

Dear oil and gas company representative,

The National Institute for Occupational Safety and Health (NIOSH) will be conducting a study to learn more about fatigue in the oil and gas industry. The purpose of this study is to better understand the factors for fatigue that affect U.S. onshore oil and gas extraction (OGE) workers; identify worker and company factors to consider when developing and implementing fatigue management strategies in the OGE industry; and to describe how fatigue mitigation strategies are being used in the OGE industry. NIOSH improves worker safety and health through research and education. NIOSH is not a regulatory agency and does not enforce any laws.

Participation in this study can have several benefits to you and your workers. We can provide you with the aggregate results from your workforce, where anonymity can be guaranteed to the worker. The results of this study will guide future safety and health research in the OGE industry that will improve the safety and health of all workers, including those from your company. Study results will be available in scientific journals, trade magazines, conferences, the Internet, or by contacting NIOSH. Company and worker participation in this study is strictly confidential. No personal or company identifiers will be listed in any reports of the study results. We will inform each of your workers about the purpose of the research study and that it is their choice to participate. We will also guarantee their answers will be anonymous, except if the worker reports directly to us an imminent hazard in their work environment (42CFR 85a). If this occurs, we will report the hazard to our company contact and follow up with them to ensure the hazard has been rectified.

We would like to come to your site (man camp, training center, trucking yard, well site, or other location) to conduct fatigue assessments, worker focus groups, and interviews with field supervisors and senior health and safety leadership. The participation of your company is completely voluntary. This study will be achieved through the following aims:

- **Aim 1 (Fatigue assessments):** Examine occupational and non-occupational determinants of fatigue in onshore OGE workers. Workers and field-level supervisors meeting the inclusion criteria will be invited to participate in Aim 1 of the study. Upon enrollment into the study, participants will be asked to complete a baseline questionnaire with questions related to their current work schedule, sleep, fatigue, safety management, job demands, health, and demographics. Participants will also be assigned and trained to wear an actigraphy wristband, these are small wristwatch-like devices that are non-intrusive and record limb activity as a measure of sleep-wake movement, for continuous data collection during the data collection period. Participants will also be asked to complete daily pre- and post-shift questionnaires and alertness testing on an electronic device.
- **Aim 2 (Worker focus groups and field-level supervisor interviews):** Identify worker and organizational factors critical to fatigue management in the OGE industry. Aim 2 consists of worker focus groups and one-on-one interviews with field-level supervisors. Participants from Aim 1 will be invited to participate in Aim 2. Focus groups will consist of 6–8 workers per group. Both focus groups and interviews will be facilitated by two NIOSH study personnel, one moderating and the other taking notes and managing the recording (if study participants

consent to recording). All focus groups and interviews will take place in a private location at the worksite where workers can speak freely. All data will be kept confidential. No personal identifiers, worker names, OGE company, or site names will be recorded in interview and focus group notes or elsewhere. Participant identity will be kept confidential and, if needed, will be referred to by a code identifier.

- **Aim 3 (Senior health and safety leadership interviews):** Describe how fatigue mitigation strategies are being used in the onshore OGE industry. Health and safety (H&S) leaders identified through Aim 1 and Aim 2 participating companies, as well as other H&S professionals in leadership positions recruited from other companies or H&S consultants providing service to small OGE contractors will be recruited for Aim 3. Senior H&S leaders will be asked to describe the levels of concern about worker fatigue at their companies or companies they work with, as well as the barriers and facilitators of addressing fatigue. Two NIOSH study personnel, one moderating and the other taking notes and managing the recording (if study participants consent to recording) will conduct the interview virtually. No personal identifiers, worker names, OGE company, or site names will be recorded. Participant identity will be kept confidential and, if needed, will be referred to by a code identifier.

If we come to your location, we would invite all workers at that location to participate; however, participation is completely voluntary. The study will take place over a 12-to-14-day period. The expected time commitment is as follows:

- Day 1 only: Informed consent (30 minutes)
- Day 1 only: Training instructions for completing alertness tests and using actigraphy wristband (15 minutes)
- Day 1 only: Baseline Questionnaire (15 min)
- Daily: Pre-shift Questionnaire (3 min)
- Daily: Post-shift Questionnaire (3 min)
- Twice per day: Alertness test (5 min)
- Continuous: 12- 14 days of actigraphy wristband wear
- One focus group (60 minutes) or one-on-one interview (60 minutes)

We would like to provide workers with a token of appreciation for completing the survey, if you approve. Workers or supervisors completing the items in Aim 1 would receive \$50 gift card and an additional \$10 gift card for participating in Aim 2. Senior H&S leaders participating in Aim 3 are not eligible to receive a gift card.

I have enclosed informed consents for the study and can send you any additional information you may need to make an informed decision. We hope you will consider participation in this survey. We feel that this study can help to better understand the extent to which fatigue and its antecedents are affecting U.S. onshore OGE workers. Please let me know if I can answer any additional questions.

Sincerely,
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