

## **Prioritization Scheme for NRC's Involvement with the DoD's Remediation of Sites Under the Memorandum of Understanding**

The NRC's approach for prioritizing its level of involvement with the remediation of sites under a Memorandum of Understanding (MOU) with the U.S. Department of Defense (DoD) is determined using the following decision process. Figure 1 provides a flow chart of the process.

The process involves answering a series of questions for a specific site.

- 1) Is the site on the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL) under EPA oversight?
- 2) Are radioactive materials in burials, landfills, fill areas, or other areas where engineered controls and/or land use controls are potential remedies?
- 3) At present time (or known plans), are radioactive materials or devices in soil, buildings, groundwater, or a combination of all three, above screening values with potential future unrestricted release?
- 4) Are small amounts of radioactive material in only soil or buildings potentially below screening values with potential future unrestricted release?

Points will be assigned to certain answers. After the questions are answered, the accumulated points are summed for each site. The higher the score after applying a weighting factor, the higher the priority of the site.

### **1) Is the site on EPA's National Priorities List under EPA oversight?**

As discussed in SECY-14-0082, NRC staff will have two main roles at a site covered by the NRC/DoD MOU; either a monitoring or a stay-informed approach. NRC has previously defined its role as a "stay-informed approach" at sites that are under EPA oversight (see SECY-08-0077). In essence, NRC is relying on the EPA's oversight for sites listed on the NPL.

If the answer to this question is "yes" for this site, please add 0 points to the site score, and staff should generally apply a stay-informed approach and proceed to question 2.

If the answer to this question is "no" for this site, please proceed to question 2.

### **2) Are radioactive materials in burials, landfills, fill areas, or other areas where engineered controls and/or land use controls are potential remedies?**

Per the MOU, NRC has a monitoring role to ensure that the NRC's 25 mrem/yr dose criteria contained in 10 CFR 20.1403(b) is met for sites with burials, landfills, or fill areas assuming that the land use and engineering controls remain effective through the use of the Five Year Reviews required by the Comprehensive Environmental Response, Compensation, and Liability Act. NRC would need to conduct monitoring activities for the DoD's investigations of the material onsite, as well as the designs and evaluations of the proposed controls on the material left in place. NRC would also conduct monitoring activities to confirm that the Five Year Reviews are conducted and are effective. Further, NRC should monitor all areas of the site that fit this description (unless under EPA oversight).

If the answer to this question is “no” for this site, please add 0 points to the site score and proceed to question 3.

If the answer to this question is “yes” for this site, please answer the following sub-question:

**2A) Are engineered barriers going to be used in conjunction with land use controls?**

If the answer to this question is “yes” for this site, meaning that the site will have engineered barriers and land use controls, please add 10 points to the site score and proceed to question 3. NRC’s monitoring approach should be applied to all base areas that meet this criteria.

If the answer to this question is “no” for this site, meaning that there are no engineered barriers and only land use controls, please add 8 points to the site score and proceed to question 3. NRC’s monitoring approach should be applied to 1-2 areas with different land use controls that meet this criteria.

While both questions 2 and 2A pertain to sites where contamination remains onsite, the primary difference between questions 2 and 2A center around whether or not engineered controls are used. Question 2 is geared primarily towards whether contamination is expected to remain onsite; question 2A is designed to differentiate contamination in large disposal areas with covers from contamination under building foundations or found in sewer lines where only land use controls are to be used to prevent certain future uses or activities (i.e., excavation of areas with contamination in soils or under structures).

**3) At present time (or known plans), are radioactive materials or devices in soil, buildings, groundwater, or a combination of all three, expected above screening values with potential future unrestricted release?**

If the answer to this question is “no”, please add 0 points to the site score and proceed to question 4.

If the answer to question 3 is “yes”, please answer the following question:

**3A) Is there significant groundwater contamination/environmental transport?**

If the answer to this question is “yes” for this site, please add 6 points to the site score and proceed to question 4. NRC should monitor 2-3 areas of the site that meet this criteria, including at least 1 building (unless under EPA oversight). If there is significant groundwater contamination and/or offsite transport, it can be assumed that there was a large amount of material or that the controls on the material at the time were inadequate by today’s standards.

If the answer to this question is “no” for this site, please add 4 points to the site score and proceed to question 4. These would be the sites with only soil or building contamination and no groundwater contamination or significant transport. NRC should monitor 1 area of the site that meets this criteria and 1 building (unless under EPA oversight).

These questions point to the need for NRC’s monitoring role at a site that will eventually be released for unrestricted use. The second question, regarding whether there has been

significant groundwater contamination and environmental transport, relates, in part, to the amount of material and historic controls on the use of the material. The question also recognizes that groundwater contamination could be more difficult to characterize and remediate. There might also be the possibility of transport offsite and future use by the public. NRC needs to focus its resources on areas with possible impacts to public health and safety; and thus, sites with groundwater contamination and/or significant offsite transport point to the need for a higher priority scoring.

**4) Are small amounts of radioactive material in only soil or buildings potentially below screening values with potential future unrestricted release?**

If the answer to this question is “yes” for this site, please add 0 points to the site score. NRC should apply a stay informed approach to these site areas. Please total the scores.

If the answer to this question is “no” for this site, please add 0 points to the site score. Please total the scores.

**Totaling Site Scores**

The scores for each site are then summed to achieve a total score.

Recognizing that a base may have multiple sites, this prioritization scheme will be done on a site-by-site basis. The answers to questions all have a point value assigned to them. A site may have multiple aspects to it, so after all of the questions are answered the points should be summed.

**Weighting Factors**

Once the points for site attributes are totaled, we should apply a weighting factor based on what is currently known about planned reuse and controls.

- a. The weighting factors would be:
  - i. Base Realignment and Closure Site or known future residential/farming use = Total site score x 1.4; or
  - ii. Active military base or known future commercial/industrial use = Total site score x 1.2; or
  - iii. Future recreational/open space = Total site score x1.

The sites with the highest total point values after weighting will be ranked the highest in prioritization. The prioritization scheme will help inform the NRC with respect to the sites to focus on for both the stay-informed approach and the monitoring approach. The stay informed approach would apply to the entire base with all its sites, because the NPL identification is for the entire base.

**Annual Prioritization**

This prioritization should be re-run annually and staff efforts focus on the items where DoD is performing action or planning actions for that year.