

# NRC Proposed Rule 10 CFR 26 Subpart I “Managing Fatigue”

## Implementation Issues

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Regulatory Information Conference  
March 14, 2007

# Implementation Issues Overview

- The proposed rule, at first glance, appears understandable and straight-forward; however,
- Compliance difficulties arise when applying the rules under “real-world” work/schedule scenarios
- Anomalies have been identified regarding the rule “intent” and verbatim compliance with the written words
- Some issues can be clarified with guidance; some issues will require changes in the rule verbiage
- Numerous implementation issues have been previously discussed with the NRC Staff – appreciate their receptiveness

# Implementation Issues

## Topical Areas

Rule interpretation and/or implementation concerns have been identified in the following areas (and more):

- Rule applicability (who and what activities the rules apply to)
- Day-off requirements for workers performing “covered” work on an infrequent/intermittent basis
- Limits on “incidental duties performed off site” (what can and cannot be done at home)
- Day-off requirements when changing work schedules
- Outage day-off requirements
- Two-week break requirement for outage workers
- Sixty-day limit on outage hours

The following slides will present an example for each one of these issues.

# Implementation Issues

## Applicability

**Example:** The applicability statement in 26(4)(b) suggests that 26.211, "Fatigue Assessments," is also applicable to individuals NOT performing work described under 26.4(a). This would suggest a fatigue assessment is required for issues addressed in 26.211(1) – For Cause, (2) – Self Declaration, (3) – Post event, and (4) – Follow-up for all badged workers. For example, paragraph (4) states that a follow-up assessment must be performed for an individual who self-declares and returns to work without a 10 hour break. This appears confusing as the 10-hour break only applies to personnel conducting activities described in 26.4(a). What is the rule intent?

**Answer:** Anyone may self-declare fatigue. The intent of the rule is to perform a fatigue assessment of any individual who has unescorted access, irrespective of job junction, for any of the reasons listed in 26.211(1), (2), (3), or (4). For this rule, fatigue is treated as any other FFD issue.

## Implementation Issues Day-Off Requirements

**Example:** Assume John Doe is a staff engineer in the Operations Department who holds an active license. John works a nominal 10-hour day. John's normal work duties are NOT within the scope of the fatigue rule. Over the last 6 weeks John has had weekends off, except for the 2<sup>nd</sup> weekend of the 6-week period when he worked a half day on Saturday. Today, (Tuesday), John is asked to stand an SRO watch due to a shift member's illness. May John stand the watch?

**Answer:** No, John has not met the average number of days off requirement for 10-hour shift schedules (i.e., 2 days per week).

## Implementation Issues Day-Off Requirements

**Example:** Assume John Doe is a staff engineer in the Operations Department who holds an active license. John works a nominal 8-hour day. John's normal work duties are NOT within the scope of the fatigue rule. Over the last 6 weeks John has had weekends off, except for the last weekend when he worked a half day on Saturday and a half day on Sunday. Today, (Tuesday), John is asked to stand an SRO watch due to a shift member's illness. May John stand the watch?

**Answer:** No, Tuesday will be the 9<sup>th</sup> day John works without a day off.

## Implementation Issues Day-Off Requirements

**Example:** Assume that John Doe is a staff engineer in the Engineering Department responsible for the Containment Spray (CS) system (i.e., a risk significant system). John works a nominal 8-hour day. The majority of John's normal work duties are NOT within the scope of the fatigue rule; however, once per month John conducts the Technical Specification ASME test on the CS pump which takes approximately 2 hours. Over the last 6-week period, John worked half days on Saturdays and had Sundays off, except for the 2<sup>nd</sup> weekend of the 6-week period when he worked a half day both days of the weekend. May John conduct the CS pump test today?

**Answer:** No, John has not met the average number of days off requirement for 8-hour shift schedules (i.e., one day off per week).

## Implementation Issues Incidental Duties

**Example:** Section 205(b)(5) limits incidental duties performed off-site to 30 minutes during any single break period. Assume an individual performs risk-significant work for 9 hours (7:00 am – 4:00 pm) and goes home. At 9:00 pm he/she receives a call from work and talks for 1 hour until 10:00 pm. The individual returns to work at 7:00 am the next morning. Since the individual “worked” from 10:00 pm to 11:00 pm, would a waiver be required to return to work since that individual did not get a contiguous 10 hour break between work periods either before or after the phone call at home.

**Answer:** It is the industry’s position that a waiver would NOT be required if the individual returns to work at 7:00 am since the individual remained at home the entire period (i.e., greater than 10 hours) and there was a reasonable opportunity for restorative sleep.



# Implementation Issues

## Changing Work Schedule

**Example:** The entire Maintenance Department normally works 8-hour days and has weekends off. During the last 3 weeks of the past 6-week period, in preparation for an outage, the entire department has been scheduled for five 12-hour shifts (Monday through Friday with weekends off; i.e., 60-hour weeks). Is this work schedule in compliance with the new fatigue rules.

**Answer:** The rule is unclear in this instance and does not address day off requirements for a 6-week period when an individual's schedule changes. One interpretation is that these individuals will violate the rule since they should have 2.5 days off per week while they work a 12-hour schedule. One could average the day-off requirements for 8-hour and 12-hour shifts; (i.e.,  $(1+2.5)/2=1.75$ ). Since the department has an average of 2 days off per week, one could conclude they will be in compliance.

# Implementation Issues

## Outage Days Off

**Example:** Section 205(d)(4) defines day off requirements during the first 60 days of an outage; however, the requirements of 205(d)(2)(ii), i.e., a 34-hour break in any 9-day period, is also applicable during non-outage periods. How will this requirement be applied during the transition from “non-outage periods” to “outage periods?”

**Answer:** The requirement of 205(d)(2)(ii) must be applied during the transition into an outage; i.e., an individual must not work more than 8 consecutive days. If the Maintenance Department works a normal 8-hour day Monday through Friday (i.e., 5 days) prior to an outage; then starts outage work on Saturday, (since the unit came line on 0000 hours Saturday), the department may only work a total of 8 consecutive days prior to getting a day off during the outage. To comply with this rule, everyone would have to take Tuesday off, i.e., the 9<sup>th</sup> consecutive day, which is the 4<sup>th</sup> day of the outage.

# Implementation Issues

## NRC Proposed Outage Schedule



### Part C-1 Example 1

#### Work Hour Control for Extended Outages

#### Reduced Work Hour "Credit"

Day	1	2	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
	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Day	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
	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Day	61	62	63	64	65	66	67	68	69	70	71	72	73	74																
	D	D	D	D	D	D	D	D	D	D	D	D	D	D																

\*The two weeks shown in blue, 31-44, form two 7-day periods that the individual or group worked not more than 48 hours. Therefore, individuals on this schedule can work under outage work hour controls for two weeks beyond day 60 (shown in green).

# Implementation Issues

## Outage Two-Week Break

**Example:** Section 205(d)(7) states that when an individual works for “a licensee” during two or more unit outages, and the interval(s) between successive outages is less than 2 weeks, licensees shall start counting the 60 day “outage window” from that start of the first outage. How will this rule be interpreted for outage services personnel who travel from outage to outage without a 2-week period between outages?

- Is the term “a licensee” meant to be taken literally which means the 2-week interval between outages is only applicable to consecutive outages worked at different plants but owned by the same licensee?

**Answer:** The 2-week “break” between outages is necessary to reset the 60-day clock only when working for the same licensee. A worker may work at successive outages, but for different licensees, and get a fresh 60-day clock without a 2-week break between outages.

## Implementation Issues

### Outage 60-Day Limit

**Example:** An individual starts working at a nuclear station on the 59th day of the outage. May this individual work “outage hours” for the next 60 days?

**Answer:** 26.205(4), “During the first 60 days of a unit outage...,” would imply that outage hours may only be worked for 60 days from the start of the outage; and therefore, this individual would only have one day left to work “outage hours.” However, 26.205(6) allows the 60-day period to be extended in 7-day increments for an individual, if that individual works no more than 48 hours for a 7-day period during the first 60 days of the outage. These two rules conflict. 26.205(6) suggests that this individual would get a fresh 60-day window to work outage hours starting at the 59<sup>th</sup> day of the outage.

# Implementation Issues

## Lessons Learned

- **Philosophical discussion/debate with the NRC Staff over controversial issues in proposed rules are appropriate; however, may not adequately capture implementation difficulties**
- **Detailed discussions, using real-world examples of how proposed rules will be implemented, will clearly identify problems with the rule language**
- **Evaluating compliance with a proposed rule using practical implementation examples will identify unintended consequences of the rule**
- **Clear and explicit rule language will avoid the need for additional guidance that “interpret” the intent of the rule language**