|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Annex 2.1**    **ANNEX- 3.1 -- OUTAGE DATA FOR THE YEAR 2004 ( F1)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| S/N | | | | | | | Failure times in (Hrs.) | | | | | Outage Duration (Hrs) | | | | |  | | | | | | | |  |
| 1 | | | | | | | 10 | | | | | 10 | | | | |  | | | | | | | |  |
| 2 | | | | | | | 26 | | | | | 16 | | | | | λ1 = Mean X = 441/24 | | | | | | | | |
| 3 | | | | | | | 44 | | | | | 18 | | | | | = 18.375/31 | | | | | | | | |
| 4 | | | | | | | 57 | | | | | 13 | | | | | = 0.593 | | | | | | | |  |
| 5 | | | | | | | 72 | | | | | 15 | | | | | MTBF1 = 1/λ1 = 1.7 | | | | | | | | |
| 6 | | | | | | | 83 | | | | | 11 | | | | | MTTR1 = Mean Y = 7204/24 | | | | | | | | |
| 7 | | | | | | | 99 | | | | | 16 | | | | | = 300.16/31 | | | | | | | |  |
| 8 | | | | | | | 120 | | | | | 21 | | | | | 9.7 | | | | | | | |  |
| 9 | | | | | | | 132 | | | | | 12 | | | | |  | | | | | | | |  |
| 10 | | | | | | | 148 | | | | | 16 | | | | | LEGEND | | | | | | | |  |
| 11 | | | | | | | 165 | | | | | 17 | | | | | F1 = Feeder One | | | | | | | |  |
| 12 | | | | | | | 180 | | | | | 15 | | | | |  | | | | | | | |  |
| 13 | | | | | | | 193 | | | | | 13 | | | | |  | | | | | | | |  |
| 14 | | | | | | | 206 | | | | | 13 | | | | |  | | | | | | | |  |
| 15 | | | | | | | 223 | | | | | 17 | | | | |  | | | | | | | |  |
| 16 | | | | | | | 237 | | | | | 14 | | | | |  | | | | | | | |  |
| 17 | | | | | | | 248 | | | | | 11 | | | | |  | | | | | | | |  |
| 18 | | | | | | | 262 | | | | | 14 | | | | |  | | | | | | | |  |
| 19 | | | | | | | 278 | | | | | 16 | | | | |  | | | | | | | |  |
| 20 | | | | | | | 292 | | | | | 14 | | | | |  | | | | | | | |  |
| 21 | | | | | | | 309 | | | | | 17 | | | | |  | | | | | | | |  |
| 22 | | | | | | | 324 | | | | | 15 | | | | |  | | | | | | | |  |
| 23 | | | | | | | 340 | | | | | 16 | | | | |  | | | | | | | |  |
| 24 | | | | | | | 349 | | | | | 9 | | | | |  | | | | | | | |  |
| 25 | | | | | | | 364 | | | | | 15 | | | | |  | | | | | | | |  |
| 26 | | | | | | | 370 | | | | | 6 | | | | |  | | | | | | | |  |
| 27 | | | | | | | 385 | | | | | 15 | | | | |  | | | | | | | |  |
| 28 | | | | | | | 404 | | | | | 19 | | | | |  | | | | | | | |  |
| 29 | | | | | | | 417 | | | | | 13 | | | | |  | | | | | | | |  |
| 30 | | | | | | | 426 | | | | | 9 | | | | |  | | | | | | | |  |
| 31 | | | | | | | 441 | | | | | 15 | | | | |  | | | | | | | |  |
| TOT | | | | | | | 7204 | | | | | 441 | | | | |  | | | | | | | |  |
|  | | | **ANNEX 3.2 --OUTAGE DATA FOR THE YEAR 2004 (F2)** | | | | | | | | | | | |
|  | | |  | | | | | |  | | | | |  |
| S/N | | | Failures times in (Hrs.) | | | | | | Outage Duration (Hrs.) | | | | |  |
| 1 | | | 13 | | | | | | 13 | | | | |  |
| 2 | | | 29 | | | | | | 16 | | | | |  |
| 3 | | | 41 | | | | | | 12 | | | | |  |
| 4 | | | 56 | | | | | | 15 | | | | |  |
| 5 | | | 72 | | | | | | 16 | | | | |  |
| 6 | | | 84 | | | | | | 12 | | | | |  |
| 7 | | | 103 | | | | | | 19 | | | | |  |
| 8 | | | 119 | | | | | | 16 | | | | |  |
| 9 | | | 133 | | | | | | 14 | | | | |  |
| 10 | | | 146 | | | | | | 13 | | | | |  |
| 11 | | | 161 | | | | | | 15 | | | | |  |
| 12 | | | 177 | | | | | | 16 | | | | |  |
| 13 | | | 188 | | | | | | 11 | | | | |  |
| 14 | | | 199 | | | | | | 11 | | | | |  |
| 15 | | | 217 | | | | | | 18 | | | | |  |
| 16 | | | 229 | | | | | | 12 | | | | |  |
| 17 | | | 243 | | | | | | 14 | | | | |  |
| 18 | | | 256 | | | | | | 13 | | | | |  |
| 19 | | | 272 | | | | | | 16 | | | | |  |
| 20 | | | 287 | | | | | | 15 | | | | |  |
| 21 | | | 301 | | | | | | 14 | | | | |  |
| 22 | | | 317 | | | | | | 16 | | | | |  |
| 23 | | | 333 | | | | | | 16 | | | | |  |
| 24 | | | 340 | | | | | | 7 | | | | |  |
| 25 | | | 357 | | | | | | 17 | | | | |  |
| 26 | | | 365 | | | | | | 8 | | | | |  |
| 27 | | | 377 | | | | | | 12 | | | | |  |
| 28 | | | 393 | | | | | | 16 | | | | |  |
| 29 | | | 408 | | | | | | 15 | | | | |  |
| 30 | | | 423 | | | | | | 15 | | | | |  |
| 31 | | | 439 | | | | | | 16 | | | | |  |
| TOT | | | 7078 | | | | | | 439 | | | | |  |
|  | | |  | | | | | |  | | | | | UL = 4.5 |
|  | | | λ2 = 439/24 = 18.29/31 = 0.59 | | | | | | | | | | |  |
|  | | | MTBF2 = 1/λ2 = 1.69 | | | | | | | | | | |  |
|  | | | MTTR2 = 7078/24 = 294.9/31 = 9.51 | | | | | | | | | | |  |
|  | | |  | | | | | |  | | | | |  |
| **ANNEX 3.3 --OUTAGE DATA FOR THE YEAR 2004 FOR FEEDER3 (F3)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | |  | | | | | | |  | | | | | | | | | | |  | | |  |
|  | | S/N | | | | Failures times in (Hrs.) | | | | | | | Outage Duration (Hrs.) | | | | | | | | | | |  | | |  |
|  | | 1 | | | | 12 | | | | | | | 12 | | | | | | | | | | |  | | |  |
|  | | 2 | | | | 16 | | | | | | | 4 | | | | | | | | | | |  | | |  |
|  | | 3 | | | | 29 | | | | | | | 13 | | | | | | | | | | |  | | |  |
|  | | 4 | | | | 38 | | | | | | | 9 | | | | | | | | | | |  | | |  |
|  | | 5 | | | | 49 | | | | | | | 11 | | | | | | | | | | |  | | |  |
|  | | 6 | | | | 57 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 7 | | | | 72 | | | | | | | 15 | | | | | | | | | | |  | | |  |
|  | | 8 | | | | 77 | | | | | | | 5 | | | | | | | | | | |  | | |  |
|  | | 9 | | | | 85 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 10 | | | | 91 | | | | | | | 6 | | | | | | | | | | |  | | |  |
|  | | 11 | | | | 100 | | | | | | | 9 | | | | | | | | | | |  | | |  |
|  | | 12 | | | | 106 | | | | | | | 6 | | | | | | | | | | |  | | |  |
|  | | 13 | | | | 119 | | | | | | | 13 | | | | | | | | | | |  | | |  |
|  | | 14 | | | | 128 | | | | | | | 6 | | | | | | | | | | |  | | |  |
|  | | 15 | | | | 137 | | | | | | | 9 | | | | | | | | | | |  | | |  |
|  | | 16 | | | | 140 | | | | | | | 3 | | | | | | | | | | |  | | |  |
|  | | 17 | | | | 148 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 18 | | | | 158 | | | | | | | 10 | | | | | | | | | | |  | | |  |
|  | | 19 | | | | 173 | | | | | | | 15 | | | | | | | | | | |  | | |  |
|  | | 20 | | | | 188 | | | | | | | 15 | | | | | | | | | | |  | | |  |
|  | | 21 | | | | 196 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 22 | | | | 206 | | | | | | | 10 | | | | | | | | | | |  | | |  |
|  | | 23 | | | | 214 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 24 | | | | 218 | | | | | | | 4 | | | | | | | | | | |  | | |  |
|  | | 25 | | | | 227 | | | | | | | 9 | | | | | | | | | | |  | | |  |
|  | | 26 | | | | 230 | | | | | | | 3 | | | | | | | | | | |  | | |  |
|  | | 27 | | | | 244 | | | | | | | 14 | | | | | | | | | | |  | | |  |
|  | | 28 | | | | 250 | | | | | | | 6 | | | | | | | | | | |  | | |  |
|  | | 29 | | | | 260 | | | | | | | 10 | | | | | | | | | | |  | | |  |
|  | | 30 | | | | 268 | | | | | | | 8 | | | | | | | | | | |  | | |  |
|  | | 31 | | | | 283 | | | | | | | 15 | | | | | | | | | | |  | | |  |
|  | | TOT | | | | 4519 | | | | | | | 283 | | | | | | | | | | |  | | |  |
|  | |  | | | |  | | | | | | |  | | | | | | | | | | |  | | |  |
|  | |  | | | | λ3 = 283/24 = 11.79/31 = 0.3803, UL = 3.4, MTT = 0.3803 | | | | | | | | | | | | | | | | | |  | | |  |
|  | |  | | | | | | | | | | |  | | | | | | | | | | |  | | |  |
|  | | MTBF3 = 1/λ3 = 2.63, MTTR3 = 4519/24 = 6.07 | | | | | | | | | | |  | | | | | | | | | | |  | | |  |
|  | |  | | | | | | | | | | |  | | | | | | | | | | |  | | |  |
|  | |  | | | | | | | | | | | | | | | | | | | | | |  | | |  |
|  | | | | | |  | | |  | |  | | | | | |  | | |  | |
| **ANNEX 3.4 --0UTAGE DATA FOR THE YEAR 2004 FOR FEEDER4 (F4)** | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | |  | | |  | |  | | | | | |  | | |  | |
|  | | | | | | S/N | | | Failures times in (Hrs.) | | Outage Duration (Hrs.) | | | | | |  | | |  | |
|  | | | | | | 1 | | | 12 | | 12 | | | | | |  | | |  | |
|  | | | | | | 2 | | | 33 | | 21 | | | | | |  | | |  | |
|  | | | | | | 3 | | | 46 | | 13 | | | | | |  | | |  | |
|  | | | | | | 4 | | | 62 | | 16 | | | | | |  | | |  | |
|  | | | | | | 5 | | | 76 | | 14 | | | | | |  | | |  | |
|  | | | | | | 6 | | | 90 | | 14 | | | | | |  | | |  | |
|  | | | | | | 7 | | | 108 | | 18 | | | | | |  | | |  | |
|  | | | | | | 8 | | | 124 | | 16 | | | | | |  | | |  | |
|  | | | | | | 9 | | | 137 | | 13 | | | | | |  | | |  | |
|  | | | | | | 10 | | | 151 | | 14 | | | | | |  | | |  | |
|  | | | | | | 11 | | | 166 | | 15 | | | | | |  | | |  | |
|  | | | | | | 12 | | | 178 | | 12 | | | | | |  | | |  | |
|  | | | | | | 13 | | | 189 | | 11 | | | | | |  | | |  | |
|  | | | | | | 14 | | | 206 | | 17 | | | | | |  | | |  | |
|  | | | | | | 15 | | | 222 | | 16 | | | | | |  | | |  | |
|  | | | | | | 16 | | | 235 | | 13 | | | | | |  | | |  | |
|  | | | | | | 17 | | | 249 | | 14 | | | | | |  | | |  | |
|  | | | | | | 18 | | | 263 | | 14 | | | | | |  | | |  | |
|  | | | | | | 19 | | | 280 | | 17 | | | | | |  | | |  | |
|  | | | | | | 20 | | | 295 | | 15 | | | | | |  | | |  | |
|  | | | | | | 21 | | | 308 | | 13 | | | | | |  | | |  | |
|  | | | | | | 22 | | | 326 | | 18 | | | | | |  | | |  | |
|  | | | | | | 23 | | | 342 | | 16 | | | | | |  | | |  | |
|  | | | | | | 24 | | | 348 | | 6 | | | | | |  | | |  | |
|  | | | | | | 25 | | | 365 | | 17 | | | | | |  | | |  | |
|  | | | | | | 26 | | | 371 | | 6 | | | | | |  | | |  | |
|  | | | | | | 27 | | | 386 | | 15 | | | | | |  | | |  | |
|  | | | | | | 28 | | | 404 | | 18 | | | | | |  | | |  | |
|  | | | | | | 29 | | | 421 | | 17 | | | | | |  | | |  | |
|  | | | | | | 30 | | | 434 | | 13 | | | | | |  | | |  | |
|  | | | | | | 31 | | | 451 | | 17 | | | | | |  | | |  | |
|  | | | | | | TOT | | | 8429 | | 451 | | | | | |  | | |  | |
|  | | | | | |  | | |  | |  | | | | | | UL = 3.4 | | |  | |
|  | | | | | |  | | | λ4 = 451/24 = 18.79/31 | | | | | | | |  | | |  | |
|  | | | | | |  | | | = 0.606 | |  | | | | | |  | | |  | |
|  | | | | | |  | | | MTBF4 = 1/ λ4 | |  | | | | | |  | | |  | |
|  | | | | | |  | | | = 1.65 | |  | | | | | |  | | |  | |
|  | | | | | |  | | | MTTR = 8429/24 = 351.2/31 = 11.3 | | | | | | | |  | | |  | |
|  | | | | | |  | | |  | | | | | | | |  | | |  | |
|  | | | | | |  | | |  | |  | | | | | |  | | |  | |
| **ANNEX 3.5 --OUTAGE DATA FOR THE YEAR 2005 FOR FEEDER1 (F1)** | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | |  | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | |  | | | | | | |  | | | | | | |  | |  | |  |
|  | | S/N | | | Failures times in (Hrs) | | | | | | | Outage times (Hrs.) | | | | | | |  | |  | |  |
|  | | 1 | | | 14 | | | | | | | 14 | | | | | | |  | |  | |  |
|  | | 2 | | | 30 | | | | | | | 16 | | | | | | |  | |  | |  |
|  | | 3 | | | 46 | | | | | | | 16 | | | | | | |  | |  | |  |
|  | | 4 | | | 59 | | | | | | | 13 | | | | | | |  | |  | |  |
|  | | 5 | | | 60 | | | | | | | 1 | | | | | | |  | |  | |  |
|  | | 6 | | | 62 | | | | | | | 2 | | | | | | |  | |  | |  |
|  | | 7 | | | 66 | | | | | | | 4 | | | | | | |  | |  | |  |
|  | | 8 | | | 72 | | | | | | | 6 | | | | | | |  | |  | |  |
|  | | 9 | | | 78 | | | | | | | 6 | | | | | | |  | |  | |  |
|  | | 10 | | | 93 | | | | | | | 15 | | | | | | |  | |  | |  |
|  | | 11 | | | 109 | | | | | | | 16 | | | | | | |  | |  | |  |
|  | | 12 | | | 123 | | | | | | | 14 | | | | | | |  | |  | |  |
|  | | 13 | | | 138 | | | | | | | 15 | | | | | | |  | |  | |  |
|  | | 14 | | | 153 | | | | | | | 15 | | | | | | |  | |  | |  |
|  | | 15 | | | 167 | | | | | | | 14 | | | | | | |  | |  | |  |
|  | | 16 | | | 177 | | | | | | | 10 | | | | | | |  | |  | |  |
|  | | TOT | | | 1447 | | | | | | | 177 | | | | | | |  | |  | |  |
|  | |  | | |  | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | λ1 = 177/24 | | | | | | |  | | | | | | | UL = 2.3 | |  | |  |
|  | |  | | | = 7.375/16 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | = 0.461 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | |  | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | MTBF1 = 1/ λ1 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | = 2.17 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | |  | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | MTTR1 = 1447/24 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | =60.29/16 | | | | | | |  | | | | | | |  | |  | |  |
|  | |  | | | = 3.77 | | | | | | |  | | | | | | |  | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | **ANNEX 3.6 -- OUTAGE DATA FOR THE YEAR 2005 FOR FEEDER2 (F2)** | | | | | | | | | |
|  | | | |  |  |  | | |  |  | | |  | |
|  | | | |  | S/N | Failures times in (Hrs.) | | | Outage Duration (Hrs) |  | | |  | |
|  | | | |  | 1 | 16 | | | 16 |  | | |  | |
|  | | | |  | 2 | 31 | | | 15 |  | | |  | |
|  | | | |  | 3 | 42 | | | 11 |  | | |  | |
|  | | | |  | 4 | 58 | | | 16 |  | | |  | |
|  | | | |  | 5 | 60 | | | 2 |  | | |  | |
|  | | | |  | 6 | 64 | | | 4 |  | | |  | |
|  | | | |  | 7 | 70 | | | 6 |  | | |  | |
|  | | | |  | 8 | 77 | | | 7 |  | | |  | |
|  | | | |  | 9 | 85 | | | 8 |  | | |  | |
|  | | | |  | 10 | 100 | | | 15 |  | | |  | |
|  | | | |  | 11 | 113 | | | 13 |  | | |  | |
|  | | | |  | 12 | 130 | | | 17 |  | | |  | |
|  | | | |  | 13 | 142 | | | 12 |  | | |  | |
|  | | | |  | 14 | 152 | | | 10 |  | | |  | |
|  | | | |  | 15 | 167 | | | 15 |  | | |  | |
|  | | | |  | 16 | 179 | | | 12 |  | | |  | |
|  | | | |  | TOT | 1486 | | | 179 |  | | |  | |
|  | | | |  |  |  | | |  | UL = 1.8 | | |  | |
|  | | | |  |  |  | | |  |  | | |  | |
|  | | | |  |  | λ2 = 179 / 24 | | |  |  | | |  | |
|  | | | |  |  | = 7.458/16 | | |  |  | | |  | |
|  | | | |  |  | = 0.466 | | |  |  | | |  | |
|  | | | |  |  |  | | |  |  | | |  | |
|  | | | |  |  | MTBF = 1/ λ2 | | |  |  | | |  | |
|  | | | |  |  | = 2.17 | | |  |  | | |  | |
|  | | | |  |  |  | | |  |  | | |  | |
|  | | | |  |  | MTTR = 1447/24 | | |  |  | | |  | |
|  | | | |  |  | = 60.29/16 | | |  |  | | |  | |
|  | | | |  |  | = 3.77 | | |  |  | | |  | |
|  | | | |  |  |  | | |  |  | | |  | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **ANNEX 3.7 --OUTAGE DATA FOR THE YEAR 2005 FOR FEEDER 3 (F3)** | | | | | | | | |  |  |  |  |  |  |  |  | |  |  | S/N | Failures times in (Hrs.) | Outage duration (Hr) |  |  |  | |  |  | 1 | 9 | 9 |  |  |  | |  |  | 2 | 18 | 9 |  |  |  | |  |  | 3 | 29 | 11 |  |  |  | |  |  | 4 | 39 | 10 |  |  |  | |  |  | 5 | 43 | 4 |  |  |  | |  |  | 6 | 45 | 2 |  |  |  | |  |  | 7 | 56 | 11 |  |  |  | |  |  | 8 | 65 | 9 |  |  |  | |  |  | 9 | 69 | 4 |  |  |  | |  |  | 10 | 80 | 11 |  |  |  | |  |  | 11 | 89 | 9 |  |  |  | |  |  | 12 | 99 | 10 |  |  |  | |  |  | 13 | 103 | 4 |  |  |  | |  |  | 14 | 108 | 5 |  |  |  | |  |  | 15 | 119 | 11 |  |  |  | |  |  | 16 | 125 | 6 |  |  |  | |  |  | TOT | 1096 | 125 |  |  |  | |  |  |  |  |  | ul = 2.6 |  |  | |  |  |  |  |  |  |  |  | |  |  |  | λ3 = 125/24 |  |  |  |  | |  |  |  | = 5.208/16 |  |  |  |  | |  |  |  | = 0.326 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTBF3 = 1/λ3 |  |  |  |  | |  |  |  | = 3.072 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTTR3 = 1096/24 |  |  |  |  | |  |  |  | = 45.666/16 |  |  |  |  | |  |  |  | = 2.85 |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  | **ANNEX 3.8 -- OUTAGE DATA FOR THE YEAR 2005 FOR FEEDER 4 (F4)** | | | | | |  | |  |  |  |  |  |  |  |  | |  |  | S/N | Failures times in (Hrs.) | Outage Duration (Hrs.) |  |  |  | |  |  | 1 | 15 | 15 |  |  |  | |  |  | 2 | 31 | 16 |  |  |  | |  |  | 3 | 44 | 13 |  |  |  | |  |  | 4 | 59 | 15 |  |  |  | |  |  | 5 | 63 | 4 |  |  |  | |  |  | 6 | 68 | 5 |  |  |  | |  |  | 7 | 75 | 7 |  |  |  | |  |  | 8 | 79 | 4 |  |  |  | |  |  | 9 | 83 | 4 |  |  |  | |  |  | 10 | 95 | 12 |  |  |  | |  |  | 11 | 104 | 9 |  |  |  | |  |  | 12 | 119 | 15 |  |  |  | |  |  | 13 | 132 | 13 |  |  |  | |  |  | 14 | 144 | 12 |  |  |  | |  |  | 15 | 155 | 11 |  |  |  | |  |  | 16 | 166 | 11 |  |  |  | |  |  | TOT | 1432 | 166 |  |  |  | |  |  |  |  |  | UL =1.7 |  |  | |  |  |  |  |  |  |  |  | |  |  |  | λ4 = 166/24 |  |  |  |  | |  |  |  | = 6.9166/16 |  |  |  |  | |  |  |  | = 0.432 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTBF4 = I/ λ4 |  |  |  |  | |  |  |  | = 2.31 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTTR = 1432/ 24 |  |  |  |  | |  |  |  | = 59.667/16 |  |  |  |  | |  |  |  | = 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **ANNEX 3.9 --OUTAGE DATA FOR THE YEAR 2006 FOR FEEDER 1 (F1)** | | | | | | | | |  |  |  |  |  |  |  |  | |  |  | S/N | Failures times in (Hrs.) | Outage Duration (Hrs.) |  |  |  | |  |  | 1 | 14 | 14 |  |  |  | |  |  | 2 | 24 | 10 |  |  |  | |  |  | 3 | 37 | 13 |  |  |  | |  |  | 4 | 52 | 15 |  |  |  | |  |  | 5 | 70 | 18 |  |  |  | |  |  | 6 | 83 | 13 |  |  |  | |  |  | 7 | 98 | 15 |  |  |  | |  |  | 8 | 113 | 15 |  |  |  | |  |  | 9 | 130 | 17 |  |  |  | |  |  | 10 | 148 | 18 |  |  |  | |  |  | 11 | 162 | 14 |  |  |  | |  |  | 12 | 177 | 15 |  |  |  | |  |  | 13 | 198 | 21 |  |  |  | |  |  | 14 | 216 | 18 |  |  |  | |  |  | 15 | 228 | 12 |  |  |  | |  |  | 16 | 244 | 16 |  |  |  | |  |  | 17 | 259 | 15 |  |  |  | |  |  | 18 | 273 | 14 |  |  |  | |  |  | 19 | 288 | 15 |  |  |  | |  |  | TOT | 2814 | 288 |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  | UL 3.03 |  |  | |  |  |  | λ1 = 288/24 |  |  |  |  | |  |  |  | = 12/19 |  |  |  |  | |  |  |  | = 0.63 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTBF1 = 1/λ1 |  |  |  |  | |  |  |  | = 1.6 |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  | MTTR1 = 2814/24 |  |  |  |  | |  |  |  | = 117.25/19 |  |  |  |  | |  |  |  | = 6.2 |  |  |  |  |   **ANNEX 3.10 --OUTAGE DATA FOR THE YEAR 2006 FOR FEEDWE 2 (F2)** | | | | | | | | | | | | | | | | | | | | |
|
|  |  |  |  | | | | |  | | | |  | | | | |  | |  | |
|  |  | **S/N** | **Failures times in (Hrs.)** | | | | | **Outage Duration (Hrs.)** | | | |  | | | | |  | |  | |
|  |  | 1 | 13 | | | | | 13 | | | |  | | | | |  | |  | |
|  |  | 2 | 26 | | | | | 13 | | | |  | | | | |  | |  | |
|  |  | 3 | 41 | | | | | 15 | | | |  | | | | |  | |  | |
|  |  | 4 | 53 | | | | | 12 | | | |  | | | | |  | |  | |
|  |  | 5 | 71 | | | | | 18 | | | |  | | | | |  | |  | |
|  |  | 6 | 85 | | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 7 | 100 | | | | | 15 | | | |  | | | | |  | |  | |
|  |  | 8 | 116 | | | | | 16 | | | |  | | | | |  | |  | |
|  |  | 9 | 135 | | | | | 19 | | | |  | | | | |  | |  | |
|  |  | 10 | 151 | | | | | 16 | | | |  | | | | |  | |  | |
|  |  | 11 | 165 | | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 12 | 182 | | | | | 17 | | | |  | | | | |  | |  | |
|  |  | 13 | 200 | | | | | 18 | | | |  | | | | |  | |  | |
|  |  | 14 | 217 | | | | | 17 | | | |  | | | | |  | |  | |
|  |  | 15 | 236 | | | | | 19 | | | |  | | | | |  | |  | |
|  |  | 16 | 250 | | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 17 | 264 | | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 18 | 280 | | | | | 16 | | | |  | | | | |  | |  | |
|  |  | 19 | 296 | | | | | 16 | | | |  | | | | |  | |  | |
|  |  | TOT | 2881 | | | | | 296 | | | |  | | | | |  | |  | |
|  |  |  |  | | | | |  | | | |  | | | | |  | |  | |
|  |  |  |  | | | | |  | | | | UL 4.6 | | | | |  | |  | |
|  |  |  | λ2 = 296/24 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 12.3/19 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 0.65 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  |  | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | MTBF2 = 1/λ2 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 1.5 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  |  | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | MTTR2 = 2881/24 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 120/19 | | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 6.3 | | | | |  | | | |  | | | | |  | |  | |
| **ANNEX 3.11 --OUTAGE DATA FOR THE YEAR 2006 FOR FEEDER 3 (F3)** | | | | | | | | | | | | | | | | | | | |
|  |  |  |  | | | |  | | | |  | | | | |  | |  | |
|  |  | S/N | Failures times in (Hrs.) | | | | Outage Duration (Hrs.) | | | |  | | | | |  | |  | |
|  |  | 1 | 7 | | | | 7 | | | |  | | | | |  | |  | |
|  |  | 2 | 17 | | | | 10 | | | |  | | | | |  | |  | |
|  |  | 3 | 23 | | | | 6 | | | |  | | | | |  | |  | |
|  |  | 4 | 37 | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 5 | 46 | | | | 9 | | | |  | | | | |  | |  | |
|  |  | 6 | 58 | | | | 12 | | | |  | | | | |  | |  | |
|  |  | 7 | 71 | | | | 13 | | | |  | | | | |  | |  | |
|  |  | 8 | 76 | | | | 5 | | | |  | | | | |  | |  | |
|  |  | 9 | 87 | | | | 11 | | | |  | | | | |  | |  | |
|  |  | 10 | 98 | | | | 11 | | | |  | | | | |  | |  | |
|  |  | 11 | 112 | | | | 14 | | | |  | | | | |  | |  | |
|  |  | 12 | 118 | | | | 6 | | | |  | | | | |  | |  | |
|  |  | 13 | 130 | | | | 12 | | | |  | | | | |  | |  | |
|  |  | 14 | 138 | | | | 8 | | | |  | | | | |  | |  | |
|  |  | 15 | 146 | | | | 8 | | | |  | | | | |  | |  | |
|  |  | 16 | 156 | | | | 10 | | | |  | | | | |  | |  | |
|  |  | 17 | 164 | | | | 8 | | | |  | | | | |  | |  | |
|  |  | 18 | 170 | | | | 6 | | | |  | | | | |  | |  | |
|  |  | 19 | 179 | | | | 9 | | | |  | | | | |  | |  | |
|  |  | 20 | 188 | | | | 9 | | | |  | | | | |  | |  | |
|  |  | TOT | 2021 | | | | 188 | | | |  | | | | |  | |  | |
|  |  |  |  | | | |  | | | | UL = 2.3 | | | | |  | |  | |
|  |  |  |  | | | |  | | | |  | | | | |  | |  | |
|  |  |  | λ3 = 188/24 | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 7.83/20 | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 0.392 | | | |  | | | |  | | | | |  | |  | |
|  |  |  |  | | | |  | | | |  | | | | |  | |  | |
|  |  |  | MTBF = 1/λ3 | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 2.6 | | | |  | | | |  | | | | |  | |  | |
|  |  |  |  | | | |  | | | |  | | | | |  | |  | |
|  |  |  | MTTR3 = 2021/24 | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 84.21/20 | | | |  | | | |  | | | | |  | |  | |
|  |  |  | = 4.2 | | | |  | | | |  | | | | |  | |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
| A**NNEX 3.12 -- OUTAGE DATA FOR THE YEAR 2006 FOR FEEDER 4 (F4)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | S/N | | Failures times in (Hrs.) | | | | | Outage Duration (Hrs) | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 1 | | 14 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 2 | | 27 | | | | | 13 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 3 | | 44 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 4 | | 60 | | | | | 16 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 5 | | 75 | | | | | 15 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 6 | | 90 | | | | | 15 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 7 | | 104 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 8 | | 121 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 9 | | 139 | | | | | 18 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 10 | | 155 | | | | | 16 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 11 | | 167 | | | | | 12 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 12 | | 184 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 13 | | 201 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 14 | | 217 | | | | | 16 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 15 | | 235 | | | | | 18 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 16 | | 247 | | | | | 12 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 17 | | 260 | | | | | 13 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 18 | | 277 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 19 | | 293 | | | | | 16 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 20 | | 307 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | TOT | | 3217 | | | | | 307 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | UL = 5.2 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | λ4 = 307/24 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | = 12.79/20 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | = 0.64 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | MTBF4 = 1/ λ4 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | = 1.6 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | MTTR4 = 3217/24 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | | = 6.7 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **ANNEX 3.13 -- OUTAGE DATA FOR THE YEAR 2007 FOR FEEDER 2 (F2)** | | | | | | | | |  |  |  |  |  |  |  |  | |  |  | **S/N** | **Failures times in (Hrs.)** | **Outage Duration (Hrs.)** |  |  |  | |  |  | **1** | **14** | **14** |  |  |  | |  |  | **2** | **24** | **10** |  |  |  | |  |  | **3** | **30** | **6** |  |  |  | |  |  | **4** | **40** | **10** |  |  |  | |  |  | **5** | **55** | **15** |  |  |  | |  |  | **6** | **65** | **10** |  |  |  | |  |  | **7** | **81** | **16** |  |  |  | |  |  | **8** | **93** | **12** |  |  |  | |  |  | **9** | **105** | **12** |  |  |  | |  |  | **10** | **114** | **9** |  |  |  | |  |  | **11** | **122** | **8** |  |  |  | |  |  | **12** | **129** | **7** |  |  |  | |  |  | **13** | **134** | **5** |  |  |  | |  |  | **14** | **150** | **16** |  |  |  | |  |  | **15** | **162** | **12** |  |  |  | |  |  | **16** | **178** | **16** |  |  |  | |  |  | **17** | **193** | **15** |  |  |  | |  |  | **18** | **209** | **16** |  |  |  | |  |  | **19** | **222** | **13** |  |  |  | |  |  | **20** | **237** | **15** |  |  |  | |  |  | **21** | **244** | **7** |  |  |  | |  |  | **22** | **261** | **17** |  |  |  | |  |  | **23** | **275** | **14** |  |  |  | |  |  | **24** | **279** | **4** |  |  |  | |  |  | **25** | **293** | **14** |  |  |  | |  |  | **26** | **299** | **6** |  |  |  | |  |  | **27** | **314** | **15** |  |  |  | |  |  | **TOT** | **4322** | **314** |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  | **UL = 3.8** |  |  |  | |  |  |  | **λ2 = 314/24** | **MTBF2 = 1/λ2** |  |  |  | |  |  |  | **= 13.08/27** | **= 2.06** |  |  |  | |  |  |  | **= 0.485 MTTR2 = 4322/24 = 6.67** |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |   **ANNEX 3.14 -- OUTAGE DATA FOR THE YEAR 2007 FOR FEEDER 4 (F4)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | |  | |  |  | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | S/N | Failures times in (Hrs.) | | | | | Outage Duration (Hrs.) | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 1 | 14 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 2 | 24 | | | | | 10 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 3 | 30 | | | | | 6 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 4 | 40 | | | | | 10 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 5 | 54 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 6 | 67 | | | | | 13 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 7 | 84 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 8 | 108 | | | | | 24 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 9 | 123 | | | | | 15 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 10 | 131 | | | | | 8 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 11 | 142 | | | | | 11 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 12 | 154 | | | | | 12 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 13 | 168 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 14 | 177 | | | | | 9 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 15 | 184 | | | | | 7 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 16 | 208 | | | | | 24 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 17 | 225 | | | | | 17 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 18 | 245 | | | | | 20 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 19 | 263 | | | | | 18 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 20 | 277 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 21 | 296 | | | | | 19 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 22 | 312 | | | | | 16 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 23 | 321 | | | | | 9 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 24 | 339 | | | | | 18 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 25 | 350 | | | | | 11 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 26 | 364 | | | | | 14 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | 27 | 377 | | | | | 13 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | | TOT | 5077 | | | | | 377 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  |  | | | | |  | | | UL = 1.2 | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | λ4 = 377/24 | | | | | MTBF4 = 1/λ4 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | = 15.708 | | | | | = 1.72 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  | = 0.5818 | | | | |  | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  |  | | | | | MTTR4 = 5077/24 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  |  | | | | | = 211.54/27 | | |  | | | |  | | | | | | | | | |  | | |
|  | | | | | | | | | | |  | |  |  | | | | | = 7.84 | | |  | | | |  | | | | | | | | | |  | | |
| **ANNEX 3.15 -- OUTAGE DATA FOR THE YEAR 2008 FOR FEEDER 1 (F1)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | |  |  | | | | |  | | | | | | |  | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | S/N | | | | | Failures times in (Hrs.) | | | | | | | Outage Duration (Hrs.) | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 1 | | | | | 4 | | | | | | | 4 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 2 | | | | | 9 | | | | | | | 5 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 3 | | | | | 12 | | | | | | | 3 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 4 | | | | | 18 | | | | | | | 6 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 5 | | | | | 30 | | | | | | | 12 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 6 | | | | | 40 | | | | | | | 10 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 7 | | | | | 52 | | | | | | | 12 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 8 | | | | | 64 | | | | | | | 12 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 9 | | | | | 73 | | | | | | | 9 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 10 | | | | | 82 | | | | | | | 9 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 11 | | | | | 88 | | | | | | | 6 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 12 | | | | | 99 | | | | | | | 11 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 13 | | | | | 104 | | | | | | | 5 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 14 | | | | | 111 | | | | | | | 7 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 15 | | | | | 115 | | | | | | | 4 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 16 | | | | | 125 | | | | | | | 10 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 17 | | | | | 135 | | | | | | | 10 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 18 | | | | | 142 | | | | | | | 7 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 19 | | | | | 147 | | | | | | | 5 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 20 | | | | | 155 | | | | | | | 8 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 21 | | | | | 161 | | | | | | | 6 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 22 | | | | | 171 | | | | | | | 10 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 23 | | | | | 176 | | | | | | | 5 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 24 | | | | | 179 | | | | | | | 3 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 25 | | | | | 184 | | | | | | | 5 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 26 | | | | | 188 | | | | | | | 4 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 27 | | | | | 191 | | | | | | | 3 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 28 | | | | | 197 | | | | | | | 6 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 29 | | | | | 207 | | | | | | | 10 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 30 | | | | | 219 | | | | | | | 12 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | 31 | | | | | 226 | | | | | | | 7 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  | TOT | | | | | 3704 | | | | | | | 226 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  |  | | | | |  | | | | | | |  | | | | | | | UL = 1.8 | | | | | | | |  | |  |
|  | | | |  |  | | | | | λ1 = 0.32, MTBF1= 3.3, | | | | | | | MTTR1 = 5.0 | | | | | | |  | | | | | | | |  | |  |
|  | | | |  |  | | | | |  | | | | | | |  | | | | | | |  | | | | | | | |  | |  |
|  | | | |  |  | | | | |  | | | | | | |  | | | | | | |  | | | | | | | |  | |  |
|  | | | |  |  | | | | |  | | | | | | |  | | | | | | |  | | | | | | | |  | |  |
|  | | | | | | **ANNEX 3.16 --OUTAGE DATA FOR THE YEAR 2008 FOR FEEDER 2 (F2)** | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | |
|  | | | | | |  |  | | | |  | | | | | |  | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | **S/N** | | | | **Failures times in (Hrs)** | | | | | | **Outage Duration (Hrs.)** | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 1 | | | | 6 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 2 | | | | 10 | | | | | | 4 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 3 | | | | 27 | | | | | | 17 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 4 | | | | 36 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 5 | | | | 45 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 6 | | | | 54 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 7 | | | | 63 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 8 | | | | 74 | | | | | | 11 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 9 | | | | 85 | | | | | | 11 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 10 | | | | 95 | | | | | | 10 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 11 | | | | 103 | | | | | | 8 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 12 | | | | 109 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 13 | | | | 118 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 14 | | | | 126 | | | | | | 8 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 15 | | | | 132 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 16 | | | | 140 | | | | | | 8 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 17 | | | | 149 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 18 | | | | 156 | | | | | | 7 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 19 | | | | 162 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 20 | | | | 170 | | | | | | 8 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 21 | | | | 176 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 22 | | | | 185 | | | | | | 9 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 23 | | | | 188 | | | | | | 3 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 24 | | | | 194 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 25 | | | | 199 | | | | | | 5 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 26 | | | | 204 | | | | | | 5 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 27 | | | | 207 | | | | | | 3 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 28 | | | | 214 | | | | | | 7 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 29 | | | | 220 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 30 | | | | 231 | | | | | | 11 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | 31 | | | | 237 | | | | | | 6 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | TOT | | | | 4319 | | | | | | 237 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  |  | | | |  | | | | | | UL = -1.34 | | | | | | |  | | | | | | | |  | | | | |
|  | | | | | |  |  | | | | λ2 = 0.32, MTBF2 = 3.14 | | | | | | MTTR2 = 5.8 | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  |  | | | |  | | | | | |  | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  |  | | | |  | | | | | |  | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  | |  | | |  | | | | | |  | | | | | | |  | | | | | |  | |  | | | | |
|  | | | | | |  |  | | | |  | | | | | |  | | | | | | |  | | | | | |  | |  | | | | |
| **ANNEX 3.17 OUTAGE DATA FOR THE YEAR 2008 FOR FEEDER 3 (F3)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  |  | | |  | | | | | | | | | |  | | | | |  | | | | | | |  |  |
|  |  | S/N | | | Failures times in (Hrs.) | | | | | | | | | | Outage Duration (Hrs.) | | | | |  | | | | | | |  |  |
|  |  | 1 | | | 5 | | | | | | | | | | 5 | | | | |  | | | | | | |  |  |
|  |  | 2 | | | 10 | | | | | | | | | | 5 | | | | |  | | | | | | |  |  |
|  |  | 3 | | | 17 | | | | | | | | | | 7 | | | | |  | | | | | | |  |  |
|  |  | 4 | | | 24 | | | | | | | | | | 7 | | | | |  | | | | | | |  |  |
|  |  | 5 | | | 32 | | | | | | | | | | 8 | | | | |  | | | | | | |  |  |
|  |  | 6 | | | 41 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 7 | | | 50 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 8 | | | 59 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 9 | | | 68 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 10 | | | 79 | | | | | | | | | | 11 | | | | |  | | | | | | |  |  |
|  |  | 11 | | | 87 | | | | | | | | | | 8 | | | | |  | | | | | | |  |  |
|  |  | 12 | | | 98 | | | | | | | | | | 11 | | | | |  | | | | | | |  |  |
|  |  | 13 | | | 110 | | | | | | | | | | 12 | | | | |  | | | | | | |  |  |
|  |  | 14 | | | 113 | | | | | | | | | | 3 | | | | |  | | | | | | |  |  |
|  |  | 15 | | | 119 | | | | | | | | | | 6 | | | | |  | | | | | | |  |  |
|  |  | 16 | | | 129 | | | | | | | | | | 10 | | | | |  | | | | | | |  |  |
|  |  | 17 | | | 137 | | | | | | | | | | 8 | | | | |  | | | | | | |  |  |
|  |  | 18 | | | 142 | | | | | | | | | | 5 | | | | |  | | | | | | |  |  |
|  |  | 19 | | | 151 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 20 | | | 157 | | | | | | | | | | 6 | | | | |  | | | | | | |  |  |
|  |  | 21 | | | 166 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 22 | | | 175 | | | | | | | | | | 9 | | | | |  | | | | | | |  |  |
|  |  | 23 | | | 183 | | | | | | | | | | 8 | | | | |  | | | | | | |  |  |
|  |  | 24 | | | 187 | | | | | | | | | | 4 | | | | |  | | | | | | |  |  |
|  |  | 25 | | | 191 | | | | | | | | | | 4 | | | | |  | | | | | | |  |  |
|  |  | 26 | | | 194 | | | | | | | | | | 3 | | | | |  | | | | | | |  |  |
|  |  | 27 | | | 200 | | | | | | | | | | 6 | | | | |  | | | | | | |  |  |
|  |  | 28 | | | 206 | | | | | | | | | | 3 | | | | |  | | | | | | |  |  |
|  |  | 29 | | | 213 | | | | | | | | | | 7 | | | | |  | | | | | | |  |  |
|  |  | 30 | | | 225 | | | | | | | | | | 12 | | | | |  | | | | | | |  |  |
|  |  | 31 | | | 230 | | | | | | | | | | 5 | | | | |  | | | | | | |  |  |
|  |  | TOT | | | 3798 | | | | | | | | | | 230 | | | | |  | | | | | | |  |  |
|  |  |  | | |  | | | | | | | | | |  | | | | | UL = 2.0 | | | | | | |  |  |
|  |  |  | | | λ3 = (230 / 24 )/31 = 0.309 | | | | | | | | | | MTBF3 = 1/λ3 = 3.23, MTTR3 = 5.1 | | | | |  | | | | | | |  |  |
|  |  |  | | |  | | | | | | | | | |  | | | | |  | | | | | | |  |  |
|  |  |  | | |  | | | | | | | | | |  | | | | |  | | | | | | |  |  |