



Contaminated water in river

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BRATTLEBORO -- Most of the information contained in a 501-page report detailing the subsurface conditions at Vermont Yankee nuclear power plant wasn't surprising, said Bill Irwin, chief of radiological health for the Vermont Department of Health

"The report provided a complete package of technical data allowing a thorough and independent assessment by all of the state's experts," he said. "While our general assessment has not changed, our basis for our assessment is stronger."

The conceptual site model, its technical name, was prepared by GZA GeoEnvironmental, Inc. in response to the results of a well sample that was taken in late 2009, which revealed a pipe tunnel somewhere at Yankee was contaminating the groundwater with tritium.

Since the leak was discovered, more than 300,000 gallons of contaminated groundwater have been removed and either treated and returned to the plant's systems or shipped to a disposal facility.

Any contaminated groundwater not extracted "will ultimately discharge to the Connecticut River, along with other groundwater within the watershed," stated the report. "Upon entry into the river, the tritium will rapidly disperse, resulting in less than detectable levels."

GZA stated its conclusion was supported by the fact that no river water samples or fish were found to have detectable levels of tritium.

Based on its study, GZA concluded the tritium leak posed "no significant risk to human health

or the environment."

GZA also concluded that further groundwater removal would have "little significant benefit."

But Yankee spokesman, Larry Smith, said plant management has no intention of ceasing the extraction at this time.

That decision will be made after the Nuclear Regulatory Commission submits the results of its investigation of Yankee's implementation of its groundwater protection initiative. That report is due sometime near the end of July or early August.

GZA's model was developed to support Entergy, which owns and operates the power plant in Vernon, in its investigation of the leak.

The model helped determine the extent of the contamination, the movement of the contaminated groundwater and the identification of any off-site water sources that could potentially be contaminated.

According to the conceptual model, the soil in the area of the pipe that was found to be leaking is a natural sand deposit over a thin layer of silt.

The sand layer is approximately 30 feet in depth. Closer to the river, the sand layer increases to 70 feet in depth.

Beneath the sand and silt is gneiss bedrock, which is moderately fractured. The reactor and turbine buildings were built on top of the bedrock, which required extensive soil and bedrock excavation, according to the report. The excavation was

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backfilled with fine-grained soils of local origin.

The report confirmed the conclusion reached by Yankee technicians who located the leak in a pipe tunnel connected to the plant's off-gas building.

The tritium plume was determined to be 200 feet wide and 400 feet long.

Both on-site and off-site drinking water wells are in the bedrock and are all located uphill of the plant. No tritiated water was discovered in any of the on-site deep wells, stated the report.

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