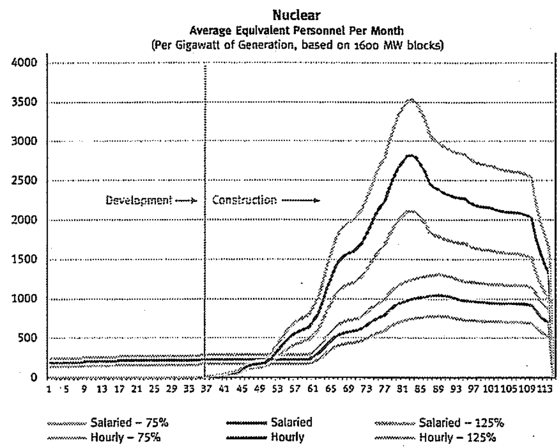
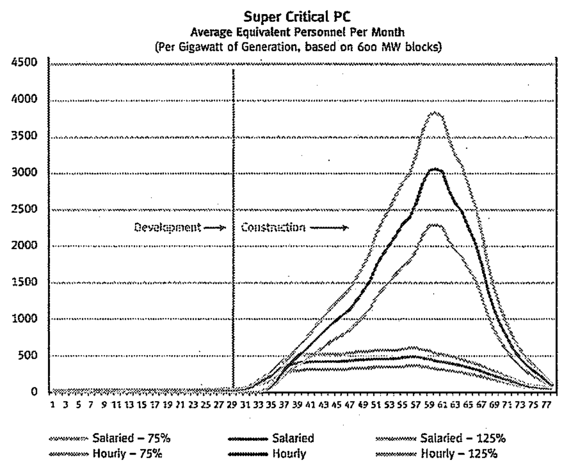
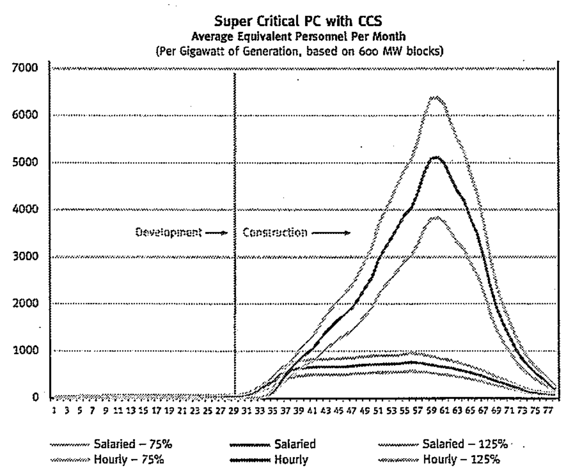
Bechtel Report Attachment 1 – Staffing Curves for 1 GW of Generation







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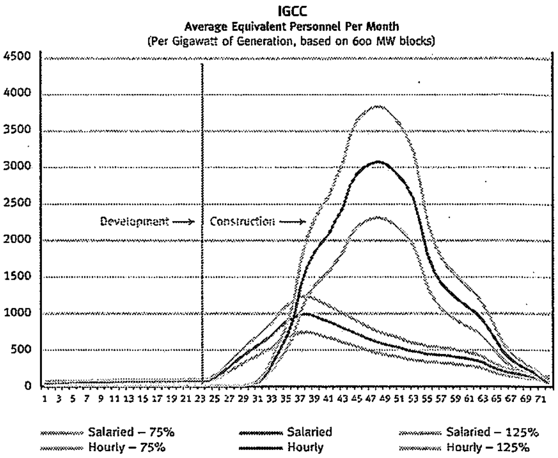

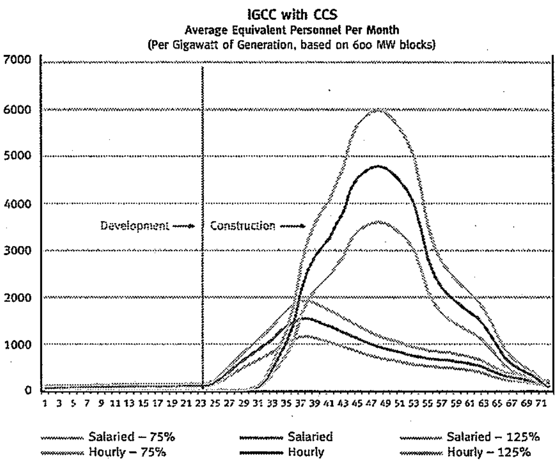

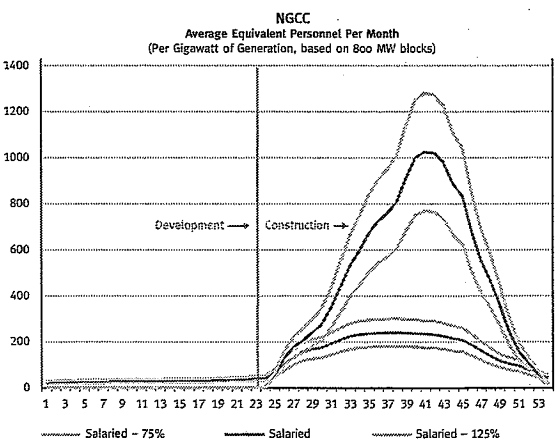

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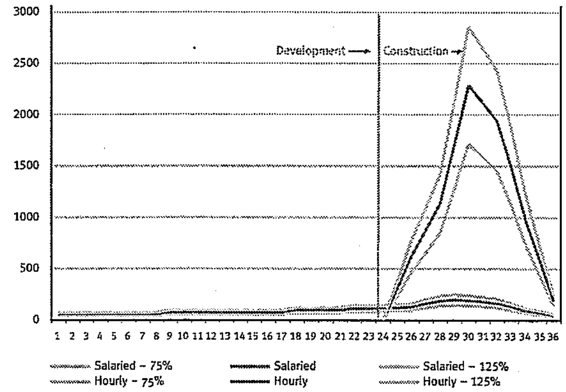
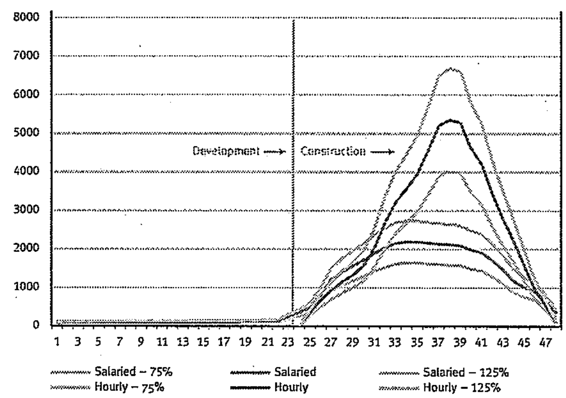
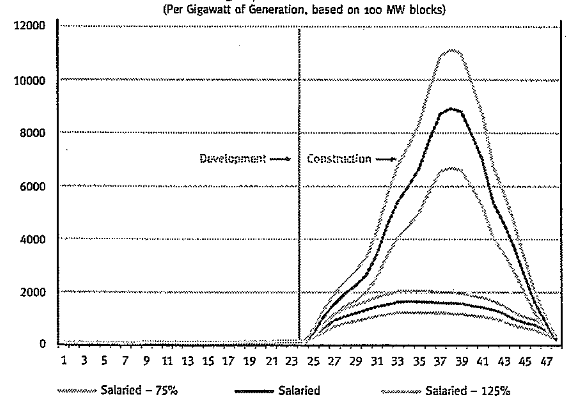
Onshore Wind
Average Equivalent Personnel Per Month
(Per Gigawatt of Generation, based on 100 MW blocks)



Solar Thermal Power
Average Equivalent Personnel Per Month
(Per Gigawatt of Generation, based on 100 MW blocks)



Solar PV
Average Equivalent Personnel Per Month
(Per Gigawatt of Generation, based on 100 MW blocks)



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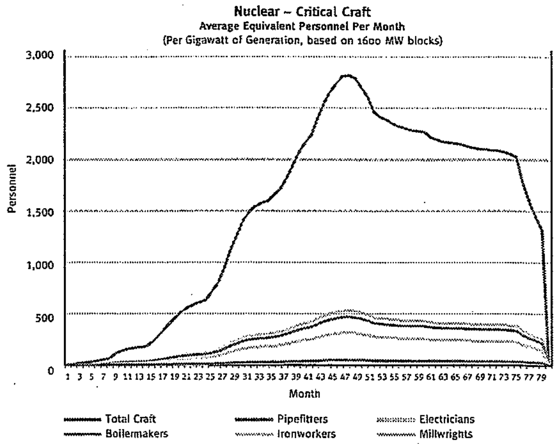

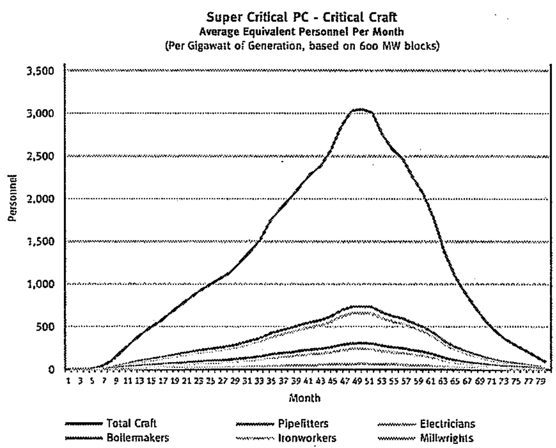

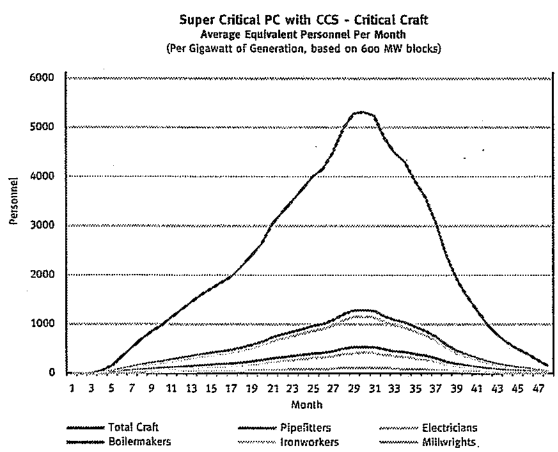

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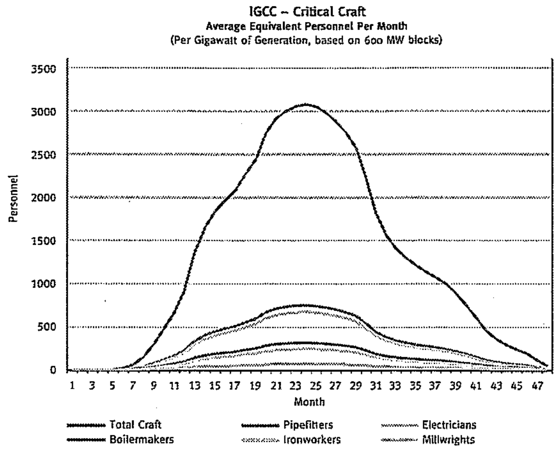

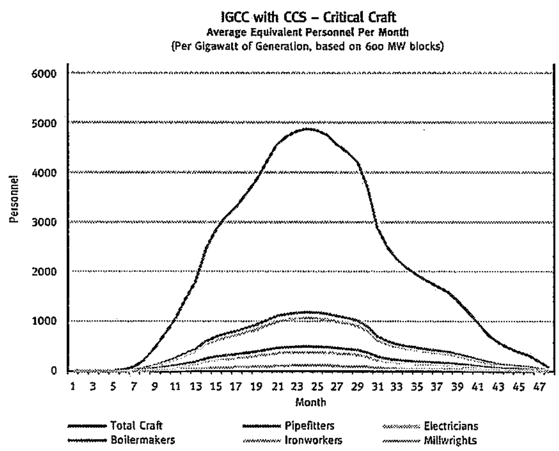

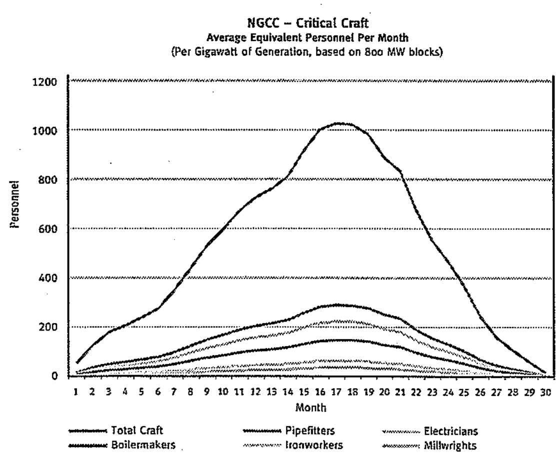

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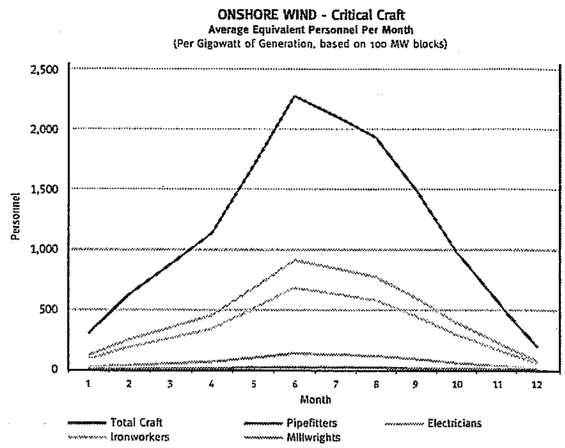

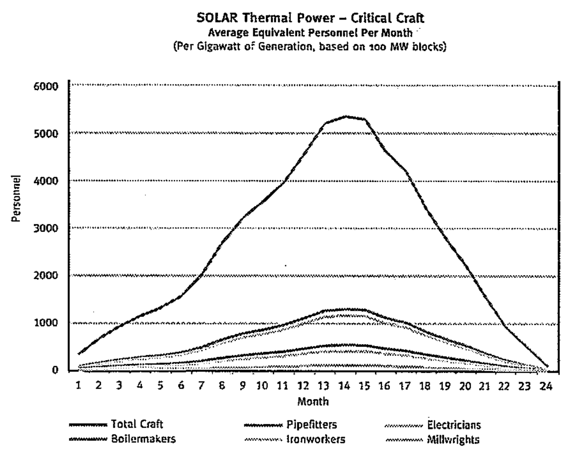

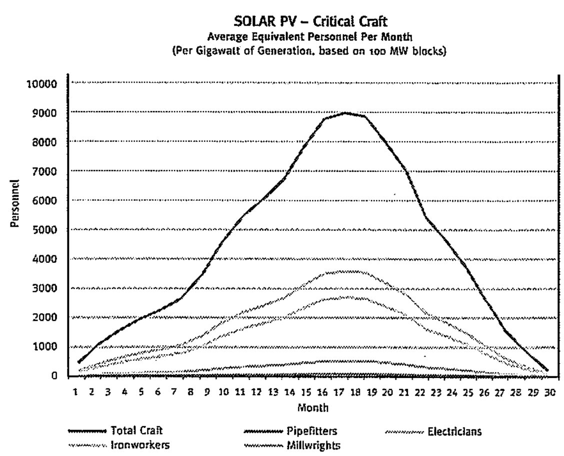

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Bechtel Report Attachment 2

Generating Capacity Deployment Scenarios

Capacity Addition Summary for EPRI Analysis

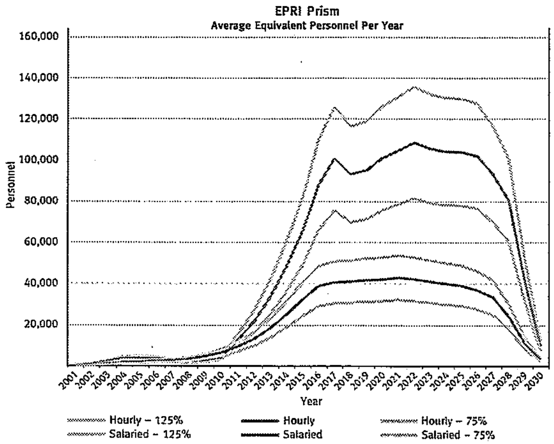
Annual Capacity Additions (GW)

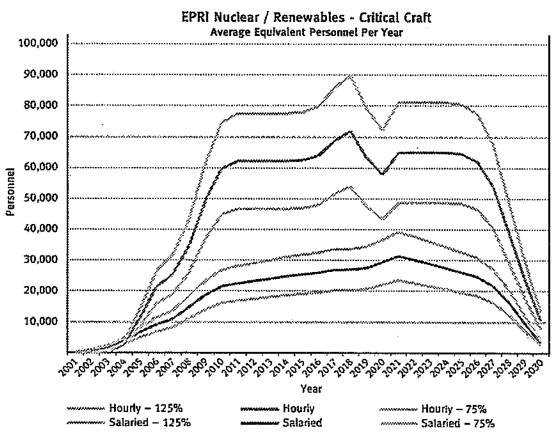
Scenario	Source	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
"EPRI Prism"	Nuclear	1.6	-	-	0.2	0.3	0.3	0.2	0.0	3.8	4.0
	Super Critical PC	-	-	-	-	-	-	-	-	-	-
	Super Critical PC with CCS	-	-	-	-	-	-	-	-	-	-
	IGCC	-	-	-	-	-	-	-	-	-	-
	IGCC with CCS	-	-	-	-	-	-	-	-	0.4	0.9
	NGCC	-	-	-	-	-	-	-	-	-	-
	Onshore Wind	-	-	-	-	3.0	3.0	3.0	3.0	3.0	3.0
	Solar Thermal	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1
	Solar PV	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
	Total GW	**1.6**	**-**	**-**	**0.2**	**3.4**	**3.4**	**3.3**	**3.1**	**7.3**	**7.9**
"EPRI Nuclear/ Renewables"	Nuclear	-	-	-	-	2.4	2.4	2.4	2.4	2.4	2.4
	Super Critical PC	3.2	3.2	3.2	3.2	7.8	7.8	7.8	7.8	7.8	7.8
	Super Critical PC with CCS	-	-	-	-	-	-	-	-	-	-
	IGCC	-	-	-	-	-	-	-	-	-	-
	IGCC with CCS	-	-	-	-	-	-	-	-	-	-
	NGCC	3.8	3.8	3.8	3.8	-	-	-	-	-	-
	Onshore Wind	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1
	Solar Thermal	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
	Solar PV	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
	Total GW	**7.0**	**7.0**	**7.0**	**7.0**	**10.4**	**10.4**	**10.4**	**10.4**	**10.4**	**10.4**
"EPRI Coal + CCS"	Nuclear	-	-	-	-	-	-	-	-	-	-
	Super Critical PC	0.5	0.5	0.5	0.5	5.1	5.1	5.1	5.1	5.1	5.1
	Super Critical PC with CCS	-	-	-	-	-	-	-	-	-	-
	IGCC	-	-	-	-	-	-	-	-	-	-
	IGCC with CCS	-	-	-	-	1.8	1.8	1.8	1.8	1.8	1.8
	NGCC	5.5	5.5	5.5	5.5	-	-	-	-	-	-
	Onshore Wind	-	-	-	-	3.0	3.0	3.0	3.0	3.0	3.0
	Solar Thermal	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1
	Solar PV	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
	Total GW	**6.0**	**6.0**	**6.0**	**6.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**

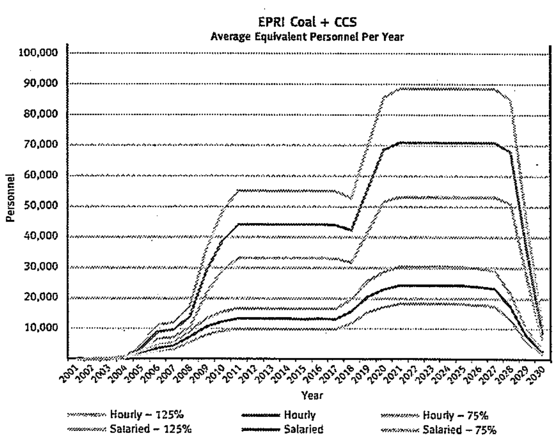
Notes:
Plant Retirements not included.
Renewable power capacity additions derived from EPRI data using renewable power shares from the U.S. Department of Energy Annual Energy Outlook 2008.

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		Total GW
4.6	5.4	6.0	6.7	4.7	4.9	4.9	5.0	5.1	5.0	4.5	4.0	4.7	2.4		78.3
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
2.6	5.8	5.5	2.8	6.5	6.1	7.6	7.4	6.5	7.4	7.5	8.0	7.4	7.9		90.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
3.0	3.0	3.0	3.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2		41.5
0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.3
10.2	**14.2**	**14.6**	**12.6**	**12.4**	**12.2**	**13.7**	**13.6**	**12.9**	**13.6**	**13.1**	**13.2**	**13.3**	**11.5**		**211.2**
2.4	2.4	2.4	2.4	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2		86.0
7.8	7.8	7.8	7.8	-	-	-	-	-	-	-	-	-	-		90.8
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		15.2
0.1	0.1	0.1	0.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		41.5
0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.3
10.4	**10.4**	**10.4**	**10.4**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**	**10.3**		**234.8**
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
5.1	5.1	5.1	5.1	-	-	-	-	-	-	-	-	-	-		53.0
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
1.8	1.8	1.8	1.8	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5		103.0
-	-	-	-	-	-	-	-	-	-	-	-	-	-		22.0
3.0	3.0	3.0	3.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2		41.5
0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.3
10.0	**10.0**	**10.0**	**10.0**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**	**9.7**		**220.8**

Bechtel Report Attachment 3 – Staffing Curves for the Deployment Scenarios







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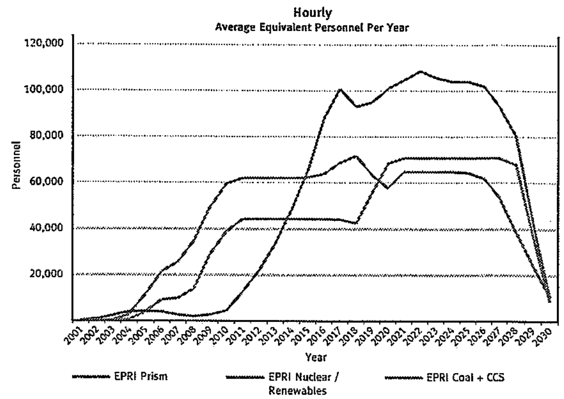

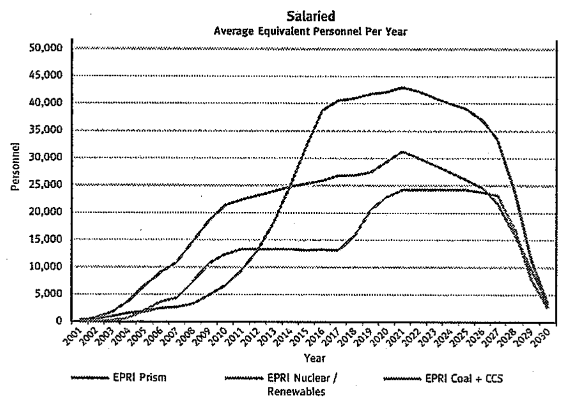

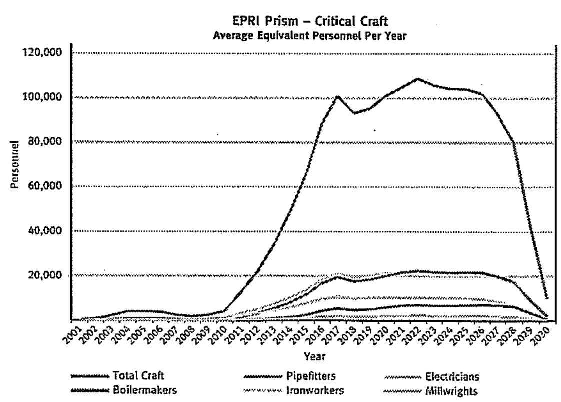

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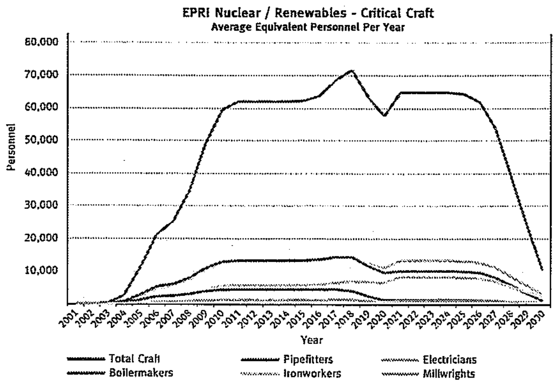

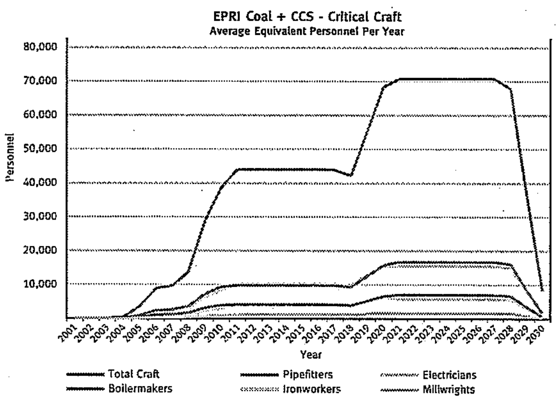

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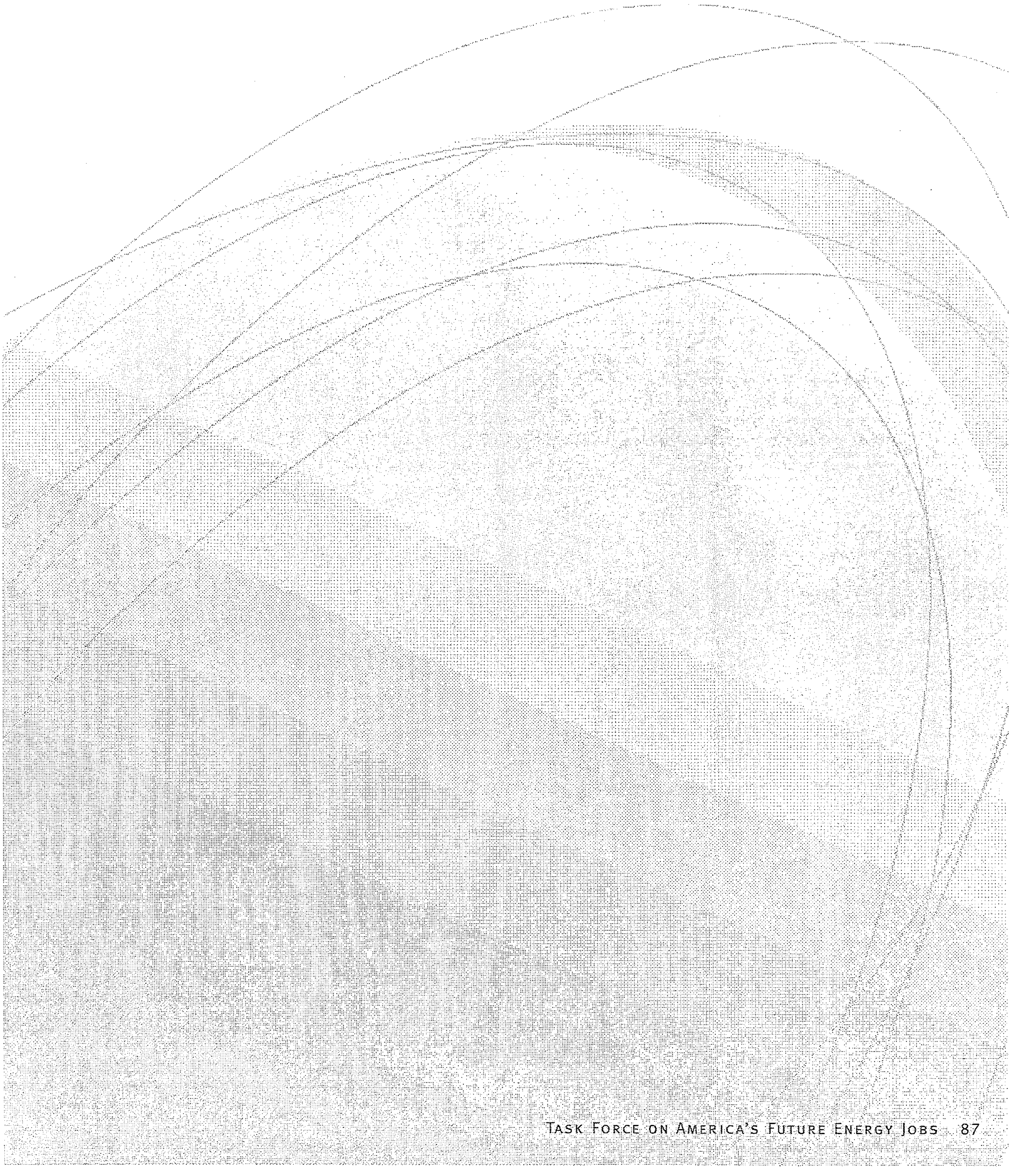


Appendix B: Alternative Scenarios

To test the robustness of results from the EPRI Prism analysis, NCEP asked Bechtel to model two alternative scenarios that were based on EPRI's economic model, MERGE.[85] Using MERGE, EPRI tested the impact of various constraints on the rate and type of generation deployment. Bechtel's report to the Task Force is included in Appendix A and includes detailed results of these analyses.

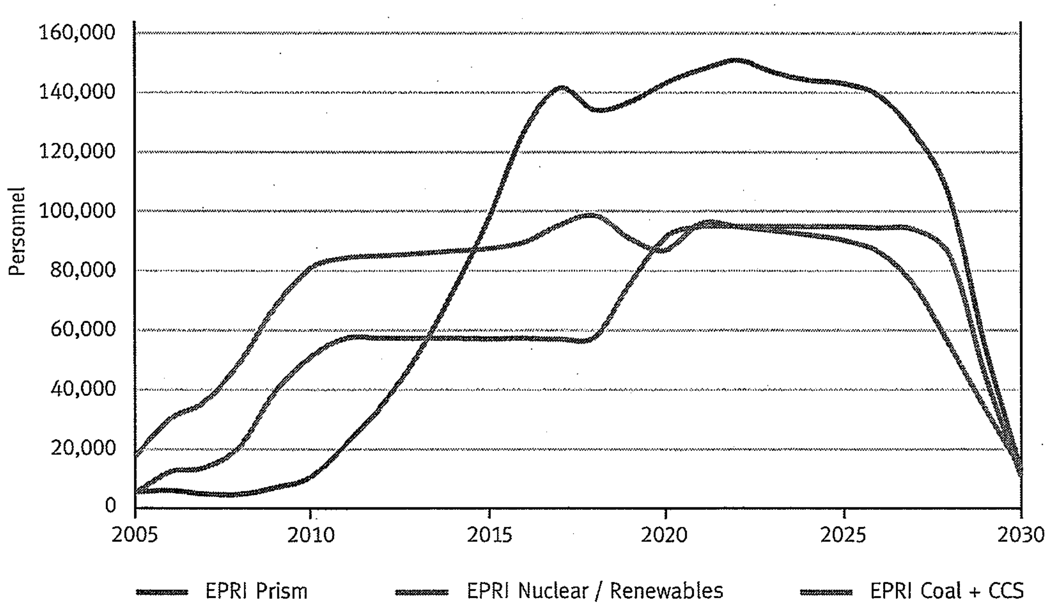
The Task Force chose two significantly different alternative deployment scenarios from the EPRI MERGE modeling effort:

- Scenario 1 (EPRI Nuclear/Renewables Scenario in the Bechtel report): Assumes the technologies associated with CCS are not available until 2030 and the cost associated with transport and storage is three times higher than in the base case. As a result, a significant number of nuclear and conventional coal units are deployed. Attachment 2 to the Bechtel report includes this deployment path.

- Scenario 2 (EPRI Coal + CCS Scenario in the Bechtel report): Assumes the levelized cost of electricity from nuclear is 18 percent higher than in the base case. As a result, no new nuclear generation is deployed and a significantly higher amount of IGCC with CCS is deployed. Attachment 2 to the Bechtel report includes this deployment path.

As with the EPRI Prism, Bechtel developed the workforce demand projections associated with these alternative deployment scenarios. The projections are shown in Figure 15 alongside the projections Bechtel developed using the EPRI Prism.

Figure 15. Total Salaried and Hourly Jobs Created Under Each Scenario



Note: 1. The information presented above is not to be used independently of or without reference to the study in Appendix A and its qualifications
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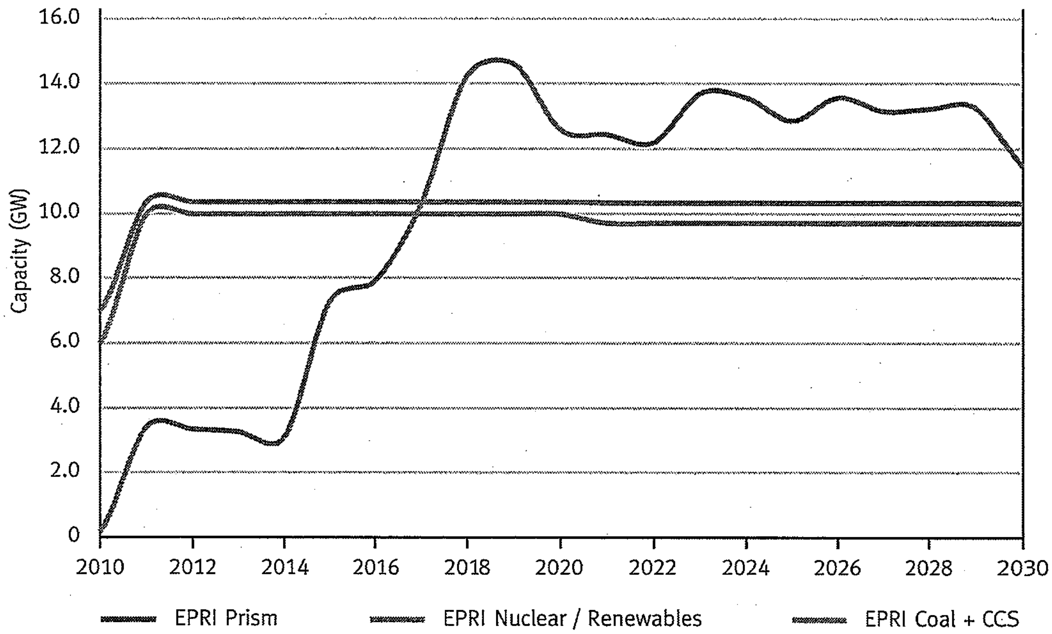
[85] MERGE uses a top-down model of economic growth to examine the economy-wide impacts of climate policy. Electric Power Research Institute (EPRI). "The Power to Reduce CO_2 Emissions: the Full Portfolio - 2008 Economic Sensitivity Studies," EPRI Report 1018431. 2008.

In the alternative scenarios, the peak workforce demand is not as high as it is in the EPRI Prism scenario. However, the workforce demand increases much more quickly in the early years. The workforce demand path in each case is driven by the generation deployment paths of the respective scenarios. Both of the alternate scenarios assume six to seven GW of new generation are built annually between 2007 and 2010 while the Prism analysis assumes a total of 1.8 GW are constructed during those years. Figure 16 shows the deployment pathway for all three scenarios.

Figure 16. Deployment Pathway Under Each Scenario



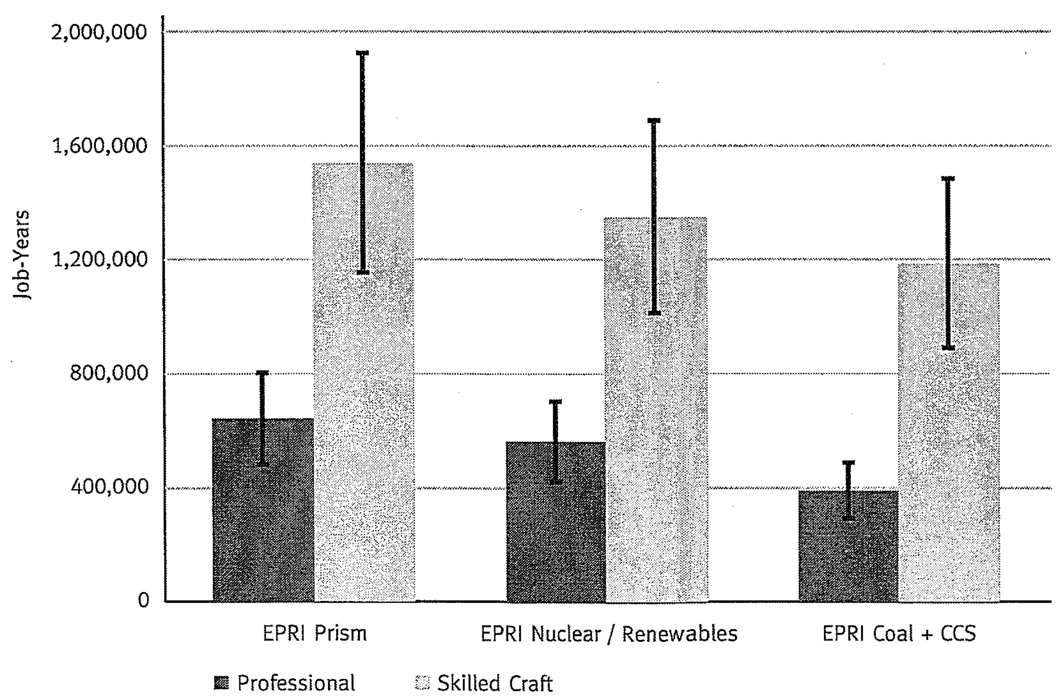
The total GW added to U.S. generation capacity under each scenario is roughly comparable: 211 GW in the EPRI Prism, 235 GW in Scenario 1, and 221 GW in Scenario 2.

One way to compare the number of jobs created under the scenarios is to normalize them by looking at "job-years" instead of peak jobs. Job-years are calculated as the area under the workforce demand curves (i.e., the sum of the annual jobs). For example, consider a generating unit that employs 1,000 people continuously during a five-year construction period. If two units are built simultaneously, 2,000 people will be needed for five years to complete the construction (since each person can only work on one unit at a time). If the two units are built in sequence, 1,000 people will be needed for 10 years to complete the construction. While the peak demand is different (2,000 jobs versus 1,000 jobs), the total number of jobs-years is equal. In each case the total number of job-years would be 10,000 (2,000 jobs times five years or 1,000 jobs times 10 years).

Figure 17 shows the cumulative job-years for each of the three scenarios with error bars representing the 25 percent uncertainty embedded in the Bechtel assumptions. As shown, the EPRI Prism has the highest number of total job-years followed by the EPRI Nuclear/Renewable scenario and then the EPRI Coal + CCS scenario. While the trend is consistent with the peak jobs comparison (i.e., the EPRI Prism is the highest), the difference between the scenarios is not as dramatic.

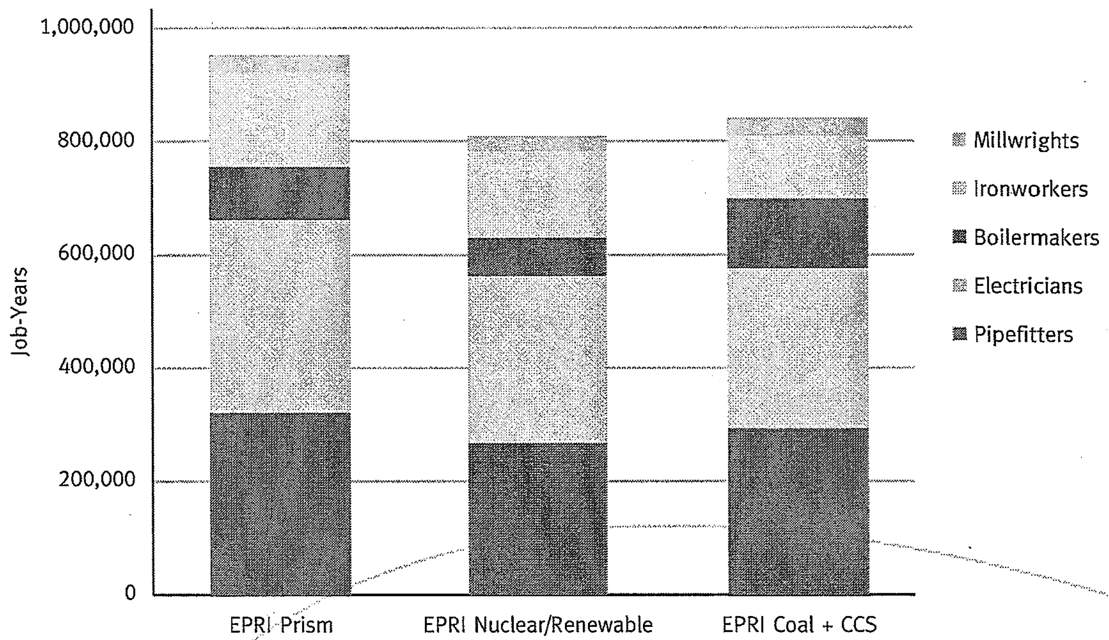
The difference in job-years highlights the observation that the type of generation deployed can affect the workforce demand. The one-GW building blocks developed by Bechtel (Attachment 1 in Appendix A) based on their expertise constructing generation facilities show that designing and constructing one GW of nuclear power will require more labor over a longer period of time as compared to the other building blocks.

Figure 17. Cumulative Job-Years for Each Scenario



The Task Force wanted to assess the impact of the different scenarios on the demand for the critical skilled crafts identified by Bechtel. Figure 18 compares the demand for the various critical crafts under each of the different scenarios in job-years.

Figure 18. Critical Craft Workforce Composition under Modeled Scenarios



Appendix C: Coordinated Training Program Case Studies

The NCEP Task Force on America's Future Energy Jobs discussed the need to improve or reestablish the training pipeline for skilled workers in the electricity generation sector. After reviewing a number of local and regional examples of coordinated training programs, the Task Force chose three examples to study further. The three programs, sponsored by Centralia College, IBEW, and PG&E, respectively, are:

- Washington State Center of Excellence for Energy Technology, Centralia College,
- IBEW Regional Training Centers, and
- PG&E PowerPathway™.

Brief program summaries and key findings are summarized below. In general, the key points shared across these three successful programs were

1. participation by multiple stakeholders (e.g., industry, academia, labor, and community groups),
2. the importance of national or regional standards, and
3. a long-term approach by stakeholders, funders, and students.

The Task Force's Policy Recommendation 1 is a direct result of lessons learned in these programs. These programs also informed our understanding of multi-stakeholder programs generally, and contributed to several other recommendations.

Case Study A: Washington State Center of Excellence for Energy Technology, Centralia College

In response to a lack of strategic policy coordination between the state's educational centers, Washington State developed a network of Centers of Excellence to serve as points of contact and resource hubs for industry trends. The distributed and duplicative nature of many in-demand fields (for example, nursing/health care, energy) prompted the state Board of Education to call for one central program of study with common course numbering, which would enable credit transfer and standardization of programs, with associated reduced administrative costs and content certainty. Each Center focuses on a targeted industry considered important to the state's economy and intends to create fast, flexible, quality education and training programs. The Washington State Board of Community and Technical Colleges designated Centralia College a Center of Excellence for Energy Technology in 2004. The Center serves as a statewide resource hub for students seeking training for a career in the energy industry.

Role of the Center of Excellence for Energy Technology

As a Center of Excellence, Centralia College serves as a point-of-contact and resource hub for industry trends, best practices, innovative curricula, and professional development opportunities. The objective is to maximize resources by bringing together workforce education and industry partners in order to develop highly-skilled employees for targeted industries.

The Center also:

- Maintains an institutional reputation for innovation and responsive education and training delivery to the energy industry.
- Acts as a broker of information and resources related to the energy industry for industry representatives, community-based organizations, economic development organizations, community and technical colleges, secondary education

institutions, and four-year colleges and universities.
- Translates industry research into best practices.
- Provides system coordination, coaching, and mentoring to assist in building statewide seamless educational and work-related systems.
- Builds a competitive workforce for the energy industry in Washington.

Industry Partners

- Avista
- Bonneville Power Administration
- Bureau of Reclamation, Grand Coulee Dam
- Centralia City Light
- Energy Northwest
- Grays Harbor County Public Utility District (PUD)
- Hampton Lumber
- Lewis County PUD
- Mid Columbia PUDs (Chelan PUD, Douglas County PUD, Grant PUD)
- North West Public Power Association
- PacifiCorp
- Portland General Electric
- Puget Sound Energy
- Seattle City Light
- Seattle Steam
- Tacoma Power
- TransAlta Centralia Power

Labor Partners

Community college programs are considered pre-apprenticeship, and labor representatives play an advisory role in each program. Labor partners include:

- IBEW Local #77
- IBEW Local #125
- Washington State Labor Council

Initial Lessons

The Task Force identified territorialism among community colleges and policy and market uncertainty as the key challenges to program development. Elements of the Centers of Excellence models critical to success have included support from the state board of education; ownership of the initiative by stakeholders including educators, industry representatives, and union representatives; and pathways for communication between stakeholders.

Case Study B: IBEW Regional Training Centers

The International Brotherhood of Electrical Workers (IBEW) signed an agreement with electric power leaders in January 2009 to develop a training trust to support multiple IBEW regional electric power training centers across the United States. The goal of the program is to partner with electric power companies to train a new generation of workers. The training centers will offer hands-on training for potential electric power employees.

Program Components

The IBEW regional training centers provide a centralized location for electric power workers to learn skills necessary to future employment in the electric power industry. One of the core offerings of the program is an eight-week "boot camp" to provide foundational training for a variety of potential electric power employment paths (i.e., operators, linemen, etc.). The boot camp is designed to address remedial education, drug testing, and basic electric power skills (e.g., climbing a pole for lineworkers or time inside a power plant).

The boot camp also screens potential workers and prepares them for industry pre-employment tests such as the Edison Electric Institute's Construction and Skilled Trades Selection System (CAST). CAST is a battery of aptitude tests designed to aid in the selection of candidates for diverse construction and skilled trades occupations. CAST aims to predict candidates' probability of success in the following categories of construction and skilled trade jobs:

1. Transmission and Distribution
2. Power Generation
3. Facilities and Repair
4. Other Facilities (e.g., Carpentry)
5. Electrical Repair
6. Machining and Vehicle Repair
7. Meter Service and Repair

Utility Partners

The IBEW is currently working to develop regional training centers with the following utility partners:

- Kansas City Power and Light (Missouri)
- DTE Energy (Detroit)
- Tucson Electric (Arizona)

The IBEW is currently working to identify sites for additional centers in the southeast, the northeast, the northwest, and Texas. Once the centers are established, the IBEW envisions them as being regional resources utilized by a range of stakeholders. Toward this goal, the Kansas site is developing a mobile training trailer to enable training in rural areas.

Initial Lessons

There is tension between the efficiencies of developing regional training centers and challenges of recruiting a workforce locally. Task Force participants suggested pairing regional training centers that offered capital-intensive training elements (e.g., hands-on lineworker training components) with localized classroom-based training (e.g., basic skills, electricity basics). Classroom-based skills would benefit from integration with local community colleges and CBOs. Additionally, technical training centers could develop mobile classrooms to bring some skills training to community colleges or community-based training centers.

The Task Force believes that developing national skill standards and providing funding to students are important parts of a strategy for training the workforce. National skill standards could increase portability of credits and certifications from school to school, company to company, and state to state. In addition to portability concerns, a major barrier remains funding. Many students are reluctant to undertake adequate training programs without an employment guarantee; similarly, employers are reluctant to offer employment guarantees before course completion. One option discussed was potentially pooling employer resources to ensure a greater pool of available jobs. Additionally, national skills standards may alleviate some risk as students would be guaranteed a widely-recognized certification upon successful completion (similar to a degree that is recognized nationwide) and employers would be guaranteed what skills successful students mastered.

Case Study C: PG&E PowerPathway™

The PowerPathway™ program, offered at community colleges throughout California, trains and prepares individuals for high-demand positions at PG&E and throughout the energy sector. In addition to one- and two-year curricula at selected institutions, individuals may participate in a customized short-term course designed to strengthen their candidacy for employment and their knowledge of the industry.

Benefits of PG&E PowerPathway™ Program for Participants

PowerPathway™ helps individuals better prepare for employment at PG&E and other high-growth energy sector jobs. The coursework covers a range of topics, including technical skills, industry knowledge, pre-employment test preparation, soft skills, physical conditioning, and interview and resume preparation. With the support of state, federal, and foundation grants, most course tuition is covered; however, individuals are not paid while in the program and there is no guarantee of employment to participants.

There are three types of PG&E PowerPathway™ programs:

- Bridge (a standalone course usually 10-16 weeks in length).
- Endorsed Program (a community college certificate or associates degree program that is 1- or 2-years in length).
- Capstone (additional coursework for students who have completed a prerequisite associates degree or certificate).

Benefits of PG&E PowerPathway™ Program For PG&E

PowerPathway™ graduates qualify at an unprecedented level on PG&E's Physical Test Battery pre-employment test. Rates at which students qualified increased over time as the program was refined, with the final class reaching a 100 percent qualifying rate. One hundred percent of PG&E supervisors would consider hiring another PowerPathway™ graduate.

Classes in the PowerPathway™ College Curriculum

Using the Bridge to Utility Worker course as an example, in general, candidates must demonstrate mastery of at least 8th-10th grade level literacy and mathematics skills to be considered for PowerPathway™ courses. Spatial reasoning, the ability to follow directions, the candidate's comfort with working at heights, and the ability to handle the physical demands of the jobs are evaluated during the selection process. If accepted into the Utility Worker / Apprentice Lineworker course, candidates will undergo a training curriculum that will include:

- Reading and Comprehension: This will strengthen the candidate's ability to read and understand required documents such as job instructions and drawings, construction standard manuals, and material lists essential to performing the work.
- Applied Mathematics: Understanding calculations involving addition, subtraction, and multiplication of percentages and fractions.
- Physical conditioning: Exercises that strengthen and prepare a student for the rigors of pole climbing, lifting, and other

required physical tasks.

- Industry-specific knowledge: safe working practices, basic electricity, pole climbing, using ropes, confined working spaces, and other areas of knowledge required to perform the work.
- Soft skills training: Time management, interviewing skills, general workplace communication skills.

Initial Lessons

The Task Force identified a long-term approach as a key to success, including:

- Consistent funding versus short-term grants,
- Involvement of multiple employers to increase the employment opportunities over time and reduce hiring volatility from the student perspective,
- Building a regional program that connects with local educators and employers, and
- Developing a program structure with a coordinating body (employment panel) that can bring together numerous community colleges, companies, labor groups, and other stakeholders including CBOs and potentially WIBs.

Additionally, establishing consistent training standards and a common curriculum is a key to success. Industry partners are looking for skilled workers who can pass or have already passed company entrance exams, while community college partners are looking for approved programs and labor groups are looking for training that complements existing apprenticeship structure.

Appendix D: Insights from the Analysis and Next Steps

The NCEP Task Force on America's Future Energy Jobs brought together representatives from the labor, electric industry, and training and educational sectors to explore the existing demographic makeup and anticipated professional needs of the electricity industry, along with the training institutions and programs that support this sector. The report summarizes the analysis and recommendations resulting from this effort. Following this analysis, the NCEP staff wants to highlight a number of specific insights about possible next steps in support of policymaking.

Additional Modeling

NCEP staff contracted with Bechtel to conduct the analysis summarized in Appendix A. The report applies the per-GW workforce estimates developed by Bechtel for the EPRI Prism scenario and two alternative scenarios (summarized in Appendices A and B). NCEP staff believes it is important to conduct updated estimates of workforce demand as policy choices are debated to gain additional insight.

As discussed in Appendix C, the types of technologies available for deployment and the rate of deployment determine the size, and potentially the desired skill sets, of the workforce needed. Both the types of technologies deployed and the rate of deployment are heavily dependent on the direction of policy decisions that are currently being considered in Congress. For this reason, we propose that economic models that incorporate emissions limits and complimentary policies (such as renewable energy standards or transmission deployment incentives) contained in proposed climate bills be used as a foundation for updated workforce demand estimates. These updated estimates should reflect potential policy decisions that will drive actual workforce demand. NCEP staff believes that the workforce demand building blocks presented in this report can assist government agencies and other organizations as they develop these economic models because, without substantial intervention, workforce shortages may be a significant constraint on deployment paths.

Additionally, as noted in the report, there will be state and regional variability in the deployment of generating assets, retrofit technologies, infrastructure, and other technologies. The building blocks used in this report could also be used in developing future state and regional workforce models.

Consideration of Supplementary Factors

The workforce estimates presented in this report focus on direct jobs associated with the construction and operation of electric generating assets and the associated infrastructure and technologies. In these workforce estimates no constraints on the feasibility of low-carbon infrastructure build out were examined aside from workforce availability. Policymakers may, however, want to evaluate potential constraints as they work towards low-carbon infrastructure policies.

Additional macroeconomic factors beyond the scope of the report contribute to the complexity of projections of future workforce demand and supply and should be considered as a part of future work to help inform federal policy decisions.

- Competition for workforce: The construction workforce is not specific to the electrical industry and the industry will likely face competition for skilled craft workers with other sectors that may also be concurrently investing in infrastructure projects.
- Industrial policy: Manufacturing implications should also be considered for the technology mixes and deployment paths considered in updated workforce estimates. The manufacturing jobs associated with the low-carbon technologies deployed could be very significant and could both increase the demand for skilled workers and contribute to competitive pressures in the labor market.
- Worker re-training: There is a potential for displacement of traditional electric power jobs as the industry deploys new technologies. This implies that there may be significant re-training needs for some of the current workforce and that the net number of new employees needed in this sector will be affected by the extent of this displacement.[86]

[86] According to the KEMA/GridWise Alliance study, as a result of smart grid deployment, about 32,000 existing utility jobs, such as meter-readers, will be transitioned to other jobs in the electric sector.

Notes

Notes

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