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## Prioritization approach for nuclear legacy facilities decommissioning

### PRIORITIZATION APPROACH FOR NUCLEAR LEGACY FACILITIES DECOMMISSIONING

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#### ABSTRACT

*Keywords:* decommissioning, nuclear legacy, facilities prioritization approach, decision making support.

The paper deals with the issues of making a decision on the order of decommissioning of “nuclear legacy” facilities. The authors of the article proposed an prioritization approach for nuclear legacy facilities decommissioning based on the assessment of the “nuclear legacy” objects hazard, taking into account 10 characteristics of “nuclear legacy” objects. The set of characteristics includes: the current state of the facility’s safety barriers, the distance to the nearest town, agricultural land and sources of drinking water, the main radionuclides and the total activity of radioactive materials, etc. The approach developed by the authors assumes that the degree of influence of each of the facilities’ characteristics (weight coefficients) determined by experts. Considering the numerical values and weight coefficients of the characteristics allows to obtain hazard indicators for each of the set of “nuclear legacy” objects. Objects with the highest values of hazard indicators are recommended to be decommissioned in the first instance.

The presented facilities prioritization approach can also be used as one of the possible tools in making a decision on the decommissioning of not only “nuclear legacy” facilities, but also other nuclear facilities.

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