

CHAPTER VIII REFINING OF PETROLEUM

162. Approval of refinery. –

(1) No person shall refine, crack, reform or blend petroleum unless the project report with specifications and plans showing the general arrangements of tanks, stills, furnaces, electrical installations, pump houses, arrangement for drainage treatment and disposal of effluents, arrangement for fighting fire, fencing gates and all plants and buildings at the place where it is proposed to refine, crack, reform or blend petroleum (hereinafter in this chapter referred to as the refinery) has been approved by the Chief Controller.

(2) The design and layout of the various blocks/facilities/process units in new crude oil refineries shall be as per design philosophy given in OISD standard-118. This will apply to new crude oil refineries/gas processing installations approved by the Chief Controller after publication of this rule.

(3) Any person desiring to refine, crack, reform or blend petroleum shall submit to the Chief Controller an application along with -

(i) a copy of the project report and specifications and plans referred to in subrule (1) in triplicate; and

(ii) a scrutiny fee of rupees five thousand paid in the manner specified in rule 13.

(4) The Chief Controller on receiving the project report with specifications and plans may require submission of such further particulars as he may specify after satisfying himself that petroleum can be so refined, cracked reformed or blended, shall return to the applicant one set of the specifications and plans signed by him and conveying his sanction subject to such conditions as he may specify.

163. Retention of plans and specifications. –

A copy each of the approved plans and specifications and containing any alterations sanctioned under rule 164 from time to time shall be kept at the refinery.

164. Alterations. –

(1) No alterations in refinery involving the general arrangements or the design of tanks, stills, furnaces, plants, pump-houses, electric installation or firefighting facilities shall be carried out without the previous sanction in writing of the Chief Controller.

(2) The occupier of a refinery wishing to carry out any of the alterations referred to in sub-rule (1) shall submit to the Chief Controller an application along with -

(i) specifications and plans, in triplicate, showing proposed alterations together with reason therefor, and

(ii) a scrutiny fee of rupees one thousand paid in the manner prescribed in rule 13.

(3) The Chief Controller on receiving the specifications and plans for the alterations and reasons therefor, may require submission of such further particulars as he may specify and after satisfying himself that the proposed alterations can be carried out, return to the applicant one copy of the specifications and plans signed by him and conveying his approval subject to such conditions as he may prescribe.

165. Use of fire-proof materials. –

All buildings and facilities in which petroleum is handled shall be built of fire-proof materials.

166. Situations of storage tanks. –

No storage tanks for petroleum shall be situated nearer than 90 metres to any still, boiler or furnace : Provided that this rule shall not apply to a storage tank containing petroleum Class C for use as a fuel for a boiler and such a storage tank shall not be larger than is necessary to conserve 24 hours fuel for the fire which it services.

167. Situation of storage tanks and facilities for liquefied petroleum gases. –

No storage tank or filling facility for liquefied petroleum gases shall be nearer than 90 metres to any still, boiler or furnace or nearer than 30 metres to any storage tank, pump-house or any facility for the blending or filling of petroleum or to any protected work.

168. Situation of flare. –

No flare shall be situated nearer than 90 metres to any tank, still, pump-house or any facility for the refining, cracking, reforming, blending, storage or handling of petroleum or liquefied petroleum gas, other than knockout drum and condensate recovery pump attached to such flare.

169. Drainage. –

- (1) Adequate arrangement shall be made to ensure that effluents and drainage passing from the refinery does not cause pollution of rivers, irrigation channels water reservoirs or foreshore and does not harmfully affect animal or vegetable life in any way.
- (2) Effluent drainage from pump-houses and all other points where oil be entrained shall be passed through an efficient oil interceptor system of adequate size.
- (3) All chemical waste shall be rendered harmless before they leave the refinery area.
- (4) The whole of the sewerage shall be independent of other drainage systems.
- (5) All drains shall have adequate capacity to prevent any flooding or backing-up and be of such construction as to prevent leakage from them to the surrounding grounds.
- (6) Drains for carrying waste chemicals shall be of a type which is not affected by the chemicals in question.
- (7) Trash racks shall be fitted to the drains where there is a possibility of rubbish being carried forward and forming a plug.
- (8) Manholes shall be provided in closed drains where there is an abrupt change of directions and also at reasonable intervals in straight sections to permit rodding.
- (9) When vents are provided to release gases separated from contaminated effluents in closed drains, they shall be sited where they are unlikely to cause danger or annoyance.
- (10) All drains shall be fitted with fire traps/water seals at suitable points to prevent the passage of flame.
- (11) Where gas traps are provided in the drains they shall be constructed on the upstream side of the oil interceptors and such gas traps shall be fitted with vents to liberate the gas at such a height that danger or annoyance is not caused.

170. Fire and Smoking. –

- (1) No fire furnace, source of heat or light capable of igniting inflammable vapours shall be allowed except in the firing space of stills and boilers.
- (2) No smoking shall be allowed except in spaces or buildings specially approved for the purpose by the Chief Controller.

171. Permits to carry out maintenance and repair work. –

- (1) No maintenance or repair work and no entry into confined spaces including a closed drain or manhole shall be permitted except under and in accordance with the conditions of a written permit as per OISD standard 105 issued by a competent person authorized by the occupier of the refinery.
- (2) The competent person referred to in sub-rule (1) shall, before issuing the permit, satisfy himself by inspection and testing, whenever necessary, that the conditions of the vessel, site or equipment are entirely safe for the work which is to be undertaken and shall specify on the permit the conditions under which the work can be carried out safely.
- (3) Permits for carrying out maintenance or repair work shall be issued for limited and stated period during which known conditions will remain safe and such permits shall not be renewed without re-inspection and re-testing of the vessel, site or equipment.
- (4) All gas tests for the purpose of issuing a permit shall be carried out by suitably trained persons by an instrument which is calibrated and checked at such intervals as are recommended in this behalf by the manufacturers of such instruments in the manual of instructions pertaining thereto.

(5) In the case of vessels which had contained products blended with leaded fluid, the regulations laid down by the suppliers of the fluid shall be fully observed.

172 Fire Control. –

(1) Every crude oil refinery shall be fully protected against fire by a well organized and trained fire fighting service with necessary materials and fixed, mobile and portable equipments for fighting fires in line with the OISD Standard –116. This will apply to new crude oil refineries/gas processing installation approved by the Chief Controller after publication of this rule.

(2) An adequate supply of water shall be available at all strategic points in the refinery by means of an independent ring main or grid provided with isolating valves. The main shall be kept constantly pressurized by two or more boosting pumps of adequate capacity preferably working automatically as any significant loss of pressure in the main occurs. At least one of the boosting pumps shall be independent of the normal power supply.

(3) All mains shall be fitted with hydrants at convenient places not more than thirty metres apart in hazardous areas and not more than 45 meters apart in non hazardous area. Such hydrants shall be of design suitable for operating conditions and for connecting mobile pumps.

(4) Static water supply of adequate capacity shall be provided where mains water supply may be subject to interference.

(5) All refinery personnel shall be practiced in the use of first-aid, fire-fighting appliances and selected refinery personnel shall be trained in all aspects of fire-fighting.

(6) The Chief Controller may relax any of the provisions of sub-rule (1) to (5) or require additional fire-fighting provisions to be made if he deems such relaxation or additional fire-fighting provisions necessary in respect of any class of refinery.

173. Removal of Petroleum. –

All petroleum as it leaves the stills with the exception of such quantities as may be pumped direct to service tanks for fuel, shall at once be pumped out into the refinery storage tanks and shall not be stored in the immediate neighbourhood of stills and boilers: Provided that the Chief Controller may permit petroleum to be disposed of otherwise.

174. Prevention of danger from static electricity. –

Adequate provision shall be made to prevent accumulation of dangerous static charges of electricity.

175. Warning notices. –

(1) Warning notices regarding prevention of unauthorized persons, naked lights, smoking and other hazards shall be displayed prominently at strategic locations in the refinery.

(2) No fire works of any kind shall be carried out within a radius of one Kilometre from the refinery except with the prior permission of District Magistrate

176. Marking of pipelines and cables. –

(1) All above-ground pipelines and cables shall be identified by taping, stenciling, colouring distinctively or by any other suitable methods.

(2) All overhead pipelines and cables crossing roads shall be adequately protected against accidental damage.

(3) Pipelines and valves at loading and discharging berths shall be prominently marked to identify the product.

(4) The route of all underground cables shall be marked by prominent markers. At least two such markers shall be visible from any point on the route of the cable.

(5) The route of all underground pipelines shall be marked by prominent markers or by any other effective means to prevent accidental damage to the pipelines.

177. Inspections. –

All plants, instruments and equipment including fire-fighting equipment shall be inspected and tested at intervals, the frequency depending on practical or other relevant factors, and records of all such inspections shall be maintained.

178. Safe operations. –

(1) All operators employed in a refinery shall be adequately trained in the safe operation of plants and equipments.

(2) Written procedures shall be established for operators to start up, shut down and gas-free plants or sections of plants safely and to take safe action under emergency conditions.

(3) Checks shall be made at all stages of the operations by supervisors to ensure that vessels and equipments are properly isolated or connected up, as required, and to ensure that safety facilities are commissioned as the operation proceeds.

179. Report of Fire. –

The occurrence of any fire in the refinery shall be reported immediately by the person in-charge of the refinery for the time being to the Chief Controller and to the nearest police station.

180. Closing of refinery. –

If refinery is closed down, the area within the fence surrounding it shall be cleared of all petroleum having flash point below 93 degree C as soon as possible.