

MMU Proposal for Maximum Notification and Start Times

Operating Committee
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Proposed Approach

- **Notification Time and Start Time should remain separate parameters**
- **Start Time, as a physical parameter, should be based on unit history, and be limited to that history on an individual unit basis.**
- **Notification Times should be limited to times in proposed matrix, based on parameter class.**
- **Units may request exceptions to start times or notification times based on historical operating behavior and physical limitations.**
- **Limits should apply to both market-based and cost-based schedules.**



Recommended Cold Notification Time

| Parameter Class | Cold Notification Time |
|-------------------------|------------------------|
| PETROLEUMSTEAMPRE-1985 | 4 |
| PETROLEUMSTEAMPOST-1985 | 1 |
| COMBINEDCYCLE | 2 |
| SUBCRITICALCOALPLANTS | 2 |
| SUPERCRITICALCOALPLANTS | 2 |
| SMALLCTSTO29MW | 0.25 |
| MEDIUMCTS30TO65MW | 0.2 |
| MEDIUMLARGECTS66TO134MW | 1 |
| LARGECTS136TO180MW | 2 |

*Data based on active cost-based offers within one standard deviation of the mean, at the 70th percentile distribution, from November 1, 2007 to November 1, 2010



Cold Notification and Cold Startup Percentiles (In hours)

| Parameter Class | Cold Notification Time | | | Cold Startup Time | | | CS + CN | | |
|-------------------------|------------------------|------|------|-------------------|------|------|---------|------|------|
| | 70th | 80th | 90th | 70th | 80th | 90th | 70th | 80th | 90th |
| PETROLEUMSTEAMPRE-1985 | 4 | 8.5 | 18 | 12.5 | 14 | 18 | 16.5 | 22.5 | 36 |
| PETROLEUMSTEAMPOST-1985 | 1 | 1 | 2 | 6 | 12 | 14 | 7 | 13 | 16 |
| COMBINEDCYCLE | 2 | 5 | 7 | 5 | 6.2 | 8 | 7 | 11.2 | 15 |
| SUBCRITICALCOALPLANTS | 2 | 2 | 4 | 15 | 16 | 20 | 17 | 18 | 24 |
| SUPERCRITICALCOALPLANTS | 2 | 2 | 8 | 19 | 20 | 22 | 21 | 22 | 30 |
| SMALLCTSTO29MW | 0.25 | 1 | 2 | 0.5 | 0.5 | 0.8 | 0.75 | 1.5 | 2.8 |
| MEDIUMCTS30TO65MW | 0.2 | 0.3 | 1.4 | 0.3 | 0.5 | 0.5 | 0.5 | 0.8 | 1.9 |
| MEDIUMLARGECS66TO134MW | 1 | 2 | 2 | 0.5 | 0.7 | 1 | 1.5 | 2.7 | 3 |
| LARGECS136TO180MW | 2 | 5 | 6 | 0.5 | 0.7 | 1 | 2.5 | 5.7 | 7 |

*Data based on active cost-based offers within one standard deviation of the mean, since November, 2007.

**Analysis based on calculating notification and startup time distributions independently, then adding together.



Time-To-Start Percentiles (In hours)

| Parameter Class | All Months | | | Peak Months | | | Off-Peak Months | | |
|-------------------------|------------|------|------|-------------|------|------|-----------------|------|------|
| | 70th | 80th | 90th | 70th | 80th | 90th | 70th | 80th | 90th |
| PETROLEUMSTEAMPRE-1985 | 18 | 20 | 32 | 18 | 20 | 30 | 17 | 19 | 32 |
| PETROLEUMSTEAMPOST-1985 | 9 | 13 | 14 | 9 | 13 | 14 | 9 | 13 | 14 |
| COMBINEDCYCLE | 9 | 11 | 14 | 8.5 | 10 | 13.5 | 9 | 11 | 14 |
| SUBCRITICALCOALPLANTS | 16.5 | 18 | 22 | 16.5 | 18 | 22.5 | 16 | 18 | 22 |
| SUPERCRITICALCOALPLANTS | 21 | 22 | 30 | 21 | 22 | 30 | 21 | 22 | 30 |
| SMALLCTSTO29MW | 1 | 1.5 | 2.2 | 1 | 1.5 | 2.2 | 1 | 1.5 | 2.2 |
| MEDIUMCTS30TO65MW | 0.5 | 0.8 | 1.7 | 0.5 | 0.7 | 1.7 | 0.5 | 1 | 2 |
| MEDIUMLARGECS66TO134MW | 2 | 2 | 3.3 | 2 | 2 | 3.3 | 2 | 2.3 | 3.4 |
| LARGECS136TO180MW | 3 | 5 | 6.6 | 2.5 | 4.3 | 6.6 | 4 | 5 | 6.8 |

*Data based on active cost-based offers within one standard deviation of the mean since, November, 2007.

**Analysis based on adding notification and startup times together first, then calculating the distribution.

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