Shell:
      a. Material: SUS304
      b. Maximum ID.: 320 mm
      c. Length: 453 mm
      d. Thickness of Plate: 2.0 mm
   (4) End Plate:
      a. Material: SUS304
      b. Type: Dished
      c. Knuckle Radius: 64 mm
      d. Thickness of Plate: 2.0 mm
   (5) Cover Plate:
      a. Material: SUS304
      b. Type: Dished
      c. Thickness of Plate: 3.0 mm
      d. Thickness of Flange: 22 mm
   (6) Stays: NA
   (7) Bolts for Cover Plate:
      a. Material: SUSXM7
      b. Nominal Diameter: M12
      c. Number: 4
   (8) Type of Longitudinal Seam of Shell: Butt one side weld joint. Efficiency: 60 %
   (9) Openings:
      a. Type: Cover opened
      b. Size: Ø 320 mm
      c. Number: 1
   (10) Tubes: NA
   (11) Safety Valve and/or Safety Devices:
      a. Kind: Safety valve
      b. Type: Spring loaded
      c. Size: Ø 3.0 mm
      d. Number: 1
9. Inspected at: Manufacturer's shop
10. Inspected on: 27 Dec 2005
11. Hydrostatic Test Pressure: 0.538 MPa
12. Note: None
13. Stamping Marks and Vessel Number: As is stated above.
14. Name of approved Inspector: Masahiro Suzuki
    (Authorized to carry out inspection of pressure systems in Japan by the Minister of Manpower, Singapore.)

I, the undersigned, certify that the inspection for design, manufacture, welding and materials of the pressure vessel, data of which are described above, was made in accordance with the Japanese Industrial Standard Code B8265 (Construction of pressure vessel - General principles), and that it passed the inspection and test established by the said standard.

Masahiro Suzuki, Inspector
Sample 3: Report from HSB