The Maharashtra Boiler Rules, 1962

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INDUSTRIES AND LABOUR DEPARTMENT

Mantralaya, Mumbai, 6th August 1962

Indian Boilers Act, 1923

No.INT 1558-Lab. III—In exercise of the powers conferred by section 29 of the Indian Boilers Act, 1923 (V of 1923) and in supersession of the Bombay Boilers Rules, 1924, the Bombay Boiler Attendants Rules,1953 ; the rules published in the former Government of Central Provinces, Commerce and Industries Department, Notification No.1655—1351-XIII, dated the 2nd July 1930 and the Hyderabad State Boiler and Machinery Rules, Fasli 1341, the Government of Maharashtra hereby makes the following rules, the same having been previously published as required by the said section 29 of the said Act :--

THE MAHARASHTRA BOILER RULES, 1962

I. PRELIMINARY

1. Short title and extent :- (1) These rules may be called the Maharashtra Boiler Rules, 1962.

(2) They extend to the whole of the State of Maharashtra.

2. Definitions: - In these rules unless the context requires otherwise:-

(a)“Act” means the Indian Boilers Act, 1923:

(b)“Appellate authority” means an appellate authority constituted under rule 63:

(c)“Board” means the Board of Examiners constituted under rule 74;

(d)“Degree” means a degree of a statutory University;

(e)“Diploma” means a diploma of a technical institute of the Government or of a technical institute recognized by the Government of Maharashtra.

(f)“Headquarters” means the place where the permanent or temporary office of the Directorate of Steam Boilers is situated;

(g)“Inspecting Authority” and “Inspecting Officer” shall have the respective meaning as assigned in the Indian Boiler Regulations, 1950. (h)“Regulation” means a regulation framed by the Central Boiler Board under section 28;

(i)“rule” means a rule framed by the Government of Maharashtra under section 29;

(j)“section” means a section of the Act;

3. **Payment of fees** :- All fees payable under the Act shall be deposited by the payer in a Government Treasury or the Reserve Bank of India in the State of Maharashtra.

Applications under sections 7 and 8 to which the treasury or bank receipt is affixed shall be deemed to be accompanied by the prescribed fee.

All fees, costs and penalties levied under the Act shall be disposed of in such manner as the State Government may from time to time direct.

4**. Location of Offices** :-- The location and charge of the offices for the under mentioned area shall be as follows :-

Sr.No.	Area
1	Mumbai, Thane and Raigad District
2	Pune & Satara
3	Solapur, Latur, Hingoli, Parbhani
4	Ahmednagar, Aurangabad, Jalana
5	Nagpur, Buldhana, Akola, Washim, Amaravati, Wardha, Chandrapur, Yawatmal, Gadchiroli,
6	Nashik, Dhule, Nandurbar, Jalgaon
7	Kolhapur, Sindhudurg, Ratnagiri

Location	Officer-in-charge
Kamgar Bhavan, Bandra Kurla complex, Plot No.C-20, Block-E, Bandra (East), Mumbai-400 051.	Director
Directorate of Steam Boilers, Sahkar Bhavan, 1st floor, Adarsh Nagar, Pune-Satara road, Pune-411 037.	Joint Director
Directorate of Steam Boilers, 1st floor, Opposite Naval Petrol Pump, 83-A, Railway Lines, Dafarin Chowk, Solapur-413 001	Joint Director

Directorate of Steam Boilers, Haresh, 16, Bijali Co-Op.HSG. Society Ltd., Near Shila Vihar, Vasant Tekadi, Ahmednagar-414003	Joint Director
Directorate of Steam Boilers, 1,Bhagawaghar Layout, Dharampeth, Nagpur-440 010	Joint Director
Directorate of Steam Boilers, Gala No. 4, Udyog Bhava, Near ITI, Trambak Road, Satpur, Nashik - 422 007	Joint Director
Directorate of Steam Boilers, Juna Rajwada, Bhawani Mandap, Kolhapur-416 002	Joint Director

II. DUTIES OF THE DIRECTOR

5. **Administrative Control** :- The Director shall work under the administrative control of Government in Industries, Energy and Labour Department and shall submit Annual Report on the administration of the Act and such other reports and returns as may be called for by the State Government.

6. **Duty of General control** :- The Director is vested with all the powers of an Deputy Director under the Act. His main duty, however, consists in supervising and controlling the work of the Deputy Directors, and he should only actually inspect or examine boilers in exceptional cases, or where he considers that the work of an Deputy Director requires a personal check.

7. **Specific duties of Director**:-(1) As an Inspecting Authority, the Director shall:-

(a) approve all drawings and plans for construction of boilers, parts thereof, steam receivers, separators, and other like equipments: (b) Supervise and control the work of all Inspecting Officers in the construction of boilers, parts thereof, steam receivers, separators, and other like equipments;

(c) issue certificates in Forms II and III-A and countersign certificates in

Form-III of the Regulations for boilers, parts thereof, steam-pipes, steam receivers, separators, and other like equipments;

(d) advise the makers of boilers or of parts thereof or of steam receivers, separators and other like equipments with regard to the provisions of the Regulations so far as they relate to their design and constructional features

(e) supervise and control the working of any testing laboratory set up for the testing and examination of boilers or parts thereof under construction;

(f) examine and approve all reports, regarding examination of boilers, parts thereof under construction in stages as enumerated in Appendix 'J' of the Regulations.

(2) The Director shall –

(a)personally check the registration particulars and calculations submitted by Deputy Directors for all boilers inspected for registration as prescribed in Chapter IX of the Regulations and enter under his own signature the approved working pressure and all orders required by section 7 ;

(b)enter under his own signature any subsequent entries required in the registration book;

(c)obtain from the State of registry registration book of any boiler the transfer of which is reported under section 6 (p);

(d)fix the area under the control of each Deputy Director and the joint Director;

(e)approve the programs of all Joint Directors and Deputy Directors subordinate to him with due regard to the convenience of owners generally;

(f)examine and countersign the Deputy Director's Memorandum of Inspection book of each boiler after each inspection;

(g)examine and pass orders on the diaries and returns of Joint Directors; (h)pass orders in all cases in which an Deputy Director proposes to increase or reduce the pressure allowed for any boiler under section 8, or to revoke, cancel or refuse to renew the certificate of boiler under section 11, or to order important repairs, structural alterations, or renewals in a boiler under section 8;

(i)pass orders in all cases in which it is reported that after due notice the boiler has not been properly prepared for inspection.

(j)Decide all appeals as against the order of a Joint Director or Deputy Director under section 19;

(k)Sanction prosecutions under the Act;

(l)inquire into serious accidents to boilers;

8. Instructions to owners :- It shall be the duty of the Director to advise owners are regards the maintenance, working and cleaning of boilers: he should issue a set instruction on the lines indicated in

Form-C appended to these rules. These instructions should be hung up in each boilers house.

9.Registers to be kept :- (1) As an Inspecting Authority: the Director shall keep in his office—

(a) a register of boilers and scantlings manufactured in the State ‘

(b) a register of all tests carried out to test specimens against the boilers under manufacture;

(c) a register of radiographic and non-destructive examination carried out with the result thereof against each boiler of welded construction under manufacture;

(d) a register of drawing s and plans of boilers approved;

(e) a register of examination fees received in connection with construction of boilers, steam pipes or parts thereof;

(f) a schedule of stage examination of boilers or parts thereof in accordance with the provisions laid down under Appendix ‘J’ of the Regulations;

(2) The Director shall keep in his office –

(a)a Register in Form A of all boilers registered in the State, or the registry of which has been transferred from another state;

(b)the Registration Book and Memorandum of Inspection Book of all boilers borne on his register;

(c)a register of appeals;

(d)a register of accidents;

(e)a register of registration and inspection fees received,

10. Deleted.

III. DUTIES OF JOINT DIRECTORS AND DEPUTY DIRECTORS.

11. Subordinate to Director :- Joint Director shall be directly subordinate to and under the control of the Director; they should ordinarily be appointed to take charge of specific area.

12**. General duties of Additional Director, Joint Directors and Deputy Directors :-** The Additional Director and Joint Directors shall exercise the powers and perform the duties conferred and imposed on Deputy Directors by or under the Act and perform such duties conferred or imposed on the Director by or under the Act as are assigned to him. The main duties of Deputy Director, as laid down in the Act, are the inspection and examination of boilers and steam-pipes. Inspections shall be carried out in strict accordance with Chapter IX of the Regulations and Chapters IV and V of these rules.

13. Deputy Directors to see that boilers are worked according to law :- In addition to the inspection and examination of boilers it is the duty of Deputy Directors to search for unregistered or uncertificated boilers within their areas, and to see that certificated boilers are worked in accordance with the terms of their certificates, and with any regulation or rule under the Act for their safe working.

14. **Deputy Directors to advise owners :-** At the time of inspection, Deputy Directors should advice the owner and the person in charge of the boiler of the management and upkeep of the boiler with special reference to the amount of cleaning required in view of the quality of water use.

15. **Specific duties:-** (1) The Additional Director shall carry out the following duties :-

(a) approve the programmes of all the Joint Directors;

(b) to examine and countersign the Memorandum of Inspection Books of all Joints Directors of each inspection;

(c) to examine weekly diaries and returns of the Joint Directors; and (d) to carry out such other duties as may be entrusted to him by the Director.

(2) The Joint Directors shall also carry out the following duties in addition:-

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(a)approve programmes of inspection work of all Deputy Directors; (b)to examine and countersign the Deputy Directors memorandum of Inspection book of each inspection;

(c)to examine weekly diaries and returns of the Deputy Directors;

(d)to carry out such other duties as may be entrusted to them by the Director.

(3) The Deputy Directors shall also carry out the following duties in addition;

(a)When in charge of an area beyond the limits of the Grater Mumbai and adjacent district, for which inspections are arranged from day-to-day by the Director, prepare a programme of inspections with regard to the convenience of owners generally in the most suitable order of places to save time and expenditure in cross-journeys and submit it at such periods as may be prescribed at least 14 days before the first date fixed in the programme to the Director for approval to enable 10 days notice required under sections 7 and 8 be given to the owners; (b)Maintain a Memorandum of Inspection Book for each boiler under his charge and submit it to the Director for examination counter signature after each inspection;

(c)keep diary for weekly submission to the Director showing places visited, boilers registered or inspected with fees paid thereon, variations from the programme and any other important particulars; (d)receive applications for registration or inspection under section 7 or 8 proposals for repairs, alterations, or renewals under section 12 and 13, and reports of accident under section 18;

(e)inquire into accidents to boilers and steam-pipes and report to the Director;

(f)report to the Director cases of unreported accident discovered at the time of inspection;

(g)submit for the orders of the Director—

(i) the Memorandum of Inspection Books of all boilers proposed for registration under section 7;

(ii) proposals for increasing or decreasing the pressure of a boiler after inspection under section 8;

(iii) proposals for necessary repairs, structural alteration or renewals to a boiler under section 8 or 12;

(iv) proposals for revoking, cancelling or refusing to renew a certificate under section 11 or 8;

(v) report when boilers have not been properly prepared for inspection under section 14;

(vi) proposals for prosecution under the Act.

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(4) As an Inspecting Officer the Dy. Director shall—

(a)prepare a programme of State examination with regard to the convenience of the makers generally and submit it to the Inspecting Authority for approval;

(b)maintain a schedule of such examination of boilers or parts thereof;

(c)maintain a diary of examinations carried out for monthly submission to the Inspecting Authority, showing places visited, boilers or parts thereof examined;

(d)submit to the Inspecting Authority reports on the results of the examinations carried out on boilers or parts thereof in accordance with the standards laid down in the regulations and with particulars reference to variations there from;

(e)report the result of test carried out to materials or scantlings in his presence;

(f)maintain a record of all test—both destructive and non-destructive—carried out by him or under his supervision.

(g)When radiographic examinations are carried out to boilers or parts thereof give his opinion in writing to the Inspecting Authority with regard to the acceptability or otherwise of the parts examined.

16. Inspection at special times – No examination of boiler shall be made by Deputy Director for the purpose of registering or issuing a certificate for a boiler or of steam feed and blow off pipes under fabrication, or of boiler mountings and fittings under manufacture or of a boiler or its component under fabrication on a Sunday or any holiday on which the offices of the State Government or the Central Government remain closed or between the hours of sunset and sunrise without the specific orders of the Director in each case.

In such cases an extra fee equal to the usual fee prescribed under Rule-39 shall be charged and half of the extra fee paid to the Deputy Director.

17. Attendance during hearing of appeals:- Under orders of the Director, Joint Directors, Deputy Directors shall attend during the hearing of appeals with regard to boilers under their charge before the Director or the Appellate Authority.

18. Registers to be kept :- Every Joint Director or Deputy Director in charge of an office shall keep—

(a) a register in Form-A of all registered boilers situated within his jurisdiction;

(b) a register of accidents;

(c) a register of registrations and inspection fees received.

IV. ADMINISTRATIVE INSTRUCTIONS FOR REGISTRATION

19. Importance of registration :- Technical regulations for the registration of boilers and the scale of fees for registration are prescribed in Chapter IX of the Regulations. The details of measurement recorded at the time of registration constitute a permanent record for the boiler and determine the original pressure at which the boiler is allowed to work . It is accordingly essential that the work should be done with the greatest care and precision.

20. Receipt of applications :- Applications for registration shall be made under section 7(1) either to the Director, Additional Director, Joint Director or to the Deputy Director of the local area in which the boiler is situated and shall be accompanied under Rule 3 by a receipt for the prescribed fee. No application shall be accepted

without the receipt. No boiler shall be registered if on measurement the fee is found to be deficient, until the deficit has been paid. Any excess payment will be refunded at the time of registration.

21. Necessity of avoiding delay: - it is essential that no delay should occur in registration. In large towns, the measurements under section 7(3) should ordinarily be completed and the report submitted to the Director within 7 days of the receipt of the application; in no case should the interval exceed 30 days. The Director should issue his orders under section 7 (4) without delay.

22. Register of registered boilers :-- The Director shall maintain a Register of Registered boilers in serial order in Form A in two parts; in Part I (boilers originally registered in the State) the registered number of a boiler shall be the one immediately following the last serial number in the Register. Gap number due to boilers being broken up or transferred to another States shall not be filled up, In Part II (boilers originally registered in other states) entries shall be made as precribed in Rule 24, Joint Directors or Deputy Directors in-charge of an office shall keep a similar Register for all boilers within their jurisdiction.

23. (1) Procedure on transfer of a boiler :- Whenever a boiler is transferred from another State into the State of Maharashtra the owner shall, under section 6(b), apply to the Director for the registration of the transfer; the boiler cannot be used until registration has been effected. The Director shall then obtain from the State from which the boiler was transferred the Registration Book and memorandum of Inspection book of the boiler.

(2) Whenever any registered boiler is transferred, the transferee shall give an intimation of the transfer to the Director within 15 days from the date on which the transfer takes effect and shall pay a fee or Rs.50 to the Director for recording an entry regarding such transfer in the Register or registered

boilers, On receipt of such intimation and the fees, the Director shall record the entry regarding the transfer in the said Register.

24. Entry of transferred boiler in Register :- On receipt of the Registration and Memorandum of Inspection Books, the Director shall enter the boiler under its original number in Part II of his Register, and shall instruct the Joint Director or Deputy Director of the local area in which the boiler is situated to enter it similarly in his Register. The Registration book and Memorandum of Inspection Book shall be kept in the Director's office.

25. Note of transferred and dismantled boilers. ;- Whenever a boiler has been transferred to another State or broken up the fact shall be noted in the Register. In the case of a boiler that has been permanently dismantled the Registration Book and the Memorandum of inspection book shall be destroyed.

26. Procedure at Inspection :- Internal Inspection—Detailed instructions for the inspection of boilers are contained in Chapter IX of the Regulations. The following general procedure at inspection should be observed :--

At a thorough inspection of a boiler the Deputy Director should, wherever the size and construction of the boiler permit, go inside it and make a thorough inspection of all its internal parts. But before doing so he should satisfy himself that proper provision has been made for disconnection from any other boiler under steam.

Should be find that proper provision for disconnection has not been made or that the boiler has not been properly cleaned or scaled or that it is unreasonably hot he should decline to proceed with the inspection and should report the facts to the Director for orders under section 14(2).

When a boiler is of such a size or its construction is such that the Deputy Director cannot go inside it there must be sufficient sight holes or hand holes provided enable him to see the principal internal parts. If any important part of a boiler is so constructed that the Deputy Director cannot examine it he should report that facts to the Director for orders.

27. External inspection: - Boilers must be examined externally as well as internally; particular attention should be paid to the external parts of the boilers, wherein contact with seating blocks and brick work, especially when the situation is damp. Having regard to any serious defects discovered, Deputy Directors should take care, in order to ensure proper inspection, that boilers, of which the whole of the outside cannot be readily examined are cleared whenever they consider it necessary of any concealing covering, supports or fittings.

Saddle tanks and engine fittings of locomotive type boilers should be removed for inspection of the parts underneath at the first inspection and at any reasonable period afterwards if the Deputy Director cannot satisfy himself. If the Owners in any special case have any good reasons for not wishing to clear covered parts, the case should be submitted to the Director for orders. The Deputy Director must keep in mind that he is not certify as efficient any boiler regarding the condition of which be cannot thoroughly satisfy himself.

28. Casual working inspections :- At the inspection of one of a battery of boiler the Deputy Director should take the opportunity of examining the other boilers under steam with special reference to the water gauges, pressure gauges and safety valves.

29. Proposals for reduction of pressure:- When the Deputy Director decides that a boiler in one or more of its parts is no longer fit for the pressure approved for it, he should, without delay, report his proposals for reducing the pressure to the Director and at the same time submit this calculations for the wasted parts for check and approval of pressure. With regard to fitting and wasting of shell plates the Deputy Director must bear in mind that shell plates ordinarily are considerably stronger in the body of the plate, owing to being unpierced, that at the seams and consequently may become reduced in thickness to an appreciable extent in the body of the plate, i.e., elsewhere than at the seams, and still be stronger than the seam.

30. Repairs to boilers :- Under section 12 of the Act the sanction of the Director to all repairs proposed for boilers must be obtained before hand.

A few water tubes or smoke tubes, however, may in an emergency be renewed pending the sanction of the Director but all such cases must be reported immediately to the Director who may, if the deems fit, notify his sanction to the owner without verification of the renewals by the Deputy Director.

Generally in repairing boilers the object to be obtained is to make up for damage or wastage by suitable compensation, either by renewal or repair of the part affected. Covering patches applied with the object of hiding defects are a source of danger and must not be passed.

Welding by electric and oxy-acetylene processes may be employed in the repairs of boilers, but, as the efficiency of the welding depends largely on the skill and care of the operator each case will have to be decided on its merits.

Proper attention must be paid to the annealing of welded parts. The Deputy Director should, wherever possible, be present during some part at least, of the welding operations.

Extensive repairs such as renewal of furnaces, and plates, parts of shell fire-boxes, girders, etc., should be supervised, so far as other duties permit, by the Deputy Director and at such time when fire-boxes and smoke tubes of locomotive-type boilers are withdrawn, advantage of the opportunity should be taken to inspect the internal parts otherwise inaccessible to close inspection.

Repairs to boilers are prescribed in Chapter IX, Regulation 392 of the Regulation.

31. Entries in memorandum of inspection books :- The Deputy Director shall, as soon as convenient after an inspection, make the necessary entries in the Memorandum of Inspection Book for the boiler and submit the book to the Director. Care should be taken to preserve the books and to keep them clean. Inspection notes should be taken to preserve the books and to keep them clean. Inspection notes should briefly state to what extent boilers were cleared of brick-work. Lagging or concealing parts; the general condition of the boiler; parts requiring attention of repair and if special preparation is required at the next inspection.

[Deputy Directors should also note, in the Memorandum of Inspection books all casual visits, inspections of steam pipes, visits for inspection of repairs, inquiry into accidents, etc., and so provide a useful record of the history for the boiler of the information and guidance of Deputy Directors at subsequent inspections]

In making inspections it is important that the Deputy Director should pay particular attention to entries made in the memorandum of Inspection book at previous inspections.

32. Entries in certificates:- In addition to the entries required to be made under Regulation-389 in a certificate for a boiler the Deputy Director should state in the remarks column his requirements, if any, with regard to hydraulic test, removal of lagging, brick-work or other concealing part for the next inspection to enable the owner to have the same properly prepared at that time. He should also state in the same place his requirements regarding the repair or renewal of any part that may be considered fit only for the period of the certificate.

In the repairs column should be entered the year of repairs and description of repairs effected. Only important repairs should be noted.

His remarks should be brief. In the absence of remarks on the condition of boiler, the boiler will be considered to be in good condition.

33. Engraving of registry number: - Paper slips of the proper size bearing the registry number allotted for a boiler will be supplied by the Director. The slip should be pasted on the part of the boiler pointed out by the Deputy Director and the device traced through with a cutting tool. The engraving should then be completed by the removal to the prescribed depth of the metal between the traced lines.

34. Arranging for inspections – In arranging for inspection particular attention should be paid to the provisions of Rule 15 (a). The notice required by sections 7 (2) and 8 (4) shall be sent in From B. If a hydraulic test is necessary in addition to the ordinary inspection ample notice must be given to the owner.

35. Issue of certificates and provisional orders. – In cases in which the Deputy Directors is empowered to issue a certificate under section 8 without further reference, the certificate should ordinarily be issued within 48 hours of the completion of the inspection. Where he proposes to issue a provisional order, the Deputy Directors must satisfy himself that the boiler is fit to be worked at the maximum pressure and for the period entered in the provisional order. The fact of issue of a provisional order must be reported immediately to the Director.

36. Provisional orders to be issued after hydraulic test – Provisional order should be issued in every case of registration after hydraulic test of boiler if the Deputy Directors is satisfied.

The steam test may be witnessed at any convenient time within the period of the provisional order after which if test is satisfactory, the certificate under section 7 (6) is to be issued.

37. Forms of provisional orders and certificates. – Provisional orders and certificates are prescribed in Forms V and VI, respectively, of the Regulations.

The period specified in any Provisional order or certificate shall begin on the day on which the enabling thorough inspection or hydraulic test is made. Where a certificate supersedes a Provisional order during the period of its currency, the period of the certificate shall be retrospective and shall being from the same time as that of the Provisional order.

38.Duplicate certificates. A duplicate of any certificate granted under section 7 or 8 which is at the time in force shall be granted by the Director on the application of the owner of the boiler if the Director is satisfied that the duplicate is required for a bonafide purpose and the fee prescribed under Rule 45 is paid.

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38-A Fees for approval of and renewal – The fees for the approval of firms and renewal of its approval shall be calculated on the basis of following rates levied in accordance with the following scale, namely :-

(a) (i) for approval of firm for pipe fabrication ..	Rs.1500
(ii) for renewal of approval as pipe fabrication firm..	Rs.750
(b) (i) for approval of firm as Boiler Repairer/erector.. Rs.1500	
(ii) for renewal of approval as Boilers repairing firm	Rs.750
(c) (i)for approval of firms for manufacture of boilers economizers Pipes, tubes, pressure vessels and heat exchangers.	Rs.7500
(ii) for renewal of firms for manufacture of boilers economizers Pipes, tubes, pressure vessels and heat exchangers.	Rs.3750
(d) (i)for approval of firms for manufacture of castings, forgings, Forged-flanges and such other fittings.	Rs.4500
(ii)for renewal of firms for manufacture of castings, forgings, Forged-flanges and such other fittings.	Rs.2250
(e) (i)for approval of firms for manufacture of plate flanges	Rs.3000
(ii)for renewal of approval of firms for manufacture of plate flanges	Rs.1500

(f) (i) for approval of testing laboratory .. Rs.3000
(ii) for renewal of approval of testing laboratory .. Rs.1500 (g) (i) for approval of electrode manufacturer (initial qualification) .. Rs.1500
(ii) for renewal of approval of electrode manufacturer .. Rs.750

39. (1) Fees for registration. – Fees for registration and first inspection on boilers and miniature boilers shall be levied as prescribed in Regulations 385 and 622 respectively, of the Indian Boiler Regulations, 1950.

(2) The fees for boilers under construction or modification at site – (i) The inspection fee for boiler under manufacture at the works of manufacture shall be charged at four times the inspection fee prescribed in clause (3).

(ii) The inspection fee for the boiler under construction at site shall be charged at four times the inspection fee prescribed in clause (3).

(3) Fees for inspection – Fees for inspection for renewal of certificate of boilers shall be calculated on the basis of rating and shall be levied in accordance with the following scale, that is to say-

	Rs.
For boiler rating not exceeding 10 sq. meters.	600
For boiler rating exceeding 10 sq. meters but not exceeding 30 sq. meters.	800
For boiler rating exceeding 30 sq. meters but not exceeding 50 sq. meters.	900
For boiler rating exceeding 50sqmeters but not exceeding 70sq. meters.	1100
For boiler rating exceeding 70 sq.meters but not exceeding 90 sq. meters.	1300
For boiler rating exceeding 90 sq. meters but not exceeding 110 sq. meters	1500
For boiler rating exceeding 110 sq. meters but not exceeding 200 sq. meters.	1700
For boiler rating exceeding 200 sq. meters but not exceeding 400 sq. meters.	1900
For boiler rating exceeding 400 sq. meters but not exceeding 600 sq. meters.	2200

For boiler rating exceeding 600 sq. meters but not exceeding 800 sq. meters.	2400
For boiler rating exceeding 800 sq. meters but not exceeding 1000 sq. meters.	2700
For boiler rating exceeding 1000 sq. meters but not exceeding 1200 sq. meters.	3200
For boiler rating exceeding 1200 sq. meters but not exceeding 1400 sq. meters.	3600
For boiler rating exceeding 1400 sq. meters but not exceeding 1600 sq. meters.	4200
For boiler rating exceeding 1600 sq. meters but not exceeding1800 sq. meters.	4500
For boiler rating exceeding 1800 sq. meters but not exceeding 2000 sq. meters.	5000
For boiler rating exceeding 2000 sq. meters but not exceeding 2200 sq. meters.	5400
For boiler rating exceeding 2200 sq. meters but not exceeding 2400 sq. meters.	6000
For boiler rating exceeding 2400 sq. meters but not exceeding 2600 sq. meters.	6300
For boiler rating exceeding 2600 sq. meters but not exceeding 2800 sq. meters.	6800
For boiler rating exceeding 2800 sq. meters but not exceeding 3000 sq. meters.	7200
For the boiler rating exceeding 3000 square meters, a fee of Rs.7200 and additional fee of Rs.200/- for every additional 200 sq. meters or part thereof, shall be levied.	

Provided that where any owner is willing to accept a renewed certificate for less than twelve months in order to approximate the date of annual inspection to the date on which other boilers in the locality are inspected, a certificate for such period less than

twelve months, as may be necessary for such approximation of dates may be granted at a reduced fee to be calculated at one-twelth of the ordinary fee for full months portion of a month not being reckoned.

(4)Fees for inspection of fabricated mountings – Fees for inspection and certification of single lot of same size fabricated mountings not exceeding 10 shall be Rs.500.

(5) Fees for testing of Pressure Gauges – A fee of Rs.50 shall be charged for testing and certification of pressure Gauge with dial of not more than 150 mm. and Rs.50 for exceeding 150 mm. dial.

(6) Fees for inspection of pipes. – The fees for inspection of pipes shall be charged in accordance with the following scales :-

(a) For fabricated pipes of nominal bore not exceeding 100 mm inclusive of all fittings; except fitting like steam separator, de-super heater, steam receiver, feed water heater and separately fired super heater shall be Rs.400 of 30 meters or part thereof.

(b) For fabricated pipes of nominal bore exceeding 100 mm. inclusive of all fittings except fitting like steam separator, de-super heater, steam receiver, feed water heater and separately fired super heater shall be Rs.800 for 30 meters or part thereof.

(c) Fee for inspection of fabricated fittings like steam separator, de-super heater, steam receiver, blow down tank, separately fired super heater and pressure reducing station during installation shall be charged as under, namely :--

i) Rs.500 for each such fitting not exceeding 100 mm nominal bore.

ii) Rs.1000 for each such fitting not exceeding 100 mm nominal bore.

d) For straight lengths pipes not exceeding 100 mm. NB the inspection the shall be Rs.200 for 30 meters or part thereof.

(e) For straight lengths pipes not exceeding 100 mm. NB the inspection fee shall be Rs.400 for 30 meters or part thereof.

(7) Fees for inspection of boiler tubes shall be Rs.100 for 30 meters or part thereof.

(8) Fees for inspection of valves shall be charged as under :-

	Rs.
(a) Up to and including 25 mm. for a batch of 100 or part thereof	900
(b) Over 25 mm. and up to and including 50 mm for a batch of 50 or part thereof	900
(c) Over 50 mm and up to and including 100 mm. for a batch of 25 or part thereof.	900
(d) Over 100 mm. and upto and including 150 mm. for a batch of 10 or part thereof.	900
(e) Over 150 mm. and upto and including 250 mm. for a batch of 5 or part thereof.	900
(f) Over 250 mm. for a batch of two or part thereof	900

(9) Fees for inspection of flanges shall be charged as under :

(i) for forged and cast flanges, the fees shall be charged as under:-

(a) Upto and including 25 mm. for a batch of 50 or part thereof	400
(b) Over 25 mm. and including 50 mm. for a batch of 50 or part thereof	400

(c) Over 50 mm. and including 100 mm. for a batch of 25 400
or part thereof

(e)Over 100 mm. and including 250 mm. for a batch of 10 or part thereof. 400

(e) Over 250 mm. for a batch of 5 or part thereof 400

(ii)Fees for inspection of plate flanges shall be charged at half the rates as specified in clause(9) (i) above.

(10) Fees for inspection of fittings – (a) Fees for inspection of forged pipe fittings shall be charged at the rates specified under clause (9) for forged and cast flanges.

(b) Fees for inspection of pipe fitting other than forged pipe fittings shall be charged at the rate specified below :

	Rs.
(i) Upto and including 25 mm. (nominal NB bore) for 100 Nos. or part thereof.	200

(ii) Over 25 mm. NB and upto and including 50 mm. NB for 100 Nos. part thereof.	400
(iii) Over 50 mm. NB upto and including 100 mm. NB for 50 Nos. or part thereof.	400
(iv) Over 100 mm. NB for 25 Nos. or part thereof	450

(11) Fees for inspection of feed water heater- (a) Fees for inspection of feed water heater under construction shall be one half of the inspection fee of the boiler or Rs.2000 whichever is less.

(b) Fees for inspection of feed water heater under installation shall be one half of the inspection fee of the boiler or Rs.1000 whichever is less.

(12) Inspection fees for pressure vessels – The inspection fees for pressure vessels shall be charged on the basis of shell ID on the following scale :

	Rs.
(a) Upto 500 mm. ID	1000
(b) Above 500 mm. ID but below 1000 mm. ID	1500
(c) Above 1000 mm. ID	2000

(13) Inspection fee for boiler scantling – The fees for inspection of boiler scantlings shall be equal to the rate of fee prescribed in clause (3) above based on outside surface.

(14) Scrutiny fees for approval of drawings – Scrutiny fees for approval of different drawings shall be charged as under :-

(a) Pipe lines .. Rs.100 for every 30 meters or part thereof.

(b) Valve Rs.200 for each type, size and rating.

(c) Fittings .. Rs.150 for each type, size rating.

(d) Boiler .. Equal to the inspection fee of the boiler as specified in clause (3).

(e) De-super heater, Steam receiver, separator, feed water heater etc. Rs.200 each

(f) Pressure Vessels –

(i) Upto 500 mm. ID Rs.200

(ii) Above 500 mm ID but below 1000 mm.ID .. Rs.400

(iii) Above 1000 mm. ID Rs.500

(g) Boiler Scantlings .. .. .. Rs.200 each Scantling.

(15) Fees to be levied for fruitless visit – Where any visit for inspection of a boiler or part thereof under fabrication, steam feed and blow off pipes under fabrication, or boiler mountings and fittings under manufacture is rendered fruitless due to the fault or neglect of a manufacture or fabricator of such materials, the Director may require the manufacturer or fabricator, as the case may be, to pay in respect of such fruitless visit,

the fees equal to the usual inspection fee prescribed in rule 39 or Rs.1000 whichever is more.

(16) Fees for testing of welders – Fees for testing of welders intending to get them selves qualified under Indian Boiler Regulations, 1950 shall be charged in accordance with the following scales, namely :-

	Rs.
(i) For plate welding by electric arc	400
(ii) For pipe welding by gas or electric arc	200
(iii) For tube welding by gas or electric arc	200

Provided that where a welder is certified by any Metropolitan Magistrate or Judicial Magistrate of First Class to be belonging to an economically backward family, the fees at half the rates specified in the aforesaid scales shall be charged.

Explanation – For the purpose of this sub-rule "economically backward family" means a family consisting of welder and his wife, children, parents and unmarried sisters who are joint in residence wherein not a single member is an earning member or whose monthly assured income is not more than Rs.200.

(17) Fees for witnessing the physical, chemical and metallographic tests:– (a) A fee of Rs.500 shall be charged for witnessing the physical, chemical and metallographic tests on samples per heat, per charge, per lot, per boiler, per welder, etc. exclusively in testing laboratories.

(b) fees for viewing radiographs shall be charged @ Rs.25 for every 25 films or part thereof.

(c) A fee of Rs.1000 shall be charged for calibration of testing machine.

40. Fee to cover inspection and tests. – A fee paid for the inspection of a boiler shall cover thorough inspection, hydraulic test and steam test where such are necessary, subject to the provisions of section 14 (2).

41. Second fee in default – A second fee will be leviable for reinspection in any case where the inspection of a boiler is begun, but owing to the fault or neglect of the owner or person-in-charge, is not completed within a period of six months from the date of commencement of inspection.

42. Sanction of Director to second fee – No extra fee shall be levied except with the sanction of the Director.

43. Special fee for inspections out of seasons – For any inspection of a boiler, steam, feed and blow off pipes under fabrication, or boiler mountings

and under manufacture or a boiler or its component under fabrication, situated at a place beyond the limits of Headquarters which is visited by an Dy. Director one or more times in a year for the purpose of inspection, if an owner or person-in-charge fails to avail himself of the services of the Dy. Director during the usual periods for visiting the

district and applies for inspection at a time which would necessitate a special journey by the Dy. Director, then before the Inspector undertakes such a journey, the owner or person-in-charge shall, in addition, to the usual prescribed fee, pay into the Government treasury additional fee equivalent to such sum as will cover the rail conveyance and travelling allowance charges of the Dy. Director from the nearest headquarters and of any Class IV servant accompanying him as the Director may determine : Provided that, if two or more owners apply for inspection at a time which would necessitate a special journey by the Dy. Director then before the Dy. Director undertakes such a journey, the owners of person-in-charge shall, in addition to the usual prescribed fees, pay such proportionate traveling allowance charges as would be determined by the Director.

44. Fee for copy or registration book – The fee for copy of Registration Book excluding inspection notes and calculations, shall be one hundred rupees.

45. Duplicate certificate's fees – Fees for duplicate certificates shall be charges as under :-

(a)	Certificate in Form No. III-A, III-B, III-C and VI of Regulations	Rs.50 each
(b)	Certificate in Form No., II, III and IV	Rs.200 each
(c)	Certificate of qualified welders	Rs.50 each
(d)	Certificate of competency or Proficiency	Rs.50 each

45 (A). Fees for endorsement :- Fees for endorsement of welders certificate shall be charged as Rs.100 per certificate.

46. Refund of Fees – Fees paid in excess and fees paid for an inspection which for any reason not due to any fault or commission of the owner or person-in-charge of the boiler has not been made, shall be refunded if a refund is applied for within one year from the date of payment.

VI. ACCIDENTS

47. Investigation of accidents – On the receipt of a report of an accident to a boiler or steam-pipe under section 18, the Dy. Director should with the least possible delay, proceed to the place to investigate the accident. If the report is received by the Director, he should forward it at once to the Dy. Director within whose jurisdiction the accident has occurred for necessary action.

48. Procedure during inquiry – The Inspector at his inquiry shall make a careful examination of the damaged parts and shall take such measurements and make such sketches for the purpose of his report, as he may deem necessary. He shall inquire into the circumstances, attending the accident and note the time of its occurrence, its nature and extent, the injury caused to persons and the

damage done to property. The report should be in the style of the Reports of Preliminary Enquiries under the British Boiler Explosions Acts, 1882 and 1890.

49. Power to hold inquiry in writing – Jt. Director and Dy. Director are authorized to take the written statements of witness and all persons immediately concerned with the accident. In order to comply with the provisions of section 18 (2) the Jt. Director or the Dy. Director should present to the owner or person-in-charge of the boiler a series of written questions on all points that are material to the inquiry.

50. Use of boiler after accident – The Inspector must decide whether the use of the boiler can be permitted at the same or at a lower pressure without repairs or pending the completion of any repairs or alterations that he may order. In no case should he issue a provisional order or renewal certificate until his orders have been carried out.

51. Procedure in case of serious accidents – The report should be sent without delay to the Director, if he considers that the investigation has been sufficient he will record the facts in his Register of Accidents and enter a brief account of the accident in the Registration Book, a copy being made in the Memorandum of Inspection Book. If, however, the accident is of a serious nature and in all cases in which an explosion has occurred, the Director should, after receipt of the Inspector's report proceed to investigate the accident personally either alone or with the assistance of a member of the panel of assessors appointed under Rule 64 who may be appointed for this purpose by the Commissioner. Report of such inquiries should be recorded as indicated above.

52. Remuneration of Assessor – The Assessor shall be remunerated at such rate as may be prescribed by the State Government and be allowed the traveling expenses incurred by him in attending the inquiry.

53. Reference in Annual Report – A brief account of all accidents and their causes should be included in the Director 's Annual Report.

54. *Unreported accidents* – If in the course of an inspection or at any other time the Jt. Director or Dy. Director discover damage which comes within the definition of and accident but which has not been reported he should report the facts at once to the Director for action under Section 24*(d)*.

VII. APPEALS

55. *Filing of appeal –* Every petition of appeal shall be made in writing either in English or in the vernacular.

56. *Presentation of appeal* – An appeal may be presented either personally or registered post to the Director.

57. *Form of appeal* – The petition of appeal shall be accompanied by the original order, notice or report appealed against or by a certified copy thereof or where no such order, notice or report has been made in writing by a clear statement of the facts appealed against the grounds of appeal and the referring section of the Act.

58. *Fixing date for hearing* – On receipt of an appeal, the Director, shall if the appeal is to be heard by himself, at once fix a date for hearing the appeal, and if it is to be heard by the Appellant Authority, obtain a date for the hearing of the appeal from the President of the Appellate Authority. It is important that there should be no delay in the decision of appeals, as the stoppage of a boiler is likely to put the owner thereof

to great inconvenience. The decision should ordinarily be given within 10 days from the receipt of the petition of appeal.

59. ***Procedure before hearing*** – When the date for hearing has been fixed, the Director shall at once issue a notice to the appellant stating the date for hearing and informing him that if he wished to be heard in support of the appeal or to produce evidence he must be present either in person or by authorized agent with his evidence on the date fixed. The notice shall be sent by registered post to such address as shall be entered in the petition of appeal.

60. ***Presence of Inspector*** – In all appeals the Director shall decide whether the presence of the Dy. Director is necessary, and shall issue orders accordingly.

61. ***Attendance of witnesses*** – The Appellate Authority shall have power to secure the attendance of witnesses and to make local inquiries under the provisions of the Code of Civil Procedure, 1908.

62. ***Ex-parte decisions***– If the appellant is not present on the date fixed, the appeal may be decided in his absence.

63. ***Appellate Authority*** – For the purpose of hearing appeals under section 20, there shall be an Appellate Authority consisting of the President and six assessors, appointed by the State Government.

64. ***Qualifications of President and Assessors*** – (1) A person to be appointed as the President of the Appellate Authority shall be one –

(i) who is holding or has held any judicial office not lower in rank than that of 'Civil Judge' or 'First Class Magistrate' or any office which in the opinion of the State Government is an equivalent office;

(ii) who is an advocate enrolled under the Indian Bar Council Act, 1926; (iii) an Attorney of a High Court; or

(iv) a Pleader enrolled under the Bombay Pleaders Act, 1920.

(2) A person to be appointed as assessor shall be one who is a Mechanical Engineer possessing such qualifications as the State Government may determine.

64-A. ***Fees payable to President and Assessors*** – The president who is not an official and Assessors of the appellate authority constituted under section 20, shall be paid fees in accordance with the following scale, namely:-

President – (i) Rs.250 per day for a meeting lasting for less than 3 hours, (ii) Rs.500 per day for a meeting lasting for 3 hours or more.

Assessor – (i) Rs.200 (inclusive of traveling and daily allowance) per day for a meeting lasting for less than 3 hours, (ii) Rs.400 (inclusive of travelling and daily allowance) per day for a meeting lasting for 3 hours or more.

65. ***Constitution of Appellate Authority*** – Whenever the date for an appeal before the Appellate Authority has been fixed, the Director shall, under the orders of the President of the Appellate Authority, arrange for the attendance of 3 members of the panel constituted under rule 63 to act as assessors.

66. ***Cost in appeals*** – In appeals before the Appellate Authority the President is authorized to fix the cost and recover them from the appellant in any case in which the

appeal is dismissed; in all case of appeal in which a local inspection is required by the appellant he shall deposit in advance the full costs of such inspection.

67. ***Fees required for certificate granted on appeal*** – Any order on appeal authorizing the registering of a boiler or the grant or renewal of a certificate shall be deemed to be subject to the payment of such fees as are prescribed by rules or regulations framed under the Act.

NOTE : Rule 68 to 149 deleted; as information in these rules is covered in the **THE BOILERS ACT.1923 (As Amended 2007) / Boiler Attendants Rules, 2011 & Boiler Operation Engineers Rules, 2011.**

XXII. INSTRUCTION FOR APPROVAL AND RENEWAL OF FIRMS FOR MANUFACTURE OF FABRICATION OR REPAIRS OF BOILERS, ETC.

150. Approval of firms for pipe fabrication – (1) Application for pipe fabrication shall be accompanied by a receipted challan for fee as prescribed in sub-clause (i) of clause (a) of rule 38-A and shall contain full information of the supervisory and operational staff employed and also the tools and plant possessed by the applicant firm as indicated in regulation 392 of the Indian Boiler Regulations, 1950.

(2) If the Director is satisfied with the equipment and supervisory personnel and quality of work done by the Organisation, approval shall be granted subject to such conditions and limitations as may be prescribed by the Director in his order. The approval thus granted shall be valid for a period of one year from the date of order and shall be renewed every year.

(3) Every application for renewal of approval as pipe fabricator shall be accompanied by a receipted challan for fee as prescribed in sub-clause (ii) of clause (a) of rule 38-A and shall contain full details in accordance with the provisions of sub-rule (1) for considering the renewal of approval by the Director.

(4) Any change in the supervisory and operational staff during the course of validity of the approval shall be communicated to the Director within seven days from such change.

151. Approval of firms for Boiler Repairs – (1) An application for approval as boiler repairer shall be accompanied by a receipted challan for a fee as prescribed in sub-clause (i) of clause (b) of rule 38-A and shall contain full information of the supervisory and operational staff employed and also the tools and the plant possessed by the applicant firm, as indicated in regulation 392 of the Indian Regulations, 1950.

(2) If the Director is satisfied with the equipment and supervisory personnel and quality of work done by the Organisation, approval shall be granted subject to such conditions or limitations as may be prescribed by Director in his order, The approval thus granted shall be valid for a period of one year from the date of order and shall be renewed every year.

(3) Every application for renewal of approvals as boiler repairer shall be accompanied by a receipted challan for fee as prescribed in sub-clause (ii) of clause (b) of rule 38 A and shall contain full details in accordance with the provisions of sub-rule (1) for considering the renewal of approval by the Director.

(4) Any change in the supervisory operational staff during the course of validity of the approval shall be communicated to the Director within seven days from such change.

152. Approval of firms for manufacture of Boilers or Economisers – (1) An application for registration for manufacture of boilers or economisers shall be accompanied by a receipted challan for fee as prescribed in clause (c) of rule 38-A and shall contain full information of the supervisory and operational staff employed and also the tools and plant possessed by the applicant firm and such other information as may be called for by the Director for considering the application.

(2) If the Director is satisfied with the equipment and supervisory personnel and quality of work done by the Organisation, approval shall be granted subject to such conditions or limitations as may be prescribed by the Director in his order.

(3) Any change in the supervisory and operational staff during the course of validity of the approval shall be communicated to the Director within seven days from such change.

153. Approval of firm for manufacture of valves, forged flanges and such other fittings – (1) An application for registration for manufacture of valves, forged flanges and such other fittings shall be accompanied by a receipted challan for fee as prescribed in clause (d) of rule 38-A and shall contain full information of the supervisory and operational staff employed and also the tools and plant possessed by the applicant and such other information as my be called for by the Director for considering the application.

(2) If the Director is satisfied with the equipment and supervisory personnel and quality of work done by the Organisation, approval shall be granted subject to such conditions or limitations as may be prescribed by the Director in his order.

(3) Any change in the supervisory and operational staff during the course of validity of the approval shall be communicated to the Director within seven days from such change.

154. Approval of firm for manufacture of Plate flanges– (1) An application for manufacture of plate flanges shall be accompanied by a receipted challan for fee as prescribed in clause (c) of rule 38-A and shall contain full information of the supervisory and operational staff employed and also the tools and plant possessed by the applicant and such other information as may be called for by the Director for considering the application.

(2) If the Director is satisfied with the equipment and supervisory personnel and quality of work done by the Organisation, approval shall be granted subject to such conditions or limitations as may be prescribed by the Director in his order.

(3) Any change in the supervisory and operational staff during the course of validity of the approval shall be communicated to the Director within seven days from such change.

155. Withdrawal of Approval – Approval granted under the pregoing rules, shall be withdrawn if-

(i) the approval was obtained on furnishing incorrect or false information; or

(ii) no manufacturing activities or fabrication work or repair work was carried out for a continuous period of six months.

Provided that before any such order for withdrawal of approval is passed, the owner or person incharge of the organisation shall be given due notice in writing calling upon the person concerned to show cause why an order for withdrawal of approval should not be made, the objections, if any, shall be considered and reasonable opportunity of being heard shall be given to such person by the Director.

G.C.P.H.4176-5 (2034-1093)

APPENDIX

FORM A

BOILER INSPECTION DEPARTMENT

Register of Boilers

(Rules 9, 18 and 22)

Registry No.	Type of Boiler	Boiler rating	Name of Manufacture	Year and Place of Construction	Date of Registration	Name of Owner	Place where in use	Remarks (Transfers, etc.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Part II of the Register Column (I) should contain registry numbers and letters.

Form B

THE BOILERS ACT, 1923 (ACT V OF 1923)

Notice for Examination of Boiler under sections 7 and 8

(Rule 34)

No. of 20

STEAM BOILER INSPECTION

OFFICE Dated the 2010

To

Gentlemen/Sir,

In reply to your application, dated you are hereby informed that Boiler Registry No. at the above named premises will be thoroughly examined/hydraulically tested by the Deputy Director on the

To enable the examination to be made, you are bound—

(a) to afford to the Deputy Director all reasonable facilities for the examination and all such information as may reasonably be required of you;

(b) to have the boiler properly prepared and ready for examination in the prescribed manner; and

(c) in the case of an application for the registration of a boiler, to provide such drawings, specifications, certificates and other particulars as may be prescribed.

Voucher No. in acknowledgement of Bank/Treasury Receipt No.

For Rs. Accompanies.

Director of Steam Boilers,
Maharashtra State
(See reverse for preparation required)

REVERSE OF FORM B

PREPARATION FOR EXAMINATION

See Chapter IX of the Regulations

(Regulation 376)

(A)Preparation for inspection

At every examination of a boiler for the grant of renewal of a certificate, the boiler shall be empty and thoroughly clean in all its parts. All doors of manholes, handholes and sightholes and cleaning plugs and all caps in the headers and mud drums of water tube boilers, all firebars, bearers, front plates, bridge plates fire bridges brick arches, oil fuel burners and mechanical stoker fittings shall be removed. All valves and cocks comprising the boiler mounting shall be opened up and taken a part and the valves or cocks ground, when necessary, before the Deputy Director's visit.

Provision shall, if required by the Deputy Director, be made for the removal of lagging or brickwork or other concealing part and for the drilling of plates and for verifying the pressure gauge and safety valve dimensions and weights. All smoke tubes, exterior of water tubes, smoke boxes and external flues shall be swept clean.

Provisions shall be made for the effective disconnection of all steam and hot water communication with any other boiler under steam, as prescribed in Chapter X of the Regulations. This shall be effected either by the removal of a length of pipe from the steam and feed piping or by the insertion or substantial blank flanges. Where blank flanges are employed, they shall be inserted between the flange of the chest and the pipe attached to it. No blank flange shall be inserted between a safety valve chest and the boiler.

In the case of forced flow and forced circulation types of boilers, provision shall be made for checking that proper circulation is maintained through all sections of the circuit by the flow of water.

Note – These provisions to effective disconnection shall extend to every case wherein a person is sent or with the absent of the owner or person-in –charge goes into boiler for any purpose

(See Part III of the Regulation)

(Regulation 378)

(B)Preparation for hydraulic test

The chest of all mountings subject to steam pressure shall be in place an shut tight or black-flaged. The safety valves shall either be jammed down or removed and the chest opening blank-flaged. The attachment * for the

Deputy Directors pressure gauge and nipple + for connecting the Deputy Directors test pump house shall be in order. All doors shall be properly jointed and tightened up. The boiler shall be completely filled with water, care being taken to allow all air to escape and, if possible, a preliminary test not exceeding the working pressure of the boiler be taken before the Inspector's visit to test the rightness of the joints. When a boiler is hydraulically tested for the first time, it shall be entirely cleared of lagging or brickworks; at subsequent tests the lagging or brickwork or portions thereof, shall be removed if required by the Dy. Director.

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*Tapped 19 mm Whiteworth bolt and nut thread.

*Tapped 22 mm Whiteworth bolt and nut thread.

Preparation now required (A), (B)

Note:- The last certificate for the boiler should be shown to the Dy. Director

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FORM C

GENERAL WORKING OF BOILERS

(See Rule 8)

Instruction to Boiler Attendants

These instructions should be frequently and carefully studied with a view to keeping in mind the precautions to be observed and ordinary procedure to be followed in the safe working of boilers.

Precautions before starting the Fires

Before starting the fires in a boiler the attendants should—

(1)see that here is sufficient water in the boiler and that the gauge cocks are working freely;

(2)see safety valves, or open cock on top of boiler to allow air to escape ;

(3)see that the blow-off cock is fully closed and tight;

(4)see that safety valves and fee check valve are free and workable;

(5)note if the pressure gauge pointer is at zero;

(6)see that the feed pump is in working order'

He must not rely on the supposition that the water he has previously put in it still in the boiler, as it may have tun out without the knowledge through a leak or open cock, nor can he be sure that the gauge glass shows the true water level until he has tested it. This is done in the following manner; shut off the lower gauge cock and empty the glass by the drain cock; then shut the drain cock and open the gauge cock; if everything is in order, the water will then rise in the glass to the same height as before.

Raising steam :-In getting up steam in all types of boilers, the operation should be as gradual as circumstances will allow. Nothing turns a new boiler into an old one sooner than getting up steam too quickly. Forcing the fires when starting work is liable to cause straining of the steams and tubes of the boiler. In the case of large boilers generally steam should not be got up in less than six hours. Before getting up steam the water level should be observed, to ensure that water is at the proper heights, in the glass, the pressure gauge noted and the safety valves tried to see they are free. The blow-off cock should be examined to see that it is completely shut and tight.

Pressure gauge :- The pressure or steam gauge should be kept in order and be in such a position as to be easily seen by the boiler attendant. There should be a plain mark on it showing the highest pressure allowed for the boiler and the dial should be kept clean so that the figures may easily be read.

Steam pressure : Ordinarily, the safety valves will prevent the steam from rising much above the working pressure, but if the steam gauge shows is rapid an increase of pressure as to indicate danger of exceeding the highest limit,

water should be immediately fed into the boiler, and the dampers partially closed in order to diminish the effect of the fire. If however, the water has fallen so low that there is danger of an accident from this cause the fires should be withdrawn before

feeding in water the safety valves eased and if the engine is at rest it should be started so as to reduce the pressure.

The safety valves are provided to guard against over-pressure. They should be moved by hand every day so as to prevent them from sticking. If moved only occasionally, they are liable to leak.

The valve can be tested by slowly raising it a little and when let down, it should closed perfectly tight. It should never be opened by a sudden knock or pull. If it does not closed tight turn it on its seat until it fit, or when its construction does not permit this, rise it slowly a few times and let it down again, but on no account must the valve be screwed down further or loaded more than what has been allowed by the Inspector.

Safety valves must never be over-loaded and spring valve should have ferrules or other provisions against the valves being screwed down too far. In case of an accident resulting from wilful overloading culprit might be held criminally responsible at the official inquiry or inquest.

Low water safety valves—If there is low water safety valves, test it occasionally by lowering the water level to see that valve begins to blow at the right point. It should give warning "before" the water level has sunk too low and before damage can be done when the boiler is open, examine the floats and lever and see that they are free and that they give the valve the fuel rise. With the ordinary type of high steam and low water safety valve the float should be down at its lowest position and the valve full open when the boiler is empty.

The water gauge :- These will be kept in best order by frequently blowing through. The cocks are thus kept in good working condition without Jeaking. Blow through the drain cock at the bottom of the gauge and shut and open the steam and water cocks every few hours. These cocks should be blown through more frequently when the water is dirty. Should either of the passage become choked, or whenever the water in the gauge glass moves sluggishly the passage must be cleaned. This is best done with a wire. The gauge glass is so arranged that its top cock connects with the steam space and its bottom cock is below the water line. The water line will ordinarily be near the middle of the glass tube. Always test the glass water gauges thoroughly the first thing in the morning and at the commencement of every shift. This is done by first opening rain cock and then shutting the upper cock which should give water; the upper cock should then be opened and the bottom cock closed which should give steam during this test the drain cock should be kept open.

If water and steam do not appear in proper order the cocks are choked and the passage should be cleaned. To lessen the risk of breaking the gauge glass the water cock should always be re-opened after the steam cock.

Gauge glasses with a narrow white strip running the whole length of the glass on the side next the boiler are recommended as they show the water line more clearly specially when the water is dirty.

The boiler regulations framed by the Board require every water gauge glass to be fitted with, a guard to prevent injury to the attendants. See that it is always in place and clean when there is steam in the boiler.

Special Note :- It does not follow that there is plenty of water in the boiler because there in plenty of water in the gauge glass. The passages may be choked and empty gauge glasses are some times mistaken for full ones and explosions have resulted there form. Hence the importance of keeping the gauge, cocks perfectly tight and clean and of blowing through the test cocks frequently.

A large number of accidents have been due to inoperative water gauges and to negligence of the attendants in not carefully reading the water level.

The blow-off cock :- The blow-off should be used daily if the water is at all dirty or sedimentary, especially with Locomotive type and Vertical Boilers as their narrow water spaces are liable to get choked with mud, which soon hardness into a solid mass. The amount of water to be blown out depends on the size of the boiler and can be determined only from experience. When blowing out the best result is obtained if the water has been at rest for some time (say before the engine is stared) thus giving the sediment time to settle; if the feed waters cleaned merely turn the cock round.

The scum cock :- When scum cocks are fitted, if the feed water is dirty, a little should be blown off daily; if the water is clean, merely turn the cock round. Before opening the scum cock, see that the water is at the height indicated by the water level pointer; otherwise the scumming will be ineffective. Water should be blown from the surface through the scum cock when steam is being drawn off, i.e. when the engine or other machinery is working.

Manhole and other door joints.- When making such joints the jointing materials should never be of round sectioned packing. Care must be taken that the spigot of the door is centrally placed in the hole, as many accidents have resulted from packing bring blown out between the spigot and side of hole, even when the clearance was only 3 mm. The nuts must be carefully and evenly tightened. Further tightening should be made during the process of heating up the boiler when raising steam.

Steam-pipes :- When properly arranged should give no trouble. Frequently however, they are so designed as to contain pickets, in which, while out of us, condensed steam accumulates. Such water is exceedingly, dangerous and great care should be taken to see that the pipes are properly drained before the stop-valve is opened otherwise “water hammer” will take place even with the best designed steam pipes, and disastrous explosions causing loss of life and property may occur.

Scale and grease :- Roughly speaking, scale offers a hundred times as much resistance to the passage of beat as does a similar thickness of the steel or iron. A 12mm furnace plate covered with 2 mm. scale is as efficient a heat retarder as steel furnace 0.250 mm, thick. Grease is about ten times worse than scale. In a boiler at work the temperature of a clean furnace plate is only slightly in excess of that of the water in the boiler; but is scale or grease is interposed between the water and the plate, the latter acquires a temperature more nearly approximately that of the flame with which it is in contact. If the fire is fierce (artificial draught) the furnace tube may grow so hot that it elongates considerable. If in addition, cold air is admitted during each firing, a concerting action of the furnace takes place, which is one of the worst causes of boiler wear and tear.

Wear and Tear can be reduced and the life of a boiler prolonged if scale and grease are prevented from accumulating in a boiler. The combined effects of scale or grease and artificial draught are disastrous. Scale or grease also causes waste of fuel.

Grease :- A mixture of sedimentary water , soda and grease produces an adhesive scum, Where this is suspected, the water level should never be lowered below the furnace top unless the boiler is afterwards entered and this scum cleaned off the furnace plate before the firing again.

Scale removal :- The customary method is not a satisfactory one. The boiler is emptied and then cooled down by opening all the manholes, and the result is that the scale which would otherwise be soft, hardens through contact with the air and requires laborious chipping off.

A very effective, but slower method is to retain the water in the boiler until cool, and not to run it out until the men are ready to enter the boiler with water house brushers and scrapers, The scale will then be soft and easily removable.

If time is a consideration, the cooling can be accelerated by adding cold feed to the hot water in the boiler and slowly running off the cold water. Another method is to blow off the boiler with the lowest possible pressure (not more than 1 Kilogram per sq.cm) and to keep it closed until cold. The scale will then be easily removed.

Treatment of feed water :- Many feed waters require soda or other chemicals to arrest corrosion or to change the nature of the scale.

There is no harmless chemical which will remove scale or sediment when it has once got into the boiler and the only effective process is to purify the feed water before it enters the boiler. By this means, the sediment, and generally too, the added chemical, can be deposited in tanks or in filters, and therefore never goes into the boiler, excepting when the water obtainable is very good, water-purifying apparatus ought to pay any boiler-owners, particularly at those works where three or more boilers are in constant work. Boiler Owners wishing to have definite advice as to the best treatment of their feed water should have it

analyzed at some chemical laboratory and ascertain the best treatment in the particular circumstances.

Special attention is drawn to the not in frequent but very bad practice of allowing the waste steam from the Engine Cylinders or Pumps to be drained into the Boiler Feed Water Tanks. The waste steam from cylinders is always mixed with a certain amount of oily matter which will be deposited in the feed water tanks and ultimately be pumped into the boiler, with possible disastrous results, as it will be obvious to every careful boiler attendant that should the oil be deposited on the furnace crowns, they may become overheated and collapse.

It should be the first care of the boiler-owner, and the Boiler Attendant to see that the feed water is kept as pure as possible. Impure feed water means additional expense on the upkeep of the boiler.

Preservation of boilers when not in use:- steam boilers, when not in use are liable to deterioration from corrosion and unless well cared for and made rust-proof; they may depreciate more rapidly than when in use. They should be thoroughly drained and thoroughly dried and all valves, cocks and openings closed so as to exclude moisture. Another plan is to fill the boiler with water to which about 1/100 per cent caustic soda has been added.

Special instructions for Boiler No. :- this boiler should be opened up and thoroughly cleaned after a period of work which should not exceed (as indicated in certificate). A record of such cleanings should be maintained and produced, when required by the Deputy Director.