

16. CODES OF PRACTICES FOR EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN (ERDMP), REGULATION, 2010

2 THE GAZETTE OF INDIA : EXTRAORDINARY Rat, 18 2010 I PART II—SE€. 3(i)l 2006 (2006 19) 61 3-rqa-r 2010. (2) afra (1) 3.FQ TT 0: _ F) F) (g.) 3ft t; (trqa\$#)" t vrå GraT t a-a7r t; ezi7\$' t "3-n-qvr q-fi' t 3-rrqrö 3-Tl@vr 4 (7) (20 (a) (g) F) THE GAZETTE OF INDIA : EXTRAORDINARY [PART 3T2t t å-€r 6ß) 'Gx-lll nt t Otr 3-n•qrr 6(7T) 3Rt t 3•rrq-ra &aT3å as?r 3-rgra a--TFar t; 'Ä-gzr(' t 3-TTqT7 3-rrqra g±7T, 3ffq<T3å Nar 3r-8r altr t 3l-æ-rq-aT (QSßTT#) Rär3#) qfi-aFT aft 3q2i-cr 3r arr 'Fra t ür & a21T Otr t azrr tl a-«r 0-8 t; 'Fra 3R-t t a-ft *r a-THar O; (30 (q) (T) (a) t ardr ta-r t, grr 3ßiO?T t, a?-TT #T33T, æraa•r3å &7r; a-fr æraa•r avr #qrci, 'Fra t av 3T-ar t qåta--Tüt "RQ7re 3Rt t «-&Tå-ö q-åaRUT B-aR7T•, 3TßT3#r, a-rv t a-a-r< 6 THE GAZETTE OF INDIA : EXTRAORDINARY I PART II—SEC. 3(i)l (2) atr t, Str f*-fi 3. 4. 4.1 4.2 (3) (3) (3) (iii) (iv) (v) &-atr, F_rrq-aT 3T@; ft7, 6T\$Srå7 F-1TA7r, Q#r\$R, t; a-avr grr 3TVl 3?rv 3•rrqTö *r 3-iaåa zr 3Tlqa-r 31Tqzr gRNzrr, 3ft tar, [3(i)] 7 qaT zi37T, 3-1lgra (i) (ii) (iii) (iv) (v) (vi) æiA*T, *r åurtr gora, a-Hra qåü•a-TÜr, qG-at) tq@Äi: 3?AR, FIÄT, \$Rcr, (a) F) F) (e) (6) (s) a-fr-wr; å•qTtr 3qgr•, 3-nqr:r gRNzrr 3•qrzr; 8 (UT) (a) (q) THE GAZETTE OF INDIA : EXTRAORDINARY 31Tqzr3å I PART 6. 3æ*r a-fra F) (a) era, t; (ii) GTT-2: ur t - atr t-aT*r tar t; (ii) ur a21T 3-TßfiZT(0; (iii) ur *r 3: 3-TTq-er t 3izv a-æiczzr, 3-rrqra f?2ft tcqotr: 11 11 11 3mzr aw-T 0, G-az:ff V3-TlfrFT fätåvt @TfÜ:- dt7!t 4 far 10 10-5Ä# 100,000 10.3 Qfra•r t &rrtr 3•Ttrq'r [Q-rrq 3(i)] (vii) (viii) (ix) (x) (xi) (xii) 13 (værrdT), a-ra avr gu•rfi-qi; 3-117ta-* 3Ä•, wrr#r *r 3LÄa•-T 3-1-rcn-a-3q-frJtT 3izr 3r#r 3T#r aizr Rs, 12.0 åQT?r åur?r 12.1 (a) (T) (q) t ur qtr, 12.1 (s.) t, au-r *r a-ayr Yr a-FT fira-TÜT fizrr3å y-zrrær zrT f?2fi #rRT a-zr aTFaÄi qvrfå *r åara#f gun-a, f&a1T, *r a-r#r zrrftkTl a-r#r a-at tar, æl\$-rq-a-r 9-ft 14 12.2 n--IE GAZETTE OF INDIA : EXTRAORDINARY [PART 11 SEC. 3-rrqT7%TöT qi-a-TOT fW a-zfi, 3&JT a•lër RFr a-rh a-TRar Äzrr 24 fig, 3izr (2)(i) 37 tl SFr zrraT@Tå tirl (ii) as?r (3) (4) 378M Afia-wr 3i-axra ait 1989 1989 gfQ)a-Tüt 12.3 atr OTT, 3-17: t æ-zrae-rr F) AT Fax-11 GTT#r [3(i)] (a) (T) 15 Ezra-err t-€r *r 3Flt<T, 3Zhvr å7Tö *7tr, avr *r t Rea-rer tl 3-lfi@Tå t:- (ii) (iii) (iv) (v) «r *qfå-zrr arr q-&a-r F2.rrq;rr 8(4) 3ia7frT 13.0 t Afifi-ur a-ft 3-rrtrrv a-efr?Tr uavr tl 3-lTq-a 24 aft 3-TTq-ra 3-e-q-Fö 16 (iii) (a) 14.0 (1) (2) THE GAZETTE OF INDIA : EXTRAORDINARY IPART F) (NVRV) *r d7i, arr 3-n-gr7 3-fftrra aTÄ f*ar ena-r 3Tit& a-zr arr 3-rrq-rer 3-lTtrrr 3Trq•rr 3TJT, %Q--IT, 17 (s.) 14.1 11 Ill 215 GI/10—3 *r *r *r Otr tl qtr 3-TTtr-a 3•hv 3ft a-Föh-\$r 19 (UT) 14.2.2 qza•r *vrrl 24 Eit qtr F) (T) (s.) (B) 3-rrgra fav Orr 3qF FqrRrq avr grq 3•lTq-ra text?r 0, *r q•zn, Erea•r 3rv•, zrü 3@fh ai *7TT; qRær, aa, <T6tr 14.2.3 22 THE GAZETTE OF INDIA : EXTRAORDINARY 14.2.5.6 F) I PART 11—SEC. (2) (3) *r fe-fi, a-*, FR-I 111 O, 3q-#r 3q-ra qTö, &rrl zrr tar tl *QT, Frar ur &frl 3fiÄ-rtr vyr *r 01 3grat &frl -Otr tqÜtr: &-a-r F.TT#ra qrr OaT t: F) (T) (q) (s.) æaT 3fraTå 3-hæ 3FT•, 14.2.5.8 (1) tr *7Tr: 23 (a) (T) 3-frö Rig, e•ptr: 1. 2. (2) va-va•ra, (VGT()) *trzr Ill æ:a-c d, ai F) pn-q-a-r 3CTF{3--T 24 (Er) THE GAZETTE OF NDIA : EXTRAORDINARY [PART 3-TTVR a?xr QflV tarotr•. 3-TN freer, 3-Tlt 14.2.5.9 (2) 3-rrgT7 xvr fäzi70T <R-aT F) (a) (Er) (g.) FT-I: FT-11 3fr(-111: ETC-1 11 15.0 15.1 (#€r) [11-æVS3(i)] (2) 215 GI/ IO F) (a) F) g) (T) F) (g.) (s) (3) aaTqr åær RFT, azr 3q-nraTki a-ga t a-rR 3?rc 7TH, 3T*r *r ataxaT 3nq-ra 3traar 3r#r aft 3h-c 26 THE GAZETTE OF INDIA : EXTRAORDINARY I PART 16.0 15.2 (2) (1) (2) (3) (4) åzrr ærVN-a-r zrv araT qar (qræå€r) a-ftv, *arc, 3+ t, 3-ngra Få-s-lifi 3r8r tl %czr 31V, *r artr 27 17.0 (3) (4) (5) (2) (3) J:rczr ai 3-TT•q-ra tar tl 3-ta•ra-r, t q-<T2t 1948 aur 3-iaåö 3-q-v 3i-aåa 3gFræ.T 3Trqr:r yorrr (70 (3) (3) (T) 3ia7t•a (240) 3-hT gi8rq 28 18.0 19.0 (4) (5) (3) (3) (s.) g) (e) (6) 3-TN THE GAZETTE OF INDIA : EXTRAORDINARY A'Q:qT ag tart [PART a-tg-aaT, 3q-a€va•r Ng, 3lvfr•.- 3-TFq•aTFr, 3Trov:r 20.0 GTTvtr 30 24.0 25.0 26.0 (2) (2) (2) THE GAZETTE OF INDIA : EXTRAORDINARY 15 10.00 *r 500 111 ya-Tr 3fi.Ä&T) G#artr (R#QJTV) [PART agr F) (a) (s) 3-rrqa (T) (Er) fiåT#r, 1 11 ÉtaT 3-TNTFT RT-111 3ia-wr trar.3å 3-11VT(*r 32 THE GAZETTE OF INDIA : EXTRAORDINARY 28.3.1 PART F) (s) F) (s) g) zrü tr *r a-H qr#r *T7Tl -a-ftv 3FTTÄT, 3FT@-v 28.3.2 q-t, 3-nqzr Ärr-at?T (3qYT), 2007 tl aft, (a) (T) (s) al-& ætr 3TßT, 01 3FTa-r, 3FT@-v 28.3.3 (a) (s) (s) 3-ngzr 3&a, 2007 3e-83t-v tl aza@, (GTI 3æqalFt 3-rarar 3FTé(\$r-v 29.0 29.1 215 GI/10—5 (2) (3) 23 2005 2005 3-Tfr*zæ, 2005 a-art, a-vö 3-rrq-<T 3-rc-Äa--T 3-TF?X 34 THE GAZETTE OF INDIA : EXTRAORDINARY IPART (4) (5) q-ättr «-3-nqzr 3TTqa•r tl crt gS-TÄ åqx *r 3-TTZd (q*3å) 3-rrqa-r zrÉ 36 F) föAÜtr: aur 30.0 (1) (2) GAZETTE OF : EXTRAORDINARY IPART avr 2, 3. 5. 6. (ta-r Vlfå±--a 3i\q 12 3 12 37 qafavr Fr) 1991)

aarr 1986 (Qli@a, 2004) I 1989 1994 2004) 1989 (æi?frft-a 2000 2003) 2006 1996 1989 1948 1987) 1952 1988 2001) 1989 2005) 1991 1992) 1991 1993) > 1934 2002 1968 2000) *z-nfr 1971 1999) 1995 1884 (1983 2004 fro-a, 1981 2002) I 1983 2002) 38 THE GAZETTE OF INDIA : EXTRAORDINARY - 11 IPART 2. 3. 4. 5. 6. 7. 8. 9. *rrqaT 2 *r 01 \$r arr gNzrr Fgf7, zrv,, (VRQ*Q-€) I (3%âfx-1 3-rrcrra 3æqara, atr&T\$, qTszzr qaTl (væltr), (3*ff\$) *217, q-c tifi7T æT6TzraT 3rr#a'r3â, 3-rrqTö *art, O, asr F.æi. 2. 3. 4. 5. 3(i)] - qtr-ar tr.v.ü-e tr.rr.& tr.rr.*z ai*r-ä\$ 39 11.2 -d) IIR 40 6. 7

8. THE GAZETTE OF INDIA : EXTRAORDINARY 12'x12" 3/8" 3-q-fi-o-r 3-T#dr.zzr\$zrt IPART 41 (T) 215 GI/10—6 22.0 3 ear (ii) Nqr a•raT 3Trqra tar t gâGTr vaRT a-ä-n-r Fazr âzntr tl 3-11AZT *r G-a-r 3-rrqz•r *r *r a-\$ atr 37 t aar æaT 42 F) (s) (3) (OT) THE GAZETTE OF INDIA : EXTRAORDINARY I PART I I—SW. 3-TTqa *r 3irgra zrY7T Yr zrv ft-at 3-æq-a1Fr/FTæzr FTäT, *r 3qTq 3-TlATö\$ra *r gar *r 3Fzr *r *r &frl 3-TTqz-r tl gma--TOT 3trrq t âztR .3fr(317T firr 01 37qa-r, 3+7, 2007 # t/ q*rzr 3-TTtra-r t 11--æuz 3(i)] 1. 3. 5. ata 7. 43 23.0 8. 10. 3Tfi- 11. Fear, frR7T, 3Fq, 12. a-H 3Tt) 13. 14. 15. 16. FT7Z-Ei-ä 17. ZT@T, 18. Fifi: 3ft 19. qta•â7, 20. qza•r Ere-ar 3grzr 21. 22. tl at, asr *r artrv 23. (a-gr tl 76, 24. 25. - 6) 3<rc7 44 THE GAZETTE OF : EXTRAORDINARY 26. t 87TTt) [PART "—SEC. v. F#rq 27. azrr 28. Err err: a) Vira-7 mrr-at?r. 3. \$. a-a-tr \$) gfrzrr OT) atrep•r/ gfhT3â 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. a#r, Err-fir ætr artr Erra-r 73, *r 3izr *r g-Fa7 *r air yr O; 15 3FT qiir 500 æa•r *r 3TVfrl 34T *r a-rrl 3ß7r Qtre aærr&r 3i7 15 30 Yr Ezar *r äa•r 45 i) ii) iii) iv) v) vi) vii) viii) 3q@-v11 27.0 a•rcrvrr gr\$qa-r\$T *r attr Ere-zr Xu-r (3ZT8WT 3Tr«r 3•rraTö am (a) 3-ffqrrer 3±qzr 46 THE GAZETTE OF INDIA : EXTRAORDINARY I PART IPSEC. ix) x) xi) xii) (T) 3•nqrrer 3?rr a•TRar a•zn 3•rrgZT aT&frl æi•R-aT3ff, zrq-araT, *r @T6tr 3TVTr 3ft *r 3Ezr 7riæ& aa•rzrr goTr#r F) g) qr t €-âf-tr *r F#ra--TT *r 3T#r a-uT qnaâ7, *r a-ar-gtra•r 28.1 1. 3. 4. [3(i)] 47 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. (*-ar/qe) 1" tra-#r qtzrr qr&3fr q17T, 2. 7?rrFr 3. art (10 a-är) iii) a-vaTâ 3-IGR 1. 2. 3. 4. 5. 6. 7. 10 3'tr\$C0T 3-117T 48 3V*7vr: 2. 3T7r-«r 2. #rtr 1. 2. 3. I. 2. 3. 4. 5. 6. 7. 8. 3-TT#i, q, aTQ7T 10. THE GAZETTE OF INDIA : EXTRAORDINARY [PART 49 1. 2. 3. 4. 5. 6. 7. gun-tr a-Rr 28.2 *r a-rmr) æur: [c tzq•otr: 3-iiär, 215 GI/10—7 50 THE GAZETTE OF INDIA : EXTRAORDINARY 3Trq•ra : (QF#r\$) a-rsv Ha-tr, tl 3Tiü a-i7 a-rgær a-H Rig, •vat 3-eraT a-H "tFtrr;T 3-TT7T tr 3-TPT a-a* srâ asr [PART aat 3Trgra 3-TPT 101. 51 10.1 11K 1 2 3 4 5 6 7 8 9 10 11 1. 2. 3. 4. 5. 6. 7

8. GTTzræ 1989 1994 2004) 3-rrzrta vaq-r errqar' *r 3•iazi7 3•TT8T 6, agr tr#r 1989 1994 2004) 3•iaâö Fsrwr *r tl 3•i\$ST art 52 12 13 14 15 16 17 18 19 20 21 22 23 24 25 THE GAZETTE OF INDIA : EXTRAORDINARY IPART gÜTTtr tl 3-&-a-sr zr 500 a-ra exa, *a-at gaT2t 3•rartr, *a-T a-ra-r tl 3--TIVR *r GTT8r t t i) 3-TT7r ii) Tr (a-va F), iii) iv) *r a;--zff 3&ær a-FT, 0, *r 7tzrr tl Far t-ër *r [3(i)] 53 2 3 4 5 8 9 IO 11 13 14 15 16 17 18 19 20 21 aizr 11.3(xii) era tl ziq•r t 7NT t 3â3rr#Qgr- 118 tl ara•r t *r 3-qF *r 3T8r tl fig-tr 3-TTAZT *r 3T8r tl 9-TßT dar-qtra-1T &ar-gtra-Tr a-rtr zrr 3?rt a-rtr tl 3T7T t I Rtra t a•r8r tl 54 2 3 4 5 6 7 8 9 11 13 14 15 16 17 : EXTRAORDINARY 12.10) 3-raT tl Gi, Ga-r taT æxa--TT *r au-r Ft YUTr#r zzzfr err@Fr tl *r 7Tqr tl era *r Zi-FT q7r [PART IPSEC. [3(i)] 55 2 3 4 5 2 3 4 5 2 3 4 5 2 13.0 Fr qza•r *r azi7ÜT Qfizrr tl qfr;zrr 7Är tl trr\$fi7T 3-ngra aretr, YUIT*r, töi-q-c tl a-qfi-zrr tl 3-TTAT7 ætr Besu Qfrar t qrv, go-ntr q-qva•r Qfizrr YäTr a•uT 56 1 2 3 4 5 6 1 2 3 4 THE GAZETTE OF INDIA : EXTRAORDINARY 14.2.1 (F) I PART tqutr q-aR, 31-a•r t *r grNzrr, 3tÄTtr *r tl 3-TTAZT t, t, afr a•-c 17.0 (5) B7RT#r, 3T03Tvr, go•nfizri 3E@-tv 4 3•TT7r ta•r tl 5 6 7 8 9. 1 2 3 4 215 GI/10-8 : a-TFrru1XUT gurrtr grco#r tdT tl 3•q-aztT, zrYa-T tl ru .•fkfi Illüic avr a•rötr fits, - verrztr azr R-v, \$T7T, - a-TRdT aalgzrt, 3-TN R-«-a-q *r 3iafi7 t a-rR 3-tafi7 qr Rzrr tl Vr aRV t 3-eq•r« *r tl 57 58 5 7 8 9 11 12 13 14 15 16 17 18 19 20 21 THE GAZETTE OF INDIA : EXTRAORDINARY 01 arr aqv t-zn -æ:fr-q tl trtra-Tvr, O, vrqT t qztraotr - 'GHEG 3-rq#r y: aNV tR tl aar •DEM -a yra•i äcae ta/3Tq-a-r aft 3TaT tl 3-TTtT<T *r 'âqTtr aiZT tl aizr 2frr Fatrq a-3r a-Fr (JF Grra-r tl [PART 59 22 23 24 25 26 27 28 29 30 31 32 Frr7k tl 3-ffq-«-r gtJTrr qq-oT, - etra-T\$ a-æmzrr tl Grra•r t a-fi wuvz Far (P73T8r, 3ift) Vr aRV R-zrr t qr axv 60 1. 2. 3 aarr e-a-a-a?fra-ar vi/att t-er\$ Fa-aa?fra-a-r THE GAZETTE OFINDIA : EXTRAORDINARY æ«a-1T a--fr-co•r #r.v.rrm a-rR 3. 4. % 00 % caT\$-e 00 taantrFraT [PART 11—SEc. 3qa77\$-1 æ:a-a-: 00 3-TN17 61 Êrmr.t#r3 #r.71T./VF3 q-aT Fêlzzrr æ--a-\$ Êqh-r/æi-<f 62 THE GAZETTE OF INDIA EXTRAORDINARY NOTIFICATION New Delhi, the 18th January, 2010 'PART IPSEC. G.S.R. 39(E).—In exercise of the powers conferred by Section 61 of the Petroleum and Natural Gas Regulatory Board Act, 2006 (19 of 2006), the Petroleum and Natural Gas Regulatory Board hereby makes the following regulations, namely :— 1

2. Short title and commencement.(1) These regulations may be called the Petroleum and Natural Gas Regulatory Board (Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP) Regulations, 2010. (2) They shall come into force on the date of their publication in the Official Gazette.

Dennhions. (1) In these regulations, unless the context otherwise requires,- (a) "Act" means the Petroleum and Natural Gas Regulatory Board Act, 2006; (b) "Board" means the Petroleum and Natural Gas Regulatory Board established under sub-section (1) of section 3 of the Act; (c) "boiling liquid expanding vapour explosion (BLEVE)" means the violent rupture of a pressure vessel containing saturated liquid or vapour at a temperature well above its atmospheric boiling point and the resulting flash evaporation of a large fraction of the superheated liquid which produces a large vapour cloud which burns in the form of a large rising fireball due to ignition; (d) "chief incident controller" means the person who assumes absolute control of the unit and determines action necessary to control the emergency; (e) "codes of practice" means the codes of practice for emergency response and disaster management plan notified by the Board; (f) "disaster" means an occurrence of such magnitude as to create a situation in which the normal patterns of life within an industrial complex are suddenly disrupted and in certain cases affecting the neighborhood seriously with the result that the people are plunged into helplessness and suffering and may need food, shelter, clothing, medical attention protection and other life sustaining requirements; means a well coordinated, "disaster management plan" comprehensive response plan to contain loss of life, property, environment and provide speedy and effective recovery by making the most effective use of available resources in case of a disaster; 63 (g) (h) "emergency" means a situation or scenario which has the potential to cause serious danger to persons, environment or damage to property and which tends to cause disruption inside or outside the premises and may require the help of outside resources; (i) "emergency response vehicle (ERV)" means a vehicle for handling emergencies having necessary equipment meant for rescue and relief operations and ERV can be put to use within installation, outside of installation including road incident; (j) "hazard" means an event related to the property of substance or chemicals with a potential for human injury, damage to property, damage to the environment, or some combination thereof; (k) "incident" means an unplanned or unintended or intended event having potential to cause damage to life, property and environment; (l) "incident record register" means a register containing complete information pertaining to all incidents covering near miss, and all other incidents leading to Level-I, Level-II and Level-III emergencies; (m) "installation" means facilities, namely, gaseous product pipeline, liquid Product pipeline, hydrocarbons processing installation, oil and natural gas terminals and commercial storage and transportation, hydrocarbons gas bottling Installations including CNG, city gas distribution facilities and retail outlets; (n) "leak" means release or discharge of a dangerous chemicals or substances or material into the environment; (o) "Level-I emergency" means an emergency as defined under sub-regulation 6 (a); (p) "Level-II emergency" means an emergency as defined under sub-regulation 6 (b); (q) "Level-III emergency" means an emergency as defined under sub-regulation 6 (c); (r) "mutual aid association" means an industrial mutual aid association in which participating industries as a community shall assist each other in case of emergency. Mutual aid associations supplement a site's emergency control plan. Services of member industries shall be requested only when the emergency threatens to exceed the capability of otherwise available resources; (s) "occupier" of an installation means the person who has ultimate control over the affairs of the installation; (t) "off site emergency" means an emergency that takes place in an installation and the effects of emergency extends beyond the premises or the emergency created due to an incident, catastrophic incidents, natural calamities, etc. It no longer remains the concern of the installation management alone but also becomes a concern for the general public living outside and to deal with such eventualities shall be the responsibilities of district administration; (u) "off site emergency plan" means a response plan to control and mitigate the effects of catastrophic incidents in above ground installation (AGI) or underground installations (UGI) or road transportation. This plan shall be prepared by the district administration based on the data provided by the installation(s), to make the most effective use of combined resources, i.e. internal as well as external to minimise loss of life, property, environment and to restore facilities at the earliest; (v) "on site emergency" means an emergency that takes place in an installation and the effects are confined to the Installation premise's involving only the people working inside the plants and to deal with such eventualities is the responsibility of the occupier and is mandatory. It may also require help of outside resources; (w) "on site emergency plan" means a response plan to

contain and minimize the effects due to emergencies within the installations which have a potential to cause damage to people and facilities within the installation premises; (x) "risk" means the chance of a specific undesired event occurring within a specified period or in specified circumstances and it may be either a frequency or a probability of a specific undesired event taking place; (y) "risk analysis" means the identification of undesired events that lead to the materialization of a hazard, the analysis of the mechanisms by which these undesired events could occur and, usually, the estimation of the extent, magnitude, and likelihood of any harmful effects; (z) "risk assessment" means the quantitative evaluation of the likelihood of undesired events and the likelihood of harm or damage being caused by them, together with the value judgments made concerning the significance of the results; (aa) "risk management" means the programme that embraces all administrative and operational programmes that are designed to 65 3. reduce the risk of emergencies involving acutely hazardous materials. Such programmes include, but are not limited to, ensuring the design safety of new and existing equipment, standard operating procedures, preventive maintenance, operator training, incident investigation procedures. risk assessment for unit operations, emergency planning, and internal and external procedures to ensure that these programmes are being executed as planned; (ab) "site incident controller" means the person who goes to the scene of the emergency and supervises the actions necessary to overcome the emergency at the site of the incident; (ac) 'spill' means an unintended release or discharge of hydrocarbon or any other dangerous liquid into the environment; (ad) "transport emergency (TREM) card" means a card containing details about the nature of hazards, protective devices, telephone numbers and actions related to spillage, fire, first aid and other details of national and international (UN) numbers or signage which is common in India and abroad; (ae) "unconfined vapour cloud explosion (UVCE)" means the formation of vapour cloud due to release of significant quantity of liquefied hydrocarbons into the atmosphere and its explosion due to ignition which may cause high over pressure and low pressure that cause very heavy damage. (2) Words and expressions used and not defined in these regulations, but defined in the Act or rules or regulations made thereunder, shall have the meanings respectively assigned to them in this Act or in the rules or regulation, as the case may be. Applicability. These regulations shall apply to — (a) (b) (c) (d) (g) (h) hydrocarbons processing installation (refinery. gas processing, LNG Re- gasification installations etc.); pipeline such as natural gas, propane, butane etc. and the hydrocarbons products which remain in gaseous state at NTP; liquid petroleum product pipeline; commercial petroleum storage facilities, gas storage facilities and terminals including LNG terminals; hydrocarbons gas bottling Installations having receiving. storage and handling facilities including storage for LPG, propane and butane; city or local natural gas distribution facilities; dispensing stations and POL retail outlets: transportation of petroleum products by road; any other installation as may be notified by the Board from time to time; 215 GI/10—9 66 5. 4.1 THE GAZETTE OF INDIA : EXTRAORDINARY Scope and intent. Scope. The scope shall cover — (i) the identification of emergencies; (ii) the mitigation measures that attempt to reduce and eliminate the risk or disaster; (iii) the preparedness that to develop plans for actions when disaster or emergencies occur; (iv) the responses that mobilize the necessary emergency services including responders (primary, secondary and tertiary) like fire service, police service, medical service including ambulance, government as well as non-governmental agencies; (v) the post disaster recovery with aim to restore the affected area to its original conditions; Intent. It is intended to apply these regulations — (a) to develop an ERDMP that should be concise and informative so that members of the emergency control organization should be able to quickly refer to the action plan determine important functions that are being carried out; (b) to manage an emergency and not to use ERDMP just as reference material for training and shall be made applicable - (i) to prevent casualties - both on-site and off-site; (ii) to reduce damage to property, machinery, public and environment; (iii) to develop a state of readiness for a prompt and orderly response to an emergency and to establish a high order of preparedness (equipment, personnel) commensurate with the (iv) to provide an incident management organogram with clear missions and lines of authority (incident command system, field supervision, unified command); (v) to ensure an orderly and timely decision-making and response process (notification, standard operating procedures); (vi) to maintain good public relations; Note: No Wyo locations shall be identical in respect of layout, surroundings, products, storage quantities, meteorological data etc. Therefore, ERDMP will be location specific as per the available resources. The content of the regulation. The ERDMP shall include - 67 (a) (b) (c) (d) (f) (g) (k) (m) (n) (o) (p) (q) (u) classification of emergencies; implementation schedule; consequences of defaults or non-compliance;

statutory requirements; pre-emergency planning; emergency mitigation measures; emergency preparedness measures; emergency response procedures and measures; emergency organisation and responsibilities; infrastructure requirements; declaration of on-site and off-site emergency; resources for controlling emergency; demographic information; medical facilities: evacuation: public relations and information to public; reporting of the incident; emergency recovery procedures; ERDMP for tank trucks and pipelines carrying petroleum products; integration of the ERDMP with National Disaster Management Authority (NDMA) guidelines and action plan on Chemical Disasters (Industrial); security threat plan and action plan to meet the eventualities

6. Classification of emergencies. Emergencies can be categorized into three broad levels on the basis of seriousness and response requirements, namely: — (a) Level 1 (i) (b) Level 2 : This is an emergency or an incident which can be effectively and safely managed, and contained within the site. location or installation by the available resources; has no impact outside the site, location or installation. : This is an emergency or an incident which — cannot be effectively and safely managed or contained at the location or installation by available resource and additional support is alerted or required; is having or has the potential to have an effect beyond the site, location or installation and where external support of mutual aid partner may be involved: is likely to be danger to life, the environment or to industrial assets or reputation. 68 7. 8

9. THE GAZZI" OF INDIA : EXI'RAORDINARY IPART IPSEC.(c) Level 3: This is an emergency or an incident with off-site impact which could be catastrophic and is likely to affect the population, property and environment inside and outside the installation, and management and control is done by district administration. Although the Level-IN emergency falls under the purview of District Authority but till they step in, it should be responsibility of the unit to manage the emergency. Note: Level-I and Level-II shall normally be grouped as onsite emergency and Level-III as off-site emergency. Implementation schedule. These Codes of Practices shall be implemented for the areas covered under Regulation 3 as per the implementation period mentioned in Schedule-I. Consequences of default or non-compliance. (1) There shall be a system for ensuring compliance to the provision of these regulations through developing a well defined Emergency Response and Disaster Management Pfan and conduction of mock drill and safety audits during the construction, commissioning and operation phase, as well as on an on-going basis. There shall also be a system of do's and don'ts regarding safety, mock drills or real emergencies for the visitors before entering an establishment. This should be supported by written instruction sheet for the visitor and ensured that visitor is accompanied by plant representative on forward visit and return gate. (2) The Board shall monitor the compliance of ERDMP, Technical Standards and Specifications including Safety Standards either directly or indirectly by accredited third party through separate regulations on third party conformity assessment. (3) In case of any deviation or shortfall, in achieving the recommended standards the entities are liable to penal provisions under the provisions of the technical standards, specifications including safety standards. (4) Mutual Aid Association not responding as per Memorandum of Unaerstanding (MoU) or written agreement on request of assistance shall attract penalty under these regulations as under:- (a) for first default in response, the defaulting entity with the application and its management shall have to submit written explanation to affected mutual aid members. (b) for the second and successive failure, the defaulting entity shall have to pay the double of the billed amount of expenses incurred by affected mutual aid members in case of any eventuality occurs in the premises of affected mutual aid members. Requirements under other statutes. It shall be necessary to comply with statutory rules, regulations and Acts, such as, the Environment (Protection) Act, 1986, the Factories Act, 1948, 69 (2) the Inflammable Substances Act, 1952, the Motor Vehicles Act, 1988, the Public Liability Insurance Act, 1991, the Petroleum Act, 1934, the National Environment Tribunal Act, 1995, the Explosives Act, 1884 mentioned in Schedule—II. It shall also be necessary to comply with the relevant statutes, provisions and guidelines of the Disaster Management Act, 2005 and National Disaster Management Guidelines Chemical Disasters (Industrial), April, 2007. These regulations are not intended to override the requirement of other statutory bodies or any other guidelines issued by the Central Government in respect of formulafion of ERDMP. It shall be necessary to comply with the provisions of different laws relating to management of hazardous substances, more particularly, referred to in Schedule-IL and rules and regulations made thereunder, as amended from time to time

10. Pre-Emergency Planning. 10.1 Hazard identification. (1) The first step towards ERDMP shall be to identify potential on-site and off-site hazards such as gas leaks, spills, fire, explosion, transportation incident, pipeline ruptures, equipment failure, natural calamities, etc. and the types of damage caused by them. The hazard identification shall include — (a) (b) (c) (d) information on toxicological, physical, and chemical properties of the substances being handled in the format of Material Safety Data Sheet (MSDS — Annexure — I); the identification of potential impact on downwind air quality or downstream water quality from an incidental release and possible danger to human, Flora and Fauna and animal health; hazards to the installation shall also include Natural perils such as floods, earthquakes, cyclones or landslides etc. ; check points for hazard identification are given at Check list-I . 10.2 Risk analysis and risk assessment. The second step of the ERDMP process is to determine the risk of an incident associated with each hazard. The basic procedure in a risk analysis shall be as follows: (a) (b) (c) (d) identify potential failures or incidents (including frequency) calculate the quantity of material that may be released in each failure, estimate the probability of such occurrences; evaluate the consequences of such occurrences based on scenarios such as most probable and worst case events; the combination of consequences and probability will allow the hazards to be ranked in a logical fashion to indicate the 70 THE GAZETTE OF INDIA : EXTRAORDINARY I PART [I—SEC. zones of important risk. Criteria should then be established by which the quantified level of risk may be considered acceptable to all parties concerned; after assessing the risk, the "maximum tolerable criterion" must be defined and above which the risk shall be regarded as intolerable. Whatever be the benefit level must be reduced below this level; the risk should also be made "as low as reasonably practicable" (ALARP) and least impacting the neighbourhood. While conducting the risk analysis, a quantitative determination of risk involves three major steps:- IRPA (Individual Risk per Annum) Intolerable The AL-ARP or Tolerable region (Risk untended only) Broadly Acceptable region (no need for continued working to demonstrate ALARP) 1041yr Fundamental improvements needed. Onw to be considered if there are no anomalies and people are well informed Too high, significant effort required to improve High, investigate alternatives Low , consider cost-effective alternatives Negligible, maintain normal precautions NOTE- a risk of 10 per million per year, or 105/ Year, effectively means that any person standing at a point of this level of risk would have a 1 in 100 000 chance of being fatally injured per year. 10.3 Causes of disasters. The common causes for the above events are tabulated below for reference and the ERDMP should be prepared by the installation to deal with the following emergencies. Heavy Leakage Explosion Failure of Critical Control system Design deficiency Unsafe acts Inadequate maintenance Natural Calamities Flood Earth Quake Cyclone Outbreak of Disease Excessive Rains Tsunami Extraneous Riots/Civil Disorder/ Mob Attack Terrorism Sabotage Bomb Threat War / Hit by missiles Abduction Food Poisoning/ Water Poisoning 11.0 3(i)] 10.4 Consequences. (1) The consequences of an Incident may be confined within the premises or may spill off-site triggering cascading effects. (2) The consequences of an Incident are fire explosion. deflagration, blast waves, fast spreading flames, BLEVE, UVCE resulting in direct effects like damage to buildings/property, burns, fatalities. However, an Incident in the neighborhood may sometimes cascade into an on-site emergency. It should be prevented or managed to avoid major emergency. Emergency Mitigation Measures. After determining the risk level, the following actions shall be required for mitigation of emergency:- 71 11.1 11.2 11.3 Basic requirement of ERDMP. Basic requirement needs to be assessed prior to development of ERDMP as per the details provided in Schedule-III. Resource mobilisation. Resource mobilisation shall include manpower requirement, fire fighting materials, appliances or equipment, safety equipment, communication facilities, transport, list of emergency drugs and appliances, etc. (Schedule-IV). Incident preventing measures and procedures. The incident prevention measures and procedures at installation or other locations shall include the following:- (i) health safety and environment (HSE) policy; (ii) proper layout and inter facility distances (the layout should not have any criss-cross movement of men and materials); (iii) safety committees with fair participation of Union leaders and workers; (iv) safety audits and inspections shall be carried out with the help of prescribed checklists. The entity shall follow the periodicity and guidelines for inspection as per regulations of Petroleum and Natural Gas Regulatory Board on process procedure/methodology for ensuring adherence and its protocol for third party conformatory assessment; (v) work permit system (including confined space and entry permit); (vi) early warning alarm system in the installation (gas monitoring system. heat detection, high level alarms, low pressure/high pressure alarms etc.) especially in the vicinity of storage tanks, filling 72 12.0 THE OF INDIA :

EXTRAORDINARY 'PART II—SEC. 3(i) station, delivery points and along with periphery with the indication in the central control room; (vii) in-built safety interlocks system in design such as safety relief valves (SRVs), thermal safety valves (TSVs), non-returning valves (NRVs), remote operated valves (ROVs) and other various emergency trip systems in Installations; (viii) fire protection (preferably automatic) and HSE Management system; (ix) drill for visitors including assembly procedure and escape route, do's and don'ts written instructions before entry, etc; (x) setting up of safety MIS system and sending Exception reports to the head of organisations or CEO; (xi) all standby equipments should be tried and operated periodically and recorded. Similarly back up power for safety equipment and instrument should be checked periodically and observations be recorded; (xii) check points for incident prevention measures are given at Check list -2. Emergency preparedness Measures. After detailing the prevention measures, preparedness measures to handle the emergency shall be explained in ERDMP document.

12.1 Emergency Drills and Mock Exercises. (a) To evaluate the thoroughness and effectiveness of an ERDMP, it is necessary to conduct periodic table top exercises full-scale or announced, and unannounced drills. Each site should hold drills on the night shifts, change shifts as well as during the day as mandated under regulation 12.1 (e). (b) Drills should present a variety of Emergency scenarios and designed to challenge each segment of the organization. Limited scale drills are useful and should be used by Chief of each Support Service to train his own team. Plans should be made to have periodic mass casualty exercises. These exercises should attempt to simulate as closely as possible a fire, explosion, or toxic agent release and comparison of the prescribed time lines and the actual received. (c) The warning system, first aid, evacuation procedures and the definitive treatment procedures should all be tested periodically. (d) Some of the drills should also include the participation of outside groups and agencies such as police, fire companies, ambulance service, civil defence organizations and mutual aid groups. (e) Testing and mock drills for onsite emergency plan shall be carried once in three months and for offsite emergency plan twelve months.

12.2 (f) For other installations, the mock drill shall be carried out once a year. However, for locations having more than one industry member, the annual mock drill can be carried out by one industry member in turn, thus ensuring one mock drill in every year at the location. (g) These mock drills will enable the unit/location to assess the capability of the individual and performance as a group. The frequent discussions and drills will help in eliminating the confusion and shortcomings, if any. (h) Each Mock Drill should be recorded with observations and deficiencies to be rectified within 24 hours. (i) Check Points for mutual aid and mock drills are given at Check list - 3.

Training. (1) An ERDMP shall be easier to use if training material and general philosophy on emergency prevention and control are kept separate from the working plan. (2) (i) Training shall be imparted to all the personnel likely to be involved directly or indirectly to the emergencies including employees, contract workers, transport crew and security personnel. (ii) Contract personnel and contract labourer shall be allowed to start work only after clearance of attending and passing safety training. (3) Refresher training shall be Conducted at regular intervals. (4) The basic requirements of Central Motor Vehicles Rules, 1989 12.3 215 GI/IO—IO pertaining to dangerous or hazardous. goods transport must be complied by the transporters. For this the loading station must conduct training of tank truck crew as per the requirement under Central Motor Vehicles Rules, 1989.

Mutual Aid. Since combating major emergencies might be beyond the capability of individual unit, it is essential to have mutual aid arrangements with neighboring industries. Consideration shall be given to the following while preparing mutual aid arrangements:- (a) Written mutual aid arrangements are to be worked out to facilitate additional help in the event of Level-II emergencies by way of rendering manpower, medical aid or fire fighting equipments, etc. (b) The mutual aid arrangement shall be such that the incident controller of the affected installation shall be supported by neighbouring industries on call basis for the support services materials and equipments already agreed. Further, all such services deputed 74 THE OF INDIA : EXTRAORDINARY IPART by member industry shall work under the command of the site incident controller of the affected installation. (c) Mutual aid associations shall conduct regular meetings, develop written plans and test the effectiveness of their plans by holding drills. Drills are essential to establish a pattern for operation, detect weaknesses in communications, transportation and training. Periodic drills also develop experience in handling problems and build confidence in the organization. (d) To make the emergency plan a success, the following exchange of information amongst the member organizations of mutual aid association is considered essential: - (i) The types of hazards in each installation and fire fighting measures. (ii) List of all the installations or entities

falling along the routes of transport vehicles carrying petroleum or petroleum products. (iii) The type of equipment, that would be deployed and procedure for making the replenishment. (iv) Written procedures which spell out the communication system for help and response. This is also required to get acquainted with operation of different firefighting equipment available at mutual aid members and compatibility for connecting at users place. (v) Familiarization of topography and drills for access and exit details carried out by mutual aid members. Note: Incidents involving road transport vehicles carrying petroleum products shall be attended by the nearest installation on request of civic authorities even in absence of mutual aid agreement with the consignor. Failure on the part of such industry, installations shall attract penalty provisions under subregulation 8(4) of these regulations.

13.0 Response Procedures and Measures.

Containing the consequences of an emergency requires well planned and documented procedures to ensure prompt response and coordination among various task groups. The following response procedures as prevalent in the location shall be carried out:

(a) Zoning and Maps. (j) The zones and maps shall be prepared highlighting the Incident prone areas of the unit so that in case of an emergency it serves as a basis for taking the action. This indicates the size of the area within which human life is seriously endangered by the consequences of incident. This should also indicate the location of assembly points and emergency control rooms. The map should also have marked 24 wind directions to facilitate easy access in case of emergencies.

(ii) The entities shall help District Disaster Management Authority (DDMA) in finalizing the full drawn map of installations and nearby areas under 11 u.o —ug3i] 75 their operations having presence of habitats which are vulnerable and sensitive like old age homes, schools, prison, etc.

(iii) Wind speed and direction should be recorded with the help of anemometer and dedaration of off-site emergencies should be immediately communicated to DDMA.

(b) LayoM/flow diagram - Detailed layout and flow diagram for different activities such as Product Lines, filling system, emergency shutdown system isolation valves etc. should be detailed. The important control valves should be highlighted.

(c) Manpower data The details of manpower deputed on shift basis should be given in order to assess the requirement in case of emergency. Note : Check points on ERDMP response measures are given at Check list- 4.

4. Emergency Organization and Responsibilities.

(1) The ERDMP shall identify the safe transition from normal operation to emergency operations and systematic shut down, if any, and the delegation of authority from operations personnel to emergency response personnel. For this purpose, the plan shall identify an emergency response organization with appropriate lines of authority with succession planning and actuating the response management. Responsibilities for decision making shall be clearly shown in an emergency organization chart. The plan shali identify each responder's position, mission, duties and reporting relationship.

(2) Overall objectives of an emergency control organization shall be:

(a) to promptly control problems as they develop at the scene. (b) to prevent or limit the impact on other areas and off-site. (c) to provide emergency personnel, selecting them for duties compatible with their normal work functions wherever feasible. The duties and functions assigned to various people shall include making full use of existing organizations and service groups such as fire, safety, occupational health, medical, transportation, personnel, maintenance, and security. (d) Employees must assume additional responsibilities as per laid down procedure of ERDMP whenever an emergency alarm sounds. (e) In setting up the organization, the need for round-the-clock coverage shall be essential. Shift personnel must be prepared to take charge of the emergency control functions or emergency shutdown of system, if need be, until responsible personnel arrive at the site of emergency. The organization should have an alternate arrangement for each function.

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Organization chart. Affected Stake Holders and Government Authorities

Municipal transport rescue and rehabilitation team	Police Services	CHIEF INCIDENT CONTROLLER	SITE INCIDENT CONTROLLER	Medical Services	Ambulance	Fire Brigade Services	Mutual Aid Operation Team,	technical team,	etc.
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Support Services * • See Note (2): Index Level 'I Level III Administration and Communication Coordinator Fire Safety and Fire Team 'HSE Coordinator

Note: (1) Above is a typical and basic organogram for control of emergency. Entity can merge the functions as per their other statutory requirements and based on level of risk and range of operations. The organisation shall have to address all services and support system required and available to it. (2) Support Services Include Communication services, Engineering/Maintenance Services, Medical and Occupational Health, Human Resource and Welfare Service, Security, Media/Public Relations, Transport and Logistics, Finance, Contract and Procurement and Environmental Services. (3) Role of both CIC and SIC can be merged depending upon

the requirement. 30) 14.2 Roles and Responsibilities. 14.2.1 Chief Incident Controller. The Chief Incident Controller (CIC) shall have overall responsibility to protect personnel, site facilities, and the public before, during, and after an emergency or disaster. The CIC shall be present at the main emergency control centre for counsel and overall guidance. Responsibilities of the Chief Incident Controller shall include the following:- (a) (b) (c) (d) (g) (h) preparation, review and updation of the ERDMP as per Check List-5; assessment of situation and declaration of emergency; mobilisation of main coordinators and key personnel; activation Emergency Control Centre; taking decision on seeking assistance from mutual aid members and external agencies like Police, Fire Brigade, Hospitais etc.; continuous review of situation and decide on appropriate response strategy; taking stock of casualties and ensure timely medical attention; ensuring correct accounting and position of personnel after the emergency; ordering evacuation of personnel as and when necessary; taking decision in consultation with District Authorities when an Off-site emergency to be declared. 14.2.2 Site Incident Controller (SIC) The Site Incident Controller shall be identified by the Chief Incident Controller and will report directly to him. SIC should be nominated by the entity in each shift 24 hrs. Responsibilities of the Chief Incident Controller shall include the following:- (a) The SIC shall maintain a workable emergency control plan, establish emergency control centers, organize and equip the organization with ERDMP and train the personnel; 78 (b) (c) (d) (g) OF INDIA : EXTRAORDINARY PART 1—SEC. 3 i The SIC shall be capable of making quick decisions and taking full charge; The SIC shall communicate to the Emergency Control Centre where it can coordinate activities among groups; The SIC shall be responsible for ensuring that appropriate local and national government authorities are notified, preparation of media statements, obtaining approval from the CIC and releasing such statements once approval received; The SIC shall also ensure the response to the incidents or the emergencies, as the case may be, is in line with entity procedures, coordinating business continuity or recovery plan from the incident. He must ensure next of kin are notified in a timely manner: The SIC shall also co-ordinate if any specialist support is required for the above purpose; and The SIC shall decide on seeking assistance of mutual aid members and external agencies like police, fire brigade, hospital etc. 14.2.3 Administration and Communication Coordinator. Responsibilities of the administration and communication controller shall include the following:- (a) (b) (c) (d) (g) (h) to coordinate with mutual aid members and other external agencies; to direct them on arrival of external agencies to respective coordinators at desired locations; to activate the medical centre and render first aid to the injured. arrange ambulance and coordination with hospitals for prompt medical attention to casualties; to ensure head counts at assembly points; to arrange procurement of spares for fire fighting and additional medicines and drugs; to mobilize transport to various teams for facilitating the response measures; to monitor entry and exit of personnel into and out of premises; to ensure only authorized personnel enter into the premises; 79 (k) To regulate the flow of traffic into and out of premises and control the mob outside. if any, with the assistance of the police. to provide administrative and logistics assistance to various teams; and to arrange evacuation as directed by the chief incident controller, and in coordination with the civil authorities like police. panchayat/municipal authorities etc. 14.2.4 Fire Safety Coordinator and Fire Team. Responsibilities of the Fire and Safety Coordinator shall include the following:- (a) to activate emergency sirens as per the practiced codes; (b) to take charge of all fire fighting and rescue operations and safety. matters; (c) to ensure that key personnel are called in and to release crew of fire fighting operations as per emergency procedure; (d) assess functioning of his team and communicate with the CIC and or administrative controller for any replenishment or, replacement of manpower or firefighting equipment; (e) direct the fire brigade personnel and mutual aid members to their desired roles as also proper positioning of the manpower and equipment; (f) to decide the requirement of mutual aid and instruct fire station, who, in turn will contact mutual aid members; (g) to coordinate with outside fire brigades for properly coordinated fire fighting operation; (h) to ensure that casualties are promptly sent to first aid centre / hospital; (i) to arrange requirement of additional fire fighting resources including help from mutual aid partners; (j) ensure empty and loaded trucks are removed to safer area to the extent possible so as not to affect emergency handling operations; (k) continually liaise with the SIC and or CIC and implement the emergency combat strategies as communicated by him; and (l) ensure adequate hydrant pressure in the mains and monitor water level in the reservoir. Note: Fire chief shall- wear identification jackets at the site of disaster so that he is clearly distinguished among fire fighting personnel and is visible from a distance. 80 THE GAZETIE OF INDIA : EXTRAORDINARY [PART "—SEC. 14.2.5 Support and auxiliary services for major Installations. The

following additional coordinators (refer 14.2.5.1 up to 14.2.5.4) may be nominated and delegated the specific responsibilities falling under the basic functions of SIC and or CIC: - 14.2.5.1 Human Resources and Welfare Services Coordinator 14.2.5.2 Transport and Logistics Services Coordinator 14.2.5.3 Media and Public Relations Coordinator 14.2.5.4 Operations and Technical Coordinator 14.2.5.5 Security Coordinator. The Security Coordinator reports to the Chief / Site Incident Controller and is responsible for security of the installation during any incident or emergency situation and for implementing the actions below: (a) Obtaining an approved visitor list from the security department or reception for ensuring that personnel on the list are escorted to reception by security staff; (b) Maintaining security of the office in the event of an office evacuation; (c) Providing office security and assisting authorities in the event of civil unrest or when required organising additional security at the emergency scene; (d) Obtaining initial briefing from Chief / Site Incident Controller and providing security information and or status reports to Site Incident Controller during the emergency; (e) Assuming responsibility for any task delegated by Chief Incident Controller; and (f) Assessing the emergency, identify security specific problems and recommend solutions to Chief Incident Controller. 14.2.5.6 (a) Maintenance of ERDMP Records. There shall be maintenance of ERDMP records for all kind of emergencies covering near Miss, Level-I, Level-II and Level-III. Organisation shall maintain an Incident Record Register for the above purpose and post-disaster documentation like resources deployed, relief, rehabilitation measures and lesson learned to avoid re-occurrence of any such emergency. Head of HSE or any other designated personnel by the CIC/SIC shall be responsible for maintenance of such records. 81 (1) A good public relations program is extremely important in an emergency situation. Inquiries will normally be received from the media, government agencies, local organizations and the general public. (2) This section of the Response Plan shall include a public relations or media plan. It should identify an Information Officer that is well-equipped and trained in media relations. (3) Initial releases shall be restricted to statements of facts such as the name of the installation involved, type and quantity of spill, time of spill, and countermeasure actions being taken. All facts must be stated clearly and consistently to everyone. Note- Plans shall also be developed to utilize local media and television stations for periodic announcements during an emergency. This shall also assist in reducing rumours and speculation. 14.2.5.7 (b) Recorder. The Recorder responsibility is to maintain an accurate time record of key information received from the incident or emergency location and to record the actions initiated by the site incident controller and for implementing the emergency response actions below: (a) to record key incident events/actions on incident status board/display manually or electronically; (b) to maintain essential equipment checklist status; (c) to ensure all status and information is up to date and correctly displayed; (d) to take all necessary recorded material to the alternate ECC room in the event of emergency in main ECC room; and (e) to maintain a log book. 14.2.5.8 Communications Services. (1) The Communications Coordinator shall ensure the following actions below: (a) (b) (c) Ensuring the ECC equipment and systems are maintained to a high standard and remain functional throughout the emergency. Ensuring a back-up communication system is available in the event of the ECC Room is not available. Providing quality and diverse communication systems for Use in routine and emergency situations. 82 Note: (2) THE GAZEHE OF INDIA : EXTRAORDINARY COMMUNICATION FLOW CHART Police Fire and gas detection system/ SCADA System Responder Fire safety NSE Coordinator and fire team Info. to Fire Brigade, PolZe. Medical and Government Authorities Employee/ Security EMERGENCY CONTROL CENTRE SITE INCIDENT CONTROLLER Public MANAGEMENT TEAM (Head Operations, Head Maintenance, Head Technical, Head HSE, Head Security, Head (HR) CHIEF INCIDENT CONTROLLER Mutual Aid Members Others (required coordinators of the installation) IPART CRISIS MGMT GROUP District Administration and Central Govt agencies Note: Level I Level II Level III The above is a typical communication flow chart for notification of emergency

2. Wherever communication exists for any level of emergency, it automatically implies that the communication exists for all higher levels of emergencies. Flow of Information. (a) Control Centre shall receive the information from field either in person or from the various systems available in the installation. (b) on receipt of information, the control room shift In-charge will actuate the ERDMP and notify the emergency to site incident controller. (c) Control room shift in-charge will act as site incident controller till arrival of designated person. (d) SIC or CIC depending upon the level of emergency will actuate the ERDMP and inform the concerned authorities as depicted above in the chart. Note: Apart from the above

main function, the role and responsibility of other support services such as finance, material etc should also be detailed in disaster management plan. 83 Siren Codes. (1) The Emergency siren/s should be located suitably to cover the whole area with the operational control within the installation. These should be tested at least once in a week to keep them in working condition. (2) Emergency siren code should be as follows, namely: - (a) (b) (c) (d) (e) Emergency Level-I: A wailing siren for 2 minutes. Emergency Level-II and III: Same type of siren as in case of Level - I and II but the same will be sounded for three times at the interval of one minutes i.e. (wailing siren 2min + gap 1 min + wailing siren 2min + gap 1min + wailing siren 2min) total duration of Disaster siren to be eight minutes. ALL CLEAR: Straight run siren for two minutes. TEST: Straight run siren for two minutes at frequency at least once a Public address system should be provided with message. 15.0 Infrastructure. 15.1 Emergency control centers (ECC). (1) Each installation shall have the provision of ECC preferably with a back- up arrangement. (a) The ECC. shall be away from potential hazards and provide maximum safety to personnel and equipment. (b) Preference should be given to a non-combustible building of either steel frame or reinforced concrete construction. (c) The ECC should have at least two exits and adequate ventilation (2) Following certain basic supplies and dedicated equipment shall be made available at the ECC. (a) A copy of the ERDMP. (b) Maps and diagrams showing buildings, roads, underground fire mains, important hazardous material and process lines, drainage trenches, and utilities such as steam, water, natural gas and electricity are required. (c) Aerial photographs, if possible, and maps showing the site, adjacent industries, the surrounding community, high-ways, rivers, etc., help determine how the disaster may affect the community so that the proper people can be notified, adequate roadblocks established, and the civil authorities advised. (d) Names, addresses, and telephone numbers of employees. 84 16.0 THE GAZETTE OF : EXTRAORDINARY (e) Names, addresses, and telephone numbers of off-site groups and organizations that might have to be contacted should be available. All telephone lists should be reviewed for accuracy on a scheduled basis and updated, as necessary. (f) Dedicated and reliable communication equipment should be provided at the ECC. Enough telephones and one fax line to serve the organization for calls both on-and off-the-site. Two-way radio shall be provided to maintain continuity of equipment communications when other means fail and also provides an excellent way of keeping in contact with field activities. (g) All ECC should have emergency lights so that operations can continue in the event of power failure. (h) Facilities for recording the sequence of events should be provided to assist in investigating causes, evaluating performance, and preparing reports. This can range from a pan board, logbook to a tape recorder with a person assigned to record pertinent information. (i) ECC should also have dedicated computer with LAN/ internet facility to access the installation data and also it should have the latest and updated soft copies of all standard operating practices (SOP) etc. 15.2 Assembly Points. (1) There should be pre-designated areas in safe zone as per quantitative risk assessment, where the personnel like workers, staff, contractor workers etc. not involved in emergency operations (as per ERDMP) shall assemble in case of an emergency. (2) Depending on the location of the emergency, the assembly point can vary. For each potential hazardous zone, a specific assembly point shall be identified and clearly marked on the zones or maps. (3) The assembly point should be clearly marked with directional display board along the route. Route should be well lighted with fluorescent marking. (4) During an emergency, pre-designated persons would take charge of this point and take the roll call of the people reporting. Provisions should be made for assembly points, communication and headcount facilities at assembly points, and personnel to control the movement of assembled employees. Declaration of on-site and off-site emergencies: (1) An emergency starts as a small incident with passage of time. At the organisation chart shall be put into action. which may become a major initial stages, the emergency If the incident goes beyond 17.0 85 control the on-site emergency plan will be actuated by the chief incident controller at the appropriate stage as considered necessary. (2) During idle shift or holidays, the security personnel will combat the incident as per the ERDMP organisation chart and at the same time inform various emergency controllers for guidance and control the situation. (3) When emergency becomes catastrophic and evacuation beyond the plant premises is considered necessary by the chief incident controller, the situation will be handed over to district authority for implementing the off- site emergency plan. (4) The management of emergency henceforth has to be controlled by the district crisis management group under the supervision of the District Collector/DDMA. (5) In addition to preparation of on-site emergency plan, furnishing relevant information to the district authorities for the preparation of off-site emergency plan is a statutory responsibility of the

occupier of every industry handling hazardous substance. Resources for controlling Emergency (1) To meet all possible emergencies, installation has to provide a number of systems and resources based on the risk level as identified above in addition to requirements under the Factories Act, 1948 and other statutory regulations applicable to the installation. (2) The available emergency control systems and facilities within the installation shall be as under: - (a) fire and gas detection system (b) fire protection system (Active and Passive) (c) fire fighting systems (d) ambulance facility in house, if not available then should be available on urgent call basis. (e) rescue facilities and personal protective equipments (PPEs) (f) first aid and medical facilities round the clock with availability of minimum one nurse (24X7) and doctor in the first aid room. (g) communication facilities (h) escape route and evacuation zones (i) emergency shutdown system (3) Required resources shall be suitably incorporated into the plan. Number and type shall be as per the relevant code, standards and best practices in the industry. This section shall also identify sources of local assistance including telephone numbers and names of contacts for: (a) fire departments (b) police 84 86 : EXTRAORDINARY (c) municipal and provincial agencies (d) hospitals (e) doctors (f) other relevant company facilities (g) mutual aid organizations (h) co-operatives (i) helicopter and air transport services (j) surface transport services (k) safety and monitoring equipment suppliers (l) spill response and/or cleanup services 'PART (4) Installations shall also determine type of resources such as equipment, personnel. technology. expertise. etc. provided by the respective governments under different conditions. (5) Check Points for availability of resources-internal/external are given at 18.0 19.0 20.0 Check list-6. Demographic Information. ERDMP shall be prepared based on the following information: - (a) neighboring population in a 5km radius (b) housing colonies of industries (c) sensitive institutions such as schools, establishments and old aged homes, etc. (d) cattle and livestock (e) flora and fauna Medical Facilities. hospitals, religious Details of medical facilities to be provided in the ERDMP as per the following:- (a) (b) (c) (d) (g) Evacuation. facilities available at first aid centre details of trained persons in first aid in the plant facilities available at identified hospitals facilities available at other local hospitals antidotes and emergency medicines details of specialist doctors in the town details of hospital in nearby cities (l) Planning and training on evacuation techniques are important in preventing injuries. Evacuation of local communities or people near the site may be prudent depending on the situation and down-wind dispersion information etc. Although this action will normally be initiated and handled by district authorities, the affected installation shall evacuation. (2) This evacuation plan shall also consider: help to implement 87 such (a) basis for recommending on-site or off-site actions (b) authorize person for area or site evacuation (c) mode of communication (d) training in locating exits from buildings, areas and the site (e) location of escape equipment (f) provisions for flashlights or other supplemental lighting (g) which areas can function as safe area (h) moving crosswind from gas or fume releases. etc. (i) provision of food and drinking water at assembly point and transfer point. (3) If evacuation takes place after initial head counts are reported, means for recounting may be necessary. Where it is safe to do so, areas being evacuated should be thoroughly searched to ensure everyone has departed safely. Portable mobile vehicle for announcement should be available in the emergency. 21.0 Information to Public. 22.0 The safety measures to be taken in the event of an emergency shall be made known to the general public who are likely to be affected. (2) For the purpose, use of Dos' and Don'ts' shall be prepared and furnished to the Crisis management Group. Display boards carrying do's and don'ts should be located outside the gate as well as in the neighbouring colonies and other habitat areas in the immediate vicinity. Roles and responsibilities of stakeholders including external agencies. (l) Role and responsibilities of stakeholders including external agencies such as District Authority, • police. fire service, revenue department, health department, pollution control board, National Disaster Response Force (NDRF) and State Disaster Response Force (SDRF). (2) For roles and responsibilities of above stakeholders and responders, primarily district collector as Head of emergency operation and other authorities under his charge including external agencies, has been defined in Schedule—V. These roles and responsibilities are generally in line with National Disaster Management Guidelines on Chemical Disasters, April, 2007, brought out by National Disaster Management Authority. 88 23.0 24.0 25.0 26.0 THE GAZZITE OF NDIA : EXTRAORDINARY Repotting of the Incident: (PART U—SEC. 301 1) All incidents covered under Level-I should be maintained by the entity for inspection whenever called for inspection and Level-II and Level-III shall be reported to the Board in the format specified and placed at Schedule-VI including near miss incident. The above report should be submitted within 48 hours after occurrence of the incidents or any other reason triggering major incident. 2)

Investigation report of all major incidents shall be submitted to the Board. An incident shall be treated as Major if any of the following occurs; (a) fire for more than 15 minutes (b) explosion / blowout (c) fatal incident. (d) loss above Rs. 10.0 Lac (e) cumulative man hours lost more than 500 hrs. (f) plant shutdown / outage due to the incident (g) Level-III incident Action after reporting of incident by the entity After reporting of the incidents to Board, Nodal officer of the Board (head of Technical Standards the specifications and safety group) shall have responsibility of informing all the Members of the Board and shall coordinate with appropriate level in National Disaster Management Authority (NDMA) till normalization of the situation. Termination of emergency (l) Termination activities should concentrate on giving accurate information to people who need it most especially employees, neighbourhood, District Authorities engaged in offsite emergencies, and should begin as soon as the emergency phase of the operation is completed. (2) The termination of emergency shall be declared through siren as per the Siren Code defined by industry in case of Level- I and II. For Level-III termination of emergency shall be declared by District Authority through appropriate mode of information transfer so as to reach each and Emergency Recovery Procedures (l) After the emergency, the following activities need to be carried out in detail. a) b) c) d) information to statutory authorities. incident investigation. damage assessment. salvage of products, de-contamination, clean-up and restoration. 89 e) a detailed report shall be prepared based on the entire experience of the incident, including restorations, limitations and lessons learnt. f) ambient air monitoring at the site as well as 5 km radius of the installation by State Pollution Control Board to determine the contamination level affecting health. (2) Check points on ERDMP recovery measures as given at Check list-7. 27.0 28.0 ERDMP for pipelines carrying petroleum products and retail outlets 1) ERDMP for pipelines carrying petroleum products should follow modern methods of surveillance of Pipeline and take guidance from all the aspects of Disaster Management Plan mentioned in the ERDMP. Schedule—VI should be referred, which is in line with Chemical Disaster by National Disaster Management Authority. 2) ERDMP for retail outlets should take care of all aspects mentioned in ERDMP and shall also refer to OISD STD- 225. ERDMP for road transportation. The road transport of Petroleum product has significant presence and needs special attention. Complete details of treatment for handling emergency arising out of road transportations have been provided below: 28.1 Resource mobilisation for road transport emergency Resource mobilisation for road transport emergency shall be as per the Schedule-VI". (a) (b) (c) In order to handle Emergencies, which may arise due to incident involving Petroleum Product Transportation, it is required that a comprehensive Emergency Management Plan is readily available with the industry as well as with other related authorities all along the routes. The ERDMP should be clearly understood by its users so that the emergencies can be handled in a systematic manner with minimum response time in accordance with the prescribed procedure. Copies of the ERDMP shall be made available by the Industry to all the field locations i.e. Installations, POL Depots, Terminals / Installations, Refineries, Gas Processing Plants, Dispatch units of etc., the concerned District Administration, Police Stations and Fire Brigades en-route and within vicinity of specified tank truck routes, oil industry sales personnel of concerned area as may be required. Location specific availability of Emergency Response Vehicle shall be mentioned in the ERDMP. 28.2 215 GI/10—12 TREM Card (Specific to Road Transportation) TREM Card format including sample as per details shown in Schedule-IX and Route Map shall be provided to the Tank Truck Crew which should 90 28.3 THE OF INDIA : EXTRAORDINARY be referred in case of an emergency. IP ART II—SEC. Role of External Agencies for road transportation emergency It is expected that the following roles shall be performed by various agencies: 28.3.1 Fire Bdgade On receipt of information from any source on incident of tank truck. fire brigade may contact nearest installation and police station. After assessing the situation, it may: (a) (b) (c) (d) (g) rush fire tender to the incident site with all necessary fire fighting equipments; prepare a contingency plan for removal of tank truck, if not leaking. in consultation with installation personnel; dispersal of vapours by water spray away from inhabited area, in case of leakage. Extinguish the fire, in case leakage source cannot be stopped; allow the fire to burn under controlled conditions if isolation is not possible in case of gaseous fuels; save human lives and salvage material from incident affected truck; liaise with fire brigade in the adjoining town for additional help, if necessary; arrange water through municipal water tanker or any other source; In addition to the above, the Schedule-V shall be followed. 28.3.2 Role of Police On receipt of information, police may take the following actions as per Schedule-V derived from the National Disaster Management Guidelines Chemical Disasters (Industrial), April, 2007.

However, the following points may also be taken care by the police authority: (a) (b) (c) (d) stop the traffic from both ends of the road. warn the people living in adjacent area for stopping all fire, smoking, evacuation to safe places, if necessary. contact nearest district police headquarters and giving the situation report. evacuate personnel from the area, if required. extend help in removal of injured personnel to the nearest first-aid centre /hospital, contacting highway patrol, completing legal formalities in case of any casualty. In addition to the above, the shall be followed 91 28.3.3 DisMct Admlnstratbn On receipt of information, District Administration may take the following actions as per Schedule-V derived from the National Disaster Management Guidelines Chemical Disasters (industrial), April, 2007. However, On receipt of information, following actions should be taken care :- (a) (b) (c) (d) (g) to keep watch on the overall situation. rush ambulance to the incident site if casualties are reported. direct cranes or any other such equipment to carry out rescue operations. issue warning messages to people through public address system, if any evacuation is required. arrange emergency vehicles for evacuation purposes. give direction to hospitals having burns injury ward for readiness to receive patient in case of incident involving fire. provide basic amenities, e.g.. water, electricity. food and shelter to the affected people as required. In addition to the above. the Schedule-V shall be followed.

29.0 Integration of the ERDMP with the NATIONAL DISASTER MANAGEMENT PLAN (NDMP)

29.1 NATIONAL DISASTER MANAGEMENT PLAN (NDMP) (2) (3)

On 23 December 2005, the Government-of India took a definite step towards NDMP by enacting the NDMP ACT, 2005. The NDMP Act, 2005 is a Paradigm Shift from a response and relief- centric approach to a proactive and comprehensive mindset towards NDMP covering all aspects from prevention, mitigation, preparedness to rehabilitation, reconstruction and recovery. Similar to National Authority at the Centre, the State Government is to establish a State Disaster Management Authority for the State. The State Authority is to be headed by the Chief Minister of the State as the Chairperson. Every State Government, in turn. is to establish a District Disaster Management Authority for every district in the State with the District Collector as the Chairperson. The Central Government is empowered to take further measures as it deems fit for the purpose of disaster management like deployment of naval, military and air forces, other armed forces of the Union or any othe- civilian personnel as may be required for the purposes o' ihis NDMP Act. Government of India is empowered to establish institutions for

92 THE GAZETTE OF INDIA : EXTRAORDINARY PART II—SEC. (4) (5)

research, training, and developmental programmes in the field of disaster management as per this Act. The national vision is to ouild a safer and disaster resilient India by developing a holistic, proactive, multi-disaster and technology driven stra\egy for NDMP. This will be achieved through a culture of preventions mitigation and preparedness to reduce the impact of disasters on people. The entire process will centre stage the community and wili be provided momentum and sustenance through the collective efforts of all government agencies supported DY Non-Governmental Organisations (NGOs). National Disaster nmanagement Structure showing the interactive linkage among various agencies for synergised management of disaster is given below;

ATIONAL DISASTER MANA GOVT OF INDIA COMMITTEE ON CALAMITIES COWISSON MM'TTE-E MHA IANSTR.K-S & DE-PRIMENTS OF GOW OF ARMED FORCES FOMX-S CML NCC, NSS& c HIGH LEVEL COMMITTEE Nm,IA NEC STATES SDMAAs msrr. DOKAs CABINET COMMITTEE ON SECURffY DSXTER &SPONSE MNSTRES & DEPRIUEUTS OF STATE DISASTER RESPONSE FORCE SERVICES pmFcSSONAL OOiES sænRS

M. M! o M M 1 TWs (fagran rdlects linkages for sysvgised mmagement ci md nū a Nerarttical stuctue 93

2. 3. •M M t" findimd ievel, •re a to "ierey. ktle"on M Oe omumuliy is a ctutial Note: Since PNGRB has been constituted by PNGRB Act, 2006, it should be identned under Ministries / Departments of Govt. of India. Abbreviations for NDMA: NDMA NEC NCC NCDM NDMRCs NDRF NSS NYK NGOs SDMA SEC DDMA National Disaster Management Authority National Executive Committee Disaster Management National Cadet Corps National Committee on Disaster Management National Disaster Mitigation Resource Centres National Disaster Response Force National Service Scheme Nehru Yuva Kendra Non-Governmental Organisations State Disaster Management Authority State Executive Committee District Disaster Management Authority

29.2 Integration of ERDMP with NDMP

This ERDMP document has been developed taking into account all possible inputs on the subjects from various stake holders. Efforts have also been made to synergize this with the document on National Disaster Management Guide (Chemical Disasters) Industrial brought out by National Disaster Management Authority.

29.0 Security Threat Plan (I)

With increase in terrorist activities towards the end of 20th century

and installations having, significant role in national economy, sabotage and bomb threats to such installation should also be considered in the disaster management plan. Such as high level of alertness measures, strengthening security measures by security gadgets mechanical and electronic security gadgets. In any of such situation, city police/ administration should be informed immediately and their help should be sought. (2) Emergency Action in case of Bomb Threat : (a) (b) (c) (d) The persons inside the Plant should be evacuated as soon as possible. All the vehicles in the plant premises should be evacuated to safer places. Plant personnel should contact district authorities immediately. Any new or doubtful thing should not be touched. 94 THE OF INDIA : EXTRAORDINARY I PART IN—SEC. All pipeline and tank valves should be closed and all the operations inside the Bottling Plant should be stopped. In case of fire. firefighting equipments shall be operated and city fire brigade should be called immediately during emergency. Note: A detailed action plan on bomb threat to be prepared by each installation and should be vetted by the Police Authority specialist in this area under information to PNGRB. 30.0 Miscellaneous. (1) Whenever any deviation from this code of practices is required to be implemented, the entity shall seek approval of the Board with mitigation measures proposed to be carried out giving full details and justification for such deviation within I month from the date of notification of these regulations. (2) If any dispute arises with regards to the interpretation of any of the provisions of these regulations, the decision of the Board shall be final. Further, the Board may at any time effect appropriate modifications in these regulations. SCHEDULE - I (refer regulation 7) Schedule of implementation of Code of Practice for ERDMP S. No. 2, 3, 4, 5

6. ActMty On-site Emer enc Plan Off-site Emergency Plan(submission of information to District Authori Resources in osition Accredited Third Party Certification of ERDMP Testin and Mock Drills On-site Testin and Mock Drills Off-site Implementation Time (from the notflication date of Codes of Practices for ERDMP 3 months 3 months 6 months * I year 3 months 12 months Note: A copy of ERDMP, duly approved by the Board of Directors of the organisations shall be submitted to the PNGRB.* Long Delivery Items should be tied up with mutual aid organizations upto 12 months. ** To be coordinated with District Authority. 95 Schedule — 11 (Refer regulation 9(1)) List of Relevant Statutes on Management of Hazardous Substances The Environment (Protection) Act, 1986 (amended 1991) and following Rules thereunder: The Environment (Protection) Rules, 1986 (amended 2004). The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (amended, 1994 and 2004). The Hazardous Wastes (Management and Handling) Rules, 1989 (amended 2000 and 2003). The Environment Prior Clearance Notification, 2006. The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. Bio-medical Wastes (Management and Handling) Rules

1989. The Factories Act, 1948 (amended 1987), State Factories Rules.The Inflammable Substances Act, 1952. The Motor Vehicles Act, 1988 (amended 2001). • The Central Motor Vehicles Rules, 1989 (amended 2005). • The Public Liability Insurance Rules, 1991 (amended 1992). • The Public Liability Insurance Rules, 1991 (amended 1993). The Petroleum Act, 1934. The Petroleum Rules, 2002. The Insecticide Rules, 1968 (amended 2000). • The Insecticide Rules, 1971 (amended 1999). The National Environment Tribunal Act, 1995. The Explosives Act, 1884 (amended till 1983). The Gas Cylinder Rules, 2004, • The Static and Mobile Pressure Vessels (Unfired) Rules, 1981 (amended 2002). • The Explosives Rules, 1983 (amended 2002). 'PART 96 2. 3. 4. 5. 6. 7. 8. 9. 2 GAZETTE OF : EXTRAORDINARY SCHEDULE - III (Refer regulation 11.1) Basic Requirements of ERDMP Location Plan of the Installation indicating siting of the installation at neighbouring details up to a distance of 2 kms from the installation in each direction. Site plan of the installation showing a complete layout of the installation indicating boundary walls, exit and entry gates and location of various facilities. Layout of Fire Water Systems and Fire Fighting Equipment details. Line block diagram of manufacturing process and Process Flow Diagram (PFD) of each unit. Material Safety Data Sheet (MSDS) for all hazardous chemicals stored, handled, produced and transported in the installation. (Sample MSDS at Annexure-) Internal and External Emergency contact numbers and addresses of police, fire station, hospitals, mutual aid industry, factory inspectors, Board, State Pollution Control Board. Petroleum and Explosive Safety Organization (PESO), etc. Pipeline route map and details of various facilities such as sectionalising Valve (SV). intermediate Pigging (IP) stations, intermediate pumping stations (IPS) across pipeline route Addresses and Telephone Directory of Technical Support Services such as Environmental Laboratories, fire fighting chemical suppliers, public and private consultant associated with emergency handling and Aviation Medical

Services, if any. Security threat plan. SCHEDULE - IV (Refer regulation I I .2) Repurse Mobil'liatlon (Men and Equipment) Total Requite ment MANPOWER Re ular em Io ees - shiftwise Securi staff Personnel Trained in first aid Others Technicians / Hel ers FIGHTING APPLIANCES/ EQUIPMENT CHEMICALS Fire Tenders/ firefi htin en ines Water stora e ca acit Fire Hoses Jet/Fog/Spray Nozzles Available with Neighbouring Installation Units Civil Authorities 97 3 4 6 8 Gillo—13 Foam Branch Jumbo Jet Nozies Foam Com ound •KL SAFÄY EQUIPMENTS PVC Suit Com ressed air B.A. Set Refill C linders for B.A. Set Cascade B.A Set Fire Proximi Suit COMMUNICATION Walkie-Talkie Public Address S stem Me a hone TRANSPORT Cars Ambulance Trucks Tractors Boats Mobile Cranes MISCELLANEOUS Ro es Metres Em drums Buckets Sand ba s Dewaterin um Pneumatic um Photo Camera Video Camera EQUIPMENTS FOR CORPS DISPOSAL Li ht Metal Stretchers Tar auline 12' X 12" Ro e fibre 3/8" Bucket Rubber loves LIST OF EMERGENCY DRUGS and APPLIANCES Canvas Stretcher Ox en C linder Stedite Banda es Cotton Sterilised Antibiotics Anal esties Sedatives Tetanus Toxoid Dressin Instruments 98 THE GAZETTE OF INDIA : *TRAORDINARY Autoclave for sterilising Instruments, dressin B.P.A aratus • Suction A aratus ! Antishock dru s I Gluco Saline Set i Gluco Saline Bottle Schedule — V IPART II—SEC• 30 (Refer Regulation 22.0) The important Roles and Responsibilities of Various Stakeholders a) Oil and Gas installations and Areas (Mentioned in Regulation 3). The above mentioned Installation in Regulation 3 should provide necessary information to Mutual Aid Association, District Authority, Police and Fire Services. i) List of Hazardous Chemical and Systems which have potential to cause danger to Human, Environment and Property. ii) On-Site Emergency Plan and Periodic Mock Drill. The above entities should support authorities in mitigation, rescue and rehabilitation, with resources identified and agreed with the authorities in advance. Such areas shall be included in Off-Site Emergency Plans. b) The dlsMct authority is responsible for the Off-Site emergency plan and it shall be equipped with up-to-date Major Accident Hazard units, website. control room etc.. with provisions for monitoring the level of preparedness at all times. Regular meetings of various stakeholders of Chemical Disaster Management will be conducted by district administration/District Disaster Management Authority to review the preparedness of Chemical Disaster Management. c) The police will be an important component of ail disaster management plans as they will be associated with investigation of incident s/disasters. Police take overall charge of the Off-Site situation until the arrival of the district collector or its representatiVe at the scene. 99 d) The fre services are one of the first responders and shall be adequately trained and equipped to handle chemical emergencies. Fire services are to acquire a thorough knowledge of likely hazards at the incident site and the emergency control measures required to contain it. e) In a chemical emergency, the revenue department shall coordinate with other agencies for evacuation, establishment of shelters and provision of food, etc. f) When required for evacuation purposes in a chemical emergency, the depanment of transport should made transport promptly available. g) The role of civil society and private sector in the Off-Site plan shall be defined. h) The health department needs to assure that all victims get immediate medical i) j) attention on the site as well as at the hospitals/health-care facility where they are shifted. In addition, the department needs to network ail the health-care facilities available in the vicinity for effective management and also take effective measures to prevent the occurrence of any epidemic. Pollution control boards need to ascertain the developing severity of the emergency in accordance with responsive measures by constant monitoring of the environment. If and when an area is fit for entry will depend upon the results of the monitoring. A decontamination operation would be required to be carried out with the help of other agencies and industries. The NDRF and SDRF are the specialised forces to manage these disasters in a longer run according to the severity and nature of the disaster. Their specialised training is an effective measure that needs to be built up and maintained with time for achieving a higher standard of preparedness. They need to coordinate with other local agencies such as the Central Industrial Security Force that may be responsible for security at the industrial site. * Role of above External Agencies have been defined in Annexure - E of National Disaster Management Guidelines Chemical Disasters, April, 2007 NDRF: National Disaster Response Force SDRF: State Disaster Response Force 100 . Organisation Location 5. Date of Incident 7. Major Minor / Near miss 9. Fire / Incident THE GAZETTE OF INDIA : EXTRAORDINARY SCHEDULE - VI (Refer Regulation 23.0) INCIDENT REPORTING FORMAT 2. Sector 4. Incident Sr. No

6. Time of Incident 8.Report - Prelimin / Final IO. Duration of fire - Hrs / Min I I . Type of Incident with loss of life / injury, Fire, Explosion, Blowout, Electrocution, Fall from Height, Inhalation of Gas, Driving,

Slip / Trip, Others, 12. Location of Incident (Name of Plant / Unit / Area / Facility / Tank farm / Gan / Road / Parkin area etc 13. Whether plant shutdown / caused outage of the facility? Yes / No 14. Fatalities nos

15. Injuries nos

16. Man - hours Lost a) Employees = a) Employees = a) Employees = b) Contractor = b) Contractor = b) Contractor = c) Others = c) Others = c) Others = 17. Direct Loss due to the incident (Rs. In Lacs). Loss to equipment / Machine as r Insurance claim etc

18. Indirect Losses : ThrouØi put / Production Loss, etc

19. Status of the Facility : Cons&uction / Commissioning / Operation / Shutting down / Tum arom Maintenance / Stat / An other

20. Brief Description of the Incident including post incident measures.I (Attach details in sep«ne sheet) 21. Whether similar Incident has occurred in past at the same location, If yes, give brief description of 6e incident and attach details in s e sheet

22. Whether Internal Investigation has been completed.If no, likel dateb which it will be com leted

23. Whether intenal mvestigatim repü«t (M\$or Incident) has been submitted to PNGRB.If no, likely date hy which it will be submitted

24. Cause of the Incident (Tick the most relevant cause preferably one, maximum two) A) Deviation from Procedure B) Lack of Job Knowledge C) Lack of supervision D) Improper Inspection E) Improper Maintenance.(Mech. F) Improper material hmdling G) Negligent Driving H) Careless walking / climbing etc. / Elec. / Inst) 25. Cause of leakage - Oil, Gas or Chemical (Tick one only) A) Weld leak from equipment / lines B) Leak from flange, glmd etc. I) Not using the PPE J) Equipment failure K) Poor design / Layout etc. L) Inadequate facility M) Poor House Keeping N) Natural Calamity O) Pilferage / Sabotage P) Any other (give details) E) Leakage due to improper o eration F) Leak due to improper 101 C) Leak from rota.ry equipment D) Metallurgical failure 26. Cause of leading to fire (Tick only one cause) A) Near to hot work B) Near to Furnace / Flare etc. C) Auto ignition D) Loose connection E) Near to hot surface 27. Was the incident Avoidable? 28. The incident could have been avoided by tie use of / or by ; (Tick the most relevant int referabl one, maximum two A) Better supervision B) Adhering to specified operating procedure C) Imparting Training D) Giving adequate tüne to do the activity through ro r lannin . E) Adhering to the work permit system K) Any other information; Guidelines for filling the Incident Report: maintenance G) Normal operation - Ventin / drainin H) Any offer F) Static Electricity G) Hammering / Fall of Ob •ect H) Heat due to Friction I) Lighming J) Any other (pyrophoric etc (Yes / No) F) Personal Protective ui ment G) Better equipment H) Management Control I) Adhering to specified maintenance rocedure J) Adhering to specified Inspection / Testing rocedures. Akl Major, Minor and Near miss incidents shall be reported in the quarterly report. Incident Reporting form shall be filled up for all Major, Minor and Near miss Incidents. 2

3. Summary report shall be enclosed with every quarterly report.Investigations shall be carried out for all Major, Minor and Near miss Incidents. 4. investigation report of all Major incidents shall be submitted to PNGRB. An incident shall be treated as Major 5. if any of the following occurs; - Fire for more than 15 minutes - Explosion / Blowout - Fatal Incident. - Loss above Rs. 5.0 Lac. - Cumulative man hours lost more than 500 hrs. - Plant Shutdown / Outage due to the incident Loss time Incident shall be monitored till the affected person joins duty. In case the affected person is yet to 6. join the duty, then the status of report submitted will be prelimina.ry. Final report against the same incident shall be sent once he joins duty and the man - hours lost are known. All columns must be filled up. 7

8. For any additional information use separate sheets as required

9. Quanerly report shall be sent to PNGRB within 1 5 to 30 days of end of quarter.i O. Immediate reporting of incident through fax/telephone shall continue as per the prevailing system. Signature Name Designation of the Occupier/Manager 102 THE OF : EXTRAORDINARY Schedule —VII (Refer Regulation 27..0) ERDMP for pipelines carrying petroleum products PART [I—SEC. Pipelines are assuming importance as a means of transport of hazardous substances. Crude oil, its derivatives and natural gas are among the main substances transported by pipelines. The Guidelines, therefore, comprise: i) v) vii) viii) Creation and maintaining an administrative framework to facilitate the development of a safe

and environmentally sound transportation infrastructure, including pipelines for hazardous substances. The pipeline operator has the primary responsibility for the safety of the systems and for taking measures to prevent incidents and to limit their consequences for human health and the environment. Pipelines for the transport of hazardous substances will be designed and operated so as to prevent any uncontrolled release into the environment. Risk assessment methods should be used in evaluating pipeline integrity and impact on human health and the environment. Land-use planning considerations will be taken into account both in the routing of new pipelines (e.g. to limit proximity to populated areas and water catchment areas to the extent possible), and in decisions concerning proposals for new developments/building in the vicinity of existing pipelines. Pipeline operators and the authorities responsible for pipelines shall review and, if necessary, develop and implement systems to reduce third-party interference, which is a cause of incidents including their effects. National legislation shall be clear, enforceable and consistent to facilitate safe transport and international cooperation. Competent authorities should ensure that pipeline operators: (a) Draw up emergency plans. (b) Provide the authorities designated for that purpose with the necessary information to enable them to draw up Off-Site emergency plans. (c) Emergency plans shall be coordinated between pipeline operators and competent authorities, as well as with fire brigades and other disaster control units. x) xii) 103 Pipelines shall be designed, constructed and operated in accordance with recognised national and international codes, standards and guidelines, notified by the Board. Consideration will be given to the impact on the safety of a pipeline such as design and stress factors, quality of material, wall thickness, and depth of burial, external impact protection, markings, route selection and monitoring. The safety of the pipelines shall be demonstrated through a suitable risk assessment procedure including the worst case scenario and including breakdowns and external additional loads. The pipeline operator shall draw up a Pipeline Management System (PMS) to ensure that it is properly implemented. The PMS shall be designed to guarantee a high level of protection of human health and the environment. The following issues shall be addressed by the safety management system. (a) The pipeline will be inspected and maintained regularly. Only reliable trained staff or qualified contractors may carry out maintenance work on a pipeline. Third party conformity assessment bodies should inspect the pipeline at regular intervals as far as required by the Board. These inspections are to cover in particular the proper condition of the pipeline and the functioning of the equipment ensuring pipeline safety. (b) Organization ability, roles and responsibilities, identification and evaluation of hazards, operational control, and management of change, planning for emergencies, monitoring performance, audit and review shall be duly addressed in the Pipeline Management System. SCHEDULE -VIII (Refer Regulation -28. I) Resource Mobilisation for Road Transportation Emergencies A. In-Plant Resources Following items should be available at the Plant in adequate quantity / nos. Mechanical Equipment: 2. 3. 4. 5. 6. 7. 8

9. Gaskets (Carbon Asbestos filled) Studs and bolts. Teflon tapes. h" / 3/4" crowbar (1 m long) Spade / blind flange Rope (Manila / Jute) Spark arrestors. 1" tapered wooden pegs. Chopper IPART IPSEC. 104 10. 11. 13. 14. 15. 16. 17. 18

19. THE GAZETTE OF : EXTRAORDINARY Spare fan belt for tank lorry with P.T.O. unit Wind sock M-Seal / epoxy-base cold-welding compound. Wooden slippers Teflon-taped spanners, wrenches Spark-proof wrenches, hammer and tools. Barricading masts and ropes / tapes hoses Chain pulley blocks and stay pipes Small valve keys for operating valves in the tank truck Electrical Equipment : 2

3. Gas Explosi-meter Flame-proof torches Earthing wires (10 m long) with crocodile clips Personnel Protective Equipment : 2

3. Gloves: i) Rubber gloves ii) Low Temperature Gloves iii) Industrial gloves (with leather lining) iv) Canvas gloves Face shields Ear muff / ear plugs SCHEDULE -VIII (contd..) Other Safety Items: 2. 3. 4. 5

6. 1 roll of gunny / hessian cloth (about 10 mts.long) First aid box (containing water gel compounds) Soap Blanket. Water Gel Blanket Breathing Apparatus (With spare filled cylinder and Canister gas masks) Fire proximity suit Fire Fighting Equipment : 2

3. Portable Dry Chemical Powder Fire Extinguishers Fire-water Hoses Triple Purpose diffuser nozzle for use with fire hoses. Communication Equipment : 2

3. Hand operated sirens Whistles Megaphone, Mobile Phones. VHF sets. Trame Control Equipment : 2

3. Red lights (Battery operated) - for traffic diversion Area maps Diversion Boards [3(i)] External Resources: B.105 SCHEDULE - (contd...) Particulars . Fire Station 2. Ambulance 3. Hospitals 4. Police Station 5. Drug Stores 6. District Administration Collector Availability 7. Cranes Name of Address 8. Local PWD / CPWD water supplies, sand, morum, vehicles etc

9. Local Army, Navy, Air Force authorities IO. Any major industry near b. c. Identification of Communication Resources: Ph. No. Ph. No. Any Any Other Other Particulars Public System Name Address Address 2. Retail Outlets 3. Railway Station 4. power Houses 5. Civil Authorities 6. Voluntary Agencies 7. Local All India Radio / Doordarshan/ other channels 21S Gd/ø-J9 106 Nature of Hazard Protective Devices Emergency Action Spillage First Aid THE OF : EXTRAORDINARY SCHEDULE - IX (Refer Regulation 28.2) Transport Emergency Card Format (PART Chemical Abstract Service (CAS). No (for universal acceptance of material, both number should be mentioned on TREM Card) Emergency Telephone Numbers/mobile numbers Name and contact numbers of the control room/contact person of the supplying company Name and contact numbers of the control room/contact person of the receiving company Name and contact numbers of Transporter Other important Name and contact numbers of civic authorities, fire and Qdice Note: The format shall be designed in English, Hindi and local language where crews are operating. 101 SCHEDULE •X (contd...) SAMPLE TRANSPORT EMERGENCY CARD FORMAT Cargo: Uqueaed P*oleum Gas (LPG) Nature of Hazard : Protective Devices : Highly volatile and Inflammable. Can cause Cold Burns. Inhaling vapour can cause nausea, and headache. Air / vapour mixture highly explosive. Leakage of LPG can cause Vapour Cloud explosion and BLEVE. Hand gloves (Rubber / low temperature) Safety Goggles Self-contained Respiratory device to work in vapour-rich area. Low temperature / fire proximity suit. Emergency Action Try to move the vehicle to open area. StQP Engine. Vehicle should not be left unguarded. Contact Police, Fire Brigade. Sarpanch, nearest oil company by sending helper / passer by. Keep public and traffic away by displaying 'Danger Boards' at sufficient distance. "No Smoking" and "No Naked Lights" within the cordoned off area. Keep ready for action Fire Extinguishers and Safety Kit. Stay Upwind. Spillage Check the valves and caps for tightness by hand and stop leak if possible If minor, try to extinguish by DCP fire extinguishers First Aid Pour water in case of cold or hot burn Seek medical help, if necessary Emergency Telephone Numbers/mobile numbers IOC BPC FIRE 215 (31/10—15 IBP POLICE 100 108 2 3 4 5 6 7 8 9 13 THE OF INDIA : EXTRAORDINARY CHECK (Refer Regulation 10.1 Emergency Response and Protection Management "qn (ERPMP) Hqzqrd Identification Hazard Analysis and Risk Which of the following procedures or techniques for hazard identification has been used in the terminal/ installation : [PART 1) 2) 4) 5) 7) 81 H AZ OF/ HAZAN -ident Consequences and Analysis Tree Fault Tree Analysis Failure Modes, Effects and Criticality Analysis Risk Assessment What analysis Other accredited practice 2. 3. 4. 5. 6. 7

8. Hazard Identification : the terminal / installation covered under the definition of "Major incident Hazard installation" as per the Manufacture Storage and Import of Hazardous Chemicals Rules 1989 (Amended 1994 and 2004. If yes, lease specify the site notification and safety reports If yes, whether major Incident hazards identified and steps taken for their prevention Whether design deficiencies, failures or errors which can contribute to hazards and cause abnormalities leading to an Incident are identified What are the measures undertaken to counter above deficiencies or, errors Consequences of a major Incident on the workers, people in the neighbourhood and the environment are considered Steps envisaged for mitigation of the consequences of such incident Does the installation produce / handle / use / import / store any hazardous chemicals as defined under MSIHC Rules 1989 Amended 1994 and 2004 If yes, whether a list of these chemicals, preferably in alphabetical order with their maximum licensed storage quantities is displayed Are material safety data sheets (MSDS) of these chemicals are prepared / obtained in the prescribed format as per MSIHC Rules and State Facto Rules Whether a system for disseminating information about these MSDS to concerned workers are existin Are there a system of labeling of containers / storage tanks for the chemicals / hazardous substances Whether estimation of maximum possible quantity of each hazardous substance are considered including any vehicle T T/ TW on site or within 500 mtrs of the site. C 11 —uc 30).] CHECK LIST-I (contd..) Whether location, configuration and condition under which the hazardous substances are stored and handled are clearly declared Vulnerability Analysis : Whether zones of influence or vulnerable zones are estimated by considering the maximum single storage of hazardous substance and maximum loss scenario Whether effects of influence on the vulnerable zones are made after considering the population, facilities and environment X)ssed

inside that zone Risk Analysis : Whether a relative measure of the probability and consequences of various possible hazardous events including worst case scenario are taken into account Whether risks are calculated by multiplying the probability of occurrence of each event by the consequences of that event and then summing the results. Whether all types of events possible in petroleum installations are considered including i) storage tanks on fire, ii) pool fire (burning pool of liquid fuel), iii) Flange joint leakage in pipelines, iv) Fire in T or TW and, v) rupture of hoses. Risk Reduction Measures : Whether measures for reduction of identified high risks are included by reducing the consequences through hazard mitigation measures Whether steps have been considered to reduce risks to the exposed population by increasing safe distances by acquiring inert around the facility, if possible HAZOP study Whether the above method is applied if the location handles more than specified storage and / or critical operations Whether the study systematically identifies all possible deviations from normal operations Whether risk levels are established for each deviation after considering the probability and consequences of each such Whether potential means for detection of such events and preventive measures are recommended by the study

109-4
14 16 17 18 19 20 21 22 23 24 25 IPART MI—sec. 110 2 3 4 5 8 9 IO 13 14 15 16 17 18 19 20 21 THE
GAWITE OF INDIA : EXTRAORDINARY CHECK LIST-2 (Refer Regulation 11.3 (Kit)) Incident
Prevention Measures Whether Safety, Health and Environment Policy of the location is displayed Whether
the Safety Policy is documented and duly approved by the management Whether the Safety Policy is
well structured to cover all elements of Safety, Health and Environment protection Whether the layout is
convenient from operation and safety aspects and meets minimum distance norms as per OISD-118
Whether a duly constituted Safety Committee is functioning in the location with representation from
workmen/staff Whether all unsafe developments and likely risks are deliberated in the meetings and
appropriate steps are recommended for eliminating such risks Whether compliance status of
recommendations of earlier Safety Committee meetings are discussed before taking up new issues. Whether
performance and shortcomings observed during recent mock disaster drills form part of the discussions in
safety committee Is the safety committee minutes are recorded and signed by all the attending members
Whether periodical safety audits and inspections by internal and external audit teams are conducted in
defined intervals Whether a system of regular monitoring of such audit compliances by controlling offices /
HO are in place What is the composition of external audit teams to ensure impartiality of audit findings
Whether Work Permit System in line with OISD-105 have been implemented Whether work permits are
issued for hot work, cold work, electrical work and vessel entry •obs Whether the location-in-charge or his
authorized nominee remain the issuer for all hot work and vessel entry permits for enhanced safety and
control. Whether work permits are duly closed at completion of the stipulated •obs, duly certified by the su
pervising officer Whether heat detectors in tank sprinkler systems, high level alarms of tank farm
management system are provided and checked for regular functioning Whether in-built safety interlocks
provided in the design of the terminal are adequately specified and checked for regular functioning

2 3 4 5 6 7
8 9 IO 11 12 13 14 15 16 17 CHECK LIST-3 (Refer Regulation 12.1 (i)) MUTUAL AID / MOCK
DRILLS Whether mock fire / emergency response drills are held If yes, periodicity of emergency response drills
Mock drills cover all types of probable emergencies Does the location have Mutual Aid Plan If yes, the details
of other members including names and contact nos. of concerned officials List of fire fighting equipments
available with each Mutual Aid members including District Fire Service Compatibility of safety equipment
of all Mutual Aid members including District Fire Services with said location has been tested and
documented in the DMP Details of water storage available with Mutual Aid member including District
Fire Service and mechanism to utilize the same in the said location well documented in the DMP Details
of fire fighting foams concentrate/chemicals available with Mutual Aid members including nearest Fire
Service has been incorporated Details of lead time for response of Mutual Aid members including District
Fire Service has been documented in the DMP Periodicity of safety training for officers, staff, contractor
workers, TT crew and security personnel mentioned in the ERDMP. Mutual Aid Plans Does the location
have established Mutual Aid Plans Which are the Mutual Aid Team members and the assistance offered
Does the plan clearly indicate types of possible hazards and fire fighting measures required. Does the plan
include expected assistance from each members Does the Plan spell out the communication protocol and
the channels in times of emergency Periodic joint exercise and meetings for practice, familiarization and
identifying and resolving compatibility issues. Yes

III Remarks 215 6 12 2 3 4 5 2 3 4 5 2 3 4 5 2 THE :
EXTRAORDINARY CHECK LIST-4 (Refer Regulation 13.0)) ERPMP M.qum/IMqstructure. Zqnes, mqu

and layQUtS Does the Location have Emergency Zones clearly identified for Incident one areas Do the Maps indicate læation of &nergency Assembly Points and Emel enc Control Rooms Is the process Lay-out prominently displayed Does the Pioing and instrument Diagram include emergency control valves, shutdown system, isolation valves, important control valves etc. Does the fire Hydrant Layout conspicuously displayed. Mqnppwer Is the ERDMP Organogam clearly displayed. Does the Organogram include all duties to be attended • in connection with an emer enc . Is the organogram include key personnel by their names or. work osition Does it have the alternate coverage to take ccye of the absence of a particular person [in cases where organogram is developed basis names Does it include assignment of all key coordinators viz. the Incident Controller, Administration and Communication Controller and Safe Coordinator. Emergency Control Centre (ECCI Is the ECC well defined and clearly marked on the displayed layout is it strategically positioned to be outside the periphery of immediate affected area. Is the centre have adequate communication channels including internal and external telephone connections, PA, paging and VHF s stems Is list of key personnel and essential telephone nos. are prominently dis la ed. The layout of fire fighting system. different hazardous zones, Assembl Points are rominentl dis la ed. Emergency Assembly PQints Are the EAPs well defined and clearly marked on the displayed la out The EAPs have pre-defined in-charges during emergencies who keep in touch with the Emergency Control Centre and Adinistrative Controllers and updates on the roll call on people re ortin Yeso Noa "—SEC. Remarks [3(i)] Check- oint CHECK LIST-5 [Refer Regulation 14.2.1 (an Review and Updation of ERDMP Sr.# 2 3 4 5 6 Remarks Frequency of mock-drills for practice. refinement and u dation Are the records for periodic Mock drills maintained in a well defined format. After each drill, whether assembly meetings involving all staff and contract personnel are conducted to share experience of the event as also to identify the shortcomings and scopes for further improvement in procedures. Whether the issues are discussed and the Ian modified suitabl Does the review ensures efficiency of the plan particularly w.r.t. response, communication and coordination as ects. Do the Mutual Aid members particippte in the drills and based on the actual response and difficulties experienced, corrective actions initiated for refinement of Does a procedure exist in incorporating the findings/ learnings of the actual disaster management handling. if an so that the Ian can be revised accordin I . 114 2 3 4 5 6 7 8 9. THE GAZETTE OF INDIA : EXTRAORDINARY CHECK LIST-6 [Refer Regulation 17.0 Availability of resources internal / external I Yeso Details of fire fighting equipment of the location is incor orated in the DMP Information on critical resources tike no. of fire hydrants, water monitors, fire fighting pumps, static water storage, portable fire fighting equipment and foam s stems are included Available resources as per Schedule-IV Location has storage of water for 4 hours fire fighting. In case 'Oater availability is less, a plan for replacement from nearby sources Details of drainage system including Oil Water Se arator is available in DMP, wherever a licable. Requirement and availability of Personal Protective E ui ment Whether manpower available during regular as well as lidle shift hours including security personnel clearly indicated in the Ian External and Internat Resources for combating Emer nc Does the plan enumerate the following resources available intemally with the location as also from external agencies including Mutual Aid Members and govt agencies like fire brigade, police, municipal authorities etc.. NOO Remadc a. c. d. e. g. h. Water - from static reservoir as also mobile water tankers Fire Hoses Specialised noüese.g.- fog, jet, triple purpose etc. Mobile water monitors Fire Extinguishers — type and capacity Water Gel Blankets Foam Compounds First Aid material, Medicines, Stretchers Mobile / fixed Vehictesavailabte- Trained ma *for. combatin emer enc Any other resources considered necessary 3(i)] 2 3 4 5 6 7 8 9 IO 11 12 13 14 15 16 CHECK LIST-7 (Refer Regulation 26.0 (2)) ERDMP - Recovery Measures Post Emerqencv Recoverv Salvage of product Check that spilled / accumulated product contents are transferred to the OWS or collected in drums. Check whether the quality and quantity estimation of the product extracted from OWS has been done for further disposal in line with standing QC guidelines by either transferring to service tanks or to nearest refine for blendin / re rocessin or not. Check that correct stock accounting of spilled product as loss has been com leted in accountin s stem. Check that affected area has been completely cleaned and dried after evacuation of s illed roduct. Declare that affected area after salvage operations is fully clean and safe for movement of the workin ersonnel. Check that all drains are not having any residual oil and are thorou hl cleaned and dried. Check that all control valves on product lines and OWS lines out side dyke area and drains are completely closed after removal of thes illed roduct. Check that interlocking system of tanks / gantry has been re- activated for normal o erations. Check whether the soil testing of the affected area, if

required. has been done to assess the soil contamination level to meet the Environmental - SPCB norms / requirements. Takjoq care of affected manpower Whether physical accounting of all personnel on duty during and after the incident are ascertained by the Site Incident Controller and reconciled immediately Whether the first-aid treatment and post-incident health check of the affected personnel has been undertaken in time Whether these personnel are declared fully physically fit before allowing them to resume their normal duties Whether the records for such first aid and treatment of the affected personnel are maintained in a well defined format Addressing media and outside media Whether the incident was appropriately informed to the local media in line with the respective company's Press and Media Whether the role of neighbouring population during the drill / disaster is suitably informed to the population during subsequent meetings with local administration / panchayat etc. for necessary improvements Whether the awareness and preparedness on disaster is regularly assimilated / shared with nearby public / societies and stakeholders.

117 Chemical Identified Chemical Name Synonyms Formula Regulated identification. Hazardous Ingredient 2

2. Physical and chemical data Boiling Range/Point Melting/Freezing Point Vapour Density (Air = 1) Specific Gravity Water-I Annexure - Format for MSDS Safety Data Sheet Chemical Classification

Trade Name C.A.S. No. Shipping Name Codes/Label Hazardous Waste 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 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