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Occupational health and safety management — Risks arising from climate change and climate change action — Guidance for organizations

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 283*, Occupational health and safety management.*

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Climate change poses significant challenges to organizations worldwide, impacting not only the environment but also occupational health and safety (OH&S), meaning that it is important that organizations proactively address the OH&S challenges arising from climate change and climate change actions. This document provides comprehensive guidance for organizations to manage these risks and opportunities effectively.

This document is intended for all organizations, whether or not they have implemented informal or formal OH&S management system such as ISO 45001. Such a management system includes the relevant elements of a Plan-Do-Check-Act (PDCA) system. Taking a systems approach facilitates the coordination of resources and efforts, which is important in managing climate change.

This document will assist organizations to better understand the impacts of climate change and climate change actions on OH&S and to create resilient and sustainable work environments that protect the health and safety of workers.

It encompasses OH&S risks resulting from climate change itself, as well as those arising from climate change adaptation efforts, such as changes in work processes or infrastructure upgrades, and those associated with climate change mitigation efforts aimed at reducing greenhouse gas (GHG) effects or an organization's carbon footprint.

It also highlights the opportunities to enhance workplace health and safety through proactive measures.

Due to the nature of the subject, many definitions and concepts have been imported from the fields of climate change science and adapted to the context of hazard identification and assessment and control of OH&S risks, with focus on both health and safety impacts and opportunities.

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Occupational health and safety management — Risks arising from climate change and climate change action — Guidance for organizations

1 Scope

This document gives guidance to organizations on planning for and addressing occupational health and safety (OH&S) risks arising from climate change and climate change action, including:

— OH&S risks which arise as a result of climate change adaptation efforts, including changing ways of working and work processes, and infrastructure upgrades;

— OH&S risks arising from climate change mitigation actions;

— OH&S opportunities arising from both climate change adaptation and mitigation actions.

This document is applicable to all organizations taking a systematic approach to addressing OH&S risks arising from climate change. It is applicable to organizations of all sizes including small and medium-sized enterprises (SMEs).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
climate
statistical description of weather in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years

Note 1 to entry: The usual period for considering these variables is 30 years, as defined by the World Meteorological Organization.

Note 2 to entry: The relevant quantities are most often near-surface variables such as temperature, precipitation and wind.

[SOURCE: ISO 14090:2019, 3.4]

3.2
climate change
change in *climate* (3.1) that persists for an extended period, typically decades or longer

Note 1 to entry: Change in climate can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties.

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Note 2 to entry: Climate change can be due to natural processes, internal to the climate system, or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use.

[SOURCE: ISO Guide 84:2020, 3.1.2]

3.3
climate change action
initiative to achieve climate change measures or goals based on mitigation and/or adaptation priorities under climate change policies

Note 1 to entry: Climate change action intends to a) reduce or prevent emissions or enhance removals, and b) reduce vulnerability, maintain and increase the resilience, and increase adaptive capacity of human and ecological systems from adverse *climate change impacts* (3.5).

[SOURCE: ISO 14080:2018, 3.1.1.1, modified — "change" added to the term.]

3.4
climate change adaptation
process of adjustment to actual or expected *climate* (3.1) and its effects

Note 1 to entry: In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.

Note 2 to entry: In some natural systems, human intervention can facilitate adjustment to expected climate and its effects.

[SOURCE: ISO 14090:2019, 3.1, modified — "climate change adaptation" replaced "adaptation to climate change" as the preferred term.]

3.5
climate change impact
effect on natural and human systems of extreme weather and climate events and of *climate change* (3.2)

Note 1 to entry: Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services and infrastructure due to the interaction of climate change or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. Impacts are also referred to as consequences and outcomes. The impacts of climate change on geophysical systems, including floods, droughts and sea level rise, are a subset of impacts called "physical impacts".

[SOURCE: ISO 14090:2019, 3.8, modified — "climate change" added to the term. "of extreme weather and climate events and of climate change" added to the definition. "In the context of climate change" deleted from Note 1 to entry.]

3.6
climate change mitigation
human intervention to reduce greenhouse gas (GHG) emissions or enhance GHG removals

[SOURCE: ISO 14080:2018, 3.1.2.1, modified — "to reduce greenhouse gas (GHG) emissions or enhance GHG removals" replaced "to reduce the sources or enhance the sinks of greenhouse gases (GHGs)" in the definition.]

3.7
climate change risk
risk of negative *climate change impacts* (3.5) that reflects the interaction among vulnerability, exposure and hazard

Note 1 to entry: A risk assessment can include the consideration of vulnerabilities, exposure and climate change hazards, or the consideration of likelihoods and consequences.

[SOURCE: ISO Guide 84:2020, 3.1.6]

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3.8
extreme weather event
event that is significantly different from typical weather patterns or occurrences

Note 1 to entry: What is considered extreme can change based on location and can change over time.

3.9
impact chain
analytical approach that enables understanding of how given hazards generate direct and indirect impacts which propagate through a system at risk

3.10
organization
person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Note 1 to entry: The concept of organization includes, but is not limited to, sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

3.11
occupational health and safety risk
OH&S risk
combination of the likelihood of occurrence of a work-related hazardous event(s) or exposure(s) and the severity of injury and ill health that can be caused by the event(s) or exposure(s)

Note 1 to entry: In this document, referring to "OH&S risk" means OH&S risks and risks to the OH&S management system.

Note 2 to entry: OH&S risk includes the "cause – effect" relationship of cascading risks (chain of events) in the context of *climate change* (3.2), for both existing and new/emerging risks.

[SOURCE: ISO 45001:2018, 3.21, modified — Notes 1 and 2 to entry added.]

4 Framework for the management of climate change impacts on OH&S

4.1 General framework and PDCA cycle

4.1.1 General

An informal or formal system to manage OH&S risks and opportunities outlines the need for an organization to identify issues that can affect its ability to achieve the intended result(s). A formal management system includes the relevant elements of a PDCA system (see Figure 1). Climate change is an external issue (see the examples given in Annex B) which poses OH&S risks (and opportunities) and can require the organization to adapt its OH&S management system, due to changes in context, risks, availability of technologies and other aspects related to OH&S management.

It is crucial that the organization analyses its context before adopting relevant changes in production, work organization, introduction of technologies and other actions.

Actions to address the effects of climate change by introducing new work systems and technologies can create new OH&S risks and opportunities. The risks can impact workers' mental and physical health and safety.

Regardless of the framework adopted, it is important that processes and arrangements are tailored to reflect the organization and its context. This includes tailoring to reflect the demands on the organization's management of OH&S risk(s) that arise from climate change. This clause highlights some of the key areas for attention.

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