

## Water Use at a Nuclear Plant

Progress Energy Florida selected the preferred site in Levy County in part because it has access to ample water to support plant needs – if a plant is built – without significantly adversely affecting other water uses and requirements. Cooling water for the plant would be supplied by a saltwater intake pipe, using water from the Gulf of Mexico. Water use and discharge are highly regulated by state and federal agencies.

- A two-unit nuclear plant could require between 100 million and 130 million gallons of saltwater per day to support plant operations.
- The gulf would supply more than 99 percent of the plant's water needs through the Cross-Florida Barge Canal.
  - More than 60 percent of the water would be returned to the gulf from the cooling tower; the rest would evaporate during the cooling process.
  - In a nuclear plant, water is used primarily for condenser cooling, which removes heat generated in the production of electricity, from the plant's steam turbine and is never exposed to radioactive material.
- Less than 1 percent of the plant's water needs would come from the Floridian Aquifer (drinking water).
  - The aquifer would supply drinking water for personal/sanitary use, fire protection and other plant uses.
  - Roughly 1 million gallons per day would be needed.
- The proposed plant would use **closed-cycle cooling**, instead of once-through cooling that some older plant technologies use.
  - The method recycles water to the greatest degree practical.
  - Considered by the Environmental Protection Agency as a "best-available technology."
    - Minimizes environmental impacts because it uses a fraction of the water needed to supply once-through cooling systems.
    - Greatly reduces risks to fish and aquatic species.
- Progress Energy is collaborating with local agencies to ensure the plant has no significant adverse impacts on resources or nearby wells.
- Water discharge from a potential new nuclear plant would be closely regulated by the state of Florida through the National Pollutant Discharge Elimination System (NPDES) permit, which will be required for operation of the facility. As authorized by the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The standards established in NPDES permits are intended to protect water for drinking, fishing, swimming and other activities.
- Intake and discharge pipes would be 54 inches in diameter, made of high-density polyethylene. They would be buried about four feet underground except when crossing the Inglis Lock Bypass Canal, where they would be eight feet above the water along a bridge.
  - The intake pipelines would be about three miles long, between the plant and the bypass canal.
  - The discharge pipelines would be about 13 miles long, running south from the proposed plant, turning west along the bank of the barge canal, and then heading south along a Progress Energy transmission line to the Crystal River discharge canal, which leads to the Gulf of Mexico.