

Fatigue Management in the Oil and Gas Industry — Applying ANSI/API RP 755 Hours of Service Guidelines

For employers in the oil and gas industry, fatigue is more than a matter of “a bad night’s sleep.” Fatigued employees can mean serious occupational risks, as well as billions of dollars annually in lost productivity, absenteeism, and other expenses. Recognizing this problem, the American Petroleum Institute (API) has developed *ANSI/API Recommended Practice 755: Fatigue Risk Management Systems for Personnel in the Refining and Petrochemical Industries*.

An important part of this recommended practice is its guidelines for hours of service. Kronos helps support compliance with these guidelines through a workforce management solution designed to address the unique demands of the oil and gas industry.

The price of fatigue

Oil and gas is a 24/7 business. Oil and gas companies are stretched by increasing demand, fierce competition, and global operations that span multiple time zones. From exploration and production, to transportation, to refining and distribution, the oil and gas industry does not sleep.

But employees do sleep — or at least they need to. Unfortunately, more and more of them suffer from fatigue, which the API defines as “reduced mental and physical functioning caused by sleep deprivation and/or being awake during normal sleep hours.”¹

Sleep deprivation has many causes, including extended work hours, insufficient opportunities for sleep, medical conditions, and the effects of drugs or alcohol. Overnight shifts can exacerbate the problem, because

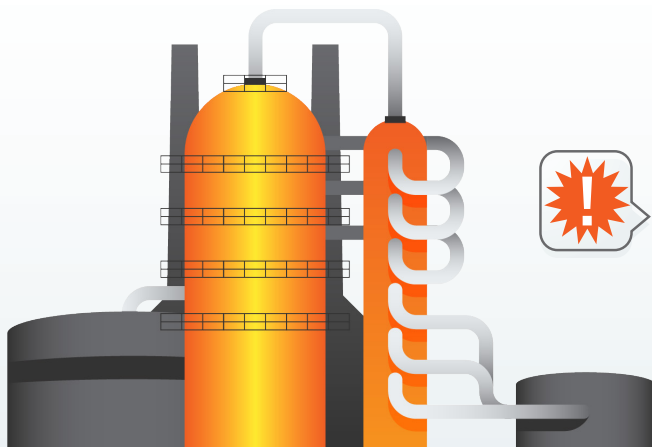
Key Benefits

PREVENT EMPLOYEE BURNOUT by proactively scheduling rest

REDUCE THE COSTS that result from worker fatigue, including accidents, injuries, and absenteeism

ENHANCE COMPLIANCE with ANSI/API RP 755 by automatically applying Hours of Service Guidelines to employee scheduling processes

INCREASE PRODUCTIVITY by reducing fatigue-impaired work



Research shows that each worker with fatigue costs an average of 5.6 hours in lost productive time per week.²

¹ American Petroleum Institute, *Fatigue Risk Management Systems for Personnel in the Refining and Petrochemical Industries: ANSI/API Recommended Practice 755* (American Petroleum Institute, 2010), 1.

² Ricci, Chee, Lorangeau, and Berger, *Journal of Occupational and Environmental Medicine*.

they interfere with the body's natural cycle of sleeping and waking. And sleep deprivation takes many forms: cumulative sleep debt (more than eight hours of inadequate sleep), acute sleep debt (less than eight hours of sleep in the previous 24 hours), and continuous sleeplessness (more than 17 hours since the last sleep period).³

Regardless of its cause or its form, fatigue exacts a heavy price.

- Fatigued employees have less mental and physical capacity to follow work processes and react to changing on-the-job circumstances. In fact, research shows that fatigued employees have as much difficulty performing simple tasks as they would if they were intoxicated.⁴
- Because of this diminished capacity and the nature of their work, petrochemical companies with fatigued employees risk costly accidents and workplace injuries — as well as potential litigation, medical expenses, fines, and irreversible reputation damage.

A proactive model for managing fatigue

Recognizing the costs and risks of fatigue, the API took far-sighted action in 2010, developing ANSI/API RP 755 to help refineries, petrochemical and chemical operations, natural gas liquefaction plants, and other facilities better manage worker fatigue. Although government regulations do not require adoption of the practice, oil and gas organizations are using it as model for mitigating fatigue in their rigs, refineries, plants, and other facilities.

ANSI/API RP 755 is a dynamic roadmap that provides guidance to all stakeholders on understanding, recognizing, and managing fatigue in the workplace. API recommends that oil, gas, and petrochemical organizations mitigate fatigue through a comprehensive fatigue risk management system (FRMS) that is integrated with other safety management systems.

A critical component of ANSI/API RP 755 is its Hours of Service Guidelines. These guidelines provide recommendations for maximum hours worked before time off, as well as requirements for rest between work sets. The guidance applies to employees working night shifts, rotating shifts, extended shifts, or call-outs and who are involved in process-safety-sensitive actions or decisions. API recommends different rules for each shift length (eight, 10, or 12 hours), with the rules varying for normal operations, outage, or extended shifts.

Fatigue costs more than \$136 billion per year in lost productivity, 84 percent of which is due to reduced performance at work, rather than absences.⁵

API 755, using manual processes to adhere to the Hours of Service Guidelines can be a cumbersome and error-prone task. The guidelines are as varied as oil and gas job functions are; rules regarding work sets and rest periods differ for each type of shift. Outages can make work scheduling even more complicated. Employers who rely on outdated systems to manage this process risk additional cost, non-compliance, and lost productivity.

How Kronos can help

Kronos for Energy is an integrated workforce management solution that helps oil and gas companies address employee fatigue, reducing costs, safety risks, and lost productivity. The Kronos solution includes automated scheduling tools designed to help petrochemical companies comply with the Hours of Service Guidelines established by ANSI/API RP 755.

For example, Kronos provides configurable tools that allow organizations to set hours-of-service limits for employees working eight-hour, 10-hour, or 12-hour shifts during normal, outage, or extended-shift operations. The fatigue management guidelines are applied automatically to scheduling, so managers can assign employees to shifts without having to think about the limitations for consecutive shifts or requirements for rest between work sets. Any attempt to assign an employee to a shift that doesn't meet the established guidelines is automatically flagged so that the schedule can be adjusted quickly.

Kronos for Energy can also help to ensure that the right number of employees are assigned to each job or shift, and that assigned employees have the required skills and certifications to perform the work, which also helps minimize employee fatigue. Automated policy management enforces overtime and meal/break requirements, so employees get the proper rest during their shifts.

³ Tim Faveri, *Fatigue Management: Productivity Enhancement and Risk Mitigation Solutions* (Deloitte Inc., 2006), 16.

⁴ D. Dawson and K. Reid, "Fatigue, Alcohol and Performance Impairment," *Nature* 388, no. 6639 (1997): 235.

⁵ J.A. Ricci, E. Chee, A.L. Lorandeanu, and J. Berger, "Fatigue in the U.S. Workforce: Prevalence and Implications for Lost Productive Work Time," *Journal of Occupational and Environmental Medicine*, 49, no. 1 (2007): 1-10.

During outages or other emergencies, Kronos is ready to assist frontline managers. The Kronos solution can immediately create a call list of employees who are available to fill the open shifts, giving priority to qualified workers who best fit the Hours of Service Guidelines. With optional Kronos mobile scheduling tools, the system can even notify employees of open-shift opportunities, using text messaging. Kronos provides oil and gas companies the flexibility to manage unplanned needs — and the workforce insight to better manage the risks of fatigue.

About Kronos

Kronos helps organizations of all sizes unlock opportunities — hidden within their workforce processes — to control labor costs, minimize compliance risk, and improve workforce productivity. Our easy-to-own time and attendance, scheduling, absence management, HR and payroll, hiring, and labor analytics solutions and strategic services provide complete automation, high-quality information, and deliver the experience our customers expect.

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