First Meeting of the Emergency Preparedness and Response Standards Committee (EPReSC)
VIC, Room C3
30 November to 2 December 2015, Vienna, Austria

Report from the ILO
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International Labour Office, Geneva, Switzerland
On September 25th 2015, countries adopted a set of goals to **end poverty, protect the planet, and ensure prosperity for all** as part of a **new sustainable development agenda**. Each goal has specific targets to be achieved over the next 15 years.
SUSTAINABLE DEVELOPMENT GOAL 8
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

PROGRESS OF GOAL 8

- Sustained and inclusive economic growth is necessary for achieving sustainable development. The global annual growth rate of real GDP per capita increased by 1.3 per cent in 2014, a significant

8.8 protect labor rights and promote safe and secure working environments of all workers, including migrant workers, particularly women migrants, and those in precarious employment

- Despite rapid growth in some developing regions, labour productivity remains far higher in the developed regions. In 2015, the average worker in developed regions produced 23 times the annual output of an average worker in sub-Saharan Africa (which has the lowest labour productivity in developing regions), and 2.5 times that of an average worker in Western Asia (which has the highest labour productivity in developing regions).

- The global unemployment rate stood at 6.1 per cent in 2015, down from a peak of 6.6 per cent in 2009, mostly owing to a decline in unemployment in the developed regions. Unemployment affects population groups differently. Globally, women and youth (aged 15 to 24) are more likely to face unemployment than men and adults aged 25 and over. In all regions, except Eastern Asia and the Pacific, the global unemployment rate of men was lower than that of females. However, in some developing regions and economies in transition, the unemployment rate of women was lower than that of men.
40. Generating quality employment is indispensable for sustainable development and is at the center of the G20’s domestic and global agenda. We will work to ensure the benefits from economic growth, globalization and technological innovation are widely shared, creating more and better jobs, reducing inequalities and promoting inclusive labor force participation. We endorse the strategies, action plans and initiatives developed by G20 labor and employment ministers to enhance the growth and development agenda by taking effective actions to address changes in skill needs, support entrepreneurship and employability, foster decent work, ensure safer workplaces including within global supply chains and strengthen social protection systems. We endorse Sustainable Wage Policy Principles. We recognize entrepreneurship is an important driver for job creation and economic growth, reinforce our commitments in the G20 Entrepreneurship Action Plan, and welcome China’s contribution in the establishment of an Entrepreneurship Research Center on G20 Economies. We also endorse the G20 Initiative to Promote Quality Apprenticeship with policy priorities of increasing the quantity, quality and diversity of apprenticeships. We will further develop the G20 employment plans in 2017 to address these commitments and monitor progress in a systemic and transparent manner in achieving the G20 goals especially on youth employment and female labor participation. We recognize strengthened labor market institutions and policies can support productivity and promote decent work, and therefore higher, sustainable wage growth, in particular for the low-income workers. We recognize the importance of addressing opportunities and challenges brought into the labor market through labor migration as well-managed migration can bring potential benefits to economies and societies.
The ILO is a tripartite organization with worker and employer representatives taking part in its work on equal status with those of governments.

The number of the ILO member countries now stands at 187.

In 1969 the ILO was awarded the Nobel Peace Prize.
Standard-setting is one of the ILO’s major means of action to improve conditions of life and work worldwide.

ILO standards are Conventions and Recommendations adopted by the International Labour Conference.
Total number of ratifications registered since 1919

As of Today 21 Nov 2016

- ILO member States: 187
- ILO instruments adopted: 399
  - Conventions: 189
  - Protocols: 6
  - Recommendations: 204

Latest Ratifications

November 2016
- Lithuania - C188 - Work in Fishing Convention, 2007 (No. 188) - 16 Nov 2016
- Montenegro - C171 - Night Work Convention, 1990 (No. 171) - 08 Nov 2016

October 2016
- Angola - C188 - Work in Fishing Convention, 2007 (No. 188) - 11 Oct 2016
Radiation Protection Convention, 1960 (No. 115)

Number of Ratifications: 50

The countries that have ratified Convention No. 115:
Argentina, Azerbaijan, Barbados, Belarus, Belgium, Belize, Brazil, Chile, Czech Republic, Denmark, Djibouti, Ecuador, Egypt, Finland, France, Germany, Ghana, Greece, Guinea, Guyana, Hungary, India, Iraq, Italy, Japan, Republic of Korea, Kyrgyzstan, Latvia, Lebanon, Lithuania, Luxembourg, Mexico, Netherlands, Nicaragua, Norway, Paraguay, Poland, Portugal, Russian Federation, Slovakia, Spain, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Turkey, Ukraine, United Kingdom, and Uruguay.
Under Article 19 of the ILO Constitution member States are required to report at appropriate intervals, as requested by the Governing Body, on non-ratified Conventions and on Recommendations, indicating in their reports the extent to which effect has been given or is proposed to be given to those instruments.

Under Article 22, reports are periodically requested from States which have ratified ILO Conventions. The report form to which each State is to conform their reports are approved by the Governing Body. On the left is the approved reporting form for C.115.
• Convention No. 115 aims at ensuring effective protection of workers, as regards their health and safety, against ionising radiations. For this, all appropriate steps shall be taken “in the light of knowledge available at the time.” (Article 3)
• Convention No. 115 also requires keeping dose limits for various categories of workers under constant review in the light of current knowledge (Article 6).
ICRP
Annals of the ICRP

ICRP Publication 103
The 2007 Recommendations of the International Commission on Radiological Protection
On 21 March 2012 the Governing Body of the ILO at its 313th Session authorized the revised BSS to be published as a joint publication.
General Observation of 2015

Developed with the support and collaboration of the IAEA

 Adopted by the CEACR in December 2015

• Presentation by the IAEA on radiation protection at the CEACR's session

Published in February 2016 in the Committee of Experts' report.
OCCUPATIONAL SAFETY AND HEALTH

Occupational safety and health

General observation

Radiation Protection Convention, 1960 (No. 115)

Introduction

Background

1. At its November–December 2014 session, the Committee deferred commenting on the application of the Radiation Protection Convention, 1960 (No. 115), in view of the preparation of a new general observation on the Convention. The general observation updates the Committee's previous general observation on the subject published in the 8th publication of the Recommendations of the International Commission on Radiological Protection (ICRP) in ICRP Publication 103 thereby IRCP Recommendations of 2007 (Publication 103), its Statement on Tracer-Related/Early and Late Effects of Radiation in Normal Tissues and Organs—A Guide for Tissue Reaction in a Radiation Protection Context, issued in ICRP Publication 118 in 2012; publication of a revised Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards Part 3 (General Safety Requirements Part 3) (revised BSS 2007) (International Atomic Energy Agency), which takes into account the ICRP recommendations. The recommendations contain these documents have a bearing on the application of the Convention in view of the references to “facts available at the time” and “current knowledge” in Articles 5(i) and 6(c) of the Convention. This observation is organized in two parts. The first part (paragraphs 4–29) is a summary of the recommendations of the IAEA and the ICRP. The second part, the conclusions (paragraphs 30–41), contains specific guidance with respect to the application of the Convention.

Reference to available knowledge—Articles 3(1) and 6(c) of the Convention

2. Under Article 3(1) of the Convention, “in the light of available knowledge at the time, all appropriate steps shall be taken to ensure effective protection of workers, as regards their health and safety, against ionizing radiation.”

The Convention states that “protection measures necessary for this purpose shall be adopted in the light of available knowledge at the time.” In the context of this recommendation, the provisions of Articles 5(i) and 6(c) are relevant. Article 5(i) provides that the recommendations contain these documents have a bearing on the application of the Convention in view of the references to “facts available at the time” and “current knowledge” in Articles 5(i) and 6(c) of the Convention. This observation is organized in two parts. The first part (paragraphs 4–29) is a summary of the recommendations of the IAEA and the ICRP. The second part, the conclusions (paragraphs 30–41), contains specific guidance with respect to the application of the Convention.

3. Article 6(c) of the Convention states that the Convention applies to all activities involving exposure of workers to ionizing radiation in the course of their work. Similarly, the BSS 2004 defines occupational exposure as exposure of workers in the course of their work and the ILO Code of Practice on Protection of Workers (ionizing Radiation) approved by the Governing Body of the ILO (34th Session, November 1985).

4. The Committee recalls that over the last few decades, there have been significant changes in the understanding of radiation effects. These concern both the levels of the dose limits recommended and the purpose and function of the recommendations of the ICRP. In the previous agreement, the ICRP recommended the dose limits as a way to protect against stochastic effects. However, the Committee notes the need to consider the current understanding of radiation effects, including both stochastic and non-stochastic effects. The Committee recommends that the dose limits be reviewed and updated to reflect these changes.

The ICRP recommends that dose limits be based on a risk assessment approach, which takes into account the likelihood of stochastic effects and the potential for non-stochastic effects. However, the Committee notes that the dose limits currently in place do not adequately reflect the current understanding of radiation effects. The Committee recommends that the dose limits be reviewed and updated to reflect these changes.
alone and need to involve economic and societal considerations. On the other side, health effects associated with higher doses are referred to as "deterministic" effects (or "linear no-threshold"), where the severity of the effect is proportional to the dose above a given level. The deterministic effects can be avoided by restricting the doses below a certain level of dose to which individuals are exposed.

7. In planned exposure situations, exposure to the limits of dose limits and for exposure below dose limits, protection is optimised further. It is recommended to involve all concerned parties in the optimisation process.

8. Accordingly, compliance with the limits on individual doses is not the sole measure of satisfactory radiation protection, and it is emphasised that it is to be optimised by all means available, including economic and social factors being taken into account. This approach is reflected in Article 13 of the Convention, which states: “Every effort shall be made to restrict the exposure of workers to ionising radiation to the lowest practicable level, and any unnecessary exposure shall be avoided by all parties concerned.”

Dose limits in occupational exposure

Limits on intake

9. Under Article 11 of the Convention, maximum permissible doses may be received from sources external to or internal to the body and maximum permissible amounts of radioactive substances which can be taken into the body shall be fixed for various categories of workers. The construct of the effective dose provides the mechanism to sum the exposures from external and internal sources, and it is to that extent that the dose limits apply.

Previous recommendations on dose limits

10. The 1990 Recommendations of the ICRP (Publication 60, Appendix B) provided a detailed discussion of the biological effects of ionising radiation. On the basis of the information contained in this publication, the ICRP concluded in 1990 that dose limits should be set in such a way that a level that the total effective dose 0 received in a full working life would be prevented from exceeding about 1 Sv, received moderately uniformly, at an annual average of 20 mSv per year, found that the system of its application of radiological protection should be such that the figure would only need to be approached. The ICRP recommended a limit on the effective dose of 20 mSv per year, averaged over five years, (100 mSv in five years), with the further provision that the effective dose limit should not exceed 50 mSv in any single year. It was indicated that if the circumstances were such that a cumulative approach of 15 mSv per year existed, then consideration needs to be given to the appropriate protection to reduce future exposures. The 1 Sv level is a guide level, and the exposure of which is not to be achieved, and that is not a demarcation at which personal cannot work within the guidance on the cumulative annual increments, or to the dose to an emergency situation. The ICRP also recommended separate annual dose limits, expressed in equivalent dose, for the lens of the eye (150 mSv per year) and for the skin (500 mSv over any 1 cm² per year) to prevent deterministic effects.

Current recommendations for dose limits

11. The dose limits in the ICRP Recommendations of 2007 (Publication 103) reflect significant continuity with the Recommendations of 1990, but were calculated on the basis of updated risk estimates. The ICRP, in the 2007 Recommendations (Publication 103), reaffirms the dose limits recommended previously in Publication 60. These limits are not defined over different periods, with a maximum of 50 mSv effective dose in any one year. Separate values of equivalent dose for skin and lens are specified at 600 mSv per year. In ICRP Publication 118, Part 1 (2012), the ICRP provides a statement on dose-related information, and defines the dose limit for the eyes at the limit of the dose equivalent to the lens of the eye being 20 mSv per year, averaged over five years. The limit on the lens of the eye is specified as 60 mSv per year, with no single year exceeding 50 mSv per year. This superseded the limit contained in both the ICRP Recommendations of 1990 and of 2007, and reflects the only changes with respect to the limit of dose between the ICRP Recommendations and current recommendations. These dose limits recommended by the ICRP have been endorsed by the ICRP 2007 guidelines and the regulatory bodies in their establishment of the control system for occupational exposure.

Protection for pregnant and breastfeeding workers

12. In the ICRP Recommendations of 2007 (Publication 103), the ICRP states that the methods of protection of workers to workers are those that may be used for the exposure of workers to background radiation or to the exposure of workers to external radiation. The methods of protection may be used for the exposure of workers to background radiation or to the exposure of workers to external radiation. The methods of protection may be used for the exposure of workers to background radiation or to the exposure of workers to external radiation.

It is to that extent that the dose limits apply.

Dose limits for persons between 16 and 18 years of age.

13. Article 71 of the Convention provides that appropriate levels shall be fixed for workers who are directly engaged in radiation work and are under the age of 18, while Article 72 provides that no worker under the age of 18 shall be engaged in work involving radiation. These principles are reflected in the ICRP 2007. For occupational exposure of apprentices between the ages of 16 to 18 who are being trained for employment involving radiation and for exposure of students of the ages 16 to 18 who use sources in the course of their studies, the specific dose limits are set lower than the dose for occupational exposure of workers above 18 years of age. Schedule 3 of the ICRP 2007 provides that, for occupational exposure of apprentices between 16 and 18 years of age who are being trained for employment involving radiation and for exposure of students of ages 16 to 18 who use sources in the course of their studies, the dose limits are: (a) an equivalent dose of 6 mSv in a year; (b) an equivalent dose to the lens of the eye of 20 mSv in a year; and (c) an equivalent dose to the extremities (hands and feet) to the skin of 500 mSv in a year. In this regard it may be recalled that, with reference to Articles 1, 14 and 4 of the ICRP 2007, it is in so far as involving occupational exposure to ionising radiation has been determined by national laws or regulations or by the competent authority to be a type of work which is likely to harm the health or safety of children by member States that have ratified Convention, persons under 18 years shall not be engaged in such work.

Dose limits for persons not directly engaged in radiation work

14. Under Article 8 of the Convention, "appropriate levels shall be fixed in accordance with Article 6 for workers who are not directly engaged in radiation work, and who remain or pass through the area or are exposed to a source of radiation, unless work is for the benefit of the public or is of national interest or of public interest. The BSS 2007 requires workers, employers and employers' organizations to ensure that workers exposed to radiation from sources within a workplace are not required by, or directly related to their work to have the same level of protection against such exposure as the public. The annual effective dose limit for these purposes remains at 1 mSv under the ICRP Recommendations of 2007 (Publication 103). As set out in these Recommendations, in special circumstances, a higher value of effective dose could be allowed in a single year, provided that the average over a number of years does not exceed 1 mSv per year. To prevent deterministic effects, separate annual limits on the cumulative annual increments for the lens of the eye at 15 mSv per year and for the skin at 50 mSv per year. In this regard it may be recalled that, with reference to Articles 1, 14 and 4 of the ICRP 2007, it is in so far as involving occupational exposure to ionising radiation has been determined by national laws or regulations or by the competent authority to be a type of work which is likely to harm the health or safety of children by member States that have ratified Convention, persons under 18 years shall not be engaged in such work.

General principles in emergency situations

15. The Committee recalls that the Committee, pursuant to Article 2, applies to all activities involving exposure of workers to ionising radiation, including emergency workers. As indicated by the Committee in its 1992 observations, occupational exposure of workers is not considered for the purpose of setting limits of exposure to the public, and that the appropriate recommendations have been based on the assumption that exposure to the public would be minimized. The annual effective dose limit for these purposes remains at 1 mSv under the ICRP Recommendations of 2007 (Publication 103). As set out in these Recommendations, in special circumstances, a higher value of effective dose could be allowed in a single year, provided that the average over a number of years does not exceed 1 mSv per year. To prevent deterministic effects, separate annual limits on the cumulative annual increments for the lens of the eye at 15 mSv per year and for the skin at 50 mSv per year. In this regard it may be recalled that, with reference to Articles 1, 14 and 4 of the ICRP 2007, it is in so far as involving occupational exposure to ionising radiation has been determined by national laws or regulations or by the competent authority to be a type of work which is likely to harm the health or safety of children by member States that have ratified Convention, persons under 18 years shall not be engaged in such work.

Limitation of occupational exposure during an emergency

16. During an emergency, individual protective action (including in emergency preparations and response planning) must be implemented separately, and optimization of the entire strategy needs to consider all pathways of exposure including those associated with the emergency procedures and response planning. The Committee refers to the holder of a current registration, which is a form of authorization for practices of low or moderate radioactivity risks to where the person is responsible for the practice, or the responsibility for the practice, or the responsibility for the practice. It is to be noted that the annual effective dose limit for these purposes remains at 1 mSv under the ICRP Recommendations of 2007 (Publication 103). As set out in these Recommendations, in special circumstances, a higher value of effective dose could be allowed in a single year, provided that the average over a number of years does not exceed 1 mSv per year. To prevent deterministic effects, separate annual limits on the cumulative annual increments for the lens of the eye at 15 mSv per year and for the skin at 50 mSv per year. In this regard it may be recalled that, with reference to Articles 1, 14 and 4 of the ICRP 2007, it is in so far as involving occupational exposure to ionising radiation has been determined by national laws or regulations or by the competent authority to be a type of work which is likely to harm the health or safety of children by member States that have ratified Convention, persons under 18 years shall not be engaged in such work.

17. During an emergency, each person having specified duties as a worker in response to an emergency (see Table 1 of the BSS 2007).

18. Regulations refer to the holder of a current registration, which is a form of authorization for practices of low or moderate radioactivity risks to where the person is responsible for the practice, or the responsibility for the practice, or the responsibility for the practice. It is to be noted that the annual effective dose limit for these purposes remains at 1 mSv under the ICRP Recommendations of 2007 (Publication 103). As set out in these Recommendations, in special circumstances, a higher value of effective dose could be allowed in a single year, provided that the average over a number of years does not exceed 1 mSv per year. To prevent deterministic effects, separate annual limits on the cumulative annual increments for the lens of the eye at 15 mSv per year and for the skin at 50 mSv per year.
exposure, in order to ensure that the residual dose is reduced to as low as reasonably achievable. The optimized protective practices that are to be implemented when generating systems, for use in protective strategies that are compatible with reference levels, are also necessary to provide rapid results. Harm actions are often needed in the absence of detailed radiological information that is usually associated with major exposure situations in which the source is unknown. A reference level is to be regarded as a reference value that should be respected, and if protective actions are not taken to reduce it to below the level of 100 mSv, a recommendation in the ICRP Recommendations of 2007 (Publication 103).

18. Occupational exposures in emergency and existing situations are subject to the available operational, and personal exposure assessment, monitoring, engagement, and expression. Individual exposure should be optimized, with appropriate boundaries of reference levels. Depending on the pre-existing circumstances, these reference levels may be regarded as the recommended values of doses limits that are applicable to planned exposure situations. In emergency or existing exposure situations, the reference levels represent the dose rate of the radiation, which is subject to inappropriate assumptions to plan to allow exposure to occur, and for which protective actions should be planned and optimized. The initial action would be to avoid, or to reduce, at these levels.

19. The higher levels of exposure in an emergency may be necessary and appropriate over a short period of time, given the circumstances, and subject to optimization of protection. Such levels would not be expected to continue for extended periods because reductions in exposure can be realized as additional information becomes available, and some measures of control over the course of the exposure situation is achieved. The relevant recommendations of the ICRP are set to reduce unnecessary actions and the ambition to reduce all doses to levels that are as low as reasonably achievable, economic and social factors being taken into account.

20. In exceptional situations, informed emergency workers must take action to reduce the probability of receiving doses that might exceed 50 mSv (the occupational dose limit for workers in a single event). The only exception to this is when exposure is inevitable.

21. According to paragraph 4.17.1 of the BSS 2014, organizations and employees should ensure that no emergency worker is subject to an exposure in excess of the 50 mSv limit (a) for the purpose of saving life or preventing serious personal injury; (b) when undertaking actions to prevent severe radiological effects; (c) to prevent actions to prevent the development of radiological conditions that could significantly affect people in the environment; (d) when undertaking actions to prevent a large collective dose.

22. Emergency workers require the consent of the emergency worker, who undertakes actions to which the dose received might exceed 50 mSv so voluntarily, that they have been clearly and comprehensively informed in advance of the associated health risks, as well as available measures for protection and safety, that they are, to the extent possible, ready to undertake the actions that they may be required to take during the recovery period.

24. The ICRP Recommendations of 2007 (Publication 103) states that workers undertaking recovery and restoration operations in a phase of emergency exposure situations should be considered to be occupationally exposed workers and should be protected according to normal occupational radiation protection standards, and their exposures should not exceed the occupational dose limits recommended by the ICRP. Workers undertaking work such as repairs to plant and buildings or activities for radioactive waste management, or undertaking remedial works, should be considered to be occupationally exposed workers.

25. Article 11 of the Convention states that appropriate monitoring of workers and places of work shall be carried out in order to measure the exposure of workers to radiation and radioactive substances, with a view to ascertaining that the applicable limits are respected. In this connection, paragraph 3.37 of the BSS 2014 provides that the regulatory body should establish requirements that monitoring and measurements be performed to verify compliance with the requirements for protection and safety. The regulatory body should be responsible for reviewing and approving the monitoring and measurement programmes of registrants and licensees. In addition, paragraph 3.38 of the BSS 2014 provides that registrants and licensees, in cooperation with employers where appropriate, should establish, maintain and keep under review a programme for workplace monitoring under the supervision of a radiation protection officer or qualified expert. According to paragraph 3.39 of the BSS 2014, the frequency and type of workplace monitoring should be sufficient to enable (i) analysis of the radiological conditions in all workplaces, (ii) assessment of exposure in controlled areas and supervised areas, and (iii) review of the classification of controlled areas and supervised areas. This monitoring should be based on dose rate, activity concentration in air and surface contamination, and their expected fluctuations, and the observations of exposure in simulated operational scenarios and accidental conditions.

Workers’ health surveillance.

26. Article 12 of the Convention states that: “All workers directly engaged in radiation work shall undergo an appropriate medical examination prior to or shortly after taking up such work and subsequently undergo further medical examinations at appropriate intervals.” Article 13 provides that circumstances shall be specified in which, because of the nature or degree of the exposure or a combination of both, the following actions shall be taken promptly: (a) the worker shall undergo an appropriate medical examination; (b) the doctor shall notify the competent authority in accordance with its requirements; (c) persons competent in radiation protection shall examine the condition in which the worker’s duties are performed; and (d) the employer shall take such necessary remedial actions on the basis of the technical findings and the medical advice. In this context, paragraph 3.40 of the BSS 2014 provides that employers, registrants, and licensees should ensure, for all workers engaged in activities in which they are, or could be subject to occupational exposure, that necessary workers’ health surveillance and health services for workers are provided. According to paragraph 3.41 of the BSS 2014, these programmes for workers’ health surveillance should be based on the general principles of occupational health and should be designed to assess the initial fitness and continuing fitness of workers for their intended task.

Discontinuation of assignment to protective activity.

27. Article 14 of the Convention provides that: “No worker shall be employed or shall continue to be employed in work by reason of which the worker could be subject to exposure to ionizing radiation contrary to the collective occupational medical advice.” The key here is the provision of qualified medical advice, upon which a decision should be taken.

28. Paragraph 27 of Recommendation No. 114 provides that, if the result of such medical advice is envisaged in the Convention, it is undesirable to subject a worker to further exposure to radiation: in that situation, the worker should be provided with suitable alternative employment. In this respect, paragraph 3.112 of the BSS 2014 notes that employers should make reasonable efforts to provide workers with suitable alternative employment in circumstances for which it has been determined, either by the regulatory body or in the framework of the programme for workers’ health surveillance to which the requirements of the BSS 2014, that workers, for health reasons, may no longer continue in employment in which they are, or could be subject to occupational exposure. In addition, it may be noted that some of the more recent occupational safety and health instruments (the Working Environment (Pollution, Noise and Vibration) Convention, 1977 (No. 148) and the Age Antiquity (No. 157)) indicate that where continued assignment to activities covered by those instruments is found to be medically inadvisable, every effort shall be made, consistent with national policies and conditions, to secure the worker concerned with other duties of his mobility.

Records of individual doses.

29. Paragraph 26 of Recommendation No. 114 provides that, so far as it is practicable, a complete record of all doses received in the course of work by every worker should be kept so that the cumulative dose may be taken into account for employment purposes. Paragraph 3.53.4 of the BSS 2014 notes that workers shall be provided with the following: (a) the cumulative dose received by the worker, (b) the period during which the dose was incurred, and (c) the type of exposure to which the worker was exposed.
employee, registrant or licensee such information on their past and present work that is relevant for ensuring effective and comprehensive protection and safety for themselves and others.

**Part II – Conclusions**

30. Recalling that, pursuant to Article 3(1) of the Convention, all appropriate steps shall be taken to ensure effective protection of workers, as regards their health and safety, against ionizing radiations, in the light of knowledge available at the time, and, pursuant to Article 6(2), minimum permissible doses and amounts shall be kept under constant review in the light of the current knowledge, the Committee invites States to review their system of protection of workers against ionizing radiations in the light of the findings set out in the ICRP Recommendations of 1977 (Publication 43) and the BSS 2014 that are summarized in paragraphs 2–20 above. In particular, the Committee urges that laws, regulations, directives, codes of practice and other instruments in this field will be re-examined with a view to ensuring, in law and in practice, the effective protection of workers as regards their health and safety. The Committee requests Governments to indicate, in future reports, the steps that may have been taken or that are under consideration in relation to the following matters:

**System of radiation protection (paragraphs 4–8)**

31. In giving effect to Article 3 of the Convention, the Committee considers that governments should ensure the establishment and maintenance of a system of radiation protection, in the light of the safety principles, and, in particular, the three general principles of radiation protection: justification of exposure, optimization of radiological protection and application of dose limits.

**Current recommendations for dose limits (paragraphs 9 and 11)**

32. When fixing maximum permissible doses of ionizing radiations in accordance with Article 6 of the Convention, the Committee considers that governments should note that the dose limits recommended for occupational exposure are:

- 20 mSv per year averaged over defined five-year periods, with a maximum of 50 mSv effective dose in any five-year period;
- equivalent dose for skin and the hands and feet of 300 mSv per year;
- equivalent dose to the lens of the eye of 20 mSv per year, averaged over defined periods of five years, with no single year exceeding 50 mSv per year.

**Protection for pregnant and breastfeeding workers (paragraphs 12)**

33. The Committee considers that the method of protection at work for women who are pregnant should provide a level of protection for the embryo/fetus broadly similar to that provided for members of the public (the annual effective dose limit for members of the public is 1 mSv). In order to ensure the same level of protection for breastfed infants, the same principle applies to breastfeeding workers.

**Dose limits for persons between 15 and 18 years (paragraph 13)**

14. In giving effect to Article 7(2) of the Convention, for occupational exposure of apprentices aged 15 to 18 years who are being trained for employment involving radiation and for exposure of students aged 15 to 18 who use sources in the course of their studies, the dose limits are (a) an effective dose of 6 mSv in a year; (b) an equivalent dose to the lens of the eye of 20 mSv in a year; and (c) an equivalent dose to the extremities (hands and feet) or to the skin of 150 mSv in a year. The Committee notes that, pursuant to Article 7(2) of the Convention, no worker under the age of 18 shall be engaged in work involving ionizing radiations. The Committee also notes that, with reference to Articles 1, 3(A) and 4 of the Worst Forms of Child Labour Convention, 1999 (No. 182), as so far as work involving occupational exposure to ionising radiation has been determined by national or international regulations or by the competent authority to be a type of hazardous work by member States, that have ratified that Convention, persons under 18 must not be engaged in such work.

**Dose limits for workers not directly engaged in radiation work (paragraph 14)**

35. In giving effect to Article 8 of the Convention, the Committee considers that the dose limits for workers not directly engaged in radiation work are those to be applied to members of the public, particularly an annual effective dose limit of 1 mSv. A higher value of effective dose can be allowed in a single year, provided that the average over five years does not exceed 1 mSv per year. To prevent deterministic effects, separate annual dose equivalent limits are to be set for the lens of the eye at 15 mSv in a year and for the skin at 50 mSv in a year. Optimization of protection should be applied to the exposure of individuals who are not directly engaged in radiation work.

**Limitation of occupational exposure during an emergency (paragraphs 15–24)**

36. The Committee considers that it is essential that measures that have minimized significant potential exposure be examined and disclosed in the notification process, and that the measures taken to reduce the dose that are identified and emergency preparedness and response plans put in place to minimize or eliminate the exposure of workers. Planning to undertake in advance of an emergency should be based on the optimization of a protection strategy, which should be implemented when generic criteria, for use in protection strategies that are compatible with reference
General Observation of 2015

Two parts:
- The first part is a summary of the recommendations of the ICRP and the IAEA.
- The second part is the CEACR's conclusions on the measures that should be taken, to give effect to the Convention, in light of these recommendations.
- A copy of the general observation will be sent to all 50 countries that have ratified the Convention, and they will be asked to provide information on the measures they are taking with respect to the guidance given.
Cases were reviewed by the ILO CEACR in 2015:

Belize, Guyana, Japan, UK,

Direct requests on C115 were made to:

Argentina, Brazil, Djibouti, Ecuador, France, Germany, Ghana, India, Japan, Republic of Korea, Kyrgyzstan, Latvia, Lebanon, Luxembourg, Mexico, Netherlands, Norway, Paraguay, Poland, Slovakia, Spain, Sri Lanka, Sweden, Turkey, Ukraine, United Kingdom, Guernsey, United Kingdom: Jersey, Uruguay.

The CEACR will examine a number of other reports this year. It draws systematically the attention of the ratifying countries to its new General Observation which reflects the up-to-date standards. It seems that a number of Governments do not have yet given effect to the new dose limit for the lens of the eye.
Safety Guide: Arrangements for the Termination of a Nuclear or Radiological Emergency (DS474).
Basic Safety Standards – New Structure

Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards

General Safety Requirements Part 3
No. GSR Part 3

Safety Guide on Occupational Radiation Protection
Under publication process
Safety Guides on Occupational Radiation Protection

RS-G-1.1
RS-G-1.2
RS-G-1.3
RS-G-1.6
GS-G-3.2

1999
1999
1999
2004
2008

DS 453-Combine, revise and supersede five safety guides
Safety Report: Radiation Protection of Itinerant Workers

- Focusing on mobile skilful workforce;
- Emphasis on
  - The cooperation of different parties,
  - Dose tracking and radiation protection optimization
- Published in December 2015
International Technical Advisory Group (ITAG) on the IAEA International Report on Fukushima NPP Accident
Industrial Safety Management for Nuclear Facilities

Technical Meeting on Industrial Safety Performance Practices, Experience, and Metrics for Nuclear Power Plants during Construction and Operation

Fuzhou, Fujian Province, China
16–18 November 2015
Ref. No.: 621-12-TM-50057
Safety Report on the assessment of occupational exposure due to external sources of radiation

Safety Report on the assessment of occupational exposure due to intakes of radionuclides

Safety Report on radiation protection optimization
International Conference on Global Emergency Preparedness and Response

19–23 October 2015
Vienna, Austria

Organized by the IAEA
International Atomic Energy Agency

In cooperation with: CTBTO, EC, EUROPE, FAO, ICAO, ILD, IMO, INTERPOL, OECD NEA, PAND, UNEP, WHO, WMO
Webinar: Protection of Emergency Workers and Helpers in a Nuclear or Radiological Emergency

Emergency workers play a critical role in mitigating the consequences and protecting the public in the aftermath of a nuclear or radiological emergency. These workers can be exposed to additional risks in the performance of their duties and protective measures must be taken to ensure that these risks can be minimized.

The IAEA’s Incident and Emergency Centre and the International Labour Organization (ILO) will jointly launch a webinar on how to protect emergency workers and volunteers from the public helping in the response (i.e. helpers) in a nuclear or radiological emergency in line with the international safety standards. The three-hour webinar will be held on 6 May 2016 at 11:00 UTC, with lectures conducted by IAEA and ILO staff in English.
2nd International Conference on Occupational Radiation Protection
1-5 December 2014
Vienna, Austria
### OCCUPATIONAL RADIATION PROTECTION

**CALL-FOR-ACTION**

1. Implement the existing international safety standards to improve occupational protection of workers
2. Develop and implement new international guidance
3. Strengthen assistance to Member States with less developed programs for occupational radiation protection
4. Promote exchange of operating experience
5. Increase training and education in occupational radiation protection
6. Improve safety culture among workers exposed to ionizing radiation
7. Develop young professionals in the area of radiation protection
8. Convene an appropriate international forum to exchange additional information
9. Apply the graded approach of the IAEA International Basic Safety Standards (BSS): Radiation Protection and the Safety of Radiation Sources in protecting workers against exposures to elevated levels of naturally occurring radiation or radioactive materials
ILO relevant activities

- IACRS, RIACRNE, ASSC, EPReSC
- Collaborate with the IAEA in its development of Safety Guides relevant to protection of workers against radiation
- BSS Workshops in Africa (Madagascar) & Asia (China) in 2017
- ILO experts participation in the IAEA technical missions and meetings
- Involvement of workers’ and employers’ organizations
- Industrial safety in nuclear facilities and nuclear power plant construction
Thank you!

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Thank to:
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