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NRC ISSUES CLEANUP CRITERIA FOR URANIUM MILLS

The Nuclear Regulatory Commission is amending its regulations to provide criteria for the cleanup of uranium and thorium in soil and radioactivity on building surfaces during the decommissioning of uranium mills and other uranium extraction facilities.

The criteria represent upper limits on the radiation dose levels that would be permitted as a result of uranium and thorium remaining at NRC-licensed uranium facilities after decommissioning. The NRC previously used agency guidance documents to decide whether to approve cleanup and decommissioning plans and determine if the license could be terminated.

The new dose criteria are based on the existing Environmental Protection Agency (EPA) soil standard for radium. The EPA previously set standards requiring that the concentration of radium at uranium mills after decommissioning may not exceed natural background levels of radiation by more than 5 picocuries per gram in the first 6 inches of soil, and 15 picocuries per gram for every subsequent 6-inch layer. These standards have already been incorporated into NRC's regulations.

The new standard for uranium and thorium uses the radiation dose from radium in soil as a benchmark. Licensees who are decommissioning their uranium facilities will have to calculate the radiation dose from radium over 1,000 years for their particular site. They will then have to remediate their site so that the dose from NRC-regulated uranium and thorium remaining on site after decommissioning will not exceed the dose allowed for radium. The staff recently calculated that the potential dose to an individual from applying the benchmark approach may range between 22 and 34 millirems per year.

In addition, licensees will be required to demonstrate that radiation doses from NRC-regulated materials are as low as is reasonably achievable.

In the unlikely event that application of this benchmark would result in a dose exceeding 100 millirems per year, the staff will consult with and receive the approval of the Commission before approving the decommissioning plan. The 100-millirem dose is the NRC annual limit for members of the public. The average annual dose to an individual in the United States from natural background radiation is about 300 millirems.

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