OE

# Safeguarding the Human Element

By Kevin McSweeney, ABS Safety and Human Factors Group Manager

As the offshore industry expands into more exacting environments where extreme temperatures and higher pressures increase operational risk, safety processes and appropriate worker behavior are essential to reducing hazards. Offshore personnel are being called on to manage multiple industrial safety factors on board facilities and rigs to lessen the probability of an incident or "close call" (near-miss) event.

If an event does occur, international organizations, government, and non-governmental organizations conduct incident investigations to help identify causes so corrective actions can be developed and implemented to improve safety. ABS uses this information and additional resources to work with industry and regulatory bodies to create publications that can help minimize incidents. One example is the Guidance Notes, which describe how to perform incident investigation activities, gather and analyze data, determine root cause, and generate corrective action recommendations.

Class guidance also includes such topics as crew habitability, applying ergonomics in equipment/machinery spaces, noise and vibration control, assessing safety culture, performing job safety analyses, change management, and the appropriate design of technical procedures and manuals. In both industrial and process safety, these tools provide guidance that can be used to verify that the design and arrangement of ships and offshore structures are habitable and provide safe work environments.

When ergonomics, human factors, and safety practices and principles are applied during the earliest stages of design, many hazards can be eliminated or controlled. For example, providing appropriate access for equipment maintenance and operation can help eliminate posture and strain-related injuries, and using an appropriate angle of inclination for stairs can help eliminate slips and fall injuries.

Admittedly, some hazards cannot be completely "engineered out" of the workplace. In these instances, owners and operators must rely on substituting a less-hazardous process or piece of equipment, use administrative controls such as training and additional procedures, or introduce personal protective equipment (PPE) to help protect the worker or the process. It is important to recognize that using substitution, administrative controls, and PPE require that workers modify their behavior, including following the new procedures, retaining new training information, and using the new PPE.

## Data drives improvement

In 2009, ABS and Lamar University in Beaumont, Texas, initiated the Mariner Safety Project, collocating more than 20,000 safety incident and near miss reports contributed by industry partners.

This project has evolved into the Mariner Safety Research Center, an online resource database that acts as a 'safety clearinghouse,' with more than 50,000 records. Data includes benchmarking and trending statistics, safety spotlights that focus on unique hazards, and ergonomics and safety discussion papers about hazards such as hearing loss, human performance in extreme environments, and slips, trips, and falls. The result of having the data available in one place is that the information can be used to improve decisions.

While the oil and gas industry is adopting technologies to improve efficiency and decrease the number of manual operations vulnerable to human error, informed decision-making remains a critical component in offshore operations. Class is committed to verifying that the human element is safeguarded as the industry, equipped with advanced technologies, moves into more remote and challenging frontiers. ■