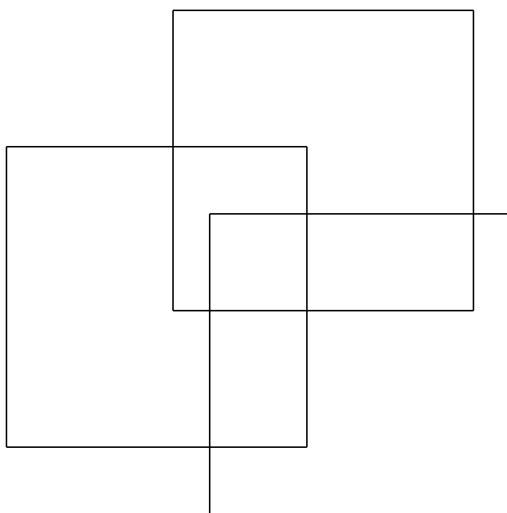




Note on the proceedings

**Tripartite Sectoral Meeting on Occupational Safety and Health and Skills
in the Oil and Gas Industry operating in Polar and Subarctic Climate Zones
of the Northern Hemisphere**
(26–29 January 2016)



TSMOGI/2016/11

INTERNATIONAL LABOUR ORGANIZATION

Sectoral Policies Department

Note on the proceedings

**Tripartite Sectoral Meeting on Occupational Safety and Health and Skills
in the Oil and Gas Industry operating in Polar and Subarctic Climate Zones
of the Northern Hemisphere**
(26–29 January 2016)

Geneva, 2016

INTERNATIONAL LABOUR OFFICE, GENEVA

Copyright © International Labour Organization 2016
First edition 2016

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to ILO Publications (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland or by email: rights@ilo.org. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered with reproduction rights organizations may make copies in accordance with the licences issued to them for this purpose. Visit www.ifro.org to find the reproduction rights organization in your country.

Note on the proceedings: Tripartite Sectoral Meeting on Occupational Safety and Health and Skills in the Oil and Gas Industry Operating in Polar and Subarctic Climate Zones of the Northern Hemisphere (Geneva, 26–29 January 2016), International Labour Office, Geneva, ILO, 2016.

ISBN 978-92-2-130899-7 (print)
ISBN 978-92-2-130900-0 (Web pdf)

Also available in French: *Note sur les travaux*: Réunion sectorielle tripartite sur la sécurité et la santé au travail et les compétences dans l'industrie du pétrole et du gaz opérant dans les zones climatiques polaires et subarctiques de l'hémisphère Nord, Genève, 26–29 janvier 2016, ISBN 978-92-2-230899-6 (print), 978-92-2-230900-9 (Web pdf), Geneva, 2016; and in Spanish: *Nota sobre las labores*: Reunión sectorial tripartita sobre la seguridad y la salud en el trabajo y las necesidades en materia de competencias profesionales en la industria del petróleo y el gas que opera en zonas climáticas polares y subárticas del hemisferio norte, Ginebra, 26-29 de enero de 2016, ISBN 978-92-2-330899-5 (print), 978-92-2-330900-8 (Web pdf), Geneva, 2016.

occupational safety / occupational health / petroleum industry / petroleum worker / working conditions / hazardous work / hours of work / occupational accident / skills development / cold zone / geographical aspect

ILO Cataloguing in Publication Data

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications and digital products can be obtained through major booksellers and digital distribution platforms, or ordered directly from ilo@turpin-distribution.com. For more information, visit our website: www.ilo.org/publns or contact ilopubs@ilo.org.

Printed by the International Labour Office, Geneva, Switzerland

Contents

	<i>Page</i>
Introduction	1
Part 1. Consideration of the agenda item	3
Composition of the Working Party	5
Opening speeches	5
Presentation of the report and general discussion	6
Presentation of the report prepared by the ILO.....	6
General discussion	7
Point by point discussion.....	8
Point for discussion 1: What are the risks and challenges for workers' health and well-being in the development and production of oil and gas in the Arctic?.....	8
Point for discussion 2: What policies are needed by governments and employers' and workers' organizations to improve workers' health and well-being in the Arctic? What tools would best serve in initiating, implementing, monitoring and continuously improving OSH in Arctic operations?.....	9
Point for discussion 3: What are the best ways to improve skills in OSH and other specific areas for safety and operations in the Arctic? By what means can education and training best take into account the safety and health challenges in the Arctic?.....	12
Point for discussion 4: What short- and long-term actions and policies could be utilized to mitigate safety and health risks related to crew scheduling and air transportation systems and practices in the Arctic areas?.....	14
Point for discussion 5: What should be the recommendations for future action by the International Labour Organization and its Members regarding OSH and skills in the oil and gas industry operating in the Arctic?.....	16
Consideration and adoption of the draft conclusions by the Meeting	17
Part 2. Other proceedings	19
Closing speeches	21
Conclusions on occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere.....	23
List of participants.....	27

Introduction

The Tripartite Sectoral Meeting on Occupational Safety and Health and Skills in the Oil and Gas Industry Operating in Polar and Subarctic Climate Zones of the Northern Hemisphere met at the International Labour Office (ILO) in Geneva from 26 to 29 January 2016. The meeting had six sittings.

The ILO had prepared a report for discussion¹ to serve as a basis for the Meeting's deliberations. The report for discussion addressed the following topics:

- development of hydrocarbons in the polar and subarctic climate zones of the northern hemisphere;
- occupational safety and health (OSH) challenges and best practices;
- working time arrangements;
- accidents in transportation; and
- OSH skills and training.

The full report was issued in English, French, Russian and Spanish. Abstracts were issued in Arabic, Chinese and German.

The Governing Body had designated Mr Peter Woolford, Canadian Employer and an Employer titular member of the Governing Body, to chair the Meeting. The three Vice-Chairpersons elected by the Meeting were: Ms Jorunn Elise Tharaldsen (Norway) from the Government group; Mr Jonathan O'Keeffe from the Employers' group; and Mr Leif Sande from the Workers' group.

The Meeting was attended by 49 tripartite participants, of which 11 were women (22 per cent). Twenty-four Government representatives from 14 countries – Cambodia, Chile, Djibouti, Indonesia, Malaysia, Marshall Islands, Mozambique, Namibia, Nigeria, Norway, Philippines, Russian Federation, Thailand and Bolivarian Republic of Venezuela – as well as seven Employer and ten Worker members participated in the Meeting. Representatives of the following intergovernmental and international non-governmental organizations also attended as observers: the International Organization for Standardization (ISO); the International Organisation of Employers (IOE); the International Trade Union Confederation (ITUC); and the IndustriALL Global Union (IndustriALL).

The Secretary-General of the Meeting was Mr Isawa, Deputy Director of the Sectoral Policies Department (SECTOR), the Deputy Secretary-General was Mr Seligson, the Executive Secretary was Mr Kamakura, the Coordinator of the secretariat services was Mr Liang and the experts were Mr Carrión-Crespo and Ms Ujita. The representative of the Office of the Legal Adviser was Mr Geckeler.

¹ ILO: *Occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere*, TSMOGI/2016 (Geneva, ILO, 2015).

Part 1. Consideration of the agenda item

Composition of the Working Party

1. At the fifth sitting, the Meeting set up a Working Party to draft conclusions reflecting the views expressed in the course of the Meeting's discussion of the report for discussion prepared by the ILO. The Working Party, presided over by the Government Vice-Chairperson, Ms Tharaldsen, was composed of the following members:

Government group

Marshall Islands:	Mr Bubar
Namibia:	Mr Tupomukumo
Norway:	Ms Guldbrandsen
Russian Federation:	Mr Todradze

Employers' group

Mr Derrick
Mr Junejo
Mr O'Keeffe
Mr Ponomarenko
Ms Shaik

Workers' group

Mr Devlin
Mr Guenther
Mr Murphy
Mr Philipsen
Mr Sande

Opening speeches

2. The Chairperson, Mr Woolford, welcomed all participants and opened the Meeting. He remarked that the Meeting would address a number of critical issues in the oil and gas industry. The Governing Body had previously noted that the polar and subarctic climate zones of the northern hemisphere posed multiple challenges for workers in the oil and gas industry. The effects of extreme cold, ice and snow storms, prolonged fog, lack of daylight in winter and darkness in summer could all have effects on the well-being of workers and their performance.
3. He added that the purpose of the Meeting was to address OSH challenges unique to the work environment (such as those caused by low temperatures) and possible solutions; health protection and access to medical care in remote and isolated areas; working time arrangements; OSH training to promote a preventative safety and health culture; and recruitment, retention and career development schemes and industry-specific vocational education and training (VET) strategies. He emphasized that the scope of the Meeting covered all oil and gas operations in the polar and subarctic climate zones of the northern hemisphere.

-
4. The Secretary-General, Mr Isawa, welcomed participants to the ILO and highlighted the significant role of the oil and gas industry in polar and subarctic climate zones of the northern hemisphere. The northern hemisphere, particularly the Arctic Circle, had the potential to produce large volumes of hydrocarbons in the coming years. For many countries, the oil and gas industry represented a high proportion of national revenues, and was an important source of economic development. Thus, hydrocarbon development in the Arctic played an essential role for the industry.
 5. He emphasized that the oil and gas industry was an important sector to create jobs. The challenge involved in bringing together capital, technology, equipment, transport, and appropriate OSH measures allowing for safe Arctic operations was significant. To ensure workers' safety and health and environmental protection in the Arctic, governments were required to furnish workers with high levels of competencies and scientific as well as technological knowledge.
 6. He stressed the importance of adequate legal frameworks to further the development of safe Arctic operations. International labour standards on OSH required employers to ensure a safe and healthy working environment, identify hazards and reduce the risks involved. Employers' and workers' organizations played a key role in promoting OSH in the oil and gas industry. Tripartite social dialogue and adequate regulatory frameworks all played critical roles in promoting OSH in Arctic operations.

Presentation of the report and general discussion

Presentation of the report prepared by the ILO

7. The Executive Secretary, Mr Kamakura, stated that Chapter 1 discussed the development of hydrocarbons in the Arctic. Reservoirs in the Arctic had the potential to produce substantial hydrocarbons in the near future. Chapter 2 outlined OSH challenges and best practices. Between 1975 and 2012, more than 6,183 offshore oil and gas accidents were reported. The majority of these accidents occurred in the northern hemisphere, which included the Arctic. No ILO standards specifically apply to OSH in the Arctic, nor were there any ILO OSH instruments specifically for the oil and gas industry. Chapter 3 considered the health and well-being of workers. The oil and gas industry operating in the Arctic takes stringent preventive approaches to workers' health and well-being. The oil and gas industry was requested to implement the best risk-based health promotion possible, using a holistic approach to address workers' lifestyle issues. Workplace safety and health committees contributed to addressing health challenges. Chapter 4 discussed working time arrangements. A number of studies indicated that there was an increased likelihood of illness and injury among workers with long-hour schedules and schedules involving unconventional shift work, such as night and evening shifts. In particular, excessive overtime work was reported on offshore installations in the Arctic. Chapter 5 covered accidents in transportation. Travel to and from work in the Arctic, at both offshore and onshore installations, could be more dangerous than the work itself because air accidents were often fatal. Safety cannot be compromised for any reason. Chapter 6 focused on OSH skills and training. Insufficient OSH skills and training were often identified as contributing factors to major industrial accidents. Highly complicated Arctic operations had resulted in utilizing numerous contractors and subcontractors, including specialized service companies and air transport. In the Arctic, OSH training must have been comprehensive in order to meet any contingencies, taking into consideration Arctic weather and geographic aspects.

General discussion

8. The Employer spokesperson emphasized that her group was strongly committed to enforcing OSH measures. Employee safety went hand in hand with sustainable enterprises. She recognized that Arctic operations not only entailed unique OSH challenges but also environmental impact concerns. Interventions and decision-making processes should be based on the principle of sound risk assessment and precautionary principles should prevail in cases of limited knowledge or information. Risk assessment and mitigation measures should be incorporated from the inception of a project, which allowed for potential technical and non-technical risks to be addressed at the early planning stages.
9. She thanked the Office for the excellent report. Her group found that the report was more heavily focused on safety and suggested that technical soft-skills training, such as resilience training, could also provide useful tools to identify and avoid worker stress and fatigue. She underlined that good communication and basic safety and health manuals assisted in limiting misunderstandings arising from different languages and cultures.
10. The Vice-Chairperson of the Workers' group thanked the Office for the report and noted that it provided a solid ground for meeting discussions. OSH matters should be considered as fundamental workers' rights. He explained that workers have a right to participate in programmes, policies and procedures on OSH through joint health and safety committees. Information about the hazards of Arctic and subarctic operations should be made available to them, as well as training on how to perform their work safely. He emphasized that workers should have a right to refuse or cease unsafe operations without fearing reprisals. In case of an emergency, protocols and response systems should consider distance to transport and infrastructure, as well as available equipment and personnel.
11. He underlined the importance of developing tripartite regulatory frameworks and guidance. A common language between workers and operators is necessary. He welcomed the timeliness of the Meeting. He conveyed his group's expectations. The conclusions should offer guidance to operators on OSH requirements for polar and subarctic climate zones of the northern hemisphere. The Meeting could also represent a first step in the development of a practical tool – a code of practice – for operations in such extreme conditions.
12. The Vice-Chairperson of the Government group stated that the Office's report was well received by her group. The knowledge and thoroughness to tackle the Meeting's OSH issues at hand were duly complemented with new literature and references. The Meeting's discussion should focus on the OSH particularities of Arctic and subarctic operations, including the need for special equipment addressing physical and ergonomic issues. She acknowledged that cultural, political and communication challenges can hinder the development of regulatory regimes for Arctic and subarctic operations.
13. Speaking on behalf of the Government of Norway, she reviewed specific benefits of the two major regulatory regimes in the oil and gas industry. She invited the Meeting to take advantage of its tripartite composition to provide for creative solutions on how to better combine performance-based regimes, with the ILO, ISO/TC 67 (Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries), and other relevant industry and international standards.
14. A representative of the ISO thanked the Office for the invitation and provided a summary of the work of ISO/TC 67/SC 8 Arctic operations. Created in 2011, the subcommittee represents 11 countries and is chaired by the Russian Federation. Its mandate runs from 2011 to 2016, and includes six standards – three drafts and three that are currently under development.

Point by point discussion

Point for discussion 1

What are the risks and challenges for workers' health and well-being in the development and production of oil and gas in the Arctic?

15. The Employer spokesperson stated that the conditions of most oil and gas development projects entailed significant physical risks. Low temperatures had an effect on workers' performance, preparedness, survival time in cases of injuries and on safety equipment. High latitudes led to difficulties in operating technical equipment, and the remoteness of locations had an impact on communications technologies and emergency rescue operations. Long periods of darkness and limited daylight accounted for fatigue and for many psychological and emotional risks. Noise levels and vibrations also posed challenges to workers. Furthermore, there were behavioural risks to be taken into consideration with regard to drugs, alcohol, HIV/AIDS and other sexually transmitted diseases (STDs). She added that, in the long term, workers tended to normalize their situations and underestimate their exposure to risk. Biological and endemic factors, such as cardiovascular disease, and infections from wild animals and birds should also come under discussion. Chemical risks owing to product exposure and ergonomic risks associated with the environment, materials or workplace design also existed. Moreover, cultural and language differences could result in misunderstandings. Lastly, conflicting regulatory regimes, such as procedures for dealing with cardiovascular risks, could create problems.
16. The Vice-Chairperson of the Workers' group indicated that alcohol use or abuse did not warrant discussion at the Meeting. More significant risks in Arctic oil and gas operations involved exposure to cold weather and further training was necessary on the prevention of extreme temperature-related disorders. Survival rates following occupational accident or illness in low temperatures were reduced owing to the remoteness of locations and distances from infrastructure and hospitals. Other risks included encounters with wildlife in the Arctic, the supply of adapted personal protective and rescue equipment, and fire and explosion resulting from flammable materials and sources of ignition. In addition, risks should be taken into account associated with a lack of work–life balance; chronic fatigue, sleep disorders, stress and health issues associated with shift work; inadequate services in living environments; lack of social life; understaffed facilities; and sleep and psychological effects associated with long periods of darkness or light. It was important to note the effects of roads, pipelines, and other industry infrastructure on communities and wildlife; the release of chemicals into the environment; extremely cold or hot equipment; cooling and heating fluids; and thermal pollution of neighbouring environments. Furthermore, oil and gas production in the Arctic posed logistical difficulties, including the transportation of workers, equipment and toxic chemicals to and from remote sites. It should be recognized that the death rate from occupational cancer was much higher in the oil and gas industry than in other industries. He concluded by stating that a key goal was sustainable community development in these remote regions.
17. The Vice-Chairperson of the Government group said that the risk factors and challenges for oil and gas workers in the Arctic were primarily related to extreme cold, darkness, icy conditions, long distances and remote locations. Low temperatures increased the propensity to circulatory disorders, such as Raynaud's disease, allergies, cardiovascular and respiratory diseases, which in turn affected workers' resilience, strength, coordination and reasoning skills. According to the Office report, work-related accidents were also higher among workers in cold environments. Research had revealed that levels of tolerance to cold varied according to ethnic groups, genders and ages. Incentives for longer work hours had to be

properly managed. Other issues to be addressed were offshore medical services and evacuation procedures, noise and vibration disturbances, and behaviour of chemicals in low temperatures.

18. The representative of the Government of Indonesia asked the Office to clarify Chapter 3 of the report (TSMOGI/2016) entitled “Health and well-being of workers”. While he would welcome discussion on the health of indigenous and tribal peoples, as discussed in section 3.3, he wondered whether such a discussion would be relevant to the Meeting.
19. The Executive Secretary explained that the report outlined certain issues and constituted a point of reference. It served to stimulate discussion among participants but was not exhaustive. The main purpose of section 3.3 was to draw attention to the importance of ratification of the Indigenous and Tribal Peoples Convention, 1989 (No. 169).
20. The Secretary of the Employers’ group mentioned that his group was not prepared to discuss issues related to the health of indigenous and tribal peoples, as participants for the current Meeting had been selected based on their expertise with regard to OSH in the oil and gas industry in polar and subarctic climate zones of the northern hemisphere.
21. The representative of the Government of Nigeria supported the statement made by the representative of the Government of Indonesia and would appreciate further explanations of the point for discussion.

Point for discussion 2

What policies are needed by governments and employers’ and workers’ organizations to improve workers’ health and well-being in the Arctic? What tools would best serve in initiating, implementing, monitoring and continuously improving OSH in Arctic operations?

22. A representative of the Government of Indonesia asked how point for discussion 2 differed from point for discussion 4.
23. The Executive Secretary replied that point for discussion 2 was a general question on policies to ensure maximum coverage of workers’ safety and health at work. Point 2 asked the Meeting to discuss what instruments on OSH would be appropriate to deal with specifically with OSH in extreme conditions, and the discussion should therefore aim to identify policies and tools that would serve that function. Point 4 was more specific and concerned OSH on air transport.
24. The Vice-Chairperson of the Workers’ group said that workers’ participation in risk assessment and management systems was crucial from the inception of a project. Workers had the right to understand, participate in and refuse to be involved in the operations of a project. Integrated OSH management systems should incorporate equipment, conditions, training and education. The ILO *Guidelines on occupational safety and health management systems, ILO–OSH 2001*, was a useful tool in this respect, and consideration should also be given to the design of similar guidelines relating specifically to OSH in extreme cold conditions. In addition, further attention should be paid to cases of corruption within certain labour inspectorates.
25. The Employer spokesperson highlighted the importance of integrated OSH management systems founded on risk assessment and tools. The social partners should aim for continuous

improvement of a safety culture. The active involvement of workers from the outset in OSH processes and discussions was essential, particularly in specific risk assessments, such as those relating to fire hazards, health issues, the impact on the local community and remote readiness. Safety rules should be devised well in advance with an eye to mitigating risks. Lastly, she pointed out the potential for a policy document on the psychological well-being of workers, and the multiplied effects and impact it could have.

- 26.** The Vice-Chairperson of the Government group noted that ambitious policy design relating to OSH in the oil and gas industry was required. Policy-making needed to pay due regard to affected marine life and environmental vulnerabilities in the High North. Differences in regulatory regimes also needed to be addressed. Tripartite cooperation was a precondition for the development of all policies and the greatest challenges should be targeted first in order to ensure continuous improvement in OSH. Rules and regulations should apply to all oil and gas companies in the industry. Contracts in the Norwegian offshore sector, for example, accounted for about 70 per cent of the total workforce. Turning to the implementation of OSH policies, she said that regulations, standards and training of managers and workers all constituted effective tools for the implementation and monitoring of OSH policies. Robust safety management systems, follow-up and internal and external audits were also essential. Joint safety and health committees composed of workers and employers should be set up for the exchange of knowledge and experience. Operating manuals should be developed that set out specific procedures, such as for mobile drilling operations, in cold climates.
- 27.** A representative of the Government of Nigeria stated that the point under discussion encompassed two substantial issues which could have been given attention separately. Implementation of OSH policies would be facilitated by the involvement of the social partners at all levels and consideration of national practices in discussions on both policies and tools.
- 28.** A representative of the Government of the Russian Federation considered that it had been logical to combine policies and tools in the list of points for discussion, and joint evaluations of policy measures and implementation tools should be carried out. A comprehensive approach to all risks was required, in close cooperation with workers' representatives. Rules and regulations should be strengthened by drawing on national legislation. In the Arctic, working conditions, workers' health and the tools needed to deal effectively with those issues should be discussed. He added that workers' health assessments should be conducted both prior to and following a contract and that such a practice was already being carried out and written into law in his country.
- 29.** The Vice-Chairperson of the Employers' group seconded support for integrated OSH policies and management systems, and knowledge sharing among the social partners for continuous improvement. It was essential to focus on the psychological well-being of workers on Arctic projects, given its multiplier effect on other risk factors. While very few projects were launched without an extreme remote readiness assessment, many assessments were performed too late to apply mitigation measures where needed. It was therefore crucial that assessments should be conducted at the early planning stages.
- 30.** The Vice-Chairperson of the Workers' group agreed with points made regarding workers' psychological well-being and risk assessment.
- 31.** The Vice-Chairperson of the Government group requested clarification of the term "extreme remote readiness assessment".
- 32.** The Vice-Chairperson of the Employers' group explained that most projects were subject to these assessments which constituted inspections prior to deployment to rigs or other remote areas. The inspections took into account the specific conditions at the duty stations, including

extreme temperatures and distances from infrastructure, and verified that all controls were in place prior to operational activity.

- 33.** The Vice-Chairperson of the Workers' group provided detailed recommendations regarding the policies necessary to improve workers' health and well-being in the Arctic. He considered OSH a matter of workers' fundamental rights. Workers' involvement in risk assessment and management should begin at the very outset of the process. OSH management systems should be comprehensive and based on worker participation as safety representatives, and on joint health and safety committees. He reiterated that workers had the right to be fully informed about the hazards of their work and must be trained to perform work safely. The ILO–World Health Organization (WHO) definition of occupational health included the psychological well-being of workers. The unique psychosocial hazards of working in Arctic and subarctic regions should be addressed. Medical monitoring, when conducted using a rights-based approach, could result in better diagnosis and treatment of work-related injuries and occupational diseases.
- 34.** He stressed that the highest levels of leadership and management should prioritize and incentivize safety. Safety policies, programmes and procedures should apply to everyone on site, with particular attention paid to contractors, subcontractors and all other service suppliers. Joint health and safety committees should monitor leading indicators that promote prevention, and not only lagging indicators that report accidents and incidents. Effective legislative and regulatory enforcement must be free from corruption and conflicts of interest. He emphasized that the ILO should develop a code of practice on safety management in extreme environments of the Arctic and subarctic climate zones of the northern hemisphere.
- 35.** The Employer spokesperson highlighted the importance of implementing an integrated safety and health management system. Company leaders should set the tone for a safety culture and demonstrate their commitment through the allocation of resources. The management and mitigation of risks should be planned, monitored and reviewed to promote a safety culture. The history of the development of OSH management systems had shown that sharing lessons learned from incidents proved to be essential to promote a culture of continuous improvement. She suggested that health risks should be assessed well in advance of entering the extreme environment. She invited workers, together with contractors, to take the lead to collaboratively reach creative solutions. Interested parties should come together for risk-based decision making and for a proactive safety culture. Cultural norms particular to the Arctic environment should also be addressed. Contractor management must be included in all safety activities and institutions, including dedicated safety days. Other cultural barriers, such as language issues and sexism, should also be tackled through creative solutions. The roles and responsibilities of each group should be clearly defined. As stipulated in the conclusions of the International Labour Conference in 2015, governments should enact a coherent national policy on OSH, employers' should prioritize a safe and healthy work environment, and workers should contribute to their own safety and health.
- 36.** The Secretary of the Employers' group called the participants' attention to the fact that the purpose of the Meeting did not entail the drafting of a technical document and suggested that the conclusions of the Meeting need not detail all the Workers' group recommendations.

Point for discussion 3

What are the best ways to improve skills in OSH and other specific areas for safety and operations in the Arctic? By what means can education and training best take into account the safety and health challenges in the Arctic?

37. The Employer spokesperson pointed out that the term “K-52” in paragraph 98 in the report for discussion most likely referred to “K-32” helicopters. With regard to the point for discussion, she urged industry stakeholders to come together and draft an educational curriculum that would ensure the resilience of oil and gas operations in polar and subarctic climate zones of the northern hemisphere. Training centres, including pre-deployment simulation, would provide workers with an advantage when having to deal with real emergency and evacuation exercises. The remoteness of these operations entailed the need to specifically address and improve emergency preparedness and training on other OSH risks. In the Arctic, testing communications systems and ensuring adequate technical support were crucial before deployment.
38. She considered that a single standardized training system, such as safety passport schemes, could provide a practical solution to training, communication and language challenges. Such a scheme would allow workers to undertake the required training once only, and prevent employers from having to rely on contractors’ individual training curricula. Delineating profiles and roles would provide a solid ground for a more adequate management of skills sets. Further standardized criteria for continuing education, risk awareness and tailored solutions for personal protective equipment could be reviewed periodically. Training could cover both technical and soft skills, including competence, resilience in harsh situations, survival skills, and medical training. The promotion of the exchange of good practices would also contribute to risk reduction.
39. Training delivered in a classroom setting should be envisaged for scenario or simulation training. She drew attention to the experiential shortcomings of online training programmes, since polar or subarctic situations and scenarios could not be replicated. She added that continuous training and education in situational awareness and risk assessment was necessary. For example, in some cases, highly skilled technical personnel had been unable to adequately assess risks due to the lack of updated or continuous training opportunities.
40. The Vice-Chairperson of the Workers’ group stated that OSH officers should have two years’ minimum work experience in the Arctic before assuming any safety decision-making responsibilities. He suggested that workers with more than ten years’ experience in Arctic oil and gas operations and OSH representatives should receive further training to assume any OSH responsibilities. The lack of apprenticeship and training programmes had also led to a shortage of qualified workers in some regions.
41. He deplored the fact that management decisions to defer liability to other actors often led to potentially risky situations. In some cases, employers had shown preference for contract workers, leaving the oversight and training to agencies or other third parties. In other cases, where it was impossible to gauge the relevance of a contract worker’s experience, an inexperienced worker was potentially left to perform a highly hazardous job. Additionally, workers with little previous experience lacked the tools to adequately identify and mitigate potential risks. Training proved essential for safe and efficient polar and subarctic operations. He underlined that experience had shown that direct employees have lower accident and fatality rates than contracted workers.

-
42. He called on Governments to use tripartism to actively engage in issuing training and educational guidance for safer polar and subarctic operations. Tailored curricula on onshore or on-ice operations in the Arctic should be developed to supplement existing internationally recognized standards on safety and preparedness.
 43. Speaking on behalf of Norway, the Vice-Chairperson of the Government group acknowledged that at that moment the industry registered a labour surplus that would most likely have an impact on young people and competence building. Nonetheless, she explained that Norway had prepared OSH criteria and developed educational requirements. In her country, for example, all workers had to undergo safety certification and familiarization programmes. Jointly developed apprenticeship schemes had also proved to be successful training tools. These allowed for young workers to benefit from practice periods and in most cases led to permanent employment opportunities. She emphasized that oil and gas companies had the responsibility to train their workers on OSH matters. Top managers and onsite managers should not only focus on the physical well-being of their workers but also on their psychological well-being. She drew attention to the importance of developing practical, relevant and tailored OSH manuals and guidelines. Lengthy and complicated documents hindered workers' ability to learn and implement basic OSH principles.
 44. Speaking on behalf of the Government of Marshall Islands, she provided information on a proposal to develop a certificate and mandatory training for industry workers involved in Arctic oil and gas operations.
 45. A representative of the Government of the Russian Federation highlighted that his country had developed OSH legislation, including accreditation and educational programmes, to prepare workers for polar and subarctic operations. This initiative was coordinated at the national level, and provided for mandatory employer and worker participation. To date, the Russian Federation had developed about 50 standards in the oil and gas industry covering all professions, skills and competences. The country's legal framework placed responsibility on the State and employers to provide for both long- and short-term educational opportunities for industry workers in polar and subarctic regions.
 46. A representative of the Government of Namibia shared an example on a bipartite funding mechanism for oil and gas worker training in his country: the Petroleum Training and Education Fund (known as Petrofund). Contributions from companies could be negotiated on a yearly basis; once an agreement on the amount had been reached, the contribution became mandatory for that year. Seventy per cent of each contribution would then be earmarked for youth training programmes while 30 per cent would revert to the company to invest in their own workforce training programmes. At the end of each year, any unused portion of the 30 per cent allocation was returned to the fund, which was managed by an independent third party.
 47. A representative of the Government of the Russian Federation underlined the importance of OSH inspections and standards, as they were directly linked to matters of professional competence. Employers needed to put in place standards that involved high levels of commitment. However, the lack of resources greatly affected labour inspectors' tasks and coverage. Inspectorates could no longer afford specialized personnel and, in addition, their mandate could be hampered by jurisdictional barriers. He further stated that, while current inspectorates' tasks involved the investigation of accidents, only serious accidents were targeted. It was crucial that labour inspectorates also investigated smaller incidents as such actions would establish precedents concerning internal control. He concurred with the risk-oriented approach as discussed in the report for the discussion, as voluntary adherence to supervisory systems would enable workers to share knowledge on the OSH requirements with employers. He stated that his Government was considering regulation on voluntary supervisory programmes. An electronic platform had already been set in place, including a search engine with 30 variables. The system comprised a preliminary self-testing tool for the

evaluation of a company's OSH shortcomings so these could be redressed. Training opportunities for labour inspectors would be welcomed, as these would contribute to improving the level of the inspections and surveillance carried out.

Point for discussion 4

What short- and long-term actions and policies could be utilized to mitigate safety and health risks related to crew scheduling and air transportation systems and practices in the Arctic areas?

48. The Vice-Chairperson of the Workers' group noted that the use of well-established carriers with a proven record of operating safely in an Arctic environment constituted, inter alia, an action aimed at mitigating safety and health risks related to crew scheduling and air transportation systems in the Arctic. Other such actions and policies included the obligation of aviation companies to operate according to best practice. Workers' work-life balance needed to be taken into consideration in crew scheduling, particularly given employers' tendencies to focus on costs rather than family needs. Studies from offshore Norway had shown that reducing the time on site to two weeks produced a corresponding fall in the number of occupational accidents. He also indicated that many unions opted for air transport as it was deemed safer and more time efficient, which had a positive impact on any necessary evacuations and on work-life balance. He recommended that oil and gas companies operating in the Arctic should gain in-house experience to ensure the quality of aviation operations and suggested adherence to good practices such as the Norwegian Branch Guidelines. Furthermore, cross-border responsibility and tripartite experience exchange should be established among governments. The Arctic Council might be tasked with such a mandate, with the secretariat and leadership of this committee shared by workers' and employers' organizations. He suggested that such a committee could be called an arctic safety forum. Finally, safety regulations must be adhered to in all circumstances, including for the transport of workers.
49. The Employer spokesperson said that aviation operations should be carried out in accordance with national legislation, and aircraft should meet requirements and be certified according to international aviation rules. Service providers should have integrated management and risk-assessment systems in place. Workers needed to pass medical examinations and pre-existing health conditions should be taken into account. She added that fatigue and stress, which also affected performance, should be monitored. Communication was critical and should be ensured during flights, especially given the risk of equipment failure at high altitudes. She underlined the importance of establishing emergency response plans that did not rely on air evacuation. Furthermore, there needed to be adequate escort provision in case of emergency; the psychological conditions of pilots and workers also had to be taken into consideration during evacuations.
50. The Secretary of the Employers' group noted that aviation safety authorities operated in all countries under whose competence accident assessments were conducted and subsequent regulations based on lessons learned were drawn up. While trade unions had a role to play in aviation issues, neither they nor employers' organizations could substitute aviation authorities in that respect.
51. The representative of the Government of Norway stated that in her country, crew scheduling and shift rotations were based on the collective bargaining agreements between employers' associations and trade unions. Employees typically worked for two weeks followed by four weeks' rest, and night and day shifts were alternated. Some workers rotated among drilling and well installations and therefore followed a less predictable schedule. Under Norwegian

legislation, working hours, rest time, overtime and night shifts were strictly regulated. Extensive study projects carried out, in cooperation with national and international research institutions, had revealed the negative impact on workers' health and performance of long working hours, night shifts and day–night rotations. She also expressed concern regarding overtime beyond an average 12-hour workday. Additionally, factors particular to Arctic conditions, such as excessive darkness, should be taken into account in OSH evaluations. She stated that the ILO report also illustrated differences among countries with regard to the mode of transportation of workers. In the Norwegian oil and gas industry, helicopter transport was the main means of transport. Alternatives were being explored, however, given the impact of Arctic and other conditions on helicopter transport, such as darkness, unpredictable weather, fuelling and weight allowances.

- 52.** A representative of the Government of the Russian Federation said that standard-setting legislation, meteorological recommendations and monitoring regimes regulated the air transport system in his country and guaranteed the safety of flights, crews and pilots, including oil and gas workers in the Arctic. The Aviation Code covered medical assessments, technical and epidemiological requirements, the influence of negative environmental effects, and certification of particular jobs within the field of aviation safety. Short- and long-term transport programmes were designed in accordance with agreements on shift work and crew scheduling. Shift working hours in the Russian Federation were generally longer than in most other countries but timetables nevertheless included adequate rest time. Although legislation did not stipulate specific rest periods following transport to work plants, which would impact workers' wages, rest times were observed in practice. He added that the Labour Code regulated the specificities of work involving air transport and set forth requirements regarding workers' conduct to ensure their safety.
- 53.** A representative of the Government of Indonesia wondered whether the principle of force majeure or of unlimited liability applied with regard to insurance in cases of aviation accidents. Categories and criteria should be defined with respect to fault-based liability. It was important that employers, companies and industries were covered in the event of such an accident.
- 54.** The Vice-Chairperson of the Government group said that concerns had also been expressed regarding travel time and its impact on workers in the Arctic. A worker's first shift at a particular site should be determined based on the time he or she had spent travelling to the workplace and the subsequent rest time required. Additionally, extreme and unpredictable weather conditions needed to be factored in during crew scheduling.
- 55.** A representative of the Government of Indonesia reiterated the need to define measures and criteria to ensure the legal responsibility of all involved in the case of an aviation accident.
- 56.** The Vice-Chairperson of the Employers' group requested the Workers' group to reconsider or indeed retract its previous statement regarding employers' lack of regard for workers' work–life balance since it did not accurately reflect the attention employers duly paid to the issue.
- 57.** The Vice-Chairperson of the Workers' group clarified that, while national aviation authorities already existed, there was no organization to deal specifically with transborder or multinational operations. A discussion on standards in the aviation industry was ongoing within the framework of the Arctic Council. He proposed to optimize that discussion to ensure a truly tripartite approach to address safety issues, including – but not limited to – transportation. The issue of work–life balance remained contentious and warranted further discussion.

Point for discussion 5

What should be the recommendations for future action by the International Labour Organization and its Members regarding OSH and skills in the oil and gas industry operating in the Arctic?

58. The Employer spokesperson said that the use of existing OSH mechanisms should be reinforced and validated as they had been developed on the basis of sound risk assessment. Regulations on working hours in the oil and gas industry in the Arctic should be decentralized and discussed with all social partners. Fatigue and other health issues should be taken into consideration when drawing up schedules. She highlighted the importance of data collection to help identify the root causes of problems related to oil and gas work in the Arctic and to develop solutions. Thus far, most discussions had focused on occupational safety and further emphasis should be placed on occupational health with the engagement of experts in that field. Lastly, she said that best practices from the Arctic regions should be consolidated to guarantee robust OSH instruments.
59. The Vice-Chairperson of the Workers' group said that a tripartite approach to safe Arctic oil and gas development in turn ensured protection of the environment, marine life and workers in the Arctic. Social partners should be involved in the development of hydrocarbon resources to guarantee transparency of operations, workers' safety and public trust. He recommended the establishment of a tripartite body to regulate safety training for offshore and onshore Arctic and subarctic areas. A specific governing body competent to conduct on-the-spot inspections and order practical amendments should be convened. Apprenticeships should be obligatory and experienced workers should participate in training for new recruits. Irrespective of current dialogue within the ISO on standards concerning oil and gas projects in the polar and subarctic areas, ILO should organize tripartite exchanges with a view to formulating recommendations and a code of practice on oil and gas operations and sustainable development in harsh temperatures and fragile ecosystems.
60. A Worker member from the Russian Federation noted that the Russian Oil and Gas Workers' Union could testify to the value of a process to develop a guideline document. The preparation of a code of practice would provide opportunities for meetings with experts, companies, unions and governments. A code of practice would comprise a compilation of best practices and skills and the fact that it was not legally binding did not render it less valuable. He urged the participants to initiate such a process.
61. The Vice-Chairperson of the Government group drew attention to the important role the ILO played in gathering and disseminating best practices on OSH for learning and improvement. Agreement on best practices would be most effectively achieved using a tripartite approach. The Government group expressed reluctance at the proposal to develop a specific OSH document, such as a code of practice, since the Arctic had limited geographic boundaries and only eight countries with jurisdiction over that area. A forum had already been organized under the Arctic Council to discuss OSH practices and regulatory issues. In addition, certain ILO instruments concerning OSH, such as the Occupational Safety and Health Convention, 1981 (No. 155), addressed hazards inherent in the working environment and set out requirements for policies and training in that regard. While the ISO was a commercial profit-making company with no tripartite basis, its current elaboration of a standard regarding Arctic operations and working environments (ISO/TC 67/SC 8) could be taken into account in any other drafts to avoid duplication of efforts. In the light of all the above, the following options were available: OSH issues could remain nationally regulated, an overview document could be prepared from existing documents to be updated on a regular basis by the ILO, or the ILO could develop a specific guideline document, in line with the wish

expressed by the Workers, based on discussions, such as at the present Meeting, and international findings.

- 62.** A Worker member from the Russian Federation said that a code of practice would be limited to specific countries in the Arctic and to particular hazards. The geography of the area was in any case expanding owing to a greater number of countries operating and increased transport through the Arctic. Neither the ISO nor the Arctic Council, an intergovernmental organization, was equipped to adequately address workers' needs. He underlined that a code of practice, developed on the basis of the ILO's tripartite principle, constituted an ideal instrument to deal with the specific issues in question.

Consideration and adoption of the draft conclusions by the Meeting

- 63.** The Working Party on Conclusions submitted its draft conclusions to the Meeting at the latter sixth sitting.
- 64.** An Employer member from the Islamic Republic of Iran expressed his reservations with regards to the last sentence of paragraph 4 of the draft conclusions.
- 65.** The Meeting adopted the draft conclusions without any change.

Geneva, 29 January 2016

(Signed) Mr Peter Woolford
Chairperson

Part 2. Other proceedings

Closing speeches

66. The Employer spokesperson thanked the Office, the Sectoral Policies Department (SECTOR), the Chairperson, and the Vice-Chairpersons of the Government and Workers' groups. She considered that the Meeting's outcomes reflected constructive negotiations and engagement.
67. The Vice-Chairperson of the Workers' group thanked all parties involved in the Meeting and conveyed that overall his group had expressed satisfaction with the productive and constructive environment of social dialogue. He regretted that consensus had not been reached for a number of issues in the conclusions of the Meeting, including a code of practice for Arctic operations or a recommendation on the establishment of an Arctic Council tripartite occupational health and safety committee. He deplored that the final drafting on the issue of the right to refuse unsafe work in paragraph 4 of the conclusions did not reflect the main position of his group. Finally, he regretted that sustainability issues for oil and gas operations in the Arctic had not been fully addressed by the conclusions of the Meeting and hoped that a future meeting would bring together a wider participation of experts. He also stated that the conclusions would be useful to ILO constituents and that his group looked forward to the full implementation of the conclusions.
68. The Vice-Chairperson of the Government group thanked the Office for facilitating the Meeting, and the Employers and the Workers for their good spirit and constructive attitude to reach consensus. She expressed satisfaction with the Meeting's outcomes, and announced that the Government of Norway would undertake action on the issue.
69. The Chairperson thanked the participants for the consensus reached in developing an important set of conclusions. He expressed his gratitude to all parties involved at the Meeting. He remarked that the success was built on the key ingredients of communication, comprehension, collaboration and cooperation.
70. The Secretary-General congratulated the Meeting, thanking all parties involved. He emphasized the success achieved by the Meeting by way of social dialogue.
71. The Chairperson closed the Meeting.

Conclusions on occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere ¹

The Tripartite Sectoral Meeting on Occupational Safety and Health and Skills in the Oil and Gas Industry operating in Polar and Subarctic Climate Zones of the Northern Hemisphere,

Having met in Geneva from 26 to 29 January 2016,

Adopts this twenty-ninth day of January 2016 the following conclusions:

Risks and challenges for workers' health and well-being in the Arctic

1. Occupational safety and health (OSH) risks should be seen in relation to internal and external factors. The working environment may include one or a combination of cold, wind, ice, wildlife encounters, extended periods of darkness and light, noise, dust, biological hazards, etc. These conditions, if not mitigated or controlled, can potentially cause or exacerbate illnesses and injuries such as carbon monoxide poisoning (especially in enclosed spaces), frostbite, frostnip, hypothermia and seasonal affective disorder (SAD). The different factors involved may compound each other, making health issues more urgent to treat and safety issues more difficult to resolve.
2. Remote and offshore installations often make transportation to the site and prompt access to medical treatment within the "Golden Hour of Life" difficult.
3. Working patterns may adversely affect workers' work-life balance. Excessive working hours and inadequate rest times may affect the health and well-being of workers.

Policies needed by governments and employers' and workers' organizations to improve workers' health and well-being in the Arctic, and tools that would best serve in initiating, implementing, monitoring and continuously improving OSH in Arctic operations

4. Strategies and tripartite commitments on prevention are essential in occupational safety and health. ² Policies should prioritize the most urgent challenges, consider the safety and health of workers, and recognize their rights to know the risks and to participate in mitigating the risks. The workers should have the right to refuse or stop unsafe work if there is a possibility of accident or injury.

¹ These conclusions were adopted by the Tripartite Sectoral Meeting on 29 January 2016. In accordance with established procedures, they will be submitted to the Governing Body of the ILO for its consideration.

² See ILO resolution concerning the recurrent discussion on social protection (labour protection), 2015.

Risk assessment

5. The tools to manage safety and health risks should commence with an effective risk assessment which will include the identification, assessment and control of hazards. Risk assessment should be done with full participation of those who face the risk. Risk assessments should encompass the diversified risks, including impact on the environment and communities surrounding the projects. OSH Management Systems should be risk orientated to achieve a culture of prevention and continuous improvement, with full worker participation and commitment by senior management. An essential reference document is the ILO's *Guidelines on occupational safety and health management systems, ILO-OSH 2001*.

Hazardous tasks and medical surveillance

6. Hazards should be identified in the earliest planning phase of projects, including extreme remote readiness assessments, and controlled at the source whenever possible, including communication and relevant training. In this context, particular attention should be paid to the exposure to hazards of all workers including contractors and subcontractors, as well as language barriers and gender-sensitive aspects. Learning from incidents and accidents relies on good data management systems and reporting. Medical surveillance is a tool to monitor development of the workers' health to uncover any work-related illness or injury and to prevent these. Special care should be taken by all parties to ensure workers' privacy and rights. The worker should have the right to receive full disclosure of all findings related to work fitness.

OSH skills and training

7. Education and training should address the specific skills and competencies that are required for Arctic oil and gas operations, and be based on an assessment of skills needs in the Arctic. Regulations, rules and tools should be easy to access and be understood by the industry and workers. Self-assessment tools are useful to promote compliance.
8. Sharing good practices and learning from the experiences among tripartite constituents is a good means to improve skills and competencies in OSH in the Arctic. Governments and employers' and workers' organizations have shared responsibilities in the design and implementation of policies, actions and tools. Industry-wide programmes, such as "safety passport" schemes, may facilitate the prevention of accidents and illness and the promotion of workers' health and well-being, particularly among contractors and subcontractors. Care must be taken that the safety passport is not used as a substitute for job-specific education, training and skills. Other standardized systems, like personal protective equipment (PPE) specifications and accredited training systems, may also be helpful.
9. Elected worker health and safety representatives and/or members of Joint Health and Safety Committees should receive additional training specific to their responsibilities.
10. All parties, such as authorities, and employers' and workers' representatives, should be involved in developing specific training tools. Multiple skills sets need to be taken into consideration in their design, development and implementation.
11. Appropriate safety, apprenticeship and recruitment programmes, as well as emergency communication and response preparedness, can help workers and enterprises manage risks that affect work in the Arctic.

Air transport safety

- 12.** Air transport is regulated at both the national and international levels, but involves distinct risks, for example extreme weather and crew fatigue, when used for Arctic oil and gas operations, particularly when using helicopters. Oil and gas enterprises should employ safe and appropriate means for transporting workers. Aviation operators should have a record of safe operation in the Arctic.

Recommendations for future action by the International Labour Organization and its Members

- 13.** In view of the discussion at the Tripartite Sectoral Meeting on Occupational Safety and Health and Skills in the Oil and Gas Industry operating in Polar and Subarctic Climate Zones of the Northern Hemisphere, the following future actions were recommended.
- 14.** Tripartite constituents should:
 - (a) reinforce the use of existing OSH mechanisms and take into consideration the knowledge developed through the work carried out by other international organizations;
 - (b) recognize relevant regulations on working hours for workers in the oil and gas industry in the Arctic, upon consultations with social partners; and
 - (c) establish appropriate apprenticeship programmes. Where possible, these can be supervised by experienced workers.
- 15.** Governments should establish a tripartite mechanism to facilitate the formulation of appropriate health and safety best practices, including training, for the oil and gas operations in the Arctic.
- 16.** The Office should:
 - (a) collect data to help identify the root causes of OSH issues in the oil and gas industry in the Arctic, and develop solutions with the engagement of experts in that field;
 - (b) undertake a review of existing ILO documents and update them for the purpose of covering operations in the Arctic; and
 - (c) collect and disseminate best practices from the polar region to strengthen OSH instruments.

List of participants
Liste des participants
Lista de participantes

Chairperson
Président
Presidente

Mr Peter WOOLFORD, Executive Director, Canadian Employers Council, Toronto, Canada.

Members representing Governments
Membres représentant les gouvernements
Miembros representantes de los gobiernos

CAMBODIA CAMBODGE CAMBOYA

Mr Bou CHAN BOROTH, Labour Counsellor, Permanent Mission of the Kingdom of Cambodia, Geneva, Switzerland.

Mr Yang SOKHA, Assistant of Labour Counsellor, Permanent Mission of the Kingdom of Cambodia, Geneva, Switzerland.

CHILE CHILI

Sr. Pablo LAZO GRANDI, Agregado Laboral, Misión Permanente de Chile, Ginebra, Suiza.

DJIBOUTI

M. Djama MAHAMOUD ALI, conseiller en charge des relations avec le BIT, mission permanente de la République de Djibouti auprès de l'Office des Nations Unies et des autres organisations internationales à Genève, Genève, Suisse.

INDONESIA INDONÉSIE INDONESIA

Ms La ASIH, Labour Inspector, Ministry of Manpower, Directorate of Occupational Safety and Health Inspection, Jakarta Selatan.

MALAYSIA MALAISIE MALASIA

M. Abdullah UMMAR JAI KUMAR BIN, Labour Attaché, mission permanente de la Malaisie auprès de l'Office des Nations Unies et des autres organisations internationales à Genève, Genève, Suisse.

MARSHALL ISLANDS ILES MARSHALL ISLAS MARSHALL

Mr Brian BUBAR, Deputy Commissioner of Maritime Affairs, the Republic of the Marshall Islands, Reston, Marshall Islands.

MOZAMBIQUE

Dr Carlos Jorge SILIYA, Permanent Mission of the Republic of Mozambique to the United Nations Office and other international organizations in Geneva, Switzerland.

NAMIBIA NAMIBIE

Mr Jose Eduardo KAMBINDA, Senior Industries Inspector, Windhoek, Namibia.

Mr Fastudu F.S. MALWA, Senior Inspector: OSH (Industries), Ministry of Labour, Industrial Relations and Employment Creation, Grootfontein, Namibia.

Mr David KATJAIMO, Chief Labour Relations Officer, Windhoek, Namibia.

Mr Iyambo TUPA, Chief Inspector Petroleum Affairs, Ministry of Mines and Energy, Windhoek, Namibia.

Mr Andreas SHEEHAMA, Petrol Inspector, Ministry of Mines and Energy, Windhoek, Namibia.

NIGERIA NIGÉRIA

Mr Aniefiok Etim ESSAH, Labour Attaché, Permanent Mission, Geneva.

NORWAY NORVÈGE NORUEGA

Ms Jorunn Elise THARALDSEN, Head of Section, Occupational Safety and Health.

Ms Tone GULDBRANDSEN, Principal Engineer, Occupational Safety and Health.

PHILIPPINES FILIPINAS

Ms Celeste M. VALDERRAMA, Labour Attaché, Republic of the Philippines, Department of Labour and Employment, Manila, Philippines.

RUSSIAN FEDERATION RUSSIE, FÉDÉRATION DE RUSIA, FEDERACIÓN DE

Mr Valery KORZH, Head of OSH Department, Ministry of Labour and Social Protection of the Russian Federation, Head of the delegation.

Mr Ivan SHKLOVETS, Deputy Head of the Federal Service on Labour and Employment.

Mr Stanislav STEPANOV, Senior adviser of the International Cooperation Section Department for Legal and International Affairs, Ministry of Labour and Social Protection of the Russian Federation, adviser of the representative.

Mr Konstantin TODRADZE, Deputy Head of OSH and Economic Research Institute, adviser of the representative.

THAILAND THAÏLANDE TAILANDIA

M^{me} Chuleerat THONGTIP, ministre conseillère, mission permanente de la Thaïlande auprès de l'Office des Nations Unies et des autres organisations internationales à Genève, Genève, Suisse.

VENEZUELA, BOLIVARIAN REPUBLIC OF VENEZUELA, RÉPUBLIQUE BOLIVARIENNE DU VENEZUELA, REPÚBLICA BOLIVARIANA DE

Sr. Carlos Enrique FLORES, Agregado Laboral, Misión Permanente de la República Bolivariana de Venezuela, Ginebra, Suiza.

Members representing the Employers
Membres représentant les employeurs
Miembros representantes de los empleadores

Ms Irina AKINSHINA, Head of Human Resources, LUKOIL, Geneva, Switzerland.

Mr Neil DERRICK, Vice-President, Human Resources and Corporate Services, PETROTRIN, Pointe-à-Pierre, Trinidad and Tobago.

Mr Mohammad Hamed EMAM JOMEH ZADEH, President (CEO), Tehran, Iran.

Mr Khalid JUNEJO, Head of Human Resources, International Industries Limited, Karachi, Pakistan.

Mr Jonathan O'KEEFFE, Regional Medical Director, Medical Services Northern Europe – Greenland, International SOS, London, United Kingdom.

Mr Dmitry PONOMARENKO, Deputy Head of Department, Public Joint-Stock Company GAZPROM, St. Petersburg, Russian Federation.

Ms Fatima Bebe SHAIK, Head: Health, Safety, Security and Environment, South African Petroleum Industry Association (SAPIA), Sandton, South Africa.

Members representing the Workers
Membres représentant les travailleurs
Miembros representantes de los trabajadores

Mr Tony DEVLIN, National Officer, Unite the Union, London, United Kingdom.

Mr Fredric GUENTHER, Health and Safety, Woodland, United States.

Mr Lev MIRONOV, President, Russian Oil and Gas Workers' Union (ROGWU), Moscow, Russian Federation.

Mr Brian MURPHY, National Representative, Unifor, Newfoundland, Canada.

Mr Albert OLE PHILIPSEN, CO-Sea/Danish Metal, Workers' Union, President, Copenhagen, Denmark.

Mr Leif SANDE, Industri Energi (IE), President, Oslo, Norway.

Mr Andrey MROST, International Officer, Russian Oil and Gas Workers' Union (ROGWU), Moscow, Russian Federation.

Mr Henrik SOLVORN FJELDSBO, Industri Energi (IE), National Officer, Oslo, Norway.

Workers' advisers
Conseillers techniques des travailleurs
Consejeros técnicos de los trabajadores

Ms Diana JUNQUERA CURIEL, IndustriALL Global Union, Director, Energy Industry, Geneva, Switzerland.

Mr Brian KOHLER, IndustriALL Global Union, Director, Health, Safety and Sustainability, Geneva, Switzerland.

Mr Kimberly Ted NIBARGER, Chair of Oil Bargaining, USW, Pittsburgh, United States.

Mr Christian Homaa PETERSEN, CO-Sea/Danish Metal Workers' Union, Union Officer, Copenhagen, Denmark.

Representatives of international non-governmental organizations
Représentants d'organisations internationales non gouvernementales
Representantes de organizaciones internacionales no gubernamentales

International Organization for Standardization (ISO)
Organisation internationale de normalisation (ISO)
Organización Internacional de Normalización

Mr Andrey TSUNEVSKIY, Member of ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” SC 8 “Arctic operations”.

Mr Igor BUKHTIYAROV, Member of ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” SC 8 “Arctic operations”.

International Organisation of Employers (IOE)
Organisation internationale des employeurs (OIE)
Organización Internacional de Empleadores (OIE)

M. Jean DEJARDIN, conseiller, Genève, Suisse.

M^{me} Thannaletchimy THANAGOPAL, Genève, Suisse.

International Trade Union Confederation (ITUC)
Confédération syndicale internationale (CSI)
Confederación Sindical Internacional (CSI)

Ms Esther BUSSER, Assistant Director, ITUC Geneva Office (ITUC-GO), Geneva, Switzerland.