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No. 97-006

FOR IMMEDIATE RELEASE
Thursday, January 16, 1997

NRC ASKS VECTRA TECHNOLOGIES TO SUBMIT INFORMATION ON ITS DRY CASK STORAGE SYSTEM FOR SPENT FUEL

The Nuclear Regulatory Commission has asked VECTRA Technologies, Inc., of San Jose, California, to submit information to show why NRC should not order the company to take certain actions with regard to a dry cask storage system for spent nuclear fuel.

NRC has asked VECTRA to submit by March 14:

- (1) A statement as to why NRC should not order VECTRA or an independent organization, contracted by VECTRA, to conduct a comprehensive review of VECTRA's design control, since June 1995, of its Standardized NUHOMS Horizontal Modular Storage System.
- (2) A statement as to why NRC should not order VECTRA to perform a comprehensive review of all design changes and nonconformances since June 1995. The statement would have to include a discussion of the root cause of previously identified corrective action weaknesses.
- (3) A statement by VECTRA as to why the NRC should not suspend VECTRA's authority to fabricate the storage system until the problems have been resolved to the NRC's satisfaction.

VECTRA holds an NRC certificate approving the use of its Standardized NUHOMS Horizontal Modular Storage System. NRC conducts inspections to determine whether the system is being manufactured in accordance with the NRC-certified design.

NRC issued the demand for information to VECTRA as a result of inspection findings regarding the company's quality assurance program for manufacture of the storage systems. NRC noted that one of the conditions of the certificate is that the dry cask fabrication must be conducted in accordance with the quality assurance program described in the company's safety analysis report submitted to NRC. The agency's inspections have found that VECTRA has not always accurately translated the system design into the specifications that its fabrication contractors must follow.

In the NUHOMS system, spent fuel rods from a nuclear power plant spent fuel pool are placed inside a metal canister, all water and moisture are removed, and a shield lid is placed over the opening and welded shut. The sealed canister is placed horizontally in a concrete structure about 10 feet wide, 5 feet tall and 19 feet deep. The full canister and surrounding structure weigh about 150 tons and rest on a reinforced concrete pad. Natural air circulation provides all the necessary cooling.

The NUHOMS system is now being used to store spent fuel at the Calvert

Cliffs (Maryland), Davis Besse (Ohio), and Oconee (South Carolina) nuclear power plants. The H.B. Robinson plant in South Carolina uses an earlier version of the NUHOMS system. These VECTRA units already in use have been previously inspected by the NRC on a periodic basis, in accordance with the agency's inspection program. Any issues identified have been resolved to the NRC's satisfaction.

In addition, the following plants plan to use the system: Oyster Creek (New Jersey), Rancho Seco (California--permanently closed), and Susquehanna (Pennsylvania).

The NRC first raised concerns with VECTRA's quality assurance program in June 1995 during an inspection of fabrication of dry shielded canisters at a VECTRA contractor facility. The quality assurance program failed to identify that there was inadequate documentation for design changes, that the fabrication process did not ensure that acceptable canister wall thickness was maintained, and that pressure tests of the canisters were not being performed as committed to by VECTRA in its submittals to NRC.

Because of the significance of these concerns, the NRC issued a letter to VECTRA on July 7, 1995, confirming VECTRA's commitment to correct and prevent recurrence of these problems.

However, in later inspections in July and August 1996, NRC again identified problems with the NUHOMS system, indicating insufficient corrective actions. The inspectors found that VECTRA had failed to provide sufficient detail in the fabrication specification to ensure that the concrete material used in the outer storage container met requirements. They also discovered an inadequate analysis of the effects of the paint used for the outer container's heat shield.

In a November 1996 inspection at another VECTRA fabrication contractor's facility, NRC inspectors found similar problems with the concrete specifications, indicating that VECTRA had failed to take actions to preclude repetition of the earlier shortcomings.

Because of NRC's concerns with VECTRA's quality assurance program and lack of effective corrective actions since June 1995, NRC questions whether it can have confidence in VECTRA's current ability to fabricate the Standardized NUHOMS Horizontal Modular Storage System.

After reviewing VECTRA's response to the demand for information just issued, the NRC will determine whether further action is necessary to ensure compliance with regulatory requirements.

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