

United States Nuclear Regulatory Commission
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NRC REVISES REGULATIONS FOR SHIPMENTS
OF URANIUM AND PLUTONIUM

The Nuclear Regulatory Commission is amending its regulations regarding shipments of certain types of uranium and plutonium.

The changes are necessary to correct a recently discovered defect in the current regulations that, in special circumstances, could permit a nuclear criticality, or chain reaction, to occur in shipments of the materials that are allowed to take place without specific NRC approval.

The amendments restrict the use of beryllium, graphite or deuterium as moderating materials in the packaging of plutonium-238, plutonium-239, plutonium-241, uranium-233, uranium-235 or any combination of such fissile material.

In addition, limits are placed on the amount of fissile material that can be shipped without specific NRC approval.

The recently discovered regulatory defect is not indicative of unsafe fissile material shipments in the past. Rather, it was identified by Babcock & Wilcox (B&W) Company during their preparation for shipment of an unprecedented type of fissile material that could result in nuclear criticality under current requirements. This unique material is produced as a waste product from processing of strategic material resulting from operations to commercially downblend weapons-usable fissile material from the former Soviet Union.

This material, which has not previously been handled by NRC licensees, contains beryllium, which acts as a "moderator" in the presence of uranium and thus enhances its ability to achieve criticality. NRC's current regulations assume that water is the only moderator that might be present in fissile material shipments made without specific NRC approval.

B&W's calculations showed that a shipment containing large amounts of enriched uranium in the presence of beryllium had the potential for starting a chain reaction. The company promptly notified NRC and made a commitment not to make any such shipments. The NRC staff determined that revisions to NRC regulations were needed after verifying B&W's calculations.

In addition to amending its regulations, the NRC has confirmed B&W's commitment not to make such shipments and has sent a notice to all licensees that might ship similar material in the future.

Because of the safety significance of this issue, the rule change is effective immediately. However, interested persons may submit comments by March 12 (30 days after publication of a Federal Register on this subject on February 10), and the Commission will revise the rule if necessary. Written comments may be addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Docketing and Service Branch. They also may be submitted electronically, as described in the Federal Register notice.

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