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DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[60Day-14-0975]

Proposed Data Collections Submitted for

Public Comment and Recommendations

The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. To request more information on the below proposed project or to obtain a copy of the information collection plan and instruments, call 404-639-7570 or send comments to LeRoy Richardson, 1600 Clifton Road, MS-D74, Atlanta, GA 30333 or send an email to omb@cdc.gov.

Comments submitted in response to this notice will be summarized and/or included in the request for Office of Management and Budget (OMB) approval. Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility;

(b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected;(d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; to develop, acquire, install and utilize technology and systems for the purpose of collecting, validating and verifying information, processing and maintaining information, and disclosing and providing information; to train personnel and to be able to respond to a collection of information, to search data sources, to complete and review the collection of information; and to transmit or otherwise disclose the information. Written comments should be received within 60 days of this notice.

Proposed Project

Virtual Reality to Train and Assess Emergency Responders (OMB No. 0920-0975, expires 07/31/2016) – Revision - National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

NIOSH, under P.L. 91-173 as amended by PL 95 -164 (Federal Mine Safety and Health Act of 1977), and PL 109-236 (Mine Improvement and New Emergency Response Act of 2006) has the responsibility to conduct research to improve working conditions and to prevent accidents and occupational diseases in underground coal and metal/nonmetal mines in the U.S.

The turn of the 21st century started with much promise for the coal mining industry. Because there was only one underground disaster in the 1990s, it seemed that emergency response in the United States no longer needed to be a top research priority. However, major coal mine disasters between 2001 and 2010 have resulted in 65 fatalities. These events highlighted the critical need to balance investments to reduce low probability/high severity events with those that focus on frequent, but less severe injuries and illnesses.

The present research project seeks to determine optimal use of virtual reality (VR) technologies for training and assessing

mine emergency responders using the Mine Rescue and Escape Training Laboratory (MRET Lab). Responders include specially trained individuals, such as mine rescue or fire brigade team members, and also managers and miners who may either be called upon to respond to an emergency situation or engage in self-protective actions in response to an emergency. This project is a step toward determining how new immersive virtual reality technologies should be used for miner training and testing in the US.

The project objective will be achieved through specific aims in two related areas as illustrated below.

Training assessment

1. Evaluate four training modules
2. Evaluate participant reactions
3. Develop guidelines

Training development

4. Use 3D technologies to develop a prototype for a mine rescue closed-circuit breathing apparatus (e.g., Dräger BG4).

To accomplish these goals over the life of the project, researchers will utilize a variety of data collection strategies, including self-report pre-and post-test instruments for assessing trainee reaction and measuring learning. Data collection will take place with approximately 210 underground

coal miners over three years. The respondents targeted for this study include rank-and-file miners, mine rescue team members, and mine safety and health professionals. A sample of 210 individuals will be collected from various mining operations and mine rescue teams which have agreed to participate. All participants will be between the ages of 18 and 65, currently employed, and living in the United States. Findings will be used to improve the safety and health of underground coal miners by assessing the efficacy of immersive VR environments for teaching critical mine safety and health skills.

To assess learning as a result of training, each participant will complete a pre-training questionnaire, a post-simulation questionnaire, and a post-training questionnaire. Participants evaluating the closed-circuit breathing apparatus training will only complete a version of the pre-training questionnaire. There is no cost to respondents other than their time.

As stated previously in the previously approved information collection request, research activities involving rank-and-file underground coal miners who participate in the mine escape training may occur at either the MRET Lab or in an off-site classroom or other typical instructional setting either at an above-ground mine safety training facility, mine administration building, or a university or academic environment (hereinto

referenced as the "classroom setting"). Having these two subsamples allows us to better assess uses for VR training applications, determine the potential additive value of training provided in the MRET Lab, and the potential benefits of adapting simulation-based mine emergency training to a broader audience. To accommodate an appropriate amount of mine escape participants for both the MRET Lab modules and classroom settings, we are requesting a revision in order to add 60 more participants to our 150 participant data collection cap, which would ideally leave us with 30 BG4 participants, 60 mine rescue participants (MRET Lab), 60 mine escape participants (MRET Lab), and 60 mine escape participants (classroom setting), for a new grand total of 210 participants.

Estimated Annualized Burden Hours

Type of Respondent	Form Name	No. of Respondents	No. Responses per Respondent	Average Burden per Response (in hours)	Total Burden Hours
Dräger BG4 participants (i.e., closed circuit breathing apparatus training participants)	Pre-Training Questionnaire	30	1	3/60	2
Mine Rescue participants	Pre-Training Questionnaire	60	1	3/60	3
	Post-Simulation Questionnaire	60	1	3/60	3

	Post-Training Questionnaire	60	1	3/60	3
Mine Escape participants	Pre-Training Questionnaire	120	1	3/60	6
	Post-Simulation Questionnaire (MRET Lab version)	60	1	3/60	3
	Post-Simulation Questionnaire (Field Test Version)	60	1	3/60	3
	Post-Training Questionnaire	120	1	3/60	6
Mine Escape/Longwall Mining participants	Pre/Post-Training Knowledge Test	60	1	6/60	6
Mine Escape/Continuous Mining participants	Pre/Post-Training Knowledge Test	60	1	6/60	6
Mine Rescue/Longwall Mining participants	Pre/Post-Training Knowledge Test	30	1	6/60	3
Mine Rescue/Continuous Mining participants	Pre/Post-Training Knowledge Test	30	1	6/60	3
Total					47

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Office of Scientific Integrity
Office of the Associate Director for Science
Office of the Director
Centers for Disease Control and Prevention

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