

MODIFICATION TO EXEMPTIONS—Continued

Application No.	Applicant	Reason for delay	Estimated date of completion
13580-M .....	Carleton Technologies Inc., Orchard Park, NY .....	4	09-30-2005
12384-M .....	OilAir Hydraulics, Inc., Houston, TX .....	4	09-30-2005
13327-M .....	Hawk FRP LLC, Ardmore, OK .....	1	08-31-2005
7774-M .....	Pipe Recovery Systems, Inc., Houston, TX .....	4	08-31-2005
13488-M .....	Faber Industries Spa, (U.S. Agent: Kaplan Industries, Maple Shade, NJ) .....	4	08-31-2005
12988-M .....	Air Products & Chemicals, Inc., Allentown, PA .....	4	08-31-2005
12284-M .....	The American Traffic Safety Services, Assn. (ATSSA), Fredericksburg, VA .....	1	08-31-2005
11579-M .....	Dyno Nobel, Inc., Salt Lake City, UT .....	4	08-31-2005
11241-M .....	Rohm and Haas Co., Philadelphia, PA .....	1	09-30-2005
7280-M .....	Department of Defense, Ft. Eustis, VA .....	4	08-31-2005
10878-M .....	Tankcon FRP Inc., Boisbriand, Qc .....	1, 3	08-31-2005
8162-M .....	Structural Composites Industries, Pomona, CA .....	4	08-31-2005
8718-M .....	Structural Composites Industries, Pomona, CA .....	4	08-31-2005

RENEWAL OF EXEMPTIONS

Application No.	Applicant	Reason for delay	Estimated date of completion
9649-X .....	U.S. Department of Defense, Fort Eustis, VA .....	1, 3	08-31-2005

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 BILLING CODE 4910-60-M

**DEPARTMENT OF TRANSPORTATION**

**Pipeline and Hazardous Materials Safety Administration**

**Pipeline Safety: Countermeasures to Prevent Human Fatigue in the Control Room**

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

**ACTION:** Notice; Issuance of Advisory Bulletin.

**SUMMARY:** The Pipeline and Hazardous Materials Safety Administration (PHMSA) issues this advisory bulletin to owners and operators of natural gas and hazardous liquid pipelines and liquefied natural gas facilities. The purpose of this advisory is to help operators ensure that controllers are not assigned to shift duties while fatigued, to advise pipeline operators on considerations which could cause a reduction of mental alertness or decision making ability, and to encourage safe management practices.

This advisory also responds to the National Transportation Safety Board's (NTSB) Safety Recommendation P-98-30, which urges PHMSA to establish industry guidelines for pipeline controller work schedules to reduce the likelihood of accidents attributable to controller fatigue.

**FOR FURTHER INFORMATION CONTACT:** Florence Hamn by telephone at (202)

366-3015; by fax at (202) 366-4566, or by e-mail at [Florence.Hamn@dot.gov](mailto:Florence.Hamn@dot.gov). General information about the PHMSA's Office of Pipeline Safety (OPS) programs may be obtained by accessing the Web site home page at <http://ops.dot.gov>.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

*NTSB Recommendations*

On November 18, 1998, the NTSB issued Safety Recommendation P-98-30, which urges PHMSA, formerly RSPA, to "assess the potential safety risks associated with rotating pipeline controller shifts and establish industry guidelines for the development and implementation of pipeline controller work schedules that reduce the likelihood of accidents attributable to controller fatigue." This recommendation resulted from NTSB's investigation into the rupture of a hazardous liquid pipeline that released about 957,600 gallons of fuel oil into a river and surrounding areas.

NTSB determined that the probable cause of the rupture was, in part, the failure to ensure that pipeline controllers were properly trained to recognize and respond to operational emergencies, abnormal conditions, and pipeline leaks. NTSB noted that the controller responsible for operation of the failed pipeline had worked under a rotating shift schedule that may have contributed to operator fatigue. NTSB expressed concern about the potential for pipeline controller fatigue from rotating shift schedules.

In 1999, NTSB issued Safety Recommendation P-99-12, which urges PHMSA to establish within two years scientifically based hours of service regulations that set limits on hours of service, provide predictable work and rest schedules, and consider circadian rhythms and human sleep and rest requirements.

This recommendation resulted from the NTSB's review of all transportation accidents reported to U.S. Department of Transportation (DOT) modal administrations over a 10 year period. NTSB noted that it had issued over 70 fatigue-related safety recommendations that resulted from its investigations of major accidents, special investigations, or safety studies that identified operator fatigue as a causal factor. The NTSB noted that scientific research has shown that certain sleep factors can affect fatigue and performance, such as insufficient sleep, irregular schedules, and unpredictable schedules.

*PHMSA Actions and Guidance*

In response to these recommendations, PHMSA has been aggressively working with the pipeline community and federal agencies to evaluate how rotating controller schedules in the pipeline industry may be related to human fatigue and safety outcomes. From this work, PHMSA has developed the following guidance, which can be applied in the pipeline environment:

**Work Schedules/Hours of Service**

Fatigue is a critical safety concern for shift workers, especially workers in the

transportation industry. Many pipeline control operators work 10 and 12 hour shifts, and they generally perform sedentary tasks requiring high levels of vigilance. Consequently, fatigue may be an issue, given the long hours of continuous control monitoring and the reduced likelihood of taking rest breaks. Fatigue can result in sleepiness, drowsiness, reduced alertness, and/or slower reaction time. This in turn can make handling stressful or emergency situations on the job more difficult. Being fatigued can make it difficult to concentrate, thereby increasing the possibility of safety-related control errors.

An individual's body processes have peaks and valleys during every 24-hour period. Time cues, like work rest schedules, help set the sleep pattern. Crossing time zones or changing from a day shift to a night shift forces the sleep pattern to move to a different schedule. Time is required to adjust to the new schedule.

Although individuals differ in their optimal sleep requirements, adults typically need between 6 and 10 hours of sleep in a 24-hour period. Most people, however, require approximately 8 hours of sleep per day. When adults get less than 5 hours of sleep over a 24-hour period, peak mental abilities begin to decline. Additionally, sleep deprivation of just a couple of days can slow response times and decrease initiative. Sleep deficit leads to less alertness and slower response times.

Although working non-traditional shifts is a common and necessary part of the pipeline control operator's job, the countermeasures recommended in this advisory can help reduce the potential detrimental effects of shift work on worker safety.

#### Control Room Environment

Pipeline control operators generally remain seated for long periods of time, and the environment of the control room can affect an individual's sleep patterns. The sedentary work of control operators can add to shift-work fatigue and reduce an operator's alertness because it decreases blood flow and causes sleepiness. An individual's sleep pattern is affected by the presence of light and darkness. By incorporating specific design features, such as lighting and temperature control, operator alertness can be maximized at any time of the day or night, which in turn enhances safety by reducing fatigue and control errors.

#### Training and Education

Because adequate sleep is the main way to address fatigue, controller

education programs must emphasize the recognition of the signs of sleep deprivation. Operators can improve safety by analyzing working conditions, addressing operational safety issues, and conducting sleep-safety training. For example, teaching control supervisors that work rotation schedules that go in the direction of the sun have been found to reduce the negative effects of fatigue. Furthermore, training controllers on the number of hours of sleep needed to reduce fatigue and methods they can use to fall asleep, such as dark light shades, can provide controllers with the tools they need to control fatigue.

#### Operator Fatigue Studies

Several studies are electronically available that provide more information about operator fatigue, such as the U.S. Department of Transportation's Commercial Transportation Commercial Transportation Operator Fatigue Management Reference (2003). This document can be viewed at <http://ops.dot.gov/regs/reports/Fatigue%20Management%20Reference.pdf>. This publication also references many other studies and reports on human fatigue.

PHMSA urges operators to evaluate potential risks associated with pipeline operator fatigue and shift rotation schedules and take measures to alleviate such risks.

#### II. Advisory Bulletin (ADB-05-06)

*To:* Owners and operators of natural gas and hazardous liquid pipeline and liquefied natural gas facilities.

*Subject:* Countermeasures to Prevent Human Fatigue in the Pipeline Control Room.

*Purpose:* The purpose of this advisory is to address situations where fatigue could reduce the ability of pipeline operators and their controller staff to operate pipelines in a safe condition. This advisory is designed to help operators ensure that controllers are not assigned to shift duties while fatigued, to advise pipeline operators on considerations which could cause a reduction of mental alertness or decision making ability, and to encourage management practices which will promote safety. This advisory provides guidance to gas and liquids pipeline operators and their pipeline controllers.

*Advisory:* The functions of a controller are often sedentary tasks requiring high levels of vigilance. Consequently, fatigue may be an issue, given long hours of continuous control monitoring and the reduced likelihood of taking rest breaks. Fatigue can result

in sleepiness, drowsiness, and/or reduced alertness. These factors can decrease the ability of the pipeline controller to safely perform critical functions. It is known that fatigue is significantly underestimated as a contributing factor in conventional accident reporting in many transportation modes because it is difficult to accurately detect. The scientific knowledge on human alertness has improved in recent years, but has not been broadly applied to managing operator fatigue because it is difficult to determine how much fatigue has contributed to the cause and/or the magnitude of pipeline accidents. PHMSA, however, has learned that there are measures that can be taken to reduce the detrimental effects of shift work on worker safety, and provides the following guidance for operators to consider:

#### Work Scheduling and Hours of Service

An individual's body processes have natural peaks and valleys during every 24-hour period. Adults typically need between 6 and 10 hours of sleep in each 24-hour period, and suffer from declining peak mental abilities if they get less than 5 hours of sleep. Natural sleep schedules are affected by shifts in routine, and can be affected by non-routine work schedules. This can lead to fatigue or impair alertness if operators are working non-standard shifts or are working long hours without enough rest. PHMSA advises pipeline operators to consider:

- Developing shift rotation practices to minimize fatigue caused by the disruption of normal sleep patterns.
- Limiting work schedules to no more than 12 hours in any 24 hour period except in extraordinary or emergency situations.
- Developing a policy or procedure to manage unusual circumstances where a controller is required to work more than 12 hours in any 24 hour period.
- Scheduling at least a 10 hour break between work periods.
- Scheduling overtime on an individual basis, not the whole shift of controllers and controller supervisors. Controller fatigue and alertness should be considered in allowing overtime.
- Developing guidelines for scheduling controllers and supervisors in emergency situations taking into consideration controller fatigue and alertness.
- Establishing work relief periods and other measures during controller shifts to promote alertness and enhance capabilities for effective decision making.

### Control Room Environmental Factors

An individual's sleep pattern is also influenced by external factors. Many control rooms are designed for day workers. In 24-hour pipeline operations, alertness and vigilance on the night shift is equally as important and should be addressed by the operator. Although there are many methods that can be employed to reduce operator fatigue in the control room, PHMSA advises pipeline operators to consider:

- Using the available information on control room environments to incorporate environmental measures that reduce fatigue and promote alertness.
- Adjusting environmental factors to specifically address the problems associated with night shifts and shift rotation schedules.
- Sharing information across the industry on environmental factors in control rooms that can affect fatigue and controller alertness.

### Training and Education

Training and education of both supervisors and controller personnel is critical to the prevention of fatigue-related pipeline incidents. These efforts can maximize the safety and performance of pipeline control personnel by minimizing the effects of fatigue in shift-work operations. Therefore, PHMSA advises pipeline operators to consider:

- Educating controllers and controller supervisors on factors that impact human fatigue.
- Training supervisors of controllers to recognize signs of stress and fatigue both on duty and when reporting for duty.
- Sharing information across the industry on training of controllers and supervisors on the effects of fatigue on controller alertness and decision making.

Issued in Washington, DC, on August 5, 2005.

**Theodore L. Willke,**

*Deputy Associate Administrator for Pipeline Safety.*

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## DEPARTMENT OF TRANSPORTATION

### Research and Innovative Technology Administration

#### Agency Information Collection; Activity Under OMB Review; Submission of Audit Reports—Part 248

**AGENCY:** Research & Innovative Technology Administration (RITA),

Bureau of Transportation Statistics (BTS), DOT.

**ACTION:** Notice.

**SUMMARY:** In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), this notice announces that the Information Collection Request (ICR) described below is being forwarded to the Office of Management and Budget (OMB) for extension of currently approved collections. The ICR describes the nature of the information collection and its expected burden. The **Federal Register** notice with a 60-day comment period soliciting comments on the following collection of information was published on December 17, 2004 (69 FR 75602).

**DATES:** Written comments should be submitted by September 12, 2005.

**FOR FURTHER INFORMATION CONTACT:** Bernie Stankus, Office of Airline Information, RTS-42, Room 4125, RITA, BTS, 400 Seventh Street, SW., Washington, DC 20590-0001, Telephone Number (202) 366-4387, Fax Number (202) 366-3383 or e-mail [bernard.stankus@dot.gov](mailto:bernard.stankus@dot.gov).

#### SUPPLEMENTARY INFORMATION:

#### Bureau of Transportation Statistics (BTS)

*Title:* Submission of Audit Reports—Part 248.

*Type of Request:* Extension of a currently approved reporting requirement.

*OMB Control Number:* 2138-0004.

*Affected Public:* Certificated air carriers.

*Number of Respondents:* 85.

*Number of Responses:* 85.

*Total Annual Burden:* 21 hours.

*Abstract:* BTS collects independent audited financial reports from U.S. certificated air carriers. Carriers not having an annual audit must file a statement that no such audit has been performed. In lieu of the audit report, BTS will accept the annual report submitted to the stockholders. The audited reports are needed by the Department of Transportation as: (1) A means to monitor an air carrier's continuing fitness to operate, (2) reference material used by analysts in examining foreign route cases, (3) reference material used by analysts in examining proposed mergers, acquisitions and consolidations, (4) a means whereby BTS sends a copy of the report to the International Civil Aviation Organization (ICAO) in fulfillment of a United States treaty obligation, and (5) corroboration of a carrier's Form 41 filings.

The Confidential Information Protection and Statistical Efficiency Act of 2002 (44 U.S.C. 3501 note), requires a statistical agency to clearly identify information it collects for non-statistical purposes. BTS hereby notifies the respondents and the public that BTS uses the information it collects under this OMB approval for non-statistical purposes including, but not limited to, publication of both Respondent's identity and its data, submission of the information to agencies outside BTS for review, analysis and possible use in regulatory and other administrative matters.

**ADDRESSES:** Send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725-17th Street, NW., Washington, DC 20503, Attention: BTS Desk Officer.

Comments are invited on: whether the proposed collection of information is necessary for the proper performance of the functions of the Department of Transportation. Comments should address whether the information will have practical utility; the accuracy of the Department's estimate of the burden of the proposed information collection; ways to enhance the quality, utility and clarity of the information to be collected; and ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

Issued in Washington, DC, on August 5, 2005.

**Donald W. Bright,**

*Assistant Director, Office of Airline Information.*

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## DEPARTMENT OF TRANSPORTATION

### Research & Innovative Technology Administration

#### Agency Information Collection; Activity Under OMB Review; Reporting Required for International Civil Aviation Organization (ICAO)

**AGENCY:** Research & Innovative Technology Administration (RITA), Bureau of Transportation Statistics (BTS), DOT.

**ACTION:** Notice.

**SUMMARY:** In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), this notice announces that the Information Collection Request (ICR) described below is being forwarded to the Office