



# *M*anaging Fatigue

PRACTICAL GUIDE FOR PIPELINERS





# Fatigue Mitigation: Implications of Control Room Management Rule

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**Charles Alday**





# Objectives

- Review “fatigue” statements in Rule.
- Consider if fatigue is a problem.
- Explain some ways to mitigate fatigue.
- Provide opinions on the implications.

# Fatigue Statements in Rule

- “Each operator must implement methods to **prevent** controller fatigue that could inhibit a controller’s ability to carry out the roles and responsibilities defined by the operator.”

# Fatigue Statements in Rule

- “Establish shift lengths and schedule rotations that provide...time... to achieve **eight hours of continuous sleep.**”
- “**Educate** controller and...supervisor in **fatigue mitigation strategies** and how **off-duty activities contribute** to fatigue.”
- “Train controller and supervisor to **recognize** and mitigate the **effects of fatigue.**”

# Fatigue Statements in Rule

- “Implement **additional measures** to monitor for fatigue when a **single controller** on duty.”
- “**Establish a maximum limits** on controller hours-of-service.” *Allows exceptions for emergency*

# Is Fatigue a Problem?

- Americans average 6.7 hours of sleep per night - National Sleep Foundation(NSF) poll.
- 29% fell asleep or got very sleepy at work.
- 36% have fallen asleep or nodded off while driving.
- 70% have some type of sleep problem.
- As a result,



# Is Fatigue a Problem – Shiftwork?

- Shiftworkers sleep less than 6 hours per day on workdays – (NSF) poll.
- Only 37% of shiftworkers say their schedule allows them time for adequate sleep.
- 48% of shiftworkers have driven drowsy in the past month.
- 49% of shiftworkers work more hours per week than non shiftworkers.

# Is Fatigue a Problem – Pipelines?

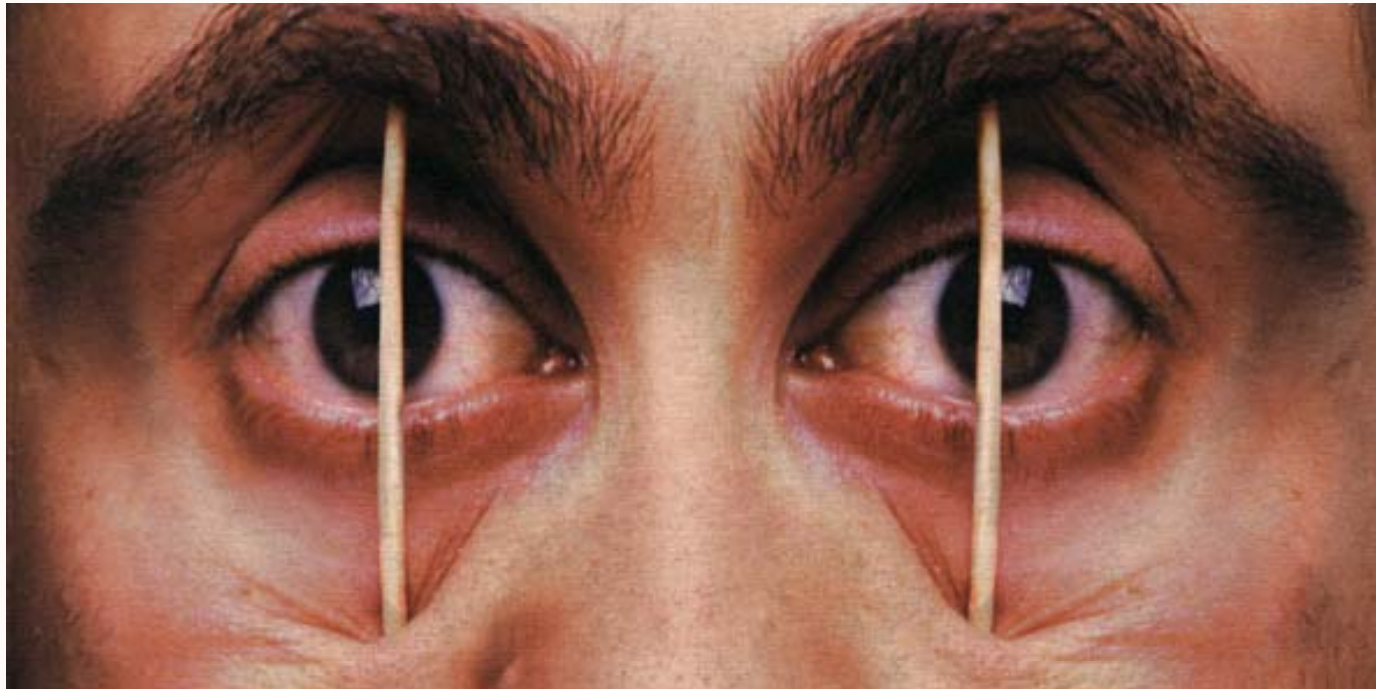
- NTSB thinks so: *Most Wanted List*.
- Congress thinks so: *2006 PIPES Act*.
- PHMSA thinks so: *Proposed Rule*.
- API issued *Recommended Practice*.
- Shift workers think so: *HF Assessments*.
- Pipeliners who work overtime or respond to call outs think so: *HF Assessments*.
- Fatigue contributes to errors: *My opinion*.



# Fatigue Mitigation

- **Sleep about 8 hours** almost every night.
- Other tools and techniques can help mitigate fatigue.
- Ultimately, the quantity and quality of sleep is what matters.

# Fatigue Mitigation Strategy – Not a Good Strategy



# Expectations for Controllers

- Statements from job postings:
  - Work on rotating 12-hour shifts every day of the year.
  - Includes nights, weekends, holidays, and overtime.
  - Maintain a high level of mental alertness.

# Expectations for Controllers

- Statements from job postings:
  - Maintain a high level of attention to detail for extended periods of time.
  - Flawless operation of SCADA system, multi-tasking, high level of concentration and the ability to remain focused under highly stressful situations.

# Expectations for Controllers

- Statements from job postings:
  - Ability to adapt and respond in changing situations.
  - Work in a fast-paced environment, process work rapidly, set priorities, work under pressure.
  - Must be extremely detail-oriented.

# Implications of Rule for You

- Use a “scientific” approach:
  - Current shift, staffing levels, commute time, health issues that current employees may have.
  - Risk-management approach to preventing fatigue.
  - Good research and information in other industries and from other countries.
- Learn differences between acute, chronic, and/or cognitive fatigue.

# Implications of Rule for You

- Evaluate the policies for vacation relief, unexpected absences, and other overtime.
  - Those who are “off” need to be allowed off time.
- Provide ongoing (more than one time) education about fatigue, shiftwork, the importance of sleep, workload.

# Implications of Rule for You

- Sleep is what matters:
  - Hours of sleep in the last 24 hours,
  - Hours of sleep in the last 48 hours,
  - Hours awake before coming to work.
- The amount of sleep is dual responsibility:
  - Employer has to provide opportunity for 8 hours, taking commute time into account.
  - Employee has to take advantage of opportunity, by creating and using a good sleep environment.

# What Is Next?

- It is ultimately about sleep!
- Acknowledge that fatigue is an issue.
- Some companies may have to increase staffing levels.
- Some companies may need to choose a different shift schedule.
- All companies will have to assess, design, develop, implement, and evaluate a plan.



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