



Estimated Economic Effects of Perry Nuclear Power Plant Closure

Direct Effects

Property Tax Revenues

- Five years from beginning the process of shutting down, the Perry Nuclear Power Plant may lose approximately 74%¹ of its market value, leaving its assessed value (35%) approximately \$11,885,845.*
- Thus, when the shutdown is complete, Lake County will lose approximately \$3,483,587.67 in property tax revenues annually from the Perry Nuclear Power Plant. That loss would need to be apportioned across the property owners in the appropriate taxing districts.

Business Expenditures/Revenues

- The Perry Nuclear Power Plant spends approximately \$60,300,000³ annually on services, supplies, and goods for the plant across the metropolitan statistical area.
- Once the shutdown is completed (typically within 5 years of beginning the process), it is projected that 95% of those annual expenditures will also be erased. Over a ten-year period, this will cost the region \$598,025,230⁴ in business revenues.

Charitable Giving

- The Perry Nuclear Power Plant and its employees spend \$130,000⁵ annually on local charities. If the Plant shuts down, that will cost our local charities \$1,289,270⁶ over ten years.

Employment

- The Perry Nuclear Power Plant directly employs 768⁵ people, of which 600⁵ live in Lake County. First Energy employs another 119⁵ support staff at other sites across the area.
- Nuclear power plant salaries are 36%⁷ higher, on average, than the average area salary. Thus, the average salary for a Perry Nuclear Power Plant employee is \$70,788⁷, while salaries for the 119 support employees average \$65,340⁸. Therefore, the Perry Nuclear Power Plant provides \$62,140,644⁹ in annual income for the region (not including benefits).
- If the Plant is shut down, it is projected that 90% of the workforce, both direct and support, will be laid off, resulting in an annual regional income reduction of \$55,905,888¹⁰. Over ten years, \$502,179,391¹⁰ in income will be lost.

Consumption, Savings, and Sales Tax Revenue

- The loss of \$55,905,888 in personal income will lead to an annual loss of \$49,191,591¹¹ in disposable personal income.
- Savings will be reduced by \$3,443,411.36¹¹ annually across the region.
- Personal Consumption Expenditures (PCE) shall be reduced by \$43,962,524.74¹² leading to an annual loss in sales tax revenues of \$2,231,098.13¹².

Secondary Effects

Output

- The Perry Nuclear Power Plant adds approximately \$510,000,000¹³ to the state's economic output annually.
- Through the multiplier effect (2.25¹³), the Perry Nuclear Power Plants adds an additional \$637,500,000¹³ to Ohio's GDP annually, resulting in a total economic output of \$1,147,500,000¹³.
- The employment multiplier is reported to be around 7.55¹⁴ for nuclear plants in Ohio. Thus, the presence of a working nuclear power plant creates an additional 5,810¹⁴ jobs throughout the state. The loss of those jobs would raise the state's unemployment rate by a half-percentage point.

*These estimates are based on other nuclear power plant closures. Actual appraised value would be determined at a later date if the Perry Nuclear Power Plant closed, within the normal course of the Lake County Auditor's Appraisal schedule. These estimates in no way constitute an official future appraisal of the plant.

¹ 74% loss estimate is based upon other recently shut nuclear plants such as Vermont Yankee.

² See Munro and Tolley (2018). *Property values and tax rates near spent nuclear fuel storage*. <https://doi.org/10.1016/j.enpol.2018.08.035>

³ See Ewinger, J. (2019). *Perry nuke plant is Lake County's cash cow*. www.cleveland.com

⁴ All projections used a 2% growth rate to match expected inflation and a 3% discount rate. The ten-year period begins 5 years after the plant begins the shutdown resulting in a 15-year period. The present value of the lost business expenditures is \$383,849,639.

⁵ See Ewinger, J. (2019). *Perry nuke plant is Lake County's cash cow*. www.cleveland.com

⁶ All projections used a 2% growth rate to match expected inflation and a 3% discount rate. The ten-year period begins 5 years after the plant begins the shutdown resulting in a 15-year period. The present value of the lost charitable giving is \$827,533.

⁷ See Nuclear Energy Institute (2015). *Economic Impacts of the Davis-Besse Nuclear Power Station*. www.nei.org. To calculate the average salary of a Perry Nuclear Power Plant take the average annual wage of the Cleveland-Elyria-Mentor statistical area from www.bls.gov of \$52,050 and multiply it by 1.36.

⁸ See Occupational Employment and Wages in Cleveland-Elyria – May 2019. www.bls.gov

⁹ To calculate annual income: $(768 * 70,788) + (119 * 65,340) = \$62,140,644$

¹⁰ To calculate reduction in annual regional income: $[(768 * 0.10) * 70,788] + [(119 * 0.10) * 65,340] = \$6,234,756$. $\$62,140,644 - \$6,234,756 = \$55,905,888$. Subsequently, all projections used a 2% growth rate to match expected inflation and a 3% discount rate. The ten-year period begins 5 years after the plant begins the shutdown resulting in a 15-year period. The present value of the lost regional income is \$322,329,583.

¹¹ Proportions of disposable personal income, savings rates, and PCE are based on 2019 data and can be found in *Table 2.6: Personal Income and Its Disposition, Monthly*. www.bea.gov Disposable personal income (DPI) is 87.99% of personal income $(.8799 * 55,905,888)$. Savings is 7% of DPI $(.07 * 49,191,590.85)$.

¹² Personal consumption expenditures (PCE) are 89.37% of DPI $(.8937 * 49,191,590.85) = 43,962,524.74$. It is estimated that 70% of PCE may have sales tax applied $(0.70 * 43,962,524.74) = 30,773,767.32$. Laketran has a sales tax rate of 0.25%. The state sales tax rate is 5.75%, and the County sales tax is 1.25%.

¹³ See Berkman and Murphy (2017). *Ohio nuclear power plants' contribution to the state economy*. www.brattle.com To find the output effect, multiply 2.25 by \$510,000,000 and then subtract 510,000,000 from the answer.

¹⁴ See Berkman and Murphy (2017). *Ohio nuclear power plants' contribution to the state economy*. www.brattle.com To find the employment effect, multiply 7.55 by $(768 + 119)$ and then subtract 887 from the answer.