

ТЕОРІЯ І ПРАКТИКА ПЕРЕКЛАДУ

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TRANSLATION STRATEGIES FOR ENGLISH TERMINOLOGY IN RADIOLOGICAL SAFETY

The rapid development of science and technology in the field of civil protection and radiological safety currently leads to continuous developments in the English-language terminology. As of 2026, with the updating of international environmental monitoring standards and the introduction of new decontamination systems, numerous new terms have emerged that need to be accurately translated into Ukrainian. These include not only technical terms related to radiation measurement and contamination control, but also terms describing emergency procedures, protective equipment, and risk assessment protocols, all of which are essential for maintaining safety and compliance with international regulations.

Studying translation strategies in this area is important due to the high level of responsibility carried by translators. In radiological safety, precise terminology is critical, as any ambiguity in translating instructions, reports, or technical guidelines may result in misinterpretation of protection protocols. Even minor inaccuracies can have serious consequences, affecting emergency response, workplace safety, and public health. Therefore, understanding the most effective translation strategies is essential for ensuring clarity, reliability, and consistency in the dissemination of safety information.

Contemporary research in translation studies emphasizes a refined understanding of translation strategies as part of broader translator decision-making, often distinguishing between global strategies (overall direction of translation) and local strategies or tactics (specific operations applied to individual units of text). This approach is also reflected in Ukrainian translation studies, where O. Romaniuk and R. Zapotichna [2] propose a clear distinction between global and local strategies as key components of

translation competence, taking into account such factors as translation purpose, text type, and target audience.

Modern classifications further include the concepts of domestication and foreignization, introduced by Lawrence Venuti [3] and further developed in contemporary scholarship. In this context, Zhuo [4] analyzes the use of domestication and foreignization in the translation of network catchwords, demonstrating how cultural adaptation and preservation of source-language features influence meaning transfer in digital discourse. Domestication involves adapting terms to the norms and expectations of the target culture, whereas foreignization aims to preserve source-language features and conceptual specificity. Alongside classical strategies such as calquing, modulation, and explicitation, these approaches are increasingly applied in the translation of specialized terminology, including radiological safety discourse, where both clarity and terminological consistency are essential.

Calquing (direct translation). Calquing is frequently used for terms with transparent internal structure and stable international usage. This strategy ensures terminological consistency and facilitates professional communication. *Example:* “*radiological emergency*” – «*радіологічна надзвичайна ситуація*» [1]. In this case, direct translation preserves structural and semantic equivalence with the source term and corresponds to international classification systems. The use of calquing minimizes the risk of misinterpretation in emergency response documentation and regulatory texts.

Semantic modulation. Semantic modulation is applied when literal translation does not adequately reflect the conceptual meaning of the term in Ukrainian technical discourse. The translator modifies the perspective to emphasize the functional or physical characteristics of the phenomenon. *Example:* “*dose uptake*” – «*отримання дози/опромінення*» [1]. A literal rendering such as «*підняття дози*» is misleading, as it contradicts the actual process of radiation exposure. Modulation allows the translator to adapt the term to professional usage and scientific logic, ensuring terminological accuracy.

Descriptive translation (explicitation). This type of translation strategies is used for culture-specific or conceptually complex terms that lack direct equivalents in the target language. This strategy provides additional information necessary for correct interpretation. *Example:* “*Nuclear legacy*” – «*об’єкти та матеріали, що залишилися від минулої ядерної діяльності та потребують контролю*» [1]. The literal equivalent «*ядерна спадщина*» may imply positive connotations.

Explication eliminates potential misinterpretation by clarifying the negative environmental and safety implications of the concept.

Abbreviation reproduction and expansion. Radiological safety discourse is characterized by extensive use of abbreviations. Their translation depends on their degree of international recognition and institutional standardization. *Example: “ALARA (As Low As Reasonably Achievable)” – «принцип ALARA (мінімізація дози до розумно досяжного рівня)»* [1]. This combined strategy preserves the internationally recognized abbreviation while simultaneously providing semantic clarification. Such an approach facilitates comprehension among Ukrainian specialists and ensures compliance with international safety standards.

In radiological safety discourse, **domestication** and **foreignization** are illustrated by different approaches to rendering specialized terms. For example, the English term “*hot zone*” [1] is often domesticated as «*зона підвищеної радіаційної небезпеки*», which reflects Ukrainian regulatory and professional usage and facilitates comprehension for specialists. In contrast, a foreignized rendering such as «*хот-зона*» preserves the source-language form but may reduce clarity in official documentation.

Another example is the term “*radiation shielding*” [1], which may be domesticated as «*радіаційний захист*» to correspond to established Ukrainian terminology, whereas a foreignized variant «*радіейн-шилдинг*» retains English phonetic features and is mainly used in informal professional communication. These examples demonstrate that domestication is generally preferred in regulatory and instructional texts, while foreignization may occur in interdisciplinary or international contexts. The choice between these strategies depends on communicative purpose, institutional norms, and the level of professional expertise of the target audience.

Thus, the analysis demonstrates that the translation of English radiological safety terminology requires a balanced combination of linguistic accuracy, professional competence, and contextual awareness. The choice of translation strategy is determined by the communicative purpose of the text, its functional characteristics, and the needs of the target audience. Calquing ensures terminological stability in standardized documentation, while semantic modulation allows translators to adapt terms to scientific logic and professional usage. Descriptive translation contributes to the adequate interpretation of complex and culture-specific concepts. The combined use of abbreviation reproduction and expansion facilitates effective communication within the international professional

community. Furthermore, the application of domestication and foreignization reflects the translator's strategic decision-making in specialized discourse. The study confirms that no single strategy is universally applicable, and effective translation depends on the flexible integration of multiple approaches. Consequently, the translator's competence plays a decisive role in maintaining clarity, reliability, and consistency in radiological safety communication.

References:

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