James A. FitzPatrick

Cost to Subsidize: $1.9 billion

Location: Oswego County
Owner: Entergy Corporation
Generating Capacity: 838 MW
Type: Mark I Boiling Water Reactor
Age: 46 years in operation
Population within 50 miles: 909,798
Nuclear waste on site: ~456 tons

Recent Safety Issues

- 2016 - Pump failure and oil spill into Lake Ontario
- 2016 - Inspection report reveals an ongoing 5-year radioactive leak on site
- 2013-2014 - Frequent condenser leaks resulting in multiple unplanned power changes and increased oversight from NRC
- 2012 - Major transformer fire
  >> A similar fire at the Indian Point reactors caused Governor Cuomo to hold a press conference, saying "This was a relatively minor situation, but when you're talking about a nuclear power plant there are no really minor situations."
- 2006-2011 - Multiple serious worker safety violations and fraudulent recordkeeping

Are the Subsidies Necessary?

In 2016, the New York Independent System Operator (NYISO) found that FitzPatrick could close with no need for additional plants to be built for replacement. Our analysis also found that FitzPatrick could be replaced with energy efficiency and renewable energy, while providing worker retraining and wage support and property tax replacement for municipalities at lower cost than subsidizing the continued operation of FitzPatrick.

General Safety Concerns

Mark I reactors like FitzPatrick have relatively small containment structures, making them especially vulnerable to large-scale accidents. In 1986, Dr. Harold Denton, an official at the Nuclear Regulatory Commission (NRC) acknowledged they had as high as a 90% chance of failure if challenged by severe accident conditions. FitzPatrick is the only Mark I in the US that does not have a hardened vent system as was recommended by the NRC. The venting plan at FitzPatrick, in the case of an accident, is to let radiation, gases, and steam vent into a nearby building, where it is expected the doors will blow off, releasing radiation at the ground level.

Alliance for a Green Economy has been calling on the NRC to address this dangerous venting plan since 2011, but the agency continues to allow the plant to operate without a hardened vent. In 2016, Entergy requested an 18-month extension for the required installation of a new vent and this request was granted, putting off this important fix, yet again.

Most of FitzPatrick's spent fuel is kept in a fuel pool on site. Just like the reactor core itself, spent fuel pools must be kept cool with a constant supply of water cooled by electricity. In Boiling Water Reactors like FitzPatrick, these pools are high in the air near the reactor core, making them vulnerable to exposure from leaks or to explosions caused by problems within the core. Institute for Resource and Security Studies estimates that a spent fuel pool fire could render 33,000 square miles uninhabitable. New York State is 55,000 square miles.

About the Owner

FitzPatrick was previously owned by Entergy Corporation, but was purchased by Exelon Corporation, as part of the deal to subsidize the upstate nuclear reactors.

Robert E. Ginna

Cost to Subsidize: $1.3 billion

Location: Wayne County
Owner: Exelon/Constellation
Generating Capacity: 581 MW
Type: Two-loop pressurized water reactor
Age: 51 years in operation
Pop. within 50 miles: 1,269,589
Nuclear waste on site: ~402 tons

Recent Safety Issues

- 1983-2013 - A significant flooding vulnerability was allowed to persist for 30 years
- 2016 - Emergency plan found in violation, which could have caused operators to fail to evacuate the public in case of an accident

Are the Subsidies Necessary?

Ginna is currently receiving temporary subsidies from customers of the utility Rochester Gas & Electric, under a two-year agreement that will end on March 31, 2017. This agreement was designed to preserve electricity reliability in the region until the utility could finish building a transmission upgrade that will make Ginna's continued operation unnecessary. In 2016, the New York Independent System Operator (NYISO) found that once that upgrade is finished, Ginna could close with no need for additional plants to be built for replacement. Yet, under a new "Clean Energy Standard" policy, all New Yorkers will now be forced to subsidize Ginna.

General Safety Concerns

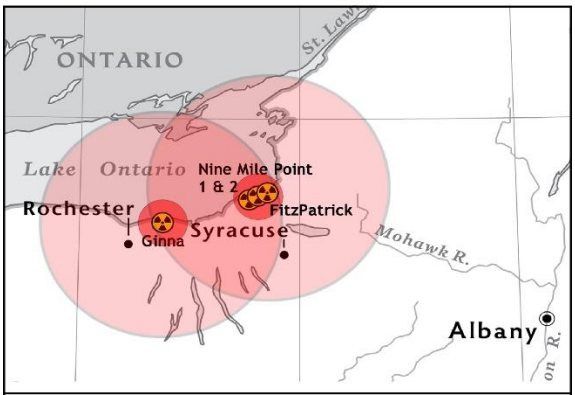
Ginna is the oldest reactor of its type in the US and one of the 8 oldest reactors in the world. No reactor in the world has made it to 50 years of age before shutting down, and Ginna is 47 years old. Ginna was slated to close in April 2017, but will be kept open through subsidies. The NRC estimates that a core meltdown at Ginna could cause 20,000 cancer deaths and 1,400 early fatalities within 12.5 miles of the plant.

About the Owners

Ginna is owned by Constellation Energy Nuclear Group (CENG), which is jointly owned by Exelon Corporation and Électricité de France (EDF). Exelon holds the majority stake in the company.

In 2012, Constellation (which was purchased by Exelon) was fined $245 million for manipulating energy markets in New York.

Exelon is the largest nuclear owner and operator in the U.S. and is notorious for fighting competition from renewable energy. For example, in 2012 Exelon was kicked out of the American Wind Energy Association because of its active opposition to renewal of federal tax credits for wind energy.



Nuclear Power Reactors in Upstate New York
The larger circles around each reactor on the map indicate an approximate 50 mile radius. During the Fukushima Daiichi nuclear disaster, the U.S. government advised U.S. citizens in Japan within 50 miles of the plants to evacuate. In the U.S., the evacuation zones around nuclear plants are currently only about 10 miles (shown by the smaller circles) while emergency planning for nuclear impacts is required for a 50-mile radius.

Nine Mile Point

Cost to Subsidize: $4.4 billion

Location: Oswego County
Owner: Exelon/Constellation
Generating Capacity: 609 MW (Unit 1) and 1,148 MW (Unit 2)
Types: Mark I (Unit 1) and Mark II (Unit 2) Boiling Water Reactors
Age: 52 years (Unit 1) and 33 years (Unit 2) in operation
Pop. within 50 miles: 909,523
Nuclear waste on site: ~826 tons

Recent Safety Issues

- 2013 - Nine Mile Point Unit 1 cited for serious incident, which brought the plant within 9 hours of fuel exposure, which could have led to a meltdown
- 2013 - A tritium (radioactive water) leak was found at Nine Mile Point
- 2007-2015 - Failure at Nine Mile Point 2 to identify and correct reactor building water pipe penetration that caused leakage and affected secondary containment

Are the Subsidies Necessary?

Even though Nine Mile Point will receive the lion's share of New York's nuclear subsidies, which were approved in order to prevent unprofitable reactors from retiring, Exelon has never submitted a retirement notice for either reactor at Nine Mile Point. There is no public financial evidence to justify subsidizing either reactor.

General Safety Concerns

Mile 1 is one of the two oldest operating nuclear plants in the US and it is showing its age. In 1997, severe cracks were discovered in the shroud surrounding the reactor. Nine Mile 1, like FitzPatrick is a Mark I Boiling Water Reactor, which have been known to have flawed containment designs since the 1970s, when scientists at both the Nuclear Regulatory Commission (NRC) and GE raised concerns that their containment structures would not successfully withstand a nuclear accident. In 1989, the NRC advised Mark I operators to install a hardened vent, which was to be used as last resort if an accident occurred to relieve pressure and prevent hydrogen explosions within the reactor. In March of 2011, the Mark I design and the venting system were put to the test during the Fukushima Daiichi nuclear catastrophe. In each of the three reactors that were online at the time of the accident, the containment system failed.

Nine Mile 2 is a Mark II Boiling Water Reactor, which is a close design to the Mark I reactors and suffers from the same containment design flaw.

Most of Nine Mile Point's spent fuel is kept in fuel pools on site. Just like the reactor core itself, spent fuel pools must be kept cool with a constant supply of water cooled by electricity. Institute for Resource and Security Studies estimates that a spent fuel pool fire could render 33,000 square miles uninhabitable. New York State is 55,000 square miles.

About the Owners

Nine Mile Point is owned by the same owners as Ginna: Constellation Energy Nuclear Group (CENG), which is jointly owned by Exelon Corporation and Électricité de France (EDF). See above for more detail about these companies.