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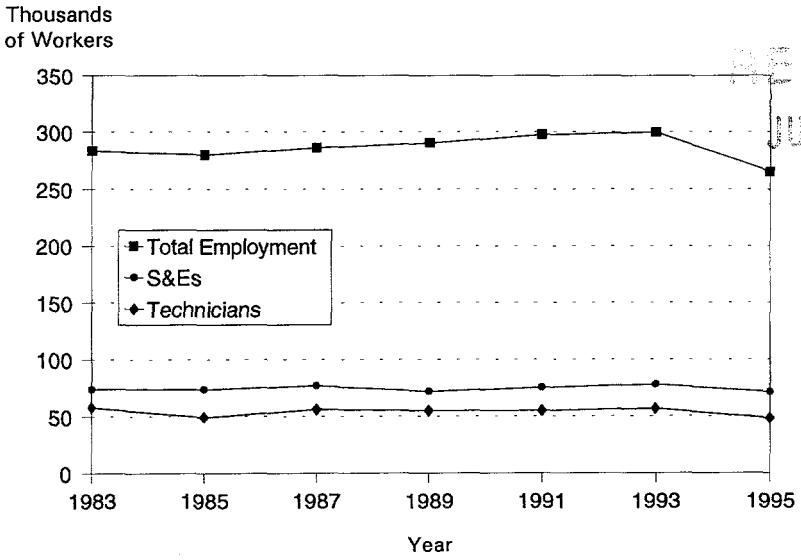
Nuclear-Related Employment Declines in 1995

Nuclear-Related Employment Falls in Both the DOE Contractor and Private Sectors

The 1993-1995 period represents a time of significant transition for workers engaged in nuclear-related activities. Total nuclear-related employment fell markedly from about 300,000 workers in 1993 to 265,000 in 1995, a 12 percent decline.* (Figure 1.) This is the lowest level since the 1970s.

Nuclear-related employment fell in both the private sector and the U.S. Department of Energy (DOE) contractor sector between 1993 and 1995. Nuclear-related employment in the DOE contractor sector fell relatively faster (by more than 18,000 workers, or 16 percent). The DOE contractor sector accounted for 36 percent of total nuclear-related employment in 1995. Nuclear-related employment in the private sector fell by 17,000 or by 10 percent between 1993 and 1995. The private sector accounted for 57 percent of total nuclear-related employment in 1995.

Figure 1. Employment in Nuclear-Related Activities, 1983-1995



Note: In 1991, the scope of the survey was expanded to include nuclear-related employment at universities and at those federal government agencies previously not included.

Nuclear Workforce Remains Highly Technical

As Figure 1 illustrates, the number of scientists, engineers, and technicians in nuclear-related activities experienced a downturn in 1995. The number of scientists and engineers fell by 6,900 (or by 9 percent) between 1993 and 1995, with engineers accounting for all of the decrease. The number of technicians fell even more sharply between 1993 and 1995, down by 8,400 or 15 percent.

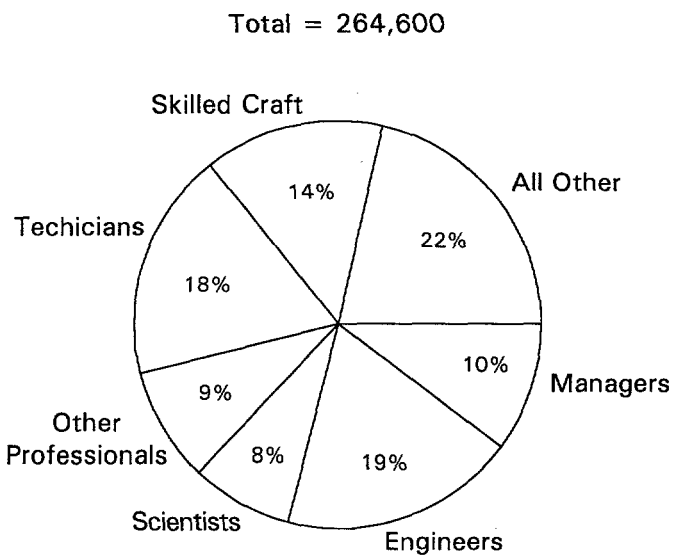
Figure 2 illustrates the occupational composition of the nuclear industry. In 1995, over 26 percent of all nuclear-related workers were either scientists or engineers. The proportion of scientists and engineers in the nuclear industry continues to increase, up from 25 percent in 1993, and 24 percent in 1991. In 1995, 18 percent of nuclear-related workers were classified as technicians or operators.

The largest number of scientists were employed in weapons development and production (21 percent--down from 29 percent in 1991), in nuclear energy research (19 percent), and in waste management and decommissioning/decontamination (17 percent).

Twenty-nine percent of all nuclear-related engineers worked in reactor operation and maintenance in 1995. For the first time, more engineers (17 percent of all nuclear-related engineers) worked in waste management and decommissioning/decontamination activities than in activities related to the engineering and design of nuclear reactors and facilities, including redesign/betterment/backfit (16 percent of all nuclear-related engineers).

*Total employment of the firms surveyed increased overall, indicating a significant shift of employees to non-nuclear activities within individual firms.

Figure 2. Nuclear-Related Employment by Occupational Group, 1995



Number of Health Physicists Remains Stable While Number of Nuclear Engineers Continues to Fall

Table 1 shows nuclear-related employment for various occupations in 1991, 1993, and 1995. The total number of scientists employed by the nuclear industry remained almost the same between 1993 and 1995. As Figure 3 shows, the number of physicists continued to decline, falling 5 percent from 1993 to 1995. The number of geologists also fell, by nearly 14 percent from 1993 levels.

The number of chemists rose nearly 11 percent from 1993 and 1995, due largely to gains in the waste management and decommissioning/decontamination segment. Likewise, the number of biologists rose almost 9 percent due to gains in the waste management and decommissioning/decontamination segment and in the nuclear energy research segment. Health physics employment remains virtually unchanged between 1993 and 1995 as growth in this field finally tapers off after years of steady increases.

Several of the engineering occupations experienced significant employment declines in nuclear-related activities over the 1993-1995 period, as shown in Figure 4. Nuclear-related civil engineering employment fell by 25 percent over the 1993-1995 period, with decreases in reactor and facility design offsetting increases in the waste management and decommissioning/decontamination segment. The number of electrical engineers decreased by 18 percent, falling in every nuclear segment except in the waste management and decommissioning/ decontamination segment. The number of nuclear engineers also declined over the 1993-1995 period, by 15 percent.

Employment in almost all of the technician occupations also experienced steep declines in nuclear-related activities. (Figure 5.) The number of drafters dropped by a third, while the number of electrical technicians fell by 19 percent. For the first time, the number of health physics technicians also decreased, falling by 10 percent between 1993 and 1995. Only in the life sciences did the employment of technicians increase (by 14 percent). Much of the decline in technician

Figure 3. Nuclear-Related Scientists, Selected Occupations, 1991, 1993, and 1995

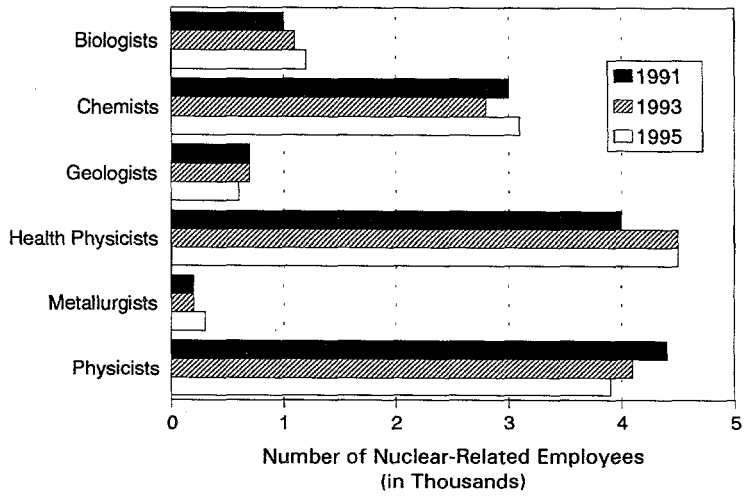


Figure 4. Nuclear-Related Engineers, Selected Occupations, 1991, 1993, and 1995

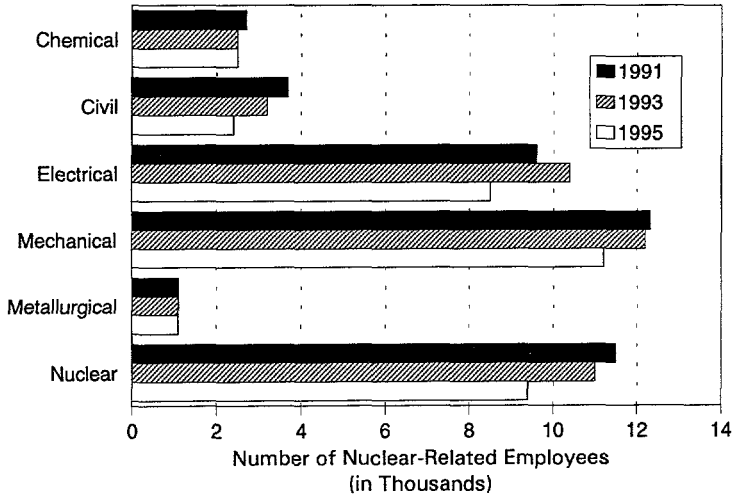


Figure 5. Nuclear-Related Technicians, Selected Occupations, 1991, 1993, and 1995

employment can be traced to declines in reactor and facility design, reactor operations and maintenance, and in the weapons segment.

Reactor Operation and Maintenance Employs Largest Number of Nuclear-Related Workers

In 1995, a third of all nuclear-related employment was in the reactor operation and maintenance segment. Unlike the past, it is no longer the engine of employment growth in the nuclear industry, falling for the first time by 6 percent over the 1993-1995 period. (Figure 6.)

Employment decreases in the reactor operation and maintenance, reactor and facility design, nuclear energy research, and weapons segments accounted for 81 percent (or 29,000) of the total decline in employment in nuclear-related activities over the 1993-1995 period.

Employment losses in reactor and facility design were particularly large, falling by more than one-third, or by over 13,000 workers. Employment in the nuclear energy research segment and in the weapons segment also fell sharply, by more than 16 percent in each segment.

Waste management and decommissioning/decontamination was the only nuclear industry segment that experienced any employment growth over the 1993-1995 period. Employment in this segment rose a scant 2 percent.

Notes:

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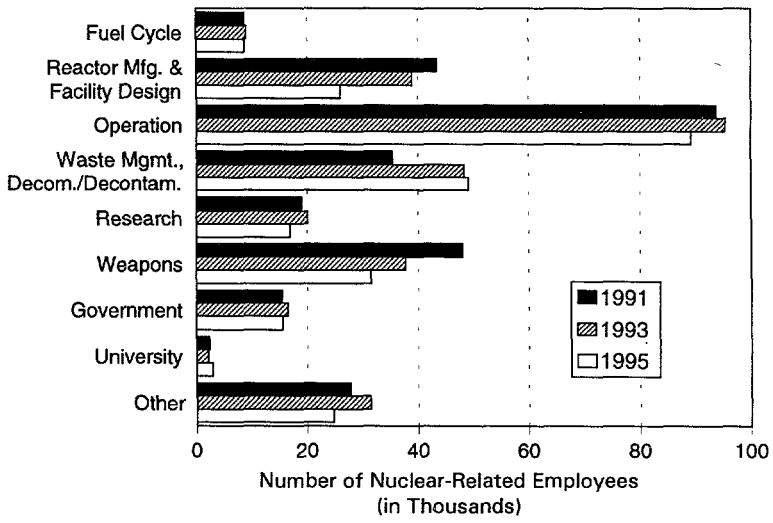
Figure 6. Nuclear-Related Employment by Industrial Segment, 1991, 1993, and 1995



Note: The small increase in employment between 1993 and 1995 in the university segment is due mainly to improved survey coverage of scientists and engineers involved in nuclear-related activities at universities.

Table 1. Nuclear-Related Employment by Occupation, 1991, 1993, and 1995

	1991	1993	1995
Total Employment	**297,600**	**300,000**	**264,600**
Managers	**30,100**	**32,700**	**27,000**
Engineers	**54,900**	**56,600**	**49,500**
Chemical Engineers	2,300	2,500	2,500
Civil Engineers	3,700	3,200	2,400
Electrical Engineers	9,600	10,400	8,500
Mechanical Engineers	12,300	12,200	11,200
Nuclear Engineers	11,500	11,000	9,400
Metallurgical Engineers	1,100	1,100	1,100
All Other Engineers	14,400	16,200	14,400
Mathematicians	**1,500**	**1,300**	**1,200**
Computer Scientists	**3,500**	**3,800**	**3,200**
Physical Scientists	**9,700**	**10,100**	**10,200**
Chemists	3,000	2,800	3,100
Geologists	700	700	600
Physicists	4,400	4,100	3,900
Metallurgists	200	200	300
Other Physical Scientists	1,400	2,300	2,300
Life Scientists	**5,500**	**6,200**	**7,000**
Biological Scientists	1,000	1,100	1,200
Health Physicists	4,000	4,500	4,500
Other Life Scientists	500	600	1,300
Other Professionals	**34,000**	**30,000**	**24,300**
Technicians	**54,700**	**56,300**	**47,900**
Drafters	4,100	3,900	2,600
Electrical Technicians	9,100	9,100	7,400
Other Engineering Technicians	7,200	6,900	5,300
Physical Science Technicians	4,500	4,000	3,300
Life Science Technicians	700	700	800
Health Physics Technicians	8,900	9,300	8,400
Senior Reactor Operators	2,100	2,400	2,100
Nuclear Reactor Operators	2,000	2,500	2,400
Auxiliary Operators	5,100	4,700	3,900
All Other Technicians	11,000	12,800	11,700
Other Skilled Craft	**38,900**	**37,100**	**37,400**
Clerical	**20,400**	**20,700**	**16,500**
All Other Workers	**44,400**	**45,200**	**40,400**

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