

Modeling Employment in the U.S. Nuclear Power Sector

David Bradish

Manager, Energy and Economic Analysis

Nuclear Energy Institute

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Today's Presentation

- Nuclear plant surveys
- Direct employment
- Economic benefit studies
- Modeling results

NEI and EUCG Surveys

- Surveys collect number and types of employees from each plant
 - NEI survey is every two years, Electric Utility Cost Group survey is every year
 - Onsite, offsite, baseline contractors, and non-dedicated staff are collected
 - Job categories include: Engineering, Loss Prevention, Materials and Services, Operations, Support Services, Training, and Work Management
 - Data is further broken out into subcategories

Direct Employment

- In 2013, the U.S. nuclear industry employed 62,170 direct jobs at the 104 units
 - Jobs at fuel cycle facilities, vendors and regulatory agencies are considered indirect when modeling the “nuclear industry”
- Operation of a U.S. nuclear plant employs 400 to 700 direct permanent jobs
 - Onsite and offsite employees, and baseline contractors are counted as direct
 - Non-dedicated staff (i.e. certain staff at headquarters) and refueling outage contractors are not counted as direct

Economic Benefits Studies

- Member utilities request NEI to conduct a study of their nuclear plant or fleet
 - Member companies supply data on jobs, salaries and expenditures on the entire plant
 - NEI uses the IMPLAN or REMI economic models to analyze impacts of the plant or fleet on counties, state and national economies
 - Impact analysis for PLANning (IMPLAN), Regional Economic Models, Inc. (REMI)
 - Based on government sources for data, IMPLAN and REMI use input/output methodology to calculate indirect/induced effects
 - NEI has completed fifteen studies
 - 24 U.S. nuclear power stations representing 42 reactors have been analyzed

Impact of a 1,000 MW nuclear plant on Local, State and National Economies

Units	Region	Effect	Output	Labor Income	Employment
Multipliers		Direct	1.00	1.00	1.00
	Local	Direct + Indirect/Induced	1.04	1.22	1.66
	State	Direct + Indirect/Induced	1.18	1.49	2.36
	National	Direct + Indirect/Induced	1.87	3.75	8.26
			\$ 2010 Millions		
Dollar and job values per gigawatt	Local	Direct	453	36	319
		Direct + Indirect/Induced	471	44	528
	State	Direct	453	61	505
		Direct + Indirect/Induced	533	91	1,192
	National	Direct	453	65	530
		Direct + Indirect/Induced	846	244	4,372

Data based on 15 economic benefits studies conducted by NEI

Job and Income Comparisons

Technology	Jobs/MW	Average Size (MW)	Direct Local Jobs	Average Salary (\$/hour)	Workforce Income (\$ Million/year)
Nuclear	0.50	1,000	504	\$31	\$32.49
Coal	0.19	1,000	187	\$28	\$10.99
Hydro > 500 MW	0.11	1,375	156	\$33	\$10.79
Hydro Pumped Storage	0.10	890	85	\$38	\$6.70
Hydro > 20 MW	0.19	450	86	\$33	\$5.79
Concentrating Solar Power	0.47	100	47	\$27	\$2.62
Gas Combined Cycle	0.05	630	34	\$28	\$2.02
Solar Photovoltaic	1.06	10	11	\$15	\$0.33
Micro Hydro < 20 MW	0.45	10	5	\$35	\$0.33
Wind	0.05	75	4	\$35	\$0.29

Source: Donald Harker and Peter Hans Hirschboeck, "Green Job Realities: Quantifying the Economic Benefits of Generation Alternatives," *Public Utilities Fortnightly*, May 2010.

Questions?



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