

(i.e., recent increases in radioactive waste disposal costs) does not apply. Another of these commenters stated that NRC's proposal will be burdensome and appears to be driven by short-term investment performance and anticipation of higher waste disposal costs. This commenter countered that the history of investments over long periods of time (e.g., 40-plus year facility lifetimes) is very positive, and that licensees have taken steps to lower their waste disposal costs by reducing the volume of decommissioning waste that will be generated and by increasing the recycling of materials to other nuclear facilities.

*Response:* The proposed requirement to update decommissioning cost estimates every 3 years will help ensure that financial assurance obtained by licensees will not become inadequate as a result of changing disposal prices or other factors. Increasing waste disposal costs have been and continue to be a concern for NRC. However, decommissioning costs also may change for a variety of licensee-specific reasons (e.g., due to changes in the size and scope of operations) as well as for other reasons that may be out of a licensee's control (e.g., inflation). The proposed 3-year cost estimate updates are intended to capture changes in estimated costs regardless of cause, and to help ensure that the level of financial assurance required of each licensee is appropriate. Therefore, the proposed requirement is appropriate even for licensees that are not expecting to incur any significant waste disposal costs, as well as for licensees that may be taking steps to reduce the volume of decommissioning waste (which is only one component of decommissioning costs).

Although it would be less burdensome to require updates every 5 years as opposed to every 3 years, the NRC believes that this would entail too great of a risk that cost estimates could become significantly low. The NRC's experience indicates that decommissioning cost estimates may fluctuate significantly in less than five years. In one case, a licensee increased its decommissioning cost estimate from \$55,000,000 to \$67,000,000 in one year. Even where site conditions do not change as dramatically as in the case noted, inflation may increase costs significantly.

For example, if decommissioning costs were to rise by five percent annually (due to higher disposal costs, increased operations, inflation, and/or other factors), then in only 3 years a previously accurate estimate would understate current costs by 15 percent. As a result, financial assurance would

be low by the same amount. This would create an unacceptable risk of unfunded decommissioning obligations. This risk would increase even further over a 5-year period.

## 2. Update Estimates Only When Warranted

*Comment:* One commenter asserted that the reason costs can change significantly has to do with "internal" factors such as the size and scope of operations (as opposed to "external" factors such as the cost of disposal). Therefore, this commenter suggested that whenever an application for a license amendment is submitted due to changes in operations or materials possession (or other factors specified by NRC), an updated cost estimate should be required and considered as part of the amendment process. If no license amendments are required prior to license renewal, then an updated estimate should be required only at the time of license renewal. The commenter also described two alternatives to this approach. Under the first alternative, NRC could arrange for updates on a case-by-case basis by category and default history for that segment. Under the second alternative, licensees would update their cost estimate if estimated costs exceed a required contingency included in the previous estimate.

*Response:* NRC agrees that internal factors are an important cause of significant changes to decommissioning costs. However, if the commenter's primary suggestion (i.e., to require an updated cost estimate as part of any license amendment application involving a change in operations or materials possession, or at the time of license renewal if there are no amendments) were enacted, licensees would update their cost estimates only once every 5 years, assuming there were no license amendments or other "internal" trigger events that might be specified by NRC. This would be true regardless of cost increases due to "external" factors (e.g., increased disposal costs, inflation). As discussed in Section C.1 above, this approach is not acceptable to NRC because it could result in a substantial portion of decommissioning costs not being covered by financial assurance.

The first alternative approach would require that updates be provided by licensees on a case-by-case basis by "category" and "default history" for the relevant segment. NRC believes this approach would place an unreasonable administrative burden on NRC staff to analyze all changes and events applicable to each licensee individually, as well as to study default histories and

other developments by segment. Even if NRC were to undertake such efforts, licensees still might be required to submit updated estimates (albeit on a case-by-case basis) with a frequency that approximates that of this rulemaking.

The second alternative approach suggested in the comment would require that cost estimates be updated only when the new estimate exceeds the required contingency in the previously-submitted cost estimate. As do other types of engineering cost estimates, decommissioning cost estimates include a contingency factor to account for unanticipated costs. This contingency factor is typically equal to 25 percent of the total of all known decommissioning costs. One problem with this alternative is that, if the contingency factor were allowed to cover recent increases in known costs, then the contingency would not be available to address the unanticipated costs for which it was intended. This means that the outdated estimate could be inadequate by 25 percent, which is not acceptable to NRC. A second problem with this alternative is that, in order to avoid updating the cost estimate, licensees would have to develop an updated cost estimate so that they could determine whether costs have escalated to more than the contingency factor. Therefore, it would be more efficient and more protective of decommissioning funding for the licensee to submit the updated estimate to NRC as proposed in this rulemaking, using it as the most accurate basis for financial assurance.

## D. General Comments

### 1. Rule Is Arbitrary and Unwarranted

*Comment:* One commenter disagreed with the increase in certification amounts and with NRC's justification for the change, characterizing it as "arbitrary and unwarranted." The commenter stated that although disposal costs have indeed risen, waste liabilities actually have been reduced by efforts to reduce weights and volumes and eliminate sources of waste streams, and by considering ease of decommissioning in the design, construction, and operation of new facilities. The commenter stated that Barnwell has been unable to achieve South Carolina targets for generation of volume-driven revenue due to changes in waste management practices by generators over the years.

*Response:* NRC does not agree that the basis for the rulemaking is arbitrary or unwarranted. First, and as noted by the comment, disposal costs have indeed risen. Although some licensees have implemented waste reduction efforts,