

KNOWLEDGE SHARING SESSION ON “ BOILER ACTS AND ITS COMPLIANCE “

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Introduction

- What is a Boiler ?
- Boiler means any closed vessel used for generating steam under pressure and includes any mounting or other fittings attached to such vessel which is wholly or partly under pressure when steam is shut off; but does not include a pressure vessel
- with capacity less than 25 liters (such capacity being measured from the feed check valve to the main steam stop valve);
- with less than one kilogram per centimeter square design gauge pressure and working gauge pressure; or
- in which water is heated below one hundred degrees centi-grade.

Details of Boiler in our Plant

S No	Make	Owner Name	Boiler Evaporation Capacity	Boiler Registry No	Boiler Maker No	Boiler Rating (in Sqr Mtr)	Boiler Certificate Valid Up to
1	Thermax	P K P Singh	4 Tons /Hr	BR/8783	SM-40 A/10.54/41	118	15.07.17
2	Thermax	P K P Singh	5 Tons /Hr	BR/8821	SM-50 B/10.54/41	134	25.08.17

Boilers in our Plant



Boiler -1



Boiler -2

Boiler Operation Precautions

- If a boiler is not operated within its design limits, it increases the risks of fatigue, stress and corrosion, which could eventually lead to leaks, ruptures and, in extreme cases, explosions. Similarly with feed water, incorrect water treatment can lead to scaling, which will again damage the boiler and could lead to premature or catastrophic failure.

Various Boiler Acts

1. Boiler Act 1923
2. IBR 1950
3. Boiler Operation Engineers Rules 2011
4. Boiler Attendant Rules 2011

BOILER ACT 1923

Introduction

- This act contains the law related to registration and inspection of steam boiler.
- It extends to the whole of India except the State of Jammu and Kashmir.
- This act is applicable to all boiler (water tube and fire tube boilers)
- It contains 35 sections .

Section 6: Prohibition of use of unregistered or uncertificated boiler

Applicability status of above rule in TPL

no owner of a boiler shall use the boiler or permit it to be used

S No	Details	Status
1	unless it has been registered in accordance with the provisions of this Act	Registered
2	in case of boiler which has been transferred from one State to another, until the transfer has been reported in the prescribed manner	Not applicable
3	unless a certificate or provisional order authorizing the use of the boiler is for the time being in force under this Act	Certificate available
4	at a pressure higher than the maximum pressure recorded in such certificate or provisional order	complied
5	where the State Government has made rules requiring that boilers shall be in charge of persons holding ¹ certificates of proficiency or competency], unless the boiler is in charge of a person holding the certificate required by such rules	complied

Section 7: Registration of boiler

Applicability status of above rule in TPL

S No	Details	Status
1	The owner of any boiler which is not registered under the provisions of this Act may apply to the Inspector to have the boiler registered. Every such application shall be accompanied by the prescribed fee.	Boilers are registered and have valid certificate
2	The inspector fix a date, within thirty days or such shorter period as may be prescribed from the date of the receipt, for the examination of the boiler and shall give the owner thereof not less than ten days' notice of the date so fixed	
3	Chief inspector issues boiler certificate after getting report form the inspector for period of 12 months	

Section 8: Renewal of certificate

Applicability status of above rule in TPL

Boiler owner need to apply for renewal for boiler certificate before its expiry.

S No	Details	Status
1	<p>If the Competent Person is</p> <p>a) satisfied that the boiler and the boiler components attached thereto are in good condition he issues a certificate for such period as may be prescribed by regulations.</p> <p>b) of the opinion that the boiler or boiler component, or both does not conform to the standards prescribed by regulations, it may, for reasons to be recorded in writing, refuse to issue such certificate</p>	Registered
2	<p>The Inspecting Authority can refuse to issue certificate if he is of the opinion that in spite of directing the boiler owner or the boiler component, or both in writing to carry out modifications or rectifications as it deems necessary were not done</p>	Not applicable
3	<p>Further the Competent Person shall, within forty-eight hours of making the examination, inform the owner of the boiler or boiler component any defect in his opinion and the reasons thereof and shall forthwith report the case to the Chief Inspector</p>	

Section 12: alternations and renewal to boiler

- No structural alteration, addition or renewal shall be made in or to any boiler registered under this Act unless such alteration, addition or renewal has been sanctioned in writing by the Chief Inspector

Section 18 :Report of accidents

S No	Details	Status
1	If any accident occurs to a boiler or steam-pipe, the owner or person in charge thereof shall within twenty-four hours of the accident, report the same in writing to the Inspector. Every such report shall contain a true description of the nature of the accident and of the injury, if any, caused thereby to the boiler or to the steam-pipe or to any person, and shall be in sufficient detail to enable the Inspector to judge of the gravity of the accident. 1. See now the Factories Act, 1948 (63 of 1948).	Registered
2	Every person shall be bound to answer truly to the best of his knowledge and ability every question put to him in writing by the Inspector as to the cause, nature or extent of the accident	

Section 22 Minor penalties

Any boiler owner who refuses or without any reasons neglects -

S No	Details
1	surrender a provisional order as required by section 9 or
2	to produce a certificate or provisional order when duly called upon to do so under section 15, or
3	to make over to the new owner of a boiler a certificate or provisional order as required by section 16,

shall be punished with fine which may extend to Rs 5000/-

Section 23 Penalties for illegal use of boiler

S No	Details	Status
1	Any owner of a boiler who, in any case in which a certificate or provisional order is required for the uses of the boiler under this Act, uses the boiler either without any such certificate or order being in force or at a higher pressure than that allowed thereby, shall be punishable with fine which may extend to five hundred rupees, and in the case of a continuing offence, with an additional fine which may extend to one hundred rupees for each day after the first day in regard to which he is convicted of having persisted in the offence	Boiler certificate available

Section 25 Penalty for tampering with register mark

- Whoever removes, alters, defaces, renders invisible or otherwise tampers with the register number marked on a boiler in accordance with the provisions of this Act or any Act repealed hereby, shall be punishable with fine which may extend to one lakh rupees)
- Whoever fraudulently marks upon a boiler a register number which has not been allotted to *Under* this Act or any Act repealed hereby, shall be punishable with imprisonment which may extend to two years, Or with '[which may extend to one lakh rupees. or with both)

Boilers in our Plant



Boiler -1



Boiler -2

Section 24 :Other penalties

- Any person who—
 - a) uses or permits to be used a boiler of which he is the owner and which has been transferred from one '[State) to another without such transfer having been reported as required by section 6 or
 - b) being the owner of a boiler fails to cause the register number allotted to the boiler under this Act to be marked on the boiler as required by sub-section (6) of section 7. or
 - c) makes any structural alteration. addition or renewal in or to a boiler without first obtaining the sanction of the Chief Inspector when so required by section 12. or to a steam-pipe without first informing the Chief Inspector, when so required by section 13.
 - d) fails to report an accident to a boiler or steam-pipe when so required *by section 18. or*
 - e) tempers with a safety valve of a boiler so as to render it inoperative at the maximum pressure at which the use of the boiler is authorized under this Act. Or
 - f) allows another person to go inside a boiler without effectively disconnecting the same in the prescribed manner from any steam or hot water connection with any other boiler or from fuel mains,)
- shall be punishable with which may extend to two years or with fine which may extend to one lakh rupees. or with both

BOILER ATTENDANT RULE 2011

- No person who does not possess a certificate of competency as a boiler attendant under this rules shall be deemed a fit and proper person to hold charge of boiler.
- Owner of boiler should intimate chief inspector or directorate of boiler about particulars of boiler attendant like serial number, date and place of issue of his certificate within 7 days of his engagement.
- Similarly if a attendant leaves his job or his tenure of service has ended must be intimated to chief inspector or directorate of boiler within 7 days

List of Boiler Attendants

T No	Employee Name	Designation	Certificate No	Remarks
855	Rakesh Kr.Yadav	Sr .Associate	7335	1 st Class Certificate
854	Mohan Prasad	Boiler Attendant	7628	1 st Class Certificate
684	Suresh Prasad	Boiler Attendant	6043	2 nd Class Certificate
765	T Ramna Rao	Boiler Attendant	7712	1 st Class Certificate
1003	N C Gope	Boiler Attendant	8594	1 st Class Certificate

Which boilers do not require boiler attendants, to be incharge?

- As per Chapter XIV of Indian Boiler Regulations, 1950, coil type boilers having volumetric capacity up to 150 liters and operating up to 12 kg/cm² pressure, as well as Shell type boilers having volumetric capacity up to 500 liters and operating up to 7 kg/cm² pressure, need not be operated by persons holding boiler attendant certificate. However the operator for these boilers shall passed Xth Standard / (S.S.C.) or equivalent.

BOILER ENGINEER RULE 2011

- No person who does not possess a Certificate of proficiency as a Boiler Operation Engineer under this rules will be deemed fit to hold charge of boiler or group of boilers.
- The boilers must be present within 50 m radius and their total heating surface should not exceed 1000 sqr mtr.
- The owner of boiler who engages any person to be in charge thereof , shall within 7 days of his engagement intimate the particulars to chief inspector or directorate of boiler
- Similarly if a boiler engineer leaves his job or his tenure of service has ended must be intimated to chief inspector or directorate of boiler within 7 days
- A person in charge of boiler holding proficiency Certificate can be relieved by boiler attendant holding first class certificate for not more than 2 hours in any one day.
- However boiler attendant holding 1st class certificate can relieve boiler operation in charge for not more than 10 consecutive days after getting consent for the same form chief inspector or directorate of boiler
- In special circumstances the chief inspector or directorate of boiler can extend the period to 30 days at a time for any length of time

IBR 1950 Regulations

- The Indian Boiler Regulations (IBR) was created in 1950 to enforce section 28 & 29 of the Indian Boilers Act 1923. (namely power to make regulations and power to make rules)

BOILER HOUSE REQUIREMENTS AS PER MANUAL

- Boiler house location should be such that there is minimum effect of corrosive atmosphere leading to reduced down time on account of maintenance.
- Fuel storage and handling system should be planned close to boiler for easy operation and handling
- Soft water availability and its storage
- Minimum 1.5m space is required around the boiler for ease of maintenance
- Sufficient space should be there in front (opening door for tube cleaning) and back (opening of smoke box)
- Boiler house to be properly ventilated

Checklist for routine boiler Maintenance as per manual

S No	Description	Frequency	Status	Purpose	Remarks
1	Blow down of boilers	Daily	Done	To maintain TDS (i.e 3500 ppm), alkalinity (700 mg/l) and silica levels within limits	Blow down done twice per shift
2	Drain soft water service tank	Daily	Done	To remove settled down sediments	
3	Cleaning fuel filters and strainers	Every 48 hrs	Not Done	To remove unwanted filterants	Cleaning done weekly
4	Burner Cleaning	Every 3 month	Not Done		Cleaned during annual shutdown
5	Water Level alarm functioning	Weekly or 50 hours	Done	To check functionality	Mobrey unit is cleaned and inspected daily

Checklist for routine boiler Maintenance

S No	Description	Frequency	Status	Purpose	Remarks
6	Electrical contacts inspection	Monthly or 200 hrs	Not Done	Maintenance	Inspection done when boiler is under shutdown
7	Checking of water pump gaskets and NRV	Monthly or 200 hrs	Not Done	Maintenance	Inspection done when boiler is under shutdown
8	Cleaning of blower fan blades	Quarterly or 600 hrs	Not Done	Maintenance	Cleaned during annual shutdown
9	Check all valves for leakage	Half yearly or 1200 hrs	Done		Values are replaced If found defective during operation after boiler shutdown
10	Lubricate bearing of water pumps	Half yearly or 1200 hrs	Done		done during annual shutdown
11	Clean burner gas spuds	Half yearly or 1200 hrs	Done		Cleaned during annual shutdown
12	Manhole sealing inspection	Half yearly or 1200 hrs	Done		Cleaned during annual shutdown

Checklist for routine boiler Maintenance

S No	Description	Frequency	Status	Purpose	Remarks
13	Motors lubrication	Yearly or 2400 hrs	Done		Done during annual shut down
14	Boiler tubes cleaning	Yearly or 2400 hrs	Done		Cleaned during annual shutdown

Thank
you

