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Abstract

Innovative measures minimize dose at  
Big Rock Point's spent fuel pool clean out project

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Removal and disposal of non-fuel items from Consumers Energy's Big Rock Point Restoration Project's spent fuel pool is one of the most ambitious projects of its kind in the nuclear industry.

The project calls for the removal of all non-fuel items from the spent fuel pool to support the scheduled loading of nuclear fuel into seven dry fuel canisters in May 2000. Approximately 130,000 curies of activity will be removed when the project is complete.

The items to be removed include:

- 241 channel assemblies
- 93 loose detectors
- 91 control blades
- 16 incore detectors
- Other items, including a channel rack and empty fuel storage baskets

One of the unique features of the project is the use of the reactor vessel as a work area. The use of the emptied reactor was necessitated by the lack of space available in the spent fuel pool.

Consumers Energy and contract partner Nukem personnel have utilized proven ALARA techniques as well as implementing a number of innovative strategies to reduce dose during the project.

ALARA strategies utilized during the project include:

- ALARA input into the planning process
- Emergent work review
- Use of a portable liquid radwaste processing system
- Use of water walls to lower dose
- Installation of a new spent fuel pool bridge

Implementation of these and other ALARA techniques have resulted in an actual dose of 13.5 person-rem after nine shipments, approximately 37 percent lower than projected.

The project began in February 1999 and is scheduled for completion in April 2000.