

## Regulatory Update

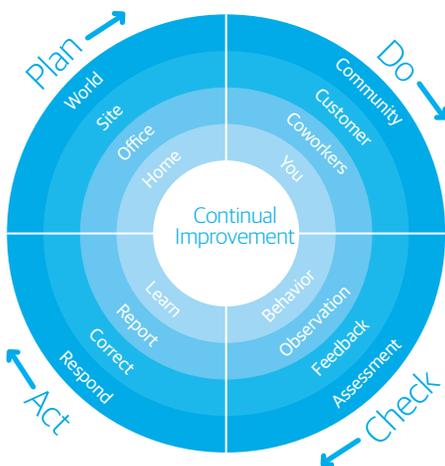
# Newly Issued International Organization for Standardization (ISO) Standards and Guidance

### ISO standards in this update include:

- ISO 14001 – Environmental management systems
- ISO 16745 Series – Sustainability in buildings and civil engineering works
- ISO 45001 – Occupational health and safety
- ISO 52000 Series – Energy performance of buildings

ISO standards facilitate international development and help solve world-wide issues related to environmental management, sustainability, greenhouse gas (GHG) management, health and safety, and energy management.

ISO standards follow the Plan-Do-Check-Act (PDCA) Cycle to foster continual improvement and to allow the effective implementation of combined management systems (e.g., environmental, health, and safety).



## Guidance on EMS, Building Sustainability and Occupational Health and Safety



### ISO 14001

#### Environmental management systems (EMS) – A practical guide for SMEs

ISO's EMS standard underwent major revision in 2015. Organizations certified to ISO 14001:2004 have a three-year grace period to transition to the new standard to maintain certification. In general, the update transitioned the previous edition to the ten-element structure, increased focus on leadership, and included more outward facing requirements and considerations. To assist practitioners and ISO 14001:2015 users, ISO published ISO 14001:2015 – Environmental management systems – A practical guide for SMEs.

The guide follows the new ten-element structure and provides background, guidance, and information on tailoring ISO 14001:2015 to fit any organization. It discusses the new requirements and how to best implement them, and includes helpful case studies.

The guide also contains an overview of the PDCA Cycle within the context of the EMS standard and how the PDCA Cycle can be applied within an individual element. Importantly, the guide discusses tailoring existing organizational procedures and processes to meet ISO's requirements, rather than inventing or implemented new processes.

### ISO 16745 Series

#### Sustainability in buildings and civil engineering works

ISO recently published two standards for measuring the carbon metric of existing buildings. ISO 16745-1 provides guidance and direction for calculation, reporting, and communication while ISO 16745-2 provides guidance on verifying carbon metrics. ISO considers the ISO 16745 series the "first global tool for measuring carbon footprint of buildings."

The standard methodology is intended as a universal tool for "consistent and comparable" GHG measurement, information, and reporting. The methodology is scalable and can be used on a city or building or by users with varying levels of calculation resources and sophistication. Indirect uses of ISO 16745 include improved consideration of GHGs in business decision-making and international benchmarking.



#### About CH2M

CH2M leads the professional services industry delivering sustainable solutions benefiting societal, environmental and economic outcomes with the development of infrastructure and industry. In this way, CH2Mers make a positive difference providing consulting, design, engineering and management services for clients needing world-class solutions in environmental; industrial and advanced facilities; transportation; and water markets, from iconic infrastructure to global programs like the Olympic Games.

Ranked among the World's Most Ethical Companies and top firms in environmental consulting and program management, CH2M in 2016 became the first professional services firm honored with the World Environment Center Gold Medal Award for efforts advancing sustainable development.

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## ISO 45001

### Occupational health and safety management systems

ISO is developing ISO 45001 to address occupational health and safety. The new standard will follow the same organizational structure as ISO 9001:2015 and 14001:2015, increasing the ability to effectively implement a combined management system. The new standard will incorporate health and safety requirements found in existing national standards, Occupational Health and Safety Assessment Series 18001 and the International Labor Organization Occupational Safety and Health Guidelines.

As of September 2017, ISO 45001 was in the draft enquiry stage (DIS) and is being reviewed and ratified by ISO members (e.g., ANSI). ISO expects an approved final DIS in late 2017, with publication in 2018.

## ISO 52000 Series

### Energy performance of buildings - Overarching EPB assessment

ISO recently published two related standards for measuring the energy performance of buildings. ISO 52000-1 provides the general framework and procedures for implementation and ISO 52000-2 provides background information and implementation instructions for ISO 52000-1. The ISO 52000 series determines total energy performance by assessing energy used by constituent processes (i.e., heating, cooling, lighting, etc.). It also contains methods for calculating energy consumption and performance, key performance indicators, as well as ratings and certificates for energy infrastructure.

These combined standards will help building engineers design and assess energy requirements and performance of new and existing construction. The ISO 52000 series will complement ISO's existing Energy Management Standard documented in ISO 50001:2011. Implementation of ISO 50001:2011 has potential to increase energy efficiency, reduce energy costs, and improve organizational energy performance. Like EMS, ISO 50001:2011 follows the PDCA Cycle.

## How We Can Help?

CH2M provides full service, cost-effective management systems support, including:

- Gap analyses and management system implementation
- Energy audits and baselines
- GHG inventories and reporting
- Training and incident tracking
- Corrective/preventive action tracking

CH2M has been performing ISO 14001:2015 gap analyses for federal and commercial clients since publication of the new standard. Gap analyses provide clients with a roadmap of changes needed to conform with the new standard. We are currently assisting a federal client in migrating their EMS to ISO 14001:2015 and working towards external certification. We are performing similar work for the same client as they prepare for ISO 45001's publication. Implementation of environmental, health, and safety management systems has resulted in a significant decrease in environmental compliance issues, worker injuries, and being awarded Star Status in the Occupational Safety and Health Administration's Voluntary Protection Program.

In the past five years, CH2M has performed energy audits on over 200 million square feet of buildings, resulting in \$700 million in energy savings projects identified and an estimated annual cost savings of \$77 million.

