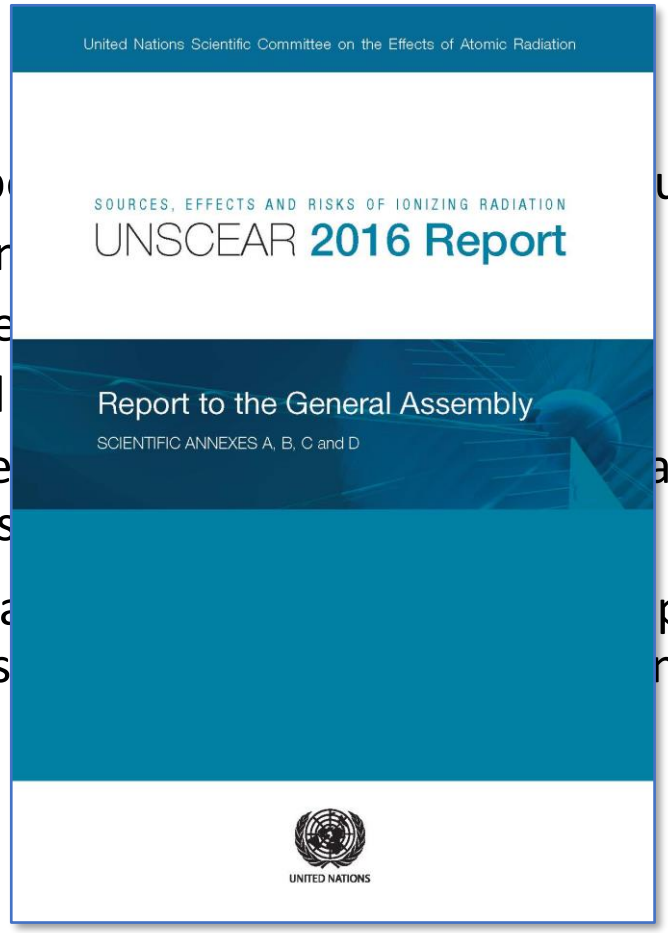
UNSCEAR
United Nations Scientific Committee on the Effects of Atomic Radiation

UNSCEAR Global Survey on Public Exposure – Discharges from nuclear fuel cycle facilities (Subgroups 4/5)

Lead writers:
Carol Robinson, Direktoratet for strålevern og atomsikkerhet (Norway)
Tiberio Cabianca, Public Health England (UK)

Objectives

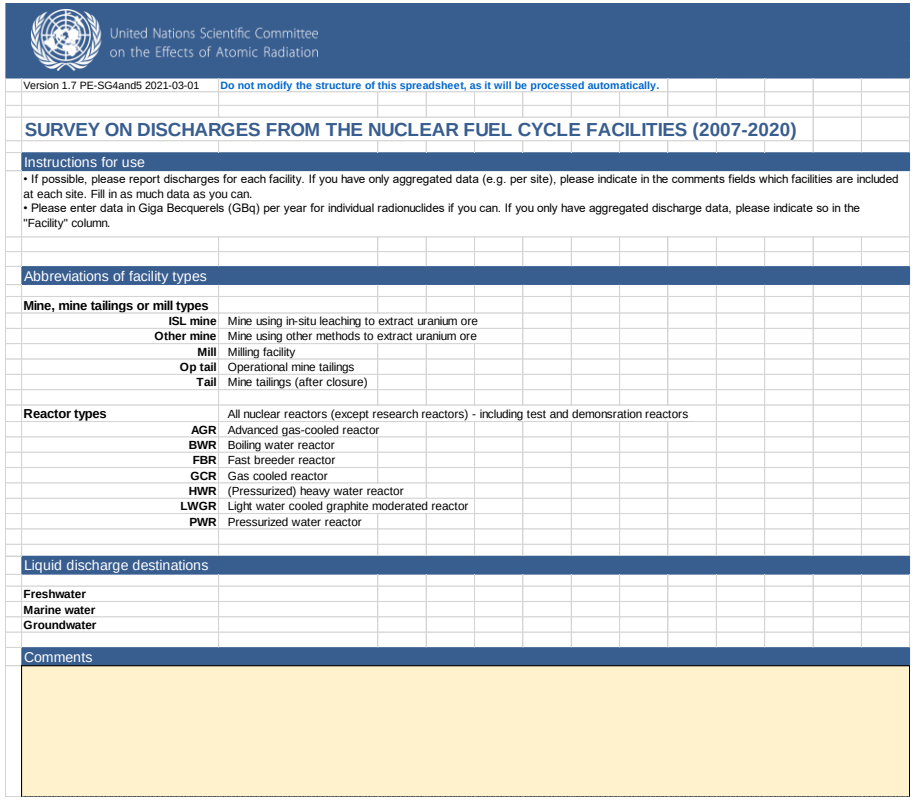
- Assessment of worldwide exp uclear fuel cycle
  - Uranium mining, milling ar
  - Operation of nuclear powe
  - Reprocessing of spent fuel
  - Radioactive waste manage and facilities for treatment and the disposal of radioactive was
- Primarily resulting from discha phere, freshwater and marine environments, based on asses nnex A of UNSCEAR 2016 Report.



Tasks of assessment

- The following main tasks will be undertaken by the group:
  - Review by the group of UNSCEAR methodology to see if requires updating of values
  - Collection of discharge data using UNSCEAR survey spreadsheet (and other possible sources of information)
  - Calculation of doses using spreadsheet that implements UNSCEAR methodology
  - Literature search to update methodology and collect information on doses from discharges to provide context for our calculations

Survey questionnaire



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Version 1.7 PE-SG4and5 2021-03-01 **Do not modify the structure of this spreadsheet, as it will be processed automatically.**

SURVEY ON DISCHARGES FROM THE NUCLEAR FUEL CYCLE FACILITIES (2007-2020)

Instructions for use

• If possible, please report discharges for each facility. If you have only aggregated data (e.g. per site), please indicate in the comments fields which facilities are included at each site. Fill in as much data as you can.
• Please enter data in Giga Becquerels (GBq) per year for individual radionuclides if you can. If you only have aggregated discharge data, please indicate so in the "Facility" column.

Abbreviations of facility types

Mine, mine tailings or mill types	
ISL mine	Mine using in-situ leaching to extract uranium ore
Other mine	Mine using other methods to extract uranium ore
Mill	Milling facility
Op tail	Operational mine tailings
Tail	Mine tailings (after closure)
Reactor types	All nuclear reactors (except research reactors) - including test and demonsration reactors
AGR	Advanced gas-cooled reactor
BWR	Boiling water reactor
FBR	Fast breeder reactor
GCR	Gas cooled reactor
HWR	(Pressurized) heavy water reactor
LWGR	Light water cooled graphite moderated reactor
PWR	Pressurized water reactor

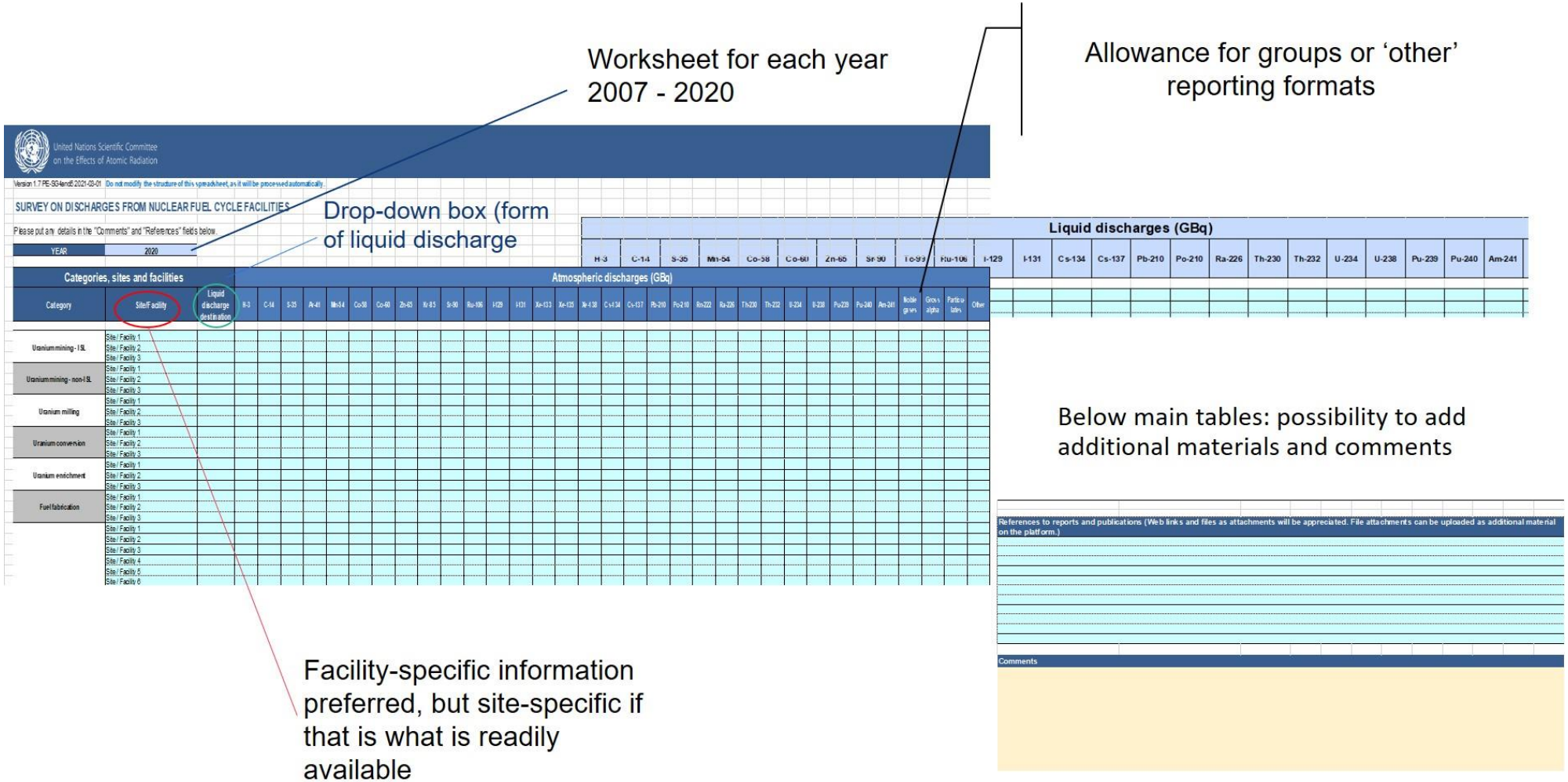
Liquid discharge destinations

Freshwater
Marine water
Groundwater

Comments

Worksheet for each year
2007 - 2020

Allowance for groups or 'other'
reporting formats



Facility-specific information
preferred, but site-specific if
that is what is readily
available

Questions received (1)

- Two questions were ceived from USA and Russia covering similar issues
  - Question from the USA was on whether electronic forms of submission other than the UNSCEAR questionnaire are also acceptable given that the amount of effort for countries with large nuclear programmes needed to complete the survey may be extensive and on the level of detail on discharge data expected
  - Question from Russia was on whether it is acceptable to provide data not on an annual basis but in 2-3 years intervals because, given that the discharges tend to be quite stable within such periods and the amount of work required to fill in the survey seems to be really huge

Response to the questions from the US and Russia

Annual data are, in fact, needed to provide the level of information traditionally included in UNSCEAR reports to describe the nuclear power cycle, as a source. In the past (eg UNSCEAR 2000 report), annual site-specific information has been presented for each country, by facility type. To update these tables, it will therefore necessary to collect annual data in the form requested in the global survey, i.e. **facility-specific annual discharge for defined radionuclides**, as far as possible (or groups of radionuclides, where that is the form data are available). However, we recognize that manually completing the survey tables is a huge task for those countries with large nuclear programmes, and hope that, by offering some **flexibility in the form of data provision**, we can help to reduce this. We would like to encourage you to provide annual facility-specific discharge data, in the form in which you have it available, in an **electronic form (database or excel or csv file)**.

Questions received (2)

- Norway: "***The instructions provide definitions for reactor types, but states that this list applies to "all nuclear reactors (except research reactors)". Norway only has two research reactors – no other types of nuclear reactors. We have no uranium mining or milling activities either. It is therefore our understanding that we should not fill out this form. Is this correct?***"
- The answer to this question is that the assumption made by Norway is correct. The survey for Subgroup 4 and 5 should not be used to collect radioactive discharges from research reactors. Research reactors are included in the scope of Subgroup 6 "Applications other than nuclear power" and discharge data should be provided through the questionnaire for that subgroup.

Thank you

unscear-survey@un.org