INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

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Resolution of Public Consultation Comments for

ICRP Publication 159: Radiological Protection in Surface and Near-Surface Disposal of Solid Radioactive Waste

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Background

ICRP is grateful for the time and effort taken to review and comment on draft publications during their public consultation period. Active public consultations are a valuable part of developing high-quality publications. Comments are welcome from individuals and organisations, and all are considered in revising the draft prior to publication.

To ensure transparency, comments are submitted through the ICRP website and visible by visiting www.icrp.org.

Public Consultation

This draft report was available for public consultation for three months, ending 7 April, 2023. About 300 responses were received on behalf of 18 organisations (see Annex).

In addition to the responses from public consultation, comments were received from ICRP Committees 4 as well as the Main Commission before and after consultation. During later stages of drafting of the document, TG members presented it for feedback to various RP organisations around the globe.

The revised report was approved for publication by the Main Commission on November 2023, with agreement on some final revisions.

Resolution of Comments

The public consultation yielded 304 comments and each one was assigned a theme. The two most common themes were "editorial" (70) and "clarification" (87) or about half of the comments. These ranged from simple typos to relatively minor wording suggestions to clarify the point. The majority of these were helpful in improving the document and were accepted, albeit sometimes in a slightly different manner than suggested.

The third most common theme was "intrusion" at 22 comments. There were a few suggestions from more details on specific types of intrusion (e.g. military actions, burrowing animals) to clarifications on deliberate intrusion. While we tended to avoid adding more detailed requirements, we did revise the text on intrusion including how "innocent bystanders" from a deliberate intrusion should be considered. This topic was also related to comments on emergency and existing exposure situations, which also attracted some attention. There was concern that an emergency situation should not be possible for a near surface disposal facility. However, the counter view that was adopted after considerable discussion within the

TG and confirmed with C4, was that it was not possible to categorically exclude the possibility of an emergency exposure situation occurring. As noted in Table 1 (see hereafter the new version) and the text in the document, we adopted the language "extreme events" and "beyond design basis" to cover this situation.

Beyond these themes, the number of comments on any specific area were generally less than 5. None of the comments were fundamentally at odds with the overall direction of the document and generally were helpful at improving or clarifying the intent of the report. While not tracked explicitly as a theme, a number of comments requested more details or specifics on a particular point. In general, these requests were rejected as beyond the scope of the current document. However, our more general approach on comments was to accept them, if they did not change the intent of the document.

Table 1. Recommended Radiological Protection Criteria and Objectives for Near-Surface Disposal.

<table>
<tr><th>Life-cycle stage*</th><th>Activity/Scenario</th><th>Protective approach</th><th>Optimisation criteria</th></tr>
<tr><td>Pre-operational; Operational; Transition to long-term institutional control</td><td>Site preparation; Design; Construction; Waste emplacement; Closure; Decommissioning of auxiliary facilities; final site configuration</td><td rowspan="2">Planned exposure situation, implementing:
• Dose limits
• Constraints (dose and risk)
• Derived consideration reference levels (DCRL)
• Best available techniques (BAT)</td><td>Optimisation as for the design and operation of any facility</td></tr>
<tr><td rowspan="4">Post-closure; Institutional control and beyond</td><td>Expected evolution of facility and environment including reasonably foreseeable disruptive events</td><td>Optimisation guided by constraints of 0.3 mSv year^{-1} (dose); 10^{-5} year^{-1} (risk); and lower end of relevant DCRL</td></tr>
<tr><td>Severe disruptive events</td><td rowspan="2">Planning against framework for management of existing exposure situations:
• Reference levels
• DCRL
• BAT</td><td rowspan="2">Optimisation guided by reference levels ≤ 20 mSv and DCRLs</td></tr>
<tr><td>Inadvertent human intrusion</td></tr>
<tr><td>Extreme events</td><td>Evaluation against possible consequences</td><td>Beyond design basis, not considered in optimisation</td></tr>
</table>

* For life cycle stages, cf. Fig. 4.

Annex: Consultation respondents

Responses were received on behalf of the following organisations: ARPANSA (Australian Radiation Protection and Nuclear Safety Agency), ASN (French Nuclear Safety Authority),

CNL (Canadian Nuclear Laboratories), CNSC (Canadian Nuclear Safety Commission), CRIEPI (Central Research Institute of Electric Power Industry), DOE (US Department of Energy), Dounreay, IRSN (Institut de radioprotection et de sûreté nucléaire), KINS (Korea Institute of Nuclear Safety), NEA (OECD/Nuclear Energy Agency), NSRA (Nuclear Safety Research Association), NWS (Nuclear Waste Services), ONR (Office for Nuclear Regulation), RIVM/ANVS (National Institute for Public Health and the Environment / Authority for Nuclear Safety and Radiation Protection), SEPA (Scottish Environment Protection Agency), SRP (UK Society for Radiological Protection), UKHSA/EA (UK Health Security Agency ad Environment Agency), US NRC (US Nuclear Regulatory Research).