

Low and Intermediate Level Radioactive Waste Management at OPG's Western Waste Management Facility

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This paper will discuss low and intermediate level radioactive waste operations at Ontario Power Generation's Western Waste Management Facility.

The facility has been in operation since 1974 and receives about 5000 – 7000 m³ of low and intermediate level radioactive waste per year from Ontario's nuclear power plants.

Low level radioactive waste is received at the Waste Volume Reduction Building for possible volume reduction before it is placed into storage. Waste may be volume reduced by one of two methods at the WWMF, through either compaction or incineration. The Compactor is capable of reducing the volume of waste by a factor up to 5:1 for most waste. The Radioactive Incinerator is capable of volume reducing incinerable material by a factor up to 70:1. After processing, low level waste is stored in above ground concrete warehouse-like structures called Low Level Storage Buildings. Low level waste that cannot be volume reduced is placed into steel containers and stored in the Low Level Storage Buildings.

Intermediate level waste is stored mainly in steel lined concrete storage structures. WWMF has both above ground and in-ground storage structures for intermediate level waste. Intermediate level waste consists primarily of resin and filters used to keep reactor water systems clean, and some used reactor core components. All low and intermediate level waste storage at the WWMF is considered interim storage and the material can be retrieved for future disposal or permanent storage.

Current improvement initiatives include the installation of a new radioactive incinerator and a shredder/bagger. The new incinerator is a continuous feed system that is expected to achieve volume reduction rates up to 70:1, while incinerating higher volumes of waste than its predecessor. The shredder will break down large/bulky items into a form which can be processed for further volume reduction.

A Refurbishment Waste Storage Project is underway in anticipation of the future need to accommodate the specific wastes associated with a steam generator replacement and retube project at a nuclear station. The project is currently undergoing an Environmental Assessment.