incorporated in the final rule. The purpose of the requirement is to provide feedback to NRC on quality assurance program effectiveness by an indication of the number and type of packaging and other mistakes and on the safety significance of those mistakes by an indication of the mistake consequences. NRC believes the reporting requirement should retain its broad scope. A large number of reports is not expected. NRC also believes that individual follow-up is the only reasonable way to uncover any procedural deficiency that might cause mistakes.

One comment questioned whether this type of report is important enough to be required within 30 days. NRC judges that the timing is about right, and expects the staff's review of submitted reports to be completed within a similar time frame.

Section 71.97 Advance Notification of Shipment of Irradiated Reactor Fuel and Nuclear Waste

Of the five comments submitted on this notification requirement, two suggested changing the value for the number of curies in § 71.97(b)(3)(iii), so it corresponds to the same limit in the regulations of DOT and IAEA. That change has been made.

The other three comments stated that this requirement was not clearly expressed. The requirement has been reorganized in the final rule, and consists of the following parts:

- 1. Paragraph (a) provides a broad general requirement that licensees prenotify governors of States of any shipments of radioactive material going to, through, or across the boundary of the State;
- 2. Paragraph (b) limits the prenotification requirement to certain types of shipments. All the conditions of paragraph (b) must be satisfied for the prenotification requirement to apply. The licensed material must be required to be in a Type B package, limiting the requirement to shipments of relatively high potential hazard. The shipment must be destined to a disposal site or to a collection point for transport to a disposal site, further limiting the requirement to waste material. The quantity of radioactive waste in a single package must exceed the limits specified in the DOT regulations for highway-route controlled quantities. Lastly, for irradiated fuel, the quantity contained in a single package must be less than that subject to the similar advance notification requirement of 10 CFR 73.37(f).
- 3. Paragraphs (c), (d), (e) and (f) contain the details for timing,

information in the notification, revisions, and cancellation.

One comment noted that from the wording in § 71.97(a), a reader would expect to find exceptions in § 71.97(b). The comment notes that the provision does not contain exceptions. NRC agrees with this comment and has revised § 71.97(a) for clarity.

One comment questioned the value of proposed § 71.97(b)(4) [§ 71.97(b) in the final rule] which required that "\* \* the quantity of irradiated fuel is less than that subject to advance notification requirements of § 73.37(f) of this chapter." Paragraph 73.37(f) refers to a separate part of the Commission's regulations, 10 CFR Part 73, "Physical Protection of Plants and Materials," and imposes an advance notification requirement for irradiated fuel shipments similar to the one under discussion. The scope of Part 73 (see § 73.1(b)(5)) limits its applicability regarding shipments of irradiated reactor fuel to "\* \* \* quantities that in a single shipment both exceed 100 grams in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, and have a total radiation dose rate in excess of 100 rems per hour at a distance of 3 feet from any accessible surface without intervening shielding." If the quantity of irradiated fuel in a shipment exceeded the quantity specified in § 73.1(b)(5), the notification would be made under § 73.37(f). If not, the notification would be made under § 71.97. The proposed provision in § 71.97(b)(4) was intended to prevent duplicate notifications for some shipments.

The final comment on § 71.97 included a clear rewrite of § 71.97(b) that has been used in its entirety in the final rule.

## Comments on Appendix A

Five comments supported the inclusion of new radionuclides in Table A–1 of Appendix A as useful and justified. Five other comments pointed out errors and inconsistencies between NRC and DOT for the A<sub>1</sub>/A<sub>2</sub> values in Table A–1. These inconsistencies have been corrected in the NRC and DOT final rules.

Three comments recommended a grandfathering provision for the continued authority to transport molybdenum (Mo) 99/technetium (Tc) 99m generators, in Type A packages, with radioactivity between the current A<sub>2</sub> value of 20 Ci and the new A<sub>2</sub> value of 13.5 Ci for Mo-99. The lower A<sub>2</sub> value is the result of a new dosimetric model, for beta-emitting radionuclides, to address skin contamination. In the preamble to the NRC proposed rule, the

NRC noted, with respect to the changes in the  $A_1$  and  $A_2$  values:

Based on our most current knowledge of radioactive material shipments in the United States, the economic impacts of these changes are not likely to be large. However, any situations where a potential exists for significant economic impacts as a result of changes in the  $A_1$  or  $A_2$  values should be brought to the NRC's attention in public comments

NRC agrees that this is a situation where health care in the United States could be significantly impacted as a result of forcing the larger quantity Mo-99/Tc-99m generators now transported in Type A packages into Type B packages. In view of the favorable experience over the years with these generators, NRC and DOT will allow the continued domestic transportation of generators that contain up to 20 Ci of radioactive material in Type A packages.

Two similar proposals to grandfather the transportation of carbon-14, phosphorus-32, sulfur-35, and iodine-125 at existing levels were not as persuasive and have not been adopted. The decrease in  $A_1$  and  $A_2$  values would apparently force many shipments out of the "limited quantity" category, where they are excepted from specification packaging, shipping papers and certification, and marking and labeling requirements, and into the "Type A" category.

Although there are clearly more packaging and communication requirements associated with the "Type A" category than with the "limited quantity" category, NRC does not view that change as creating the same economic impact as a change from the "Type A" to the "Type B" category.

One comment suggested that the radionuclides einsteinium-253 and einsteinium-254 be added to Table A-1 because shipment of those transuranics are increasing in number and the default values are not expected to be adequate. NRC has added those radionuclides and will also propose them for addition to the IAEA regulations. Until they are included in IAEA Safety Series No. 6, however, multilateral approval is required for international shipments. This limitation is identified by footnote in Table A-1.

One comment objected to having to obtain NRC approval of  $A_1/A_2$  values that are not in Table A–1. In addition to NRC approval, international shipments require multilateral approval of A values that are not included in the IAEA regulations by each country through or into which the consignment is to be transported. The development of A values may not be a simple matter, requiring consideration of daughter