



Part 26 Subpart I Alternatives to the Minimum Day Off Requirements

January 25, 2011

Part 26 Subpart I

Meeting Purpose

- To provide interested stakeholders an opportunity to discuss with the NRC staff alternatives to the minimum day off requirements in 10 CFR 26.205(d)(3)

Part 26 Subpart I

Agenda

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| 9:30 – 9:45 | Opening comments and introductions |
| 9:45 – 10:00 | NRC presentation |
| 10:00 – 10:15 | Clarifying questions regarding the NRC presentation |
| 10:15 – 11:00 | Stakeholder presentations |
| 11:00 – 11:30 | Clarifying questions regarding the presentations |
| 11:30 – 1:00 | Lunch Break |
| 1:00 – 2:45 | Discussion of Minimum Day Off alternatives |
| 2:45 – 3:00 | Closing remarks and adjournment |

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Overview

- Discuss a modified 54-hour weekly average, calculated over not more than a 6-week period
- Discuss additional considerations for security officers

Goals

- Reduce complexity
- Increase flexibility
- Maintain clear and enforceable requirements
- Manage cumulative fatigue

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Concept

- A maximum 54-hour average weekly limit
- Calculated over not more than a 6-week rolling period

Managing Cumulative Fatigue

- **Mitigation**
Provide recovery periods so that individuals can sleep in a manner consistent with their natural sleep-wake cycle and wake naturally
- **Prevention**
Provide sufficient opportunity to ensure individuals are able to obtain adequate rest on a daily basis

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Questions – 54-hr rolling schedule

- How the first weeks of such schedules would be calculated
- How licensees would manage individuals' fatigue on such schedules
- How consecutive extended work weeks would be minimized
- How consecutive extended work days would be minimized
- How individuals' days off would be maintained
- The flexibility of a 54-hour rolling schedule
- Any difficulties to implement a 54-hour rolling schedule
- Other alternatives to the minimum day off requirements that either mitigate, prevent or otherwise manage cumulative fatigue

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Problem Statement

- Consecutive extended work weeks provide an opportunity for reduced sleep durations.

12-Hour Schedule Extended Work Weeks

Week	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Weekly Totals	6 Week Averages	Rolling Average
1	off	12	12	12	12	12	12	72	54.00	54.00
2	off	12	12	12	12	12	12	72		54.00
3	off	12	12	12	12	off	4	52		54.00
4	off	12	12	12	off	3	3	42		54.00
5	off	12	12	12	12	off	2	50		54.00
6	off	12	12	12	off	off	off	36		54.00
1	off	12	12	12	12	12	12	72	54.00	54.00
2	off	12	12	12	12	12	12	72		54.00
3	off	12	12	12	12	off	4	52		54.00
4	off	12	12	12	off	3	3	42		54.00
5	off	12	12	12	12	off	2	50		54.00
6	off	12	12	12	off	off	off	36		54.00
1	off	12	12	12	12	12	12	72	54.00	54.00
2	off	12	12	12	12	12	12	72		54.00
3	off	12	12	12	12	off	4	52		54.00
4	off	12	12	12	off	3	3	42		54.00
5	off	12	12	12	12	off	2	50		54.00
6	off	12	12	12	off	off	off	36		54.00
1	off	12	12	12	12	12	12	72	54.00	54.00
2	off	12	12	12	12	12	12	72		54.00
3	off	12	12	12	12	off	4	52		54.00
4	off	12	12	12	off	3	3	42		54.00
5	off	12	12	12	12	off	2	50		54.00
6	off	12	12	12	off	off	off	36		54.00
1	off	12	12	12	12	12	12	72	54.00	54.00
2	off	12	12	12	12	12	12	72		54.00

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Problem Statement

- A 54 hour per week rolling average allows individuals to work 8 out of every 9 days. Individuals' can, therefore, work actual hours that minimize the opportunity for restorative rest to 1 in every 9 days.

8, 10 or 12-Hr Schedule Maximum Days of Work

Week	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Weekly Totals	6 Week Averages	Rolling Average
1	2	12	12	12	12	2	2	54		54.00
2	4	off	14	12	14	6	4	54		54.00
3	4	12	12	off	12	12	2	54		54.00
4	6	6	12	12	12	off	6	54		54.00
5	2	12	12	12	12	2	2	54		54.00
6	off	12	12	12	12	4	2	54		54.00
1	2	14	off	12	12	12	2	54		54.00
2	4	12	14	12	off	6	6	54		54.00
3	2	14	12	12	12	2	off	54		54.00
4	2	12	12	12	12	2	2	54		54.00
5	6	off	12	14	12	4	6	54		54.00
6	4	12	12	off	12	12	2	54		54.00
1	6	14	12	12	6	off	4	54		54.00
2	4	12	12	12	4	4	6	54		54.00
3	off	12	12	12	12	3	3	54		54.00
4	6	12	off	12	12	8	4	54		54.00
5	4	12	12	12	off	12	2	54		54.00
6	6	14	12	14	4	4	off	54		54.00
1	2	12	12	12	12	2	2	54		54.00
2	4	off	14	12	14	4	6	54		54.00
3	4	12	12	off	12	12	2	54		54.00
4	6	14	12	14	4	off	4	54		54.00
5	6	12	12	12	4	4	4	54		54.00
6	off	12	12	12	12	2	4	54		54.00
1	2	12	off	12	14	12	2	54		54.00
2	6	12	12	12	off	6	6	54		54.00

Concepts for Augmenting 54-Hour Per week Rolling Average

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Consecutive “Extended Work Weeks” Augmentation 1

- In the circumstance when individuals work more than 132 hours in any 14 day period, the licensee may either:
 - Document the extended work weeks, the circumstances that necessitated the extended work weeks and the performance of the individual over the 14 day period (26.205(e)(1)), and review the frequency and associated circumstances quarterly in the Corrective Action Program.

OR

- Provide the individual with two days off. To begin when the individual has ended the last work period that exceeded 132 hours.

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Consecutive “Extended Work Weeks” Augmentation 2

- Establish a performance objective to not deviate from an individual’s base work schedule by not more than
 - 1 extra work day in a week
- Establish “success” criterion for number or percentage of weeks that meet the objective and track performance.

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“Maximizing Days of Work” Augmentation

- Establish a performance objective to not deviate from an individual’s base work schedule by not more than
 - 1 extra work day in a week
 - 2 extended work days in a week
- Establish “success” criterion for number or percentage of weeks that meet the objective and track performance.

Your Questions