

## G.S.R. 186(E) THESE RULES MAY BE CALLED THE ENVIRONMENT PROTECTION) AMENDMENT RULES, 2008

REGD.NQDL-33(N99 Ili 'i Che Gazette of •tidia 1201 No. 1201 PART (1) BY Atrnoxry M, 18, 200'-q• as, 1929 NEW DELHI, TUESDAY, MARCH ZOOSTRA1ßUNA28, 1929 18 2008 (ü07) 1986 (1986 29), 6 25 g, 1986 fiztq t; (1) 2008 t I 1. 2. fiq•q 1986 i,— (i) qv•tT, (1) 1014 GV2008 [PART THE GAZETTE OF INDIA : EXTMORDINARY 3.0 3 27 C 6 8. 10. 11 12. (F) 13. 14. 15. 16. 17. 18. 19. 20. 21. 6.0-8.5 5.0 15.0 125.0 20.0 0.35 0.5 0.20 15.0 40.0 3.0 2.0 0.1 0.01 5.0 1.0 1.0 0.2 0.1 0.2 3 2 3 (ii) ( iii) 4 3fiq 1 .O 31füö ati 50 1700 350 450 50 850 250 350 4 NE GAZETTE OF INDIA : EXTRAORDINARY 2 3 (H2 S) 4 100 150 200 5 150 1.0 PAT 11—SEc. 3(i) 5 50 150 5 150 0.5 (ii) (iii) (iv) \*Tar Tz:r, t, 5 (so) (NOx) 100 (co) 2 1700 500 850 100 5 2 11. III. SC NOx 98% 6 1 1-5 2 2 THE GAZEITE OF INDIA EXTRAORDINARY 3 iv. ) HS, 3 für (i) (ii) (iii) 20 3trt 5-20 98.7 15 96 94 4 350 150 [PART IT—SEt. 3(i)] 99.5 10 98 96 250 100 20 S02 I 7 (2) (3) (5) 4 75 75 500 \$1 10 76 500 10 76 75 3Tfuö 76 'âqâ (iii) (i) (ö) 96% t\$R \$1 4 tfr. 200 I FT) I 1.3 20 I (q) 95% APIRP•575 I OF EXTRAORDINARY LPARTII—SEC. 301 8 (1) (VOC) 99.9% I 99% t, 970/0 Fit (ii) 20 (ii) (ii) 0 (11) 99.5 99.99 99.98 150 (ii) (iii) 9 (3) (4) 15) 3Fq (i) (ii) (jii) q«i; (iv) (v) (vi) (viii) (ix) 1.875 (9f3tR 2 (i) (ii) @ 20â (iii) @ 20 â < 0.3 (q tr e - 453/31R 95- 017) 1995 asr 31 2008 10000 10000 10000 , 2009 31 2008 2000 1 1000 100b , 2n9 [PART "—SEC. 3(i)] IO THE GAZETÆ OF mm A : EXTRAORDINARY (frrr (8) 19) a tfi7T, 5 < 2% 15 24 fö-- â 2% 3 100/0 Q I uifrö (10) 112) (13) (14) (16) (1) (3) 14) 11 i: (i) (ii) (iii) I 3quR 90% â.3h.\*r. 10, / o/ 76 2/0 & —3 12 THE GAZEHE OF : EXTRAORDINARY 35, (ii) vi 3Te•frr, ,nfa:- [PART IPSEC. 3(i)] 2. 3. 4. 5. 6. 8. 9. 10. 11. 12. 13. 14. qr« 15. 16. 18. 19, 20. 3 27 2 2.0 6.0 50 8.0 0.14 0.2 0.08 16 1.2 0.04 0.8 0.04 0.004 2.0 0.4 0.4 0.8 0.04 0.0B (i) qutawr (ii) (R\*rN7T (iii) (iv) 400 eq/1000FT&tr I •â, aqf 700 / 1000 IVI Wr•.- zr.sr. 844(\$, 19 \*RX, 1986 ERT 433 1987, 64M, 18 FaQ, 198B, OT.%T. 3(\$, 3 1989, öT.ar. 190 g, 15 1989, 913 (a), 24 —q, 1989, 12 8 742 (a), 30 n«, 1990, 23 (a), 16 1991, 930, 21 graq, 1991, 95 (a), 12 1992, 30 (a), 13 1992, •475 (a), 1992, 797 (3), 1 1992, ql.z•r.B. 386 (a), 28 ü, 1993, 422(\$, 19 1993, 801 (a), 31 1993, 176 3 1996, 631 31 1997, 504(a), 20 1998, 7 (3), 2 Fat, 1999, 682 (3), 5 1999, 742 (a), 25 2000, 72 54 22 \*at, 2002, 371 g, 17 2002, 489 (a), 9 2002, TT.m. 1088 (a), 11 2002, 849 (3), 2002, 520 (a), 1 2003, qr.MT.Ä. 92 (30, 29 3\*r, 2004, 448 (O, 12.1\$, 2004 520 (30, 12 2004, 272M, 5 qi, 2005, WTST.B. 315.6, 16 qi, 2005, 464 M, 2006, 566 6, 29 m«, 2007 t 14 THE GAZEITE OF INDIA : EXTRAORDINARY MINISTRY OF ENVIRONMENT AND FORESTS NOTIFICATION New Delhi,'the 18th March, 2008 (PART G.S.R. exercise of the powers conferred by Sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986; namely I. (1) These rules may be called the Environment (Protection) Amendment Rules. 2008. (2) They shall come into force on the date of their publication in the Official Gazette, 2. In the Environment (Protection) Rules, 1986,- in Schedule —1, - (a) for serid number 3, relating to 'OIL REFINERY INDUSTRY' and entries relating thereto, the following serial • number and entries shall be substituted, namely:- s. NO. "3 Paameter Industry 3 2 Petroleum Refinery 2. Oil & Grease 3. BOD3 .270c 4. COD Sus ended Solids 5. Phenols 6. Sul hides 7

**9. Ammonia as N '0.TKN 12. Cr Hexavalent 13. cr Total 16. Zn 17. Nt 18. cu 19**

**20. Benzene 21.Benzo a -p ene Notes.- Standard 4 A. Effuenf Limiting value for concentration (mg/l except for H 6.0-8.5 5.0 15.0 125.0 20.0 0.35 0.5 0.20 15.0 40.0 3.0 0.1 2.0 0.1 0.01 5.0 1.0 1.0 0.2 0.1 0.2 (i).Concentration limits shall be complied with at the outlet. discharging effluent (excluding discharge from sea water cooling systems) to receivin environment surface water 2 (Furnace, Boiler and captive Plant) 3 4 Bodies. marine systems or public sewers). In case of application of treated effluent directly for irrigation/horticulture purposes (Within or outside the premises of refinery), make-up water for cooling systems, fire fighting, etc., the concentration limits shall also be complied with at the outlet before taking the effluent tor such application. However. any use in the such as use of sour water •in desalter excluded for the purpose of compliance. (ii) In case of circulating seawater cooling, the blow-down from cooling systems shall be monitored for pH and oil & greqse (also hexavalent & total chromium, if chromate treatment is given to cooling water) and shall conform to the concentration limits for these parameters. lh case of reuse of treated effluent as cooling water make-up, ali the parameters (as applicable for treated effluent) •shall be monitored and conform to the prescribed standards. (iii) In' case of once through cooling**

with seawater, the oil & grease content in the effluent from cooling water shall not exceed 1.0 mg/l. Emissions Limiting concentration in mg/Nm<sup>3</sup>. unless stated Fuel Type Existing New Refinery/Furnace/Liquid Sulphur Dioxide Oxides of Nitrogen (NO<sub>x</sub>) Particulate Matter Carbon Monoxide Nickel and Vanadium Ni+V Hydrogen Sulphide (H<sub>2</sub>S) in fuel as Sulphur content in liquid fuel. Weight Gas • Liquid Gas Liquid Gas Liquid Liquid Liquid / gas Liquid/ gas refineries Boiler 50 1700 350 450 10 100 150 200 5 150 1.0 50 850 250 350 5 50 150 5 150 Notes.- (iii) In case of mixed fuel (Gas and liquid) use, the limit shall be computed based on heat supplied by gas and liquid fuels. All the furnaces/boilers with heat input of 10 million kilo calories/hour or more shall have continuous systems for monitoring of SO<sub>2</sub> and NO<sub>x</sub>: Manual monitoring for all the emission parameters in such furnaces or boilers shall be carried out once in two months. All the emission parameters in furnaces/boilers having heat 16 THE GAZETTE OF INDIA : EXTRAORDINARY [PART II—SEC. 3(i)] 2 3 4 (v) (FCC Regenerators) input less than 10 million kilo calories/hour will be monitored once in three months. In case of continuous monitoring, one hourly average concentration values shall be complied with 98% Of the time in a Month. Any concentration value obtained through manual monitoring, if exceeds the limiting concentration value, shall be considered as non-compliance. Data on Nickel and Vanadium content in the liquid fuel (in ppm) shall be reported. Nickel and Vanadium in the liquid fuel shall be monitored at least once in six months, if liquid fuel source & quality are not changed. In case of changes, measurement is necessary after every change. Limiting concentration in mg/Nm<sup>3</sup>, unless stated Existing refineries New Refinery hydro processed FCC feed 100 2 30 Other than [FCC Sulphur Dioxide (SO<sub>2</sub>) Oxides of Nitrogen NO<sub>x</sub> Particulate Matter PM Carbon Monoxide CO Nickel and Vanadium % Notes: Hydro processed FCC feed ) 700 5 30 Commissioned 500 (for hydro- processed feed) 850 (for other feed) 350 50 300 2 30 (i) In case part feed is hydro-processed, the emission values shall be calculated proportional to the feed rates of untreated and treated feeds. (ii) FCC regenerators shall have continuous systems for monitoring of SO<sub>2</sub> and NO<sub>x</sub>. One hourly average concentration values shall be complied with 98% of the time in a month, in case of continuous monitoring. Manual monitoring for all the emission parameters shall be carried out once in two months. 17 2 {Sulphur Recovery Units (SRU)} 3 (iii) Any concentration value Obtained through manual monitoring, if exceeds the limiting concentration value, shall be considered as non-compliance. (v) Data on Sulphur (weight in Nickel (PPM) and Vanadium (PPM) content in the feed to FCC shall be reported regularly (V) Limit of Carbon Monoxide emissions shall be complied with except during annual shut down of CO boiler for statutory maintenance. Sulphur recovery H<sub>2</sub>S, mg/Nm<sup>3</sup> Sulphur recovery. Sulphur recovery Oxides of Nitrogen (NO<sub>x</sub>), mg/Nm<sup>3</sup> Carbon Monoxide (CO), mg/Nm<sup>3</sup> Notes: Above 20 5-20 1-5 All capacity All capacity Existing SRU 98.7 15 96 94 150 New SRU Commissioned 99.5 10 98 96 100 Sulphur recovery units having capacity above 20 tonnes per day shall have continuous systems for monitoring of SO<sub>2</sub>. Manual monitoring for all the emission parameters shall be carried out once in a month. Data on Sulphur Dioxide emissions (mg/Nm<sup>3</sup>) shall be reported regularly. Sulphur recovery efficiency shall be calculated on (ii) monthly basis, using quantity of sulphur in the feed to SRU and quantity of sulphur recovered. 18 OF : EXTRAORDINARY C - Fugitive Emission Storage of Volatile Liquids : General Petroleum Products [PART II SEC. 3(i)] (2) (3) (4) (5) Storage tanks with capacity between 4 to 75m<sup>3</sup> and total vapour Pressure (TVP) of more than 1.0 kpa should have fixed Roof Tank (FRT) with pressure valve vent. Storage tanks with the capacity between 75 to 500 m<sup>3</sup> and total vapour Pressure (TVP) of 1.0 to 76 kpa should have Internal Floating Roof Tank (IFRT) or External Floating Roof Tank (EFRT) or fixed Roof Tank with vapour control or vapour balancing system. Storage tanks with the capacity of more than 500 m<sup>3</sup> and total vapour Pressure (TVP) of 1.0 to 76 kpc should have Internal Floating Roof Tank or External Floating Roof Tank or Fixed Roof Tank with vapour control system. The tanks with the capacity of more than 75 m<sup>3</sup> and total vapour Pressure (TVP) of more than 76 kpc should have Fixed Roof Tank with vapour control system. Requirement for seals in floating Roof Tanks: (i) (a) IFRT and EFRT shall be provided with double seals with minimum vapour recovery of 96%. (b) Primary seal shall be liquid or shoe mounted for EFRT and vapour mounted for IFRT. Maximum seal gap width will be 4 cm and maximum gap area will be 200 cm<sup>2</sup>/m of tank diameter. (c) Secondary seal shall be rim mounted. Maximum seal gap width will be 1.3 cm and maximum gap area will be 20 cm<sup>2</sup>/m of tank diameter. (d) Material of seal and construction shall ensure high performance and (iii) durability. Fixed Roof Tanks shall have Vapour control efficiency of 95% and vapour balancing efficiency of 90%. Inspection and maintenance of storage tanks shall be carried out under strict control. For the inspection,

API RP 575 may be adopted. \_ In-service inspection with regard seal gap should be carried out once in every six months and repair to be implemented in short time. In future, possibility of on-stream repair of both seals shall be examined. Storage of Volatile Liquids : Benzene Storage FRT with vapour to incineration with 99.9% of removal efficiency for volatile organic compounds (VOC) shall be provided. IFRT/EFRT with double seals, emission-reducing roof fitting and fitted with fixed roof with vapour removal efficiency of at least 99% shall be provided 19 SoWents for Lube•Bæ O" B0dueNon (FLARd, NMP, MEK, Toluene and MIBK) IFRT with double seals and inert gas blanketing with vapour removal efficiency of at least 97% shall be provided. Emission contr for Road tank truck Rail tank w Loading of Gasoline and Naphtha: (i) VOC reduction, % Volatile Frodvcts ii Emission, Benzene: (i) VOC reduction, % ü & nission, m m3 Toluene/Xylene: (i) VOC reduction, % ii i •on, m /m3 Note: (i) 99.5 5 {i} 99.99 (i) 99.98 ii 150 (2) (3) (4) (5) It shall be applicable for Gcxoline. Naphtha. Bdnzene, Toluene and Xylene loading. {ii} Road tank Truck shdlhave Bottom loading and Rail tank wagon shall have Top submerged loading. {iii} Annual leak-testing for vapour collection shall be done. Standards for Equipment Approach: Approach for controlling fugitive emissions from equipment leaks shall have proper selection. installation and maintenance of non-leakjng or leak-tight equipment. Following initial testing after commissioning, the monitoring for leak detection is to be caried out as a permanent on-ging Leak Detection and Repair (LDAR) programme. finally detected leaks are to be repdre within time frame. Components to be . Covered: Components that shall be covered under LDAR programme include (i) Block valves; (ii) Control valves; {iii} Pump sed; {iv} Compressor seals; (v) Pressure relief valves; (vi) Flanges — Heat Exchangers; (vii) Flanges — Plplng; (viü) Connectors — Piping; (ix) Open ended -fines: and (x) Sampling connections. Equipment and lne sizes more than 1.875 cm or % inch are to be covered. Applicability: LDAR programme WOUId be applicable to components {given at 2 above) for folowing products/compounds: (i) hydrocarbon gases; (iiJ Light liquid with vapour pressure @ 200C > 1 .0 kPa; and (iii) Heavy liquid with vapour @ between 0.3 to .0 kPa. While LDAR will nol be applicabie for heavy liquids with vapour pressure < 0.3 kPa, it be desirable to check for liquid dripping as indication of leak. Definition of leak: A leak is defined as the detection of VOC concentration more than the. values (in ppm) specified below at the emission source using a hydrocarbon analyzer according to measurement protocol (US EPA — 453/+95-017, 1995 Protocol for equipment leak emission estimates may be referred to: 20 GAZETTE OF INDIA : EXTRAORDINARY Component Pum iCom ressor Valves/Flan es Other com onents General H drocarbon Benzene m Till Dec. w.e.f. January Till 31st Dec. 2008 I oooo 10000 10000 01 , 2009 5000 2008 3000 [PART w.e.f. January 01.2009 2000 1 coo 1000 (6) (7) (8) (9) (10) In addition, any component observed to be leaking by sight, sound or smell, regardless of concentration (liquid dripping, visible vapor leak) or presence of bubbles using soap solution should be considered as leak. Monitoring Requirements and Repair Schedule: Following frequency of monitoring of leaks and schedule for repair of leaks shall be followed: Com neni Pum seals Corn ressor seals Pressure relief devices Pressure relief devices (after ventin Heat Exchan ers Process drains Components that are difficult to monitor Pump seals with visible liquid dri in Any component with visible leaks Any component after r air/re lacement Fre uen of monitorin Quarterly (semiannual after two consecutive periods with < 2% leaks and annual after 5 eriods with < 2% Quarte Quarterl Quarterly Within 24 hours Quarterl Annuali Annually Immediately Immediately Within five days Re alr schedule Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for genera' hydrocarbons. In case of benzene. , the leak Shall be attended immediately for repair. Immediately Immediately - The percentage leaking components should not be more than 2% for any group of components, monitored excluding pumps/compressors. In case of pumps/compressors, it should be less than of the total number of pumps/compressois or three pumps and compressors, whichever is greater. Emission Inventory: Refinery shali prepare on inventory of equipment components in the plant. After the instrumental measurement of leaks, emission from the components will be calculated using stratified emission factors (USEPA) or any other superior factors. The total fugitive emission will be established. Monitoring: Following types of monitoring methods may be judiciously employed for detection of leaks: (i) Instrumental method of measurement of leaks; (ii) Audio. visual and olfactory (AVO) leak detection; and (iii) Soap bubble method. 21 (12) (13) 05 (16) D. (2) (3) Data on time of measurement and concentration value for leak detection: time of repair of leak; and time of measurement & concentration value after repair of leak should be documented far all the components. Pressure relief and •blow down systems should discharge to

a vapour collection and recovery system or to Rare. Open-ended lines should be closed by a blind flange or plugged; Totally closed-loop should be used in all routine samples. Low emission packing should be used for valves. High integrity sealing materials should be used for flanges. Emission Standards for VOC from Wastewater Collection and Treatment All contaminated and odorous wastewater streams shall be handled in closed systems from the source to the primary treatment stages (oil-water separator and equalization tanks). The collection system shall be covered with water seals (traps) on sewers and drains and gas tight covers on junction boxes. Oil-water separators and equalization tanks shall be provided with floating/fixed covers. The off-gas generated shall be treated to remove at least 90% of VOC and eliminate odour. The system design shall ensure safety (prevention of formation of explosive mixture, possible detonation and reduce the impact) by dilution with inert gas, installing LEL detector including control devices, seal drums, detonation arrestors, etc. The system shall be designed and operated for safe maintenance of the collection and primary treatment systems. (4) Wastewater from aromatics plants (benzene and xylene plants) shall be treated to remove benzene & total aromatics to a level of 10, 20 ppm respectively before discharge to effluent treatment system without dilution." (b) Serial number 35 relating to 'oil refineries. (sulphur oxide) and entries relating thereto shall be omitted; in Schedule VI, in C, - (a) serial number relating to 'Oil Refinery Industry' and entries relating thereto. the following serial number and entries shall be substituted, namely :- "1. Petroleum 011 Refinery : Parameter Quantum limit in K Oil & Grease 2. BOD 3. COD 4. Solids 5. Phenol 6. Sulphides 7. Cyanide 8. Ammonia as N 9. TKN 10. Cr Hexavalent 12. Cr Total 13. Pb 14. Hg 15. Zn 16. Ni 17. Cu 19. Benzene Benzene p Notes : THE OF INDIA EXTRAORDINARY Standard 2 Quantum limit in K / 1,000 tonne of crude processed 0.004 2.0 0.4 0.4 0.8 0.04 0.08 ART [I—SEC. 3 (i) Quantum limits shall be applicable for discharge of total effluent (process effluent, cooling water blow down including sea cooling water blow down, washings, etc.) to receiving environment (excluding direct application on land for irrigation/horticulture purposes within the premises of refinery). (ii) In order to measure the quantity of effluent (separately for discharge to receiving environment. application for irrigation/horticulture purposes within the premises Of refinery & blow-down Of coding systems), appropriate flow measuring devices (e.g. V-notch, flow meters) shall be provided with. (iii) Quantum of pollutants shall be calculated on the basis of daily average of concentration values (one 24-hourly composite sample or average of three grab samples, as the case may be). average flow of effluent during the day and crude throughput capacity of the refinery. (iv) Limit for quantity of effluent discharged (excluding blow-down from seawater cooling) shall be 400 m<sup>3</sup>/1000 tonne of crude processed. However, for refineries located in high rain fall area, limit of quantity of effluent on'y during rainy days shall be 700 m<sup>3</sup>/1000 tonne of crude processed." [F. No. (2-15017/15/2007-cpw] R. K. VAISH, Jt. secy. Note : - The principal rules were published in the Gazette of India vide number S.O. 844 (E) 19 November, 1986 and subsequently amended vide S.O. 433 (E) dated 1st April, 1987, S.O. 64 (E) dated 18th January, 1988, S.O. 3 (E) dated 3rd January, 1989, S.O. 190 (E) dated 15th March, 1989, G.S.R. 913 (E) dated the 24th October, 1989, S.O. 12 (E) dated the 8th January, 1990, G.S.R. 742 (E) dated the 30th August, 1990, S.O. 23 (E) dated the 16th January, 1991, G.S.R. 93 (E) dated the 21st February, 1991, G.S.R. 95 (E) dated the 12th February, 1992, G.S.R. 329 (E) dated the March, 1992, G.S.R. 475 (E) dated the 5th May, 1992, G.S.R. 797 (E) dated the October, 1992, G.S.R. 386 (E) dated the 28th April, 1993, G.S.R. 422 (E) dated the 19th May, 1993, G.S.R. 801 (E) dated the 31st December, 1993, G.S.R. 176 (E) dated the 1st April, 1996, G.S.R. 631 (E) dated the 31st October, 1997, G.S.R. 504 (E) dated 20th August, 1998, G.S.R. 7 (E) dated the 2nd January, 1999, G.S.R. 682 (E) dated 5th October, 1999, G.S.R. 742 (E) dated the 25th September, 2000, G.S.R. 72 (E) dated the 6th February, 2001, G.S.R. 54 (E) dated the 22nd January, 2002, G.S.R. 371 (E) dated the 17th May, 2002, G.S.R. 489 (E) dated the 9th July, 2002, S.O. 1088 (E) dated the 11th October, 2002 and G.S.R. 849 (E) dated the 30th December, 2002, G.S.R. 520 (E) dated July, 2003, G.S.R. 92 (E) dated 29th January, 2004, G.S.R. 448 (E) dated 12th July, 2004, Corrigenda G.S.R. 520 (E) dated August, 2004, G.S.R. 272 (E) dated 5th May, 2005, G.S.R. 315 (E) dated 16th May, 2005, G.S.R. 546 (E) dated 30th August, 2005, G.S.R. 46 (E) dated 3rd February, 2006, G.S.R. 464 (E) dated 7th August, 2006, G.S.R. 566 (E) dated 29 August, 2007 and G.S.R. 704 (E) dated 1201

5. Phenol 6. Sulphides

7. Cyanide 8. Ammonia as N

9. TKN 10. Cr Hexavalent 12. Cr Total 13. Pb 14. Hg 15. Zn 16. Ni 17. Cu 19. Benzene Benzene p Notes : THE OF INDIA EXTRAORDINARY Standard 2 Quantum limit in K / 1,000 tonne of crude processed 0.004 2.0 0.4 0.4 0.8 0.04 0.08 ART [I—SEC. 3 (i) Quantum limits shall be applicable for discharge of total effluent (process effluent, cooling water blow down including sea cooling water blow down, washings, etc.) to receiving environment (excluding direct application on land for irrigation/horticulture purposes within the premises of refinery). (ii) In order to measure the quantity of effluent (separately for discharge to receiving environment. application for irrigation/horticulture purposes within the premises Of refinery & blow-down Of coding systems), appropriate flow measuring devices (e.g. V-notch, flow meters) shall be provided with. (iii) Quantum of pollutants shall be calculated on the basis of daily average of concentration values (one 24-hourly composite sample or average of three grab samples, as the case may be). average flow of effluent during the day and crude throughput capacity of the refinery. (iv) Limit for quantity of effluent discharged (excluding blow-down from seawater cooling) shall be 400 m<sup>3</sup>/1000 tonne of crude processed. However, for refineries located in high rain fall area, limit of quantity of effluent on'y during rainy days shall be 700 m<sup>3</sup>/1000 tonne of crude processed." [F. No. (2-15017/15/2007-cpw] R. K. VAISH, Jt. secy. Note : - The principal rules were published in the Gazette of India vide number S.O. 844 (E) 19 November, 1986 and subsequently amended vide S.O. 433 (E) dated 1st April, 1987, S.O. 64 (E) dated 18th January, 1988, S.O. 3 (E) dated 3rd January, 1989, S.O. 190 (E) dated 15th March, 1989, G.S.R. 913 (E) dated the 24th October, 1989, S.O. 12 (E) dated the 8th January, 1990, G.S.R. 742 (E) dated the 30th August, 1990, S.O. 23 (E) dated the 16th January, 1991, G.S.R. 93 (E) dated the 21st February, 1991, G.S.R. 95 (E) dated the 12th February, 1992, G.S.R. 329 (E) dated the March, 1992, G.S.R. 475 (E) dated the 5th May, 1992, G.S.R. 797 (E) dated the October, 1992, G.S.R. 386 (E) dated the 28th April, 1993, G.S.R. 422 (E) dated the 19th May, 1993, G.S.R. 801 (E) dated the 31st December, 1993, G.S.R. 176 (E) dated the 1st April, 1996, G.S.R. 631 (E) dated the 31st October, 1997, G.S.R. 504 (E) dated 20th August, 1998, G.S.R. 7 (E) dated the 2nd January, 1999, G.S.R. 682 (E) dated 5th October, 1999, G.S.R. 742 (E) dated the 25th September, 2000, G.S.R. 72 (E) dated the 6th February, 2001, G.S.R. 54 (E) dated the 22nd January, 2002, G.S.R. 371 (E) dated the 17th May, 2002, G.S.R. 489 (E) dated the 9th July, 2002, S.O. 1088 (E) dated the 11th October, 2002 and G.S.R. 849 (E) dated the 30th December, 2002, G.S.R. 520 (E) dated July, 2003, G.S.R. 92 (E) dated 29th January, 2004, G.S.R. 448 (E) dated 12th July, 2004, Corrigenda G.S.R. 520 (E) dated August, 2004, G.S.R. 272 (E) dated 5th May, 2005, G.S.R. 315 (E) dated 16th May, 2005, G.S.R. 546 (E) dated 30th August, 2005, G.S.R. 46 (E) dated 3rd February, 2006, G.S.R. 464 (E) dated 7th August, 2006, G.S.R. 566 (E) dated 29 August, 2007 and G.S.R. 704 (E) dated 1201

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