

## Sample Requests for Additional Information (RAIs)

In evaluating the reports submitted by the U.S. Department of Defense per the NRC/DoD Memorandum of Understanding, the NRC reviewer may prepare an RAI if the information is not provided, not sufficient, or requires further clarification. The preparation of RAIs is an important element in the evaluation of the proposed action. RAIs must be carefully prepared, compiled, and organized, with the issues clearly identified, the intention well known, and the basis properly justified. A good RAI addresses only the submitted materials, avoids using judgmental or sentimental language, and does not offer opinions or suggestions. Such an RAI will elicit a sufficient and clear response from the licensee. The scope of the RAI should be limited to the proposed action meeting NRC's 25 millirem per year dose requirements. RAIs should:

- Provide **clear references** to specific subject areas (i.e., the areas where the reviewer was expecting to see the requested information) in the DoD's submittal;
- State the **nature of the questions and their basis** (e.g., refer to existing regulatory guidance documents); and
- Clearly state the **specific information requested** (e.g., system flow chart, site map). This appendix has some examples of RAIs to illustrate their proper construction.

### **EXAMPLE 1: UNDERGROUND AND EMBEDDED PIPES**

#### **Description of the Request**

While reviewing Section 6.1, *Site Release Criteria*, in the DoD's submittal, the NRC reviewer noticed that the licensee did not include a dose calculation for the underground and embedded pipes.

#### **Basis of the Request**

According to Draft Regulatory Guide DG-4006 (NRC 1998b), the direct (external-gamma) dose from the pipes will be in addition to the total effective dose equivalent from the residual radioactivity on the surfaces in the room.

#### **Formulation of RAI**

Section xx, *Site Release Criteria*, page xx: According to Draft Regulatory Guide DG-4006, the direct (external-gamma) dose from the pipes will be in addition to the total effective dose equivalent (TEDE) from the residual radioactivity on the surfaces in the room. To verify that the dose to the average member of the critical group is not likely to exceed the 25-mrem annual dose criterion in 10 CFR 20.1402, please provide text explaining whether all the associated embedded piping of a building would be removed. If it would not be removed, please provide text explaining how the dose from the embedded piping that would not be removed during decommissioning would be calculated and incorporated into the dose estimate for other media (soil, building, and groundwater).

## EXAMPLE 2: AREA FACTOR

### Description of the Request

For residential and building occupancy scenarios, the DoD assumed that the dose, which decreases with decreasing area, decreases more slowly for the direct exposure pathway than for other pathways (e.g., inhalation, ingestion) and therefore included only the direct exposure pathway in calculating area factors. The DoD used Co-60 to calculate area factors for both scenarios, since it represented the limiting radionuclide in terms of direct exposure per unit activity. The RESRAD code with default parameters was used to calculate area factors for the resident farmer scenario, and point kernel calculations were performed for the building occupancy scenario.

### Basis of the Request

An area factor is used to adjust wide-area DCGLs ( $DCGL_W$ ), to estimate DCGLs for small areas with elevated radioactivity ( $DCGL_{EMC}$ ) for comparison, and to find the minimum detectable concentration for scanning surveys in Class 1 survey units. An area factor is the magnitude by which the residual radioactivity in a small area of elevated activity (i.e., hot spot) can exceed the  $DCGL_W$  while maintaining compliance with the release criterion. The area factor depends on the scenario and radionuclide; therefore, the area factor calculated for Co-60 may not be appropriate for other radionuclides.

### Formulation of RAI

Section xx, *Elevated Measurement Comparison (EMC) DCGLs*, page xx: This section calculates area factors for both the resident farmer scenario and building occupancy scenario. It was assumed that under both scenarios, the dose decreased more slowly with decreasing area for the direct exposure pathway than for other pathways (e.g., inhalation, ingestion), so only the direct exposure pathway was included in calculations of area factors. Further, it was assumed that since Co-60 represents the limiting radionuclide in terms of direct exposure per unit activity at the site, only Co-60 needed to be used in calculating area factors for both scenarios.

- Please calculate area factors for all radionuclides of concern at the site in order to provide justification that the area factor calculated for Co-60 by using only the external exposure pathway would be the most conservative area factor for a survey unit. If results indicate that this assumption is not true, then please provide area factors for all radionuclides of concern by considering all active pathways for both scenarios.
- To make the building occupancy scenario consistent in the approach used to derive DCGL and  $DCGL_{EMC}$  values, please use RESRAD-BUILD to compute area factors.