Nuclear Criticality Safety Professionals Compensation Study 2023

January 2024

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Executive Summary

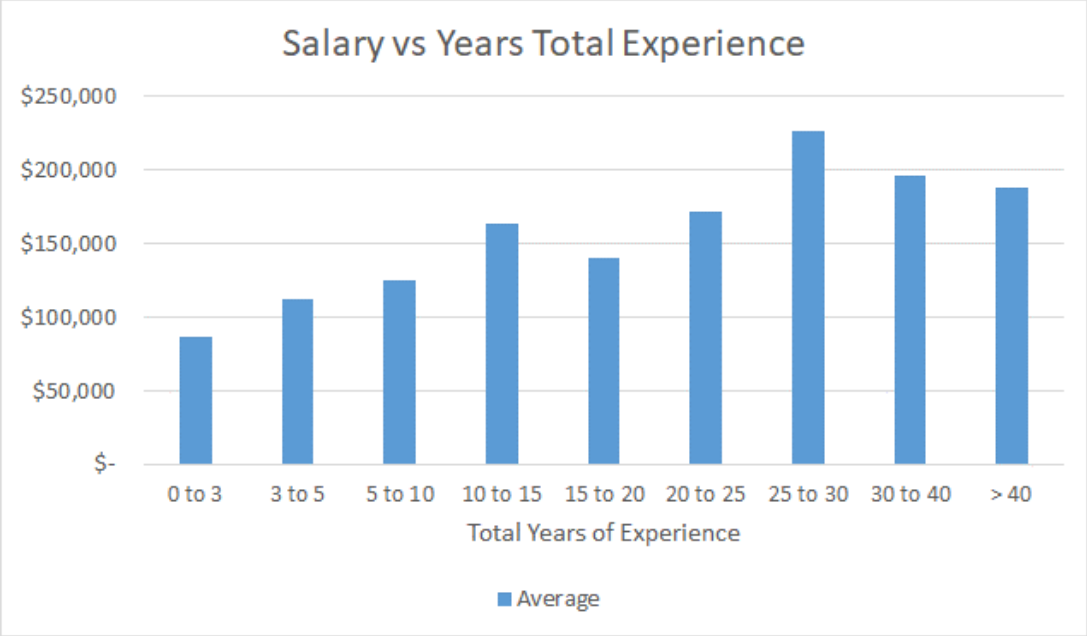
All data presented in this report is voluntary self-reported by the survey respondents. It is assumed to be accurate to the extent practical based on the professionalism of the respondents. The driver for this revision was to bring the data more up to date. Further revisions may have additional goals.

The Nuclear Criticality Safety Division (NCSD) of the American Nuclear Society (ANS) conducted a voluntary survey of nuclear criticality safety (NCS) professionals during the early part of 2023. The primary goal of the survey was to assess salaries of NCS professionals and compare that information to various other career aspects.

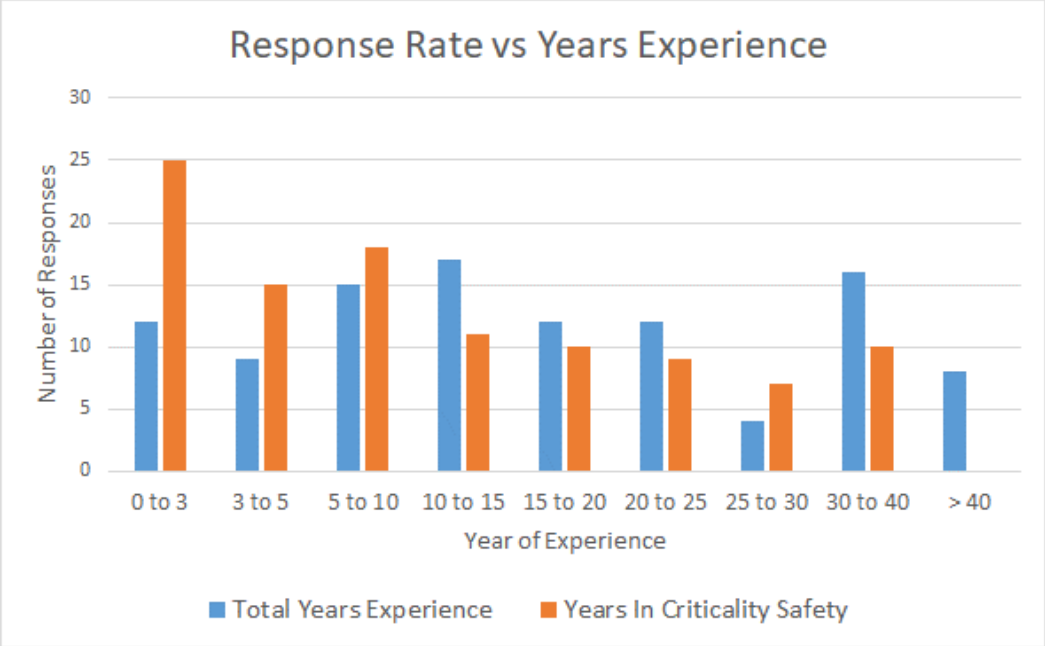
The survey was open to both ANS and non-ANS members and received over 100 responses, which is a significant portion of the NCS professionals in the U.S. The responses cannot be guaranteed to be fully representative of the entire population of NCS professionals, however the respondents did represent a wide range of experience, work location, work responsibilities, and employers. No other demographics were collected on the basis of anonymity.

The overall average salary reported was $152, 336.

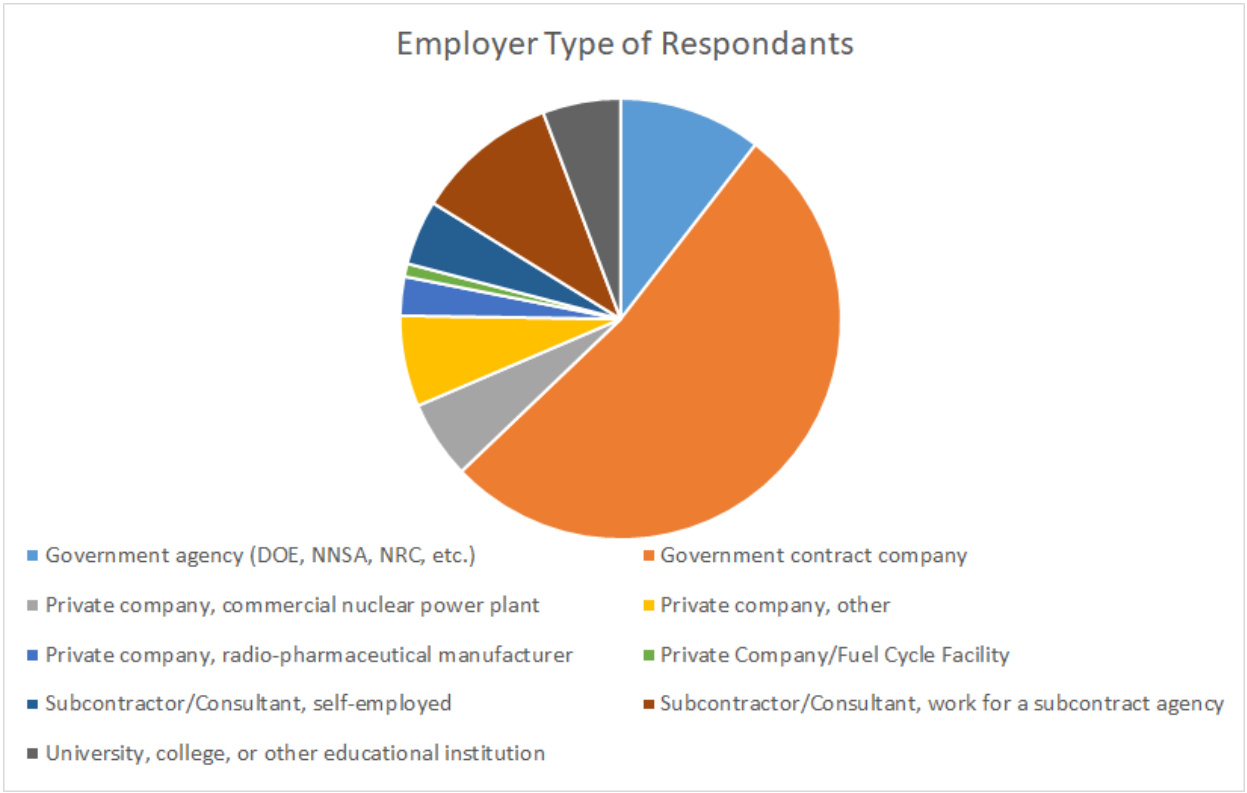
Experience was found to be one of the strongest correlations to salary with average results presented in the figure below:



The average respondent to this survey has 18.6 years total experience and 12.3 years of experience in NCS. Of the respondents, 74% have changed jobs at least once. The histogram below shows the response rates versus years of experience, both overall and NCS specific.



Approximately half of the survey respondents work for a government contract agency such as those who hold the management and operation contracts at DOE sites. The pie chart below shows the overall break down of respondents versus employer type.



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Background

The ANS NCSD periodically surveys the NCS community to determine the compensation and benefits packages being offered to NCS professionals across the industry. Typically, this data is assessed versus a number of parameters including experience level, employer, education, etc. The survey is voluntary self-reported information. The survey is opened for NCS professionals whether they are ANS members or not by distributing the survey link through a network of individuals at nuclear site across the nation in a variety of industry roles. Respondents had from February 16, 2023 until May 1, 2023 to respond to the survey.

The last time the NCSD made this survey was 2016. There have been significant changes to the work force and the way many companies do business since then. Most notably the COVID-19 pandemic brought about telework options in ways that would not have been dreamed of even five years ago. In some cases it also accelerated retirements and delayed graduations, shifting workforce demographics. Also, the U.S. has experienced high inflation rates for most of the last three years, resulting in companies needing to offer higher compensation and more extensive benefits packages to remain competitive and retain highly valuable NCS staff. Therefore, it was appropriate to reconduct the survey in 2023 and update the information contained therein.

The NCSD took the opportunity to expand the survey as well by including more and detailed questions on education, credentials, experiences, benefits, raise history, job flexibility and responsibilities, work arrangements, and job satisfaction.

The NCSD hopes this data is informative and useful. The NCSD also extends many thanks to the more than 100 individuals who took the time to complete the survey.

1. Salary versus Years of Experience

The length of the individual's tenure as a NCS professional appears to be one of the leading indicators of salary. The survey had 105 datapoints for this criterion. Respondents in this criterion provided answers to the following questions:

- What are your total years of professional experience, including any internships and co-ops?
- How many years are in NCS?
- How many years are in a nuclear safety related field other than NCS (e.g. safety basis, radiological protection, accident analysis, etc.)?
- How many years are with current employer?
- How many years are with immediate past employer, if any?
- What is your annual base salary, exclusive of all stipends, bonuses, overtime, hazard pay, etc.?

The years outside of NCS is calculated as the difference between the total years and the years in NCS.

The spread on the data was such that presentation of raw data is difficult to interpret. Rather, results were binned into a histogram with years ranged 0 to 3, 3 to 5, 5 to 10, 10 to 15, 15 to 20, 20 to 25, 25 to 30, 30 to 40, and >40 years. The response rate for total years of experience and years in NCS is shown in Figure 1. The average respondent to this criterion has 18.6 years total experience and 12.3 years of experience in NCS.

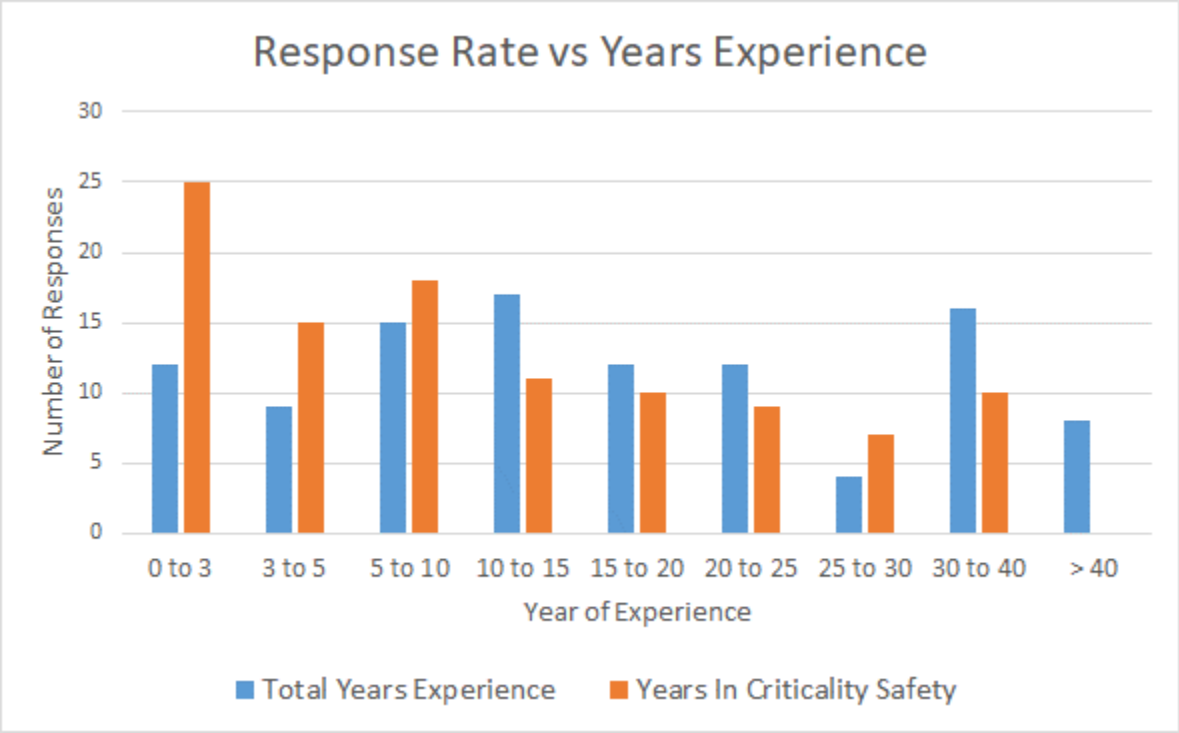

Figure 1: Response rate versus years of experience

1.1. Total Years

The responses for total years of experience versus base salary are provided in Figure 2 and Table 1.

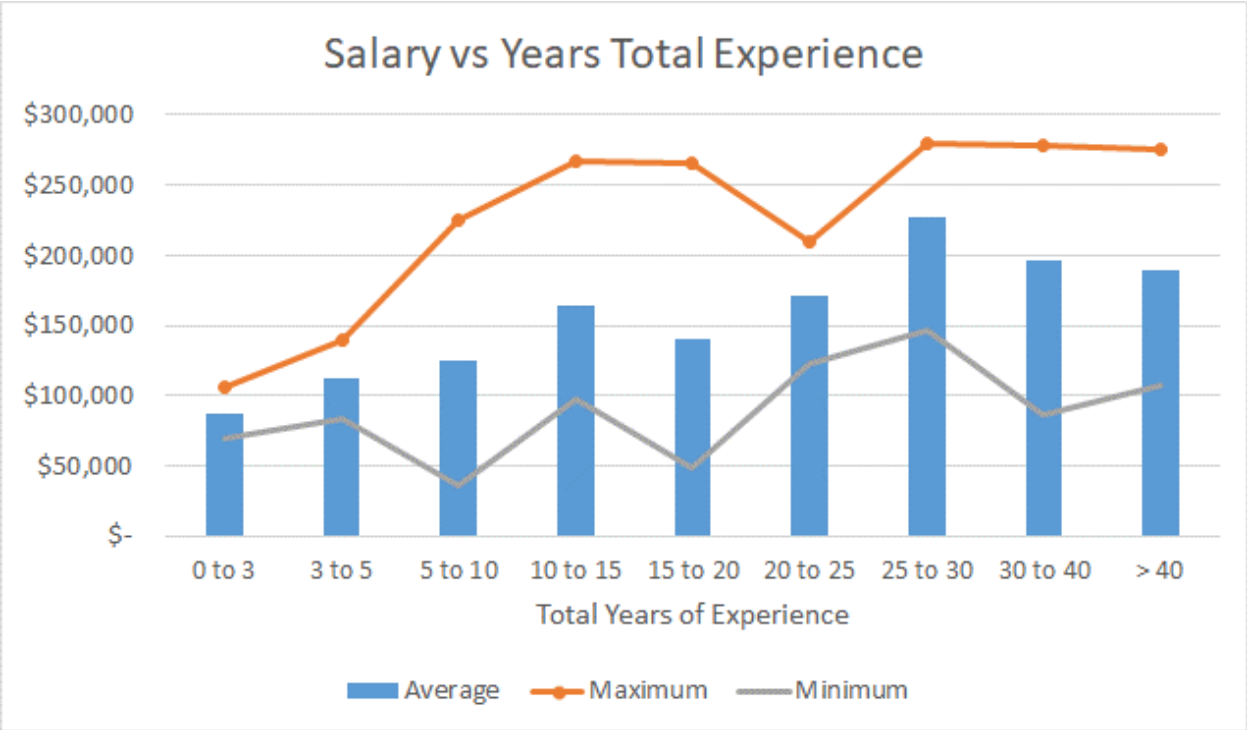

Figure 2: Salary versus total years of experience.

Table 1: Salary versus total years of experience.

Total Years of Experience	Responses	Average	Min	Max	Standard Deviation
0 to 3	12	$ 87,061	$ 70,000	$ 106,500	$ 10,813
3 to 5	9	$ 112,599	$ 83,692	$ 140,000	$ 18,897
5 to 10	15	$ 124,629	$ 36,000	$ 225,000	$ 48,366
10 to 15	17	$ 163,345	$ 98,000	$ 267,231	$ 43,227
15 to 20	12	$ 139,875	$ 48,259	$ 266,240	$ 56,831
20 to 25	12	$ 171,375	$ 122,000	$ 210,000	$ 31,521
25 to 30	4	$ 226,500	$ 146,000	$ 280,000	$ 59,181
30 to 40	16	$ 196,318	$ 85,680	$ 278,400	$ 48,167
> 40	8	$ 188,600	$ 107,000	$ 276,000	$ 56,159

1.2. Years in Criticality Safety

The responses for years of NCS *experience versus base salary are provided in* Figure 3 and Table 2.

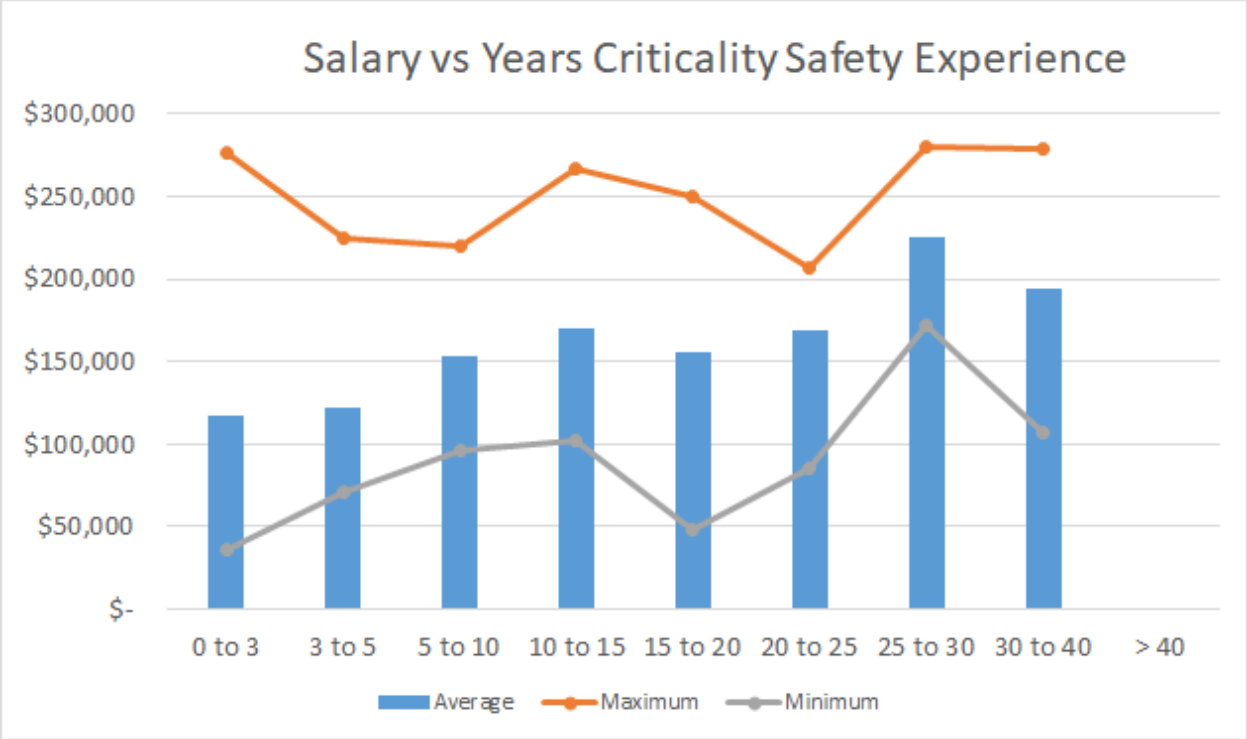

Figure 3: Salary versus years of criticality safety experience.

Table 2: Salary versus years of criticality safety experience.

Years of NCS Experience	Responses	Average	Min	Max	Standard Deviation
0 to 3	25	$ 117,568	$ 36,000	$ 276,000	$ 53,662
3 to 5	15	$ 122,623	$ 70,560	$ 225,000	$ 38,748
5 to 10	18	$ 153,224	$ 96,000	$ 220,480	$ 37,437
10 to 15	11	$ 169,943	$ 101,700	$ 267,231	$ 54,872
15 to 20	10	$ 155,653	$ 48,259	$ 250,000	$ 65,086
20 to 25	9	$ 168,345	$ 85,680	$ 206,500	$ 37,490
25 to 30	7	$ 225,829	$ 171,800	$ 280,000	$ 35,867
30 to 40	10	$ 193,691	$ 107,000	$ 278,400	$ 51,495
> 40	0	NA	NA	NA	NA

1.3. Attrition

All 105 of the respondents reported their years with their current employer. However, 78 reported years with a previous employer and 73 reported some number of years of professional experience outside of NCS. Both may be taken as attrition either from a previous employer or from another facet of the industry to NCS. 58 of the respondents reported years of experience in another related field of nuclear safety. The results may be seen in Table 3. In taking the attrition ratio, 78/105 = 74% reported attrition.

Of that 62% reported it in their first 5 years of professional experience and 22% between 5 and 10 years. A course histogram can be drawn for both current and previous employers' years of experience results in Figure 4 and Figure 5.

Table 3: Years with Current and Previous Employers and Fields.

	Responses	Years			
		Average	Minimum	Maximum	Standard Deviation
Years with Current Employer	105	8.66	0.10	42.50	9.16
Years with Previous Employer	78	5.93	0.25	25.00	5.64
Reporting Attrition	*74%*				
Attrit in first 5	*62%*				
Attrit in 5-10	*22%*				
Years Outside of CS	73	8.36	0.25	38.00	8.78
Years in another safety field	58				

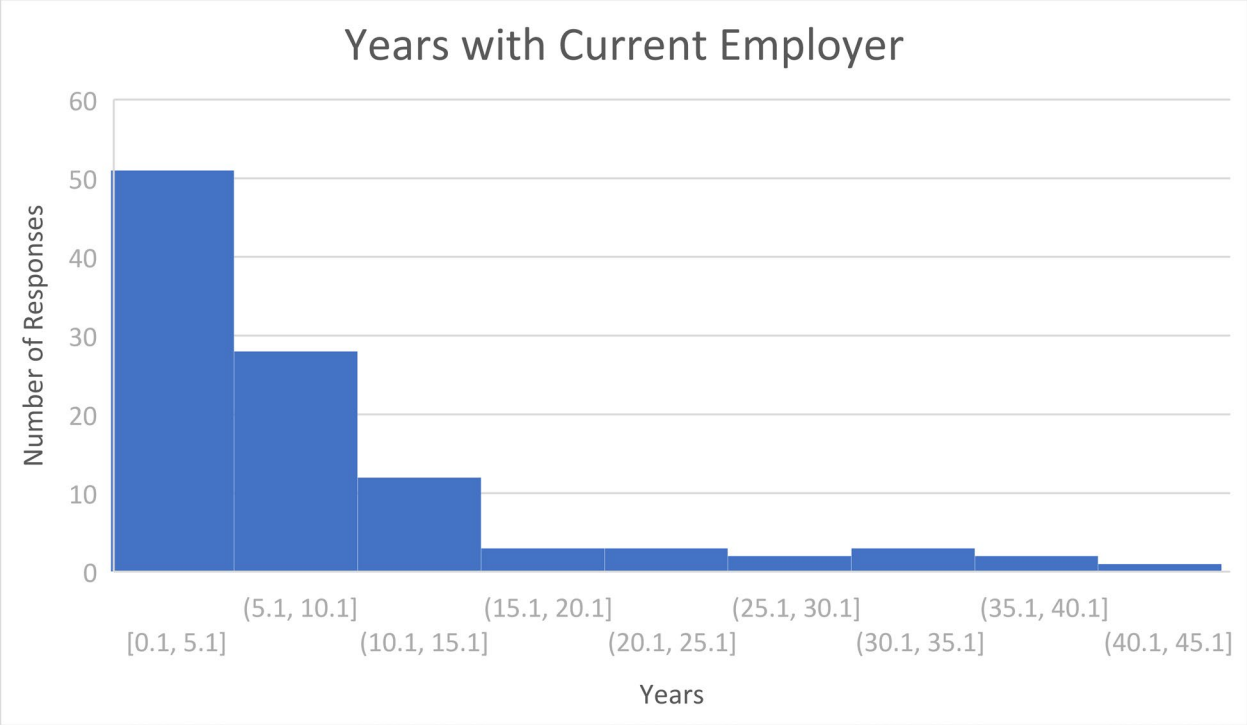

Figure 4: Years with current employer.

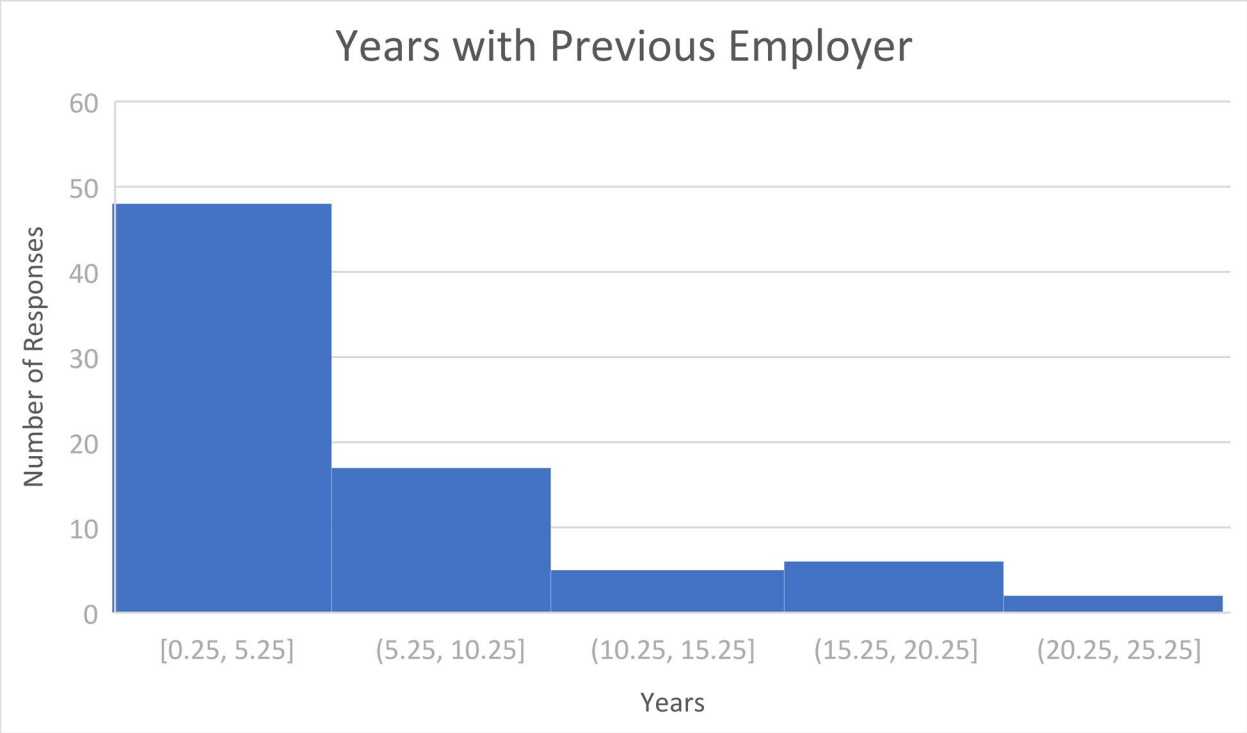

Figure 5: Years with previous employer.

1.4. Discussion

The large value in the 0 to 3 years in NCS (Figure 1) implies that a significant number of respondents made the choice to transition from other branches of engineering to NCS. The low number of mid-career professionals in the 15-30 year range is consistent with other facets of nuclear engineering.

For the most part, salary grows commensurate with years of experience. Reponses however indicate a rapid rise in salary during the first ten years and a large salary toward the end of the career that tapers off likely as the most experienced professional drop to part time work near or after retirement. Both the average and maximum salary curves indicate that mid-career NCS engineers, the ones most difficult to find, actually have an inconsistent dip in their salary compared to their less and more experienced counterparts.

A rather high 74% of respondent reported leaving their previous employer. Both Figure 4 and Figure 5 indicate that most attrition occurs during the first five year and the second highest risk of attrition occurs during the 5-10 year period, dropping off exponentially after that.

2. Salary versus Employer Type

The type of employer the NCS professional works for also appears to be one of the leading indicators of salary. The survey had 105 datapoints for this criterion. Respondents in this criterion provided answers to the following questions:

- What is your current (or most recent) Primary Employer Type? (select only one)
    - Government agency (DOE, NNSA, NRC, etc.)
    - Government contract company
    - International agency (e.g. IAEA)
    - Subcontractor/Consultant, self-employed
    - Subcontractor/Consultant, work for a subcontract agency
    - Private company, commercial nuclear power vendor
    - Private company, commercial nuclear power plant
    - Private company, radio-pharmaceutical manufacturer
    - Private company, other
    - University, college, or other educational institution
    - Non-university research foundation (EPRI, INPO, etc.)
    - Other
- What is your employment status? (select only one)
    - Employed, full time
    - Partially employed, seeking work (e.g. you are a consultant working less than 2000hours per year and are seeking additional work)
    - Partially employed, not seeking additional work (e.g. you are a consultant working less than 2000 hours per year but are not seeking additional work)
    - Unemployed, seeking work
    - Unemployed, not seeking work (e.g. fully retired)
- What is your annual base salary, exclusive of all stipends, bonuses, overtime, hazard pay, etc.?

2.1. Employer type results

The results for this criterion were rather concise, indicating there were more options listed above than were necessary. The results are presented in the tables and figure below.

Table 4: Salary versus primary employer type

Type	Responses	Average	Minimum	Maximum	Standard Deviation
Government agency (DOE, NNSA, NRC, etc.)	11	$ 116,689	$ 49,700	$ 145,000	$ 30,622
Government contract company	55	$ 145,710	$ 70,560	$ 250,000	$ 49,375
Private company, commercial nuclear power plant	6	$ 141,550	$ 125,000	$ 180,000	$ 23,509
Private company, other	7	$ 164,321	$ 107,000	$ 210,000	$ 35,105
Private company, radio-pharmaceutical manufacturer	3	$ 88,667	$ 70,000	$ 124,000	NA
Private Company/Fuel Cycle Facility	1	$ 197,000	NA	NA	NA
Subcontractor/Consultant, self-employed	5	$ 230,080	$ 137,000	$ 278,400	$ 55,490
Subcontractor/Consultant, work for a subcontract agency	11	$ 224,041	$ 173,500	$ 280,000	$ 41,065
University, college, or other educational institution	6	$ 103,376	$ 36,000	$ 175,000	$ 52,128

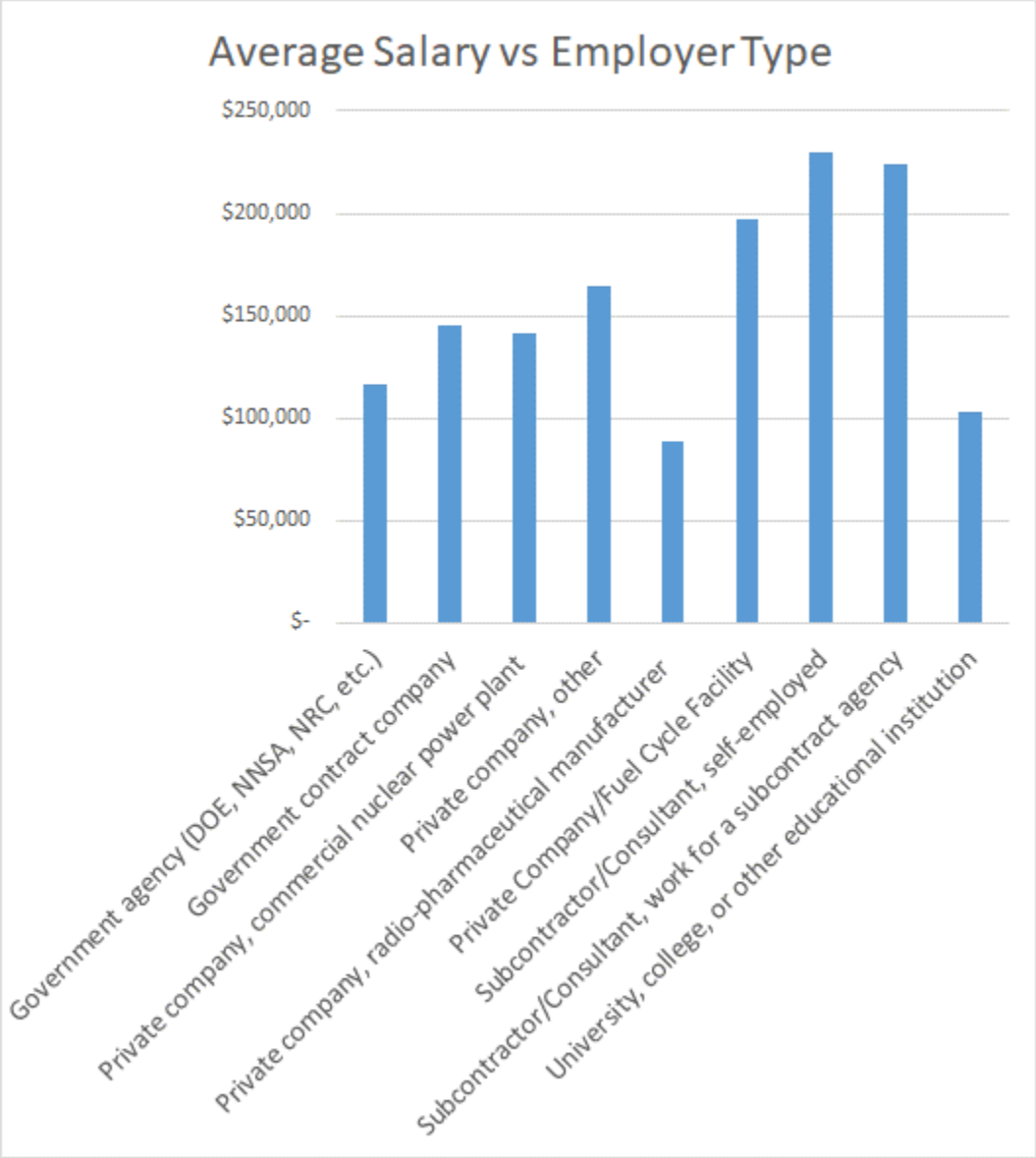

Figure 6: Average salary vs employer type.

Table 5: Salary versus employment status

Type	Responses	Average	Minimum	Maximum	Standard Deviation
Full time	102	$ 152,905	$ 36,000	$ 280,000	$ 56,759
Partially Employed not seeking work	2	$ 112,000	NA	NA	NA
Unemployed Not Seeking Work	1	$ 175,000	NA	NA	NA

2.2. Discussion

From the data taken, consistently across average, minimum, and maximum results, the highest paid NCS professionals are those who work as or for subcontractors.

The lowest paid NCS professionals are those who work for radio-pharmaceutical manufacturers.

The reported results have a very large spread in the data. Thus, categories outside of the highest and lowest paid have overlapping data points. Government contract company employees are approximately the median salary and were the largest group of respondents.

3. Salary versus Location

Of the respondents, 91 were generous enough to provide the zip code of their primary work location. Specifically, the question read:

- Optional: Please enter the zip code of your employer or the site/facility you primarily support. This information is for regional cost of living normalization only.

This is in recognition of the fact that due to the COVID-19 pandemic greatly expanding telework capabilities and the tendency for more experienced professionals to seek consulting and contract work possibly supporting multiple sites, one's primary work location and one's state of residence my not be the same or even nearby.

The results are provided in Table 6. A plot of the results versus the average for the top 7 state of response is shown in Figure 1.

Table 6: Salary versus location of primary employment

State	Responses	Average	Min	Max	STDEV
TN	27	$ 160,030	$ 81,600	$ 280,000	$ 63,043
SC	18	$ 143,672	$ 90,700	$ 260,000	$ 53,159
NC	7	$ 134,771	$ 36,000	$ 250,000	$ 67,807
WA	7	$ 188,775	$ 175,000	$ 209,200	$ 12,646
NM	6	$ 196,372	$ 125,000	$ 267,231	$ 53,632
VA	6	$ 169,071	$ 96,000	$ 225,000	$ 47,299
NY	4	$ 169,400	$ 98,000	$ 260,000	$ 67,059
PA	3	$ 176,467	$ 131,400	$ 248,000	NA
WI	3	$ 163,827	$ 131,000	$ 220,480	NA
DC	2	$ 187,500	$ 125,000	$ 250,000	NA
OH	2	$ 210,750	$ 173,500	$ 248,000	NA
CA	1	$ 190,000	NA	NA	NA
GA	1	$ 267,231	NA	NA	NA
ID	1	$ 146,000	NA	NA	NA
MD	1	$ 220,000	NA	NA	NA
NH	1	$ 117,000	NA	NA	NA
NV	1	$ 101,700	NA	NA	NA
Total	**91**	**$ 156,855**	**NA**	**NA**	**NA**

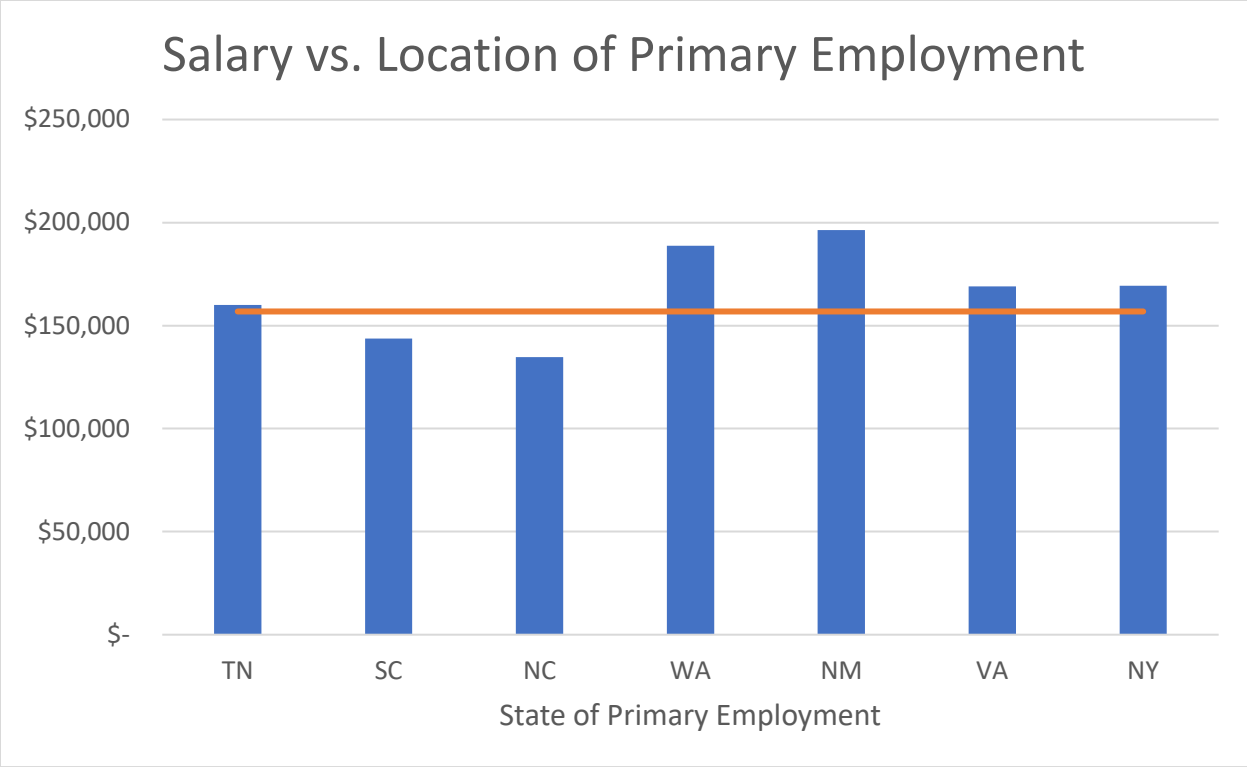

Figure 7: Salary vs. state of primary employment, top results.

3.1. Discussion

For the respondents who reported their primary work location, the average salary overall was $156,854.83 which is comparable to the overall average of $152, 336.23 implying that those respondents who did not report location average about the same salaries.

The top five states reported are TN (home of Oak Ridge National Lab, Y-12, TVA, and numerous others), SC (home of the Savannah River Site and the Westinghouse nuclear fuel manufacturing plant), NC (home of the GE nuclear fuel manufacturing plant), and WA (home of PNNL and the Hanford Site).

Of the top reporting states WA and NM reported higher salaries but also have higher costs of living overall. In general, the average NCS engineer salaries are consistent across the U.S.

4. Salary versus Education and Top Schools for Criticality Safety

The choice of college is often a personal one made for a variety of reasons. This criterion included responses to the following questions. Where applicable, the number of respondents to each question provided in brackets.

- What discipline was your B.S. in? **[109]**
- What college/university did you graduate from? **[103]**
- Do you hold a Master of Science, Master of Engineering, or similar technical masters degree?
- What discipline was your masters in? **[65]**
- What college/university did you obtain your masters from? **[63]**
- Do you hold a Doctor of Philosophy or similar technical doctoral degree?
- What college/university did you obtain your doctorate from? **[17]**
- What discipline was your doctorate in? **[17]**
- Do you hold a Master of Business Administration or similar advanced business or management degree?
- What college/university did you obtain your MBA or similar degree from? **[3]**
- Did your current employer pay for any part of your educational expenses? **[103]**
- Did a former employer pay for any part of your educational expenses? **[105]**
- Did you complete any of the above advanced degrees part time while working full time for your current or a previous employer?" **[102]**
- What is your annual base salary, exclusive of all stipends, bonuses, overtime, hazard pay, etc.? **[105]**

Respondents were also given the option to provide what year they obtained each degree, but this result had no correlation to salary so it was not analyzed further for this discussion.

The reader should note two things before proceeding.

1) There were only 105 usable salary data point in this category though there were in some cases more usable responses in the academic criteria questions, for example 109 respondents reported their undergraduate school.
2) Survey takers were also asked what year they graduated with each degree. This was found upon analysis to not be a useful metric for this report and is not included in these results.
3) Every respondent with a Ph.D. also had a masters degree. All respondents had bachelors' degrees.

4.1. Terminal Degree Type

From the responses, 105 provided usable salary data correlated to degree type. Of those 40 had a terminal degree of B.S., 49 had a terminal degree of M.S. or M.B.A., and 16 had a terminal degree of Ph.D. The results are provided in Figure 8.

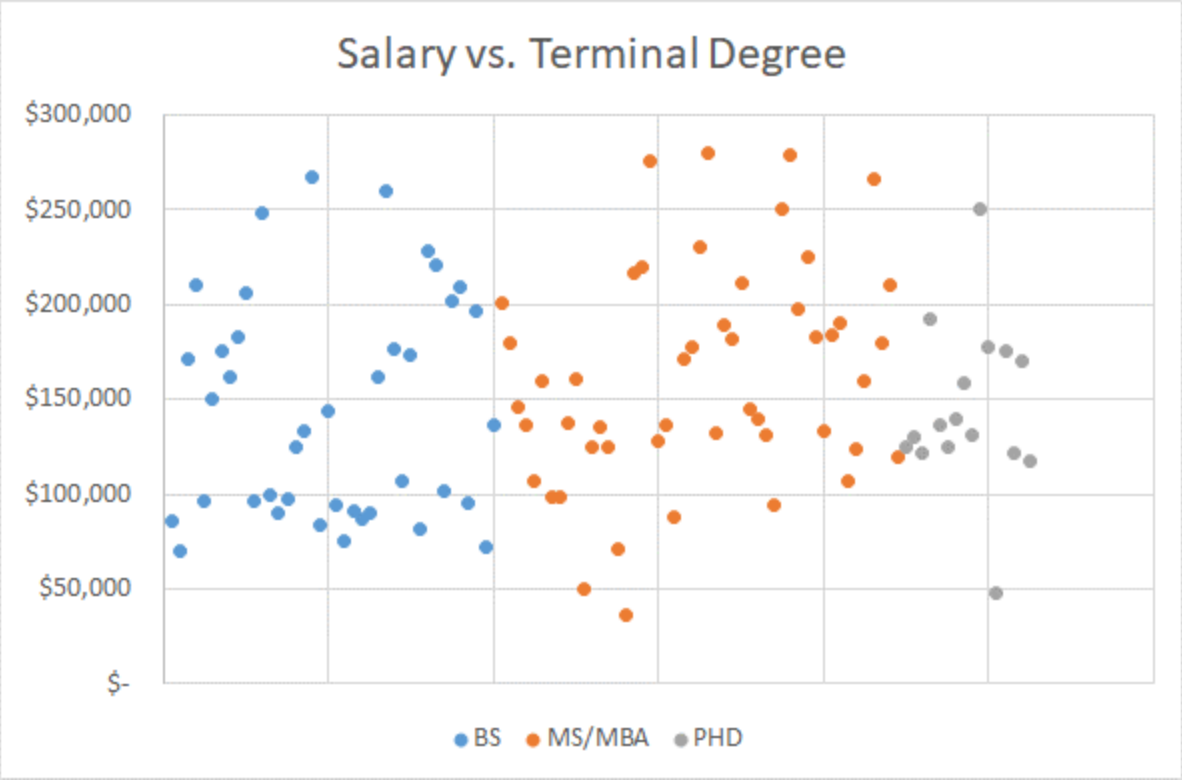

Figure 8: Salary vs. terminal degree.

4.2. Schools and Majors for B.S.

For the bachelor's degree type, 109 responses were received. The top major was nuclear engineering (64). Physics followed a distant second (14). The next largest groups were chemistry or chemical engineering (8) and mechanical engineering (7). The remaining degrees varied.

In the responses, 103 reported their undergraduate school. The University of Tennessee Knoxville dominated with 11 alumni. Texas A&M University was reported for 8 responses, Rensselaer Polytechnic Institute for 5, and North Carolina State University and Georgia Institute of Technology for 4 each. The following schools each has 3 alumni report Idaho State University, Massachusetts Institute of Technology, Pennsylvania State University, University of Michigan, University of Florida, University of Utah, and University of New Mexico. All other schools were reported only once or twice.

These data are summarized in the table below.

Table 7: Top bachelors degree majors and schools

B.S. Major (109 reported)	# of Responses
Nuclear Engineering	64
Physics	14
Chemistry/Chemical Engineering	8
Mechanical Engineering	7
B.S. School (103 reported)	**# of Responses**
University of Tennessee	11
Texas A&M University	8
Rensselaer Polytechnic Institute	5
Georgia Institute of Technology	4
North Carolina State University	4
University of Idaho	3
Massachusetts Institute of Technology	3
Pennsylvania State University	3
University of Michigan	3
University of Florida	3
University of New Mexico	3
University of Utah	3

4.3. Schools and Majors for M.S., M.B.A., and Ph.D.

For the Master of Science degree, 65 respondents reported their major and 63 reported their school. The top major was again nuclear engineering at 46 degrees, followed by physics at 5. The remainder were other science and engineering disciplines. Of the 63 schools reported, University of Tennessee Knoxville dominated again with 14 of the alumni, followed by Idaho State University with 5, North Carolina State University and University of Michigan with 4 each, and Georgia Institute of Technology with 3.

Only three respondents reported obtaining an M.B.A. and each went to a different school.

For the Doctor of Philosophy degree, 17 respondents reported their major – all nuclear engineering and 16 reported their school. Again, University of Tennessee Knoxville dominated with 5 alumni. There were 3 from Rensselaer Polytechnic Institute and 2 each from North Carolina State University and the University of Utah.

These data are summarized in the tables below.

Table 8: Top M.S. degree majors and schools

M.S. Major (65 reported)	# of Responses
Nuclear Engineering	46
Physics	5
M.S. School (63 reported)	**# of Responses**
University of Tennessee	14
University of Idaho	5
North Carolina State University	4
University of Michigan	4
Georgia Institute of Technology	3

Table 9: Top Ph.D. degree majors and schools

Ph.D. Major (17 reported)	# of Responses
Nuclear Engineering	17
Ph.D. School (63 reported)	**# of Responses**
University of Tennessee	5
Rensselaer Polytechnic Institute	3
North Carolina State University	2
University of Utah	2

4.4. Employer Involvement

Survey takers were asked if their current or previous employer financially aided them in their degree and if they completed any part of the degree part time while working. The results were as follows:

- 19 of 103 responses said their current employer paid for some part of their advanced degree
- 25 of 105 responses said their previous employer paid for some part of their advanced degree
- 30 of 102 responses said they completed their degree part time while working their normal day job.

4.5. Discussion

Perhaps to the chagrin of our higher education system, there appears to be no correlation to the terminal degree level and the salary commanded by the NCS professional. The implication is that the success of the NCS professional depends more on their experience and their career choices than on the degree they received.

That being said, the University of Tennessee Knoxville was the most commonly reported school for B.S., M.S., and Ph.D. degrees. Texas A&M University also produced a significant number of the B.S. degree holding respondents. For graduate schools, North Carolina State University, Rensselaer Polytechnic Institute and the University of Utah (a surprise contender) issued the remaining majority of M.S. and Ph.D. degrees of the respondents.

Additionally, about 1/3 of advanced degree holders completed the degree not as a full-time graduate student but while working a job and doing classes and research part time. About 40% (44 responses) said their current or former employer supported their education financially. However, it seems employer

support of the degree is not an effective retention tool as 25 respondents said it was their *previous* employer who supported them.

The fact that 30 respondents reported part time graduate education but 44 reported financial help from their employer is not inconsistent. A number of employers fund graduate students to do specific research for them full time as students and then require them to work for the company for some amount of time after graduation.

5. Salary versus Military Experience, Professional Credentials, and Company Role

5.1. Military Service History

For military service, there was insufficient data for analysis. The survey team would like to say thank you to the 8 veterans who responded and served in our armed forces.

5.2. Professional Credentials

Survey takers were asked if they had any form of credential other than their degree. The there most common were assessed and then the respondents had the opportunity to list any other credentials they had. Here are the questions the survey takers responded to:

- Do you have a professional engineer's license (PE)?
- If not, are you in the process of pursuing it?
- Do you have a health physics certification (CHP)?
- If not, are you in the process of pursuing it?
- Do you have a project management certification (PMP)?
- If not, are you in the process of pursuing it?
- Do you have any other professional credentials?
- If so, please list them.

There were 105 responses to these criteria which are presented in Table 10. Additionally, 17 respondents reported some other credential but they were random and in some cases job specific. However, the two other credentials reported more than once having passed the Fundamentals of Engineering Exam and having at some time been certified as a Senior Reactor Operator.

Table 10: Salary versus credentials.

Responses	105	Average Salary	Standard Deviation
Has a PE	17	$ 173,168	$ 61,392
Getting a PE	7		
Has a CHP	2	$ 122,000	NA
Getting a CHP	2		
Has a PMP	7	$ 177,610	NA
Getting a PMP	3		
No Credential	83	$ 147,219	$ 54,604
Credential	22	$ 171,642	$ 59,510
Total Credentials	26		

5.3. Salary Versus Company Role

Most professionals understand their role in their company, but it is sometimes hard to put into words that apply to multiple companies in different facets of the industry across the entire nation and abroad. To try to define this criterion, respondents were asked three questions with limited choices:

- What percentage of your time is spent on NCS matters? (Please round to nearest 10%)

- Which of the following best describes your current job rank or title? Check only one, recognizing that the terms may mean different things to different companies.
    - Engineer in training
    - Engineer
    - Senior Engineer
    - Principal Engineer
    - Fellow or higher designation engineering (but still in technical work)
    - Executive level engineer (e.g. site chief engineer)
- Which of the following best describes your primary current job function? (select only one)
    - Field/operations support
    - Analyst with modeling focus
    - Safety bases authority
    - Technical lead
    - Consulting engineer
    - Chief consulting engineer
    - Project manager
    - Personnel manager
    - Educator/training manager
    - Program manager
    - Executive
    - Other

While the survey authors recognize that these options may not completely describe every role, responses were appreciated. The number of respondents and how many fell into the categories from 50% to 100% of time spend on NCS work are reported in Table 11 while the corresponding raw data are shown in Figure 9.

Table 11: Time spent on criticality safety work by number of responses.

Responses on time spent on NCS	103
100% of work time	42
90% of work time	15
80% of work time	9
70% of work time	4
60% of work time	4
50% of work time	7
Average time on NCS	77.70%

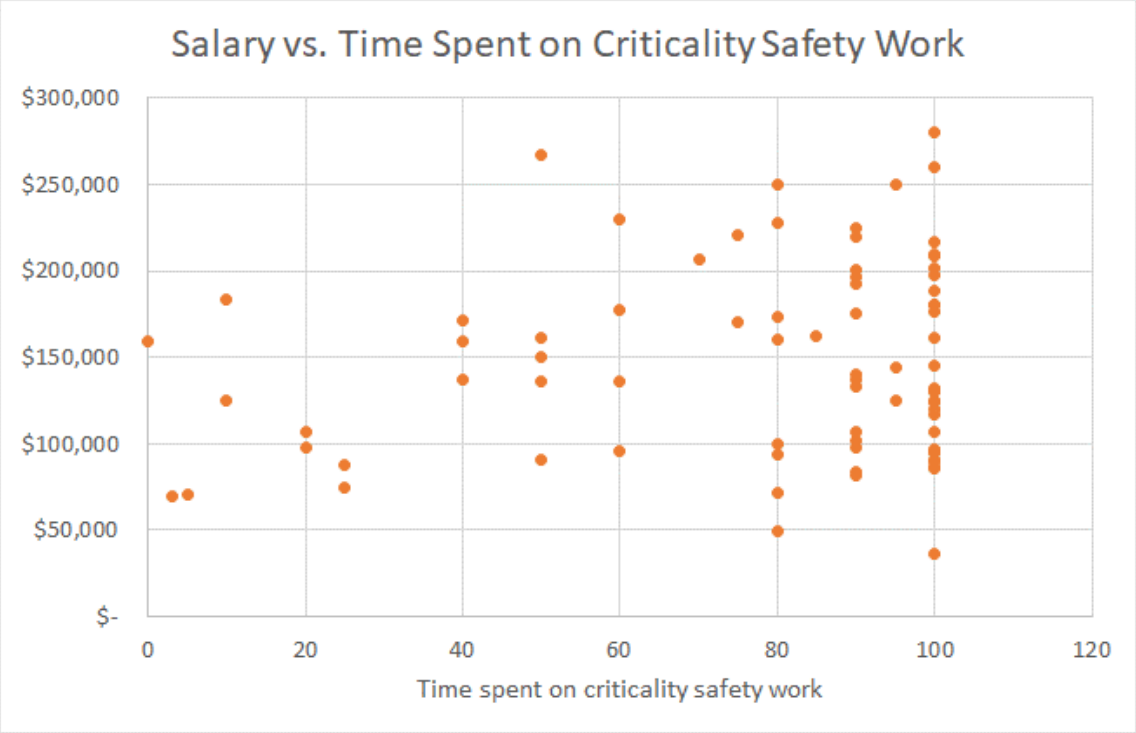

Figure 9: Salary vs. time spent on criticality safety work.

Respondents next provided their job rank or job title, which is often assumed to tie to seniority but also to experience and knowledge/skill set of the individual. 103 respondents provided this input and the salary data may be seen in Table 12 and Figure 10.

Table 12: Salary vs. job rank.

Responses on Time	103	Maximum	Minimum	Average	Standard Deviation
Engineer in training	9	$ 125,000	$ 70,000	$ 89,577	$ 16,716
Engineer	27	$ 210,000	$ 48,258.92	$ 116,458	$ 37,293
Senior Engineer	32	$ 267,231	$ 70,560	$ 166,303	$ 45,941
Principal Engineer	15	$ 280,000	$ 85,680	$ 181,405	$ 58,988
Fellow or higher engineer	14	$ 278,400	$ 107,000	$ 187,462	$ 43,601
Executive level engineer	6	$ 276,000	$ 122,000	$ 204,083	$ 54,296

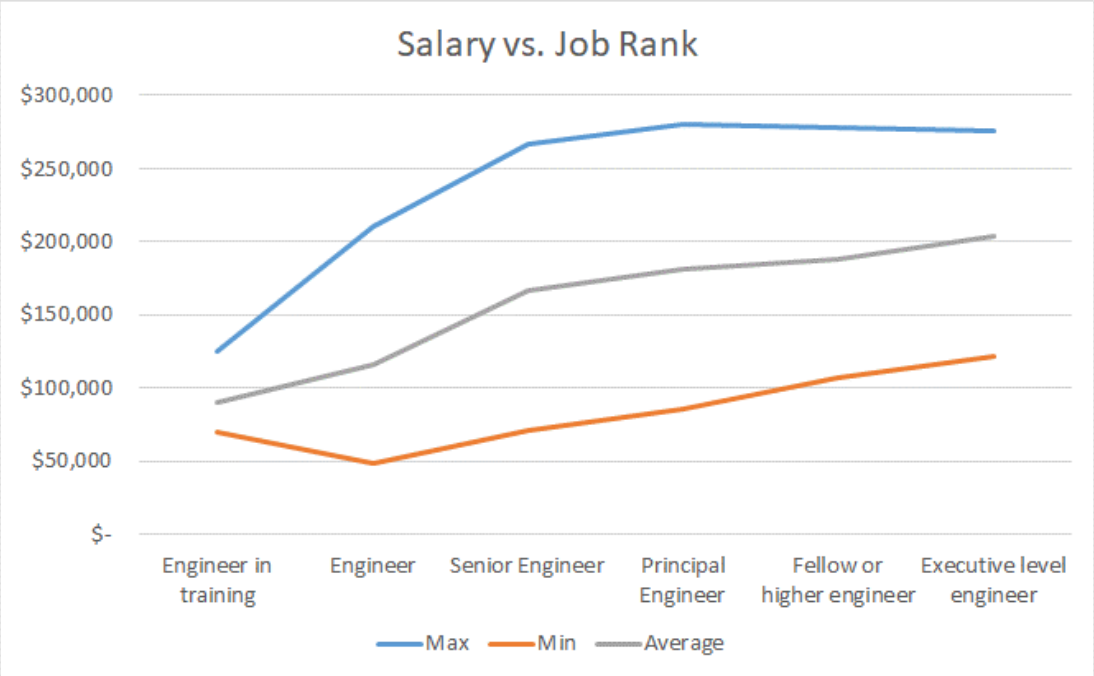

Figure 10: Salary vs. job rank.

Finally, the respondents were asked to provide a description of their job function from a pre-set list of to enter their own description. The results from this are interesting but were so disparate that comparison to salary data is not informative. Also, there were two more responses to this question than other data sets in this criterion. The results are shown in Table 13.

Table 13: Job function of respondents by number of responses.

Which of the following best describes your primary current job function? (select only one)	105
Analyst with modeling focus	30
Chief consulting engineer	2
Consulting engineer	13
Criticality Safety/ Safety Analysis Engineer	1
Educator/training manager	4
Executive	2
Field/operations support	10
Graduate Ph.D. Student	1
Licensing engineer	1
NCS Management consultant	1
Personnel manager	6
Program manager	5
Research and development staff	5
Safety bases authority	2
Technical lead	22

5.4. Discussion

In reviewing the averaged data for the responses on credentialed versus uncredentialed NCS professional, there is a strong support for getting either a PE or a PMP. On average, these two credential holders earned $24,000 to $30,000 more than their uncredentialed counterparts. However, this must be tempered by the spread in this data which is greater than that range, thus resulting in effectively a null conclusion. It is interesting to note that the CHP holders averaged $25,000 less than their average uncredentialed counterparts though.

The results for credentials are also interesting in the fact that there were 26 total credentials counted among the respondents but only 22 credential holders. The two CHP holders also had PE licenses and two PMP holders also had PE licenses, accounting for the overlap. These doubly credentialed persons accounted for both the lowest salary of a credentialed respondent ($122,000 with PE + CHP) and the highest ($276,000 with PE + PMP), effectively negating any conclusions for or against having multiple credentials.

The results for time spent on NCS work showed little correlation with salary. It is however beneficial to note that the majority of respondents (64%) said they spent at least 80% of their work time on matters related directly to NCS.

The results for salary versus job title or rank as so closely related to salary versus experience there is little need for comparison. This is because job title or rank is typically commensurate with the experience base of the individual. Outliers exist (which drive the minimum and maximum values) but in general this follows the experience curve.

While the job function query was not reasonable to coordinate with salary, about 1/3 of all respondents identified as being an analyst.

6. Raise Profiles

Before discussing this section, the survey authors would like to thank everyone who responded to this criterion specifically. This was the most convoluted of our questions to answer and it also required some level of introspection and willingness to report on your own performance grading. Neither are things most of us find comfortable. However, this information is invaluable to the community as a gauge on how our employers are rewarding performance and managing inflation. Again, thank you.

Respondents to this criterion answered the following questions:

- What was your cumulative percentage raise received in 2022?
- What was your percentage raise received raise in 2021?
- What was your percentage raise received raise in 2020?
- What was your percentage raise received raise in 2019?

The reason the 2022 question was different was because it was followed by the following request to itemize or allocate the components of the 2022 raise:

- What were the bases for your 2022 raise by fraction?

Respondents were asked to allocate their 2022 raise among cost-of-living increase (inflation), market adjustment (competition for NCS staff), and merit. The results are presented in the following sections.

6.1. 2022 Raises versus Experience and Employer Type

The results reported for the 2022 raise profile are shown as a scatter plot versus years of experience in NCS (Figure 11 and Figure 12) and versus employer type (Table 14).

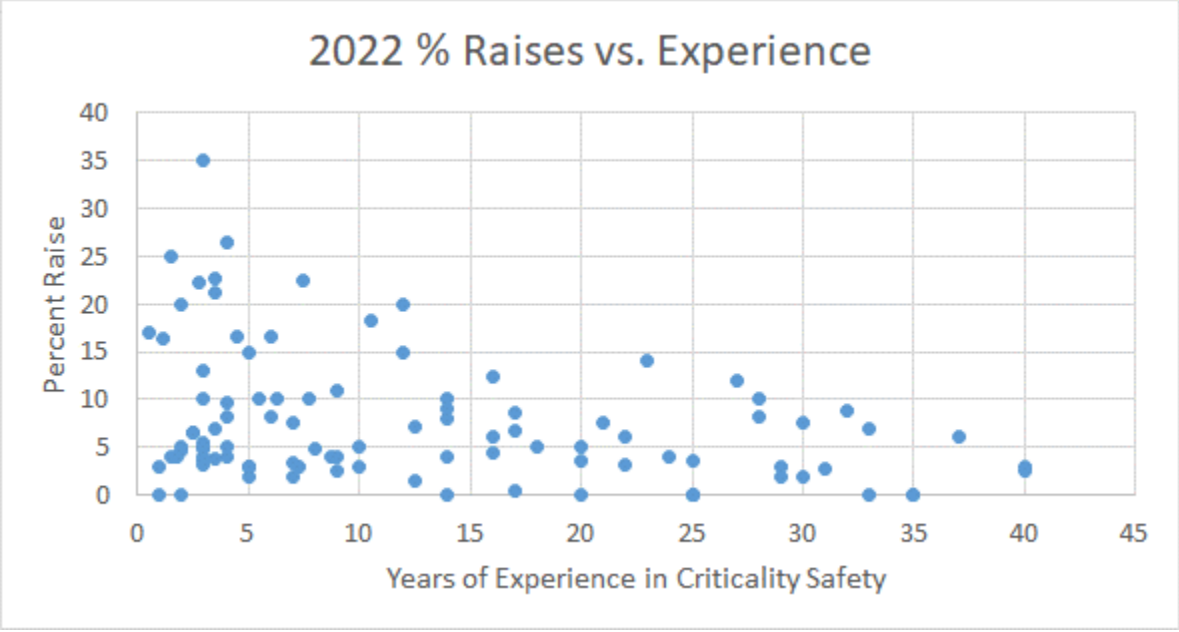

Figure 11: 2022 Percentage raise by employer type.

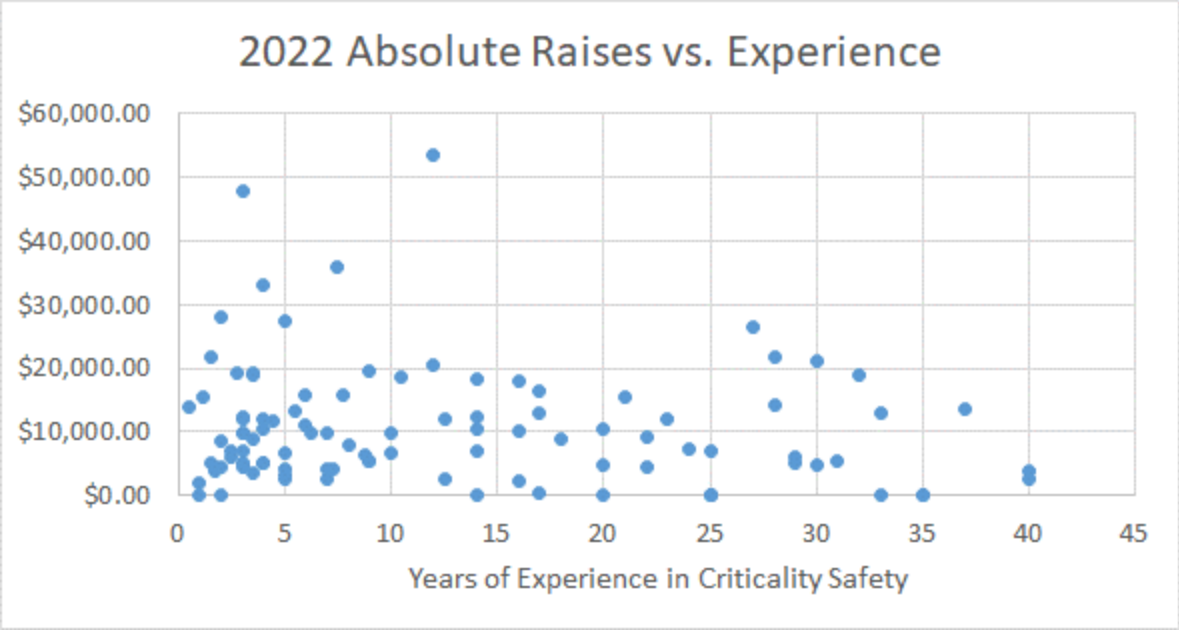

Figure 12: 2022 Absolute raise by employer type.

Table 14: 2022 Raises by Employer Type.

	2022 Raises			
Employer Type	**Number of Responses**	**Average Raise (%)**	**Minimum Raise (%)**	**Maximum Raise (%)**
All	100	7.54	0.00	35.00
Government agency	11	7.05	3.00	16.30
Government contract company	54	8.89	0.00	25.00
Private company, commercial nuclear power	6	9.34	4.00	26.50
Private company, other	6	4.82	0.00	20.00
Private company, radio-pharmaceutical	3	2.05	0.00	3.30
Private Company/Fuel Cycle Facility	1	5.00	5.00	5.00
Subcontractor/Consultant, self-employed	5	8.00	0.00	35.00
Subcontractor/Consultant, subcontract agency	11	5.10	0.00	20.00
University, college	3	1.50	0.50	2.00

6.2. 2019-2021 Raises versus Employer Type

The raise profiles for 2019-2021 are presented only versus employer type (Tables 15 through 17) and only for the average percent raise value. This is done in order of brevity as the ranges were similar to those of the 2022 data presented above.

Table 15: 2021 Raises by Employer Type.

	2021 Raises	
Employer Type	Number of Responses	Average Raise (%)
All	92	4.10
Government agency	9	2.41
Government contract company	50	5.25
Private company, commercial nuclear power	6	4.97
Private company, other	4	2.13
Private company, radio-pharmaceutical	3	2.67
Private Company/Fuel Cycle Facility	1	0.00
Subcontractor/Consultant, self-employed	5	2.00
Subcontractor/Consultant, subcontract agency	11	3.28
University, college	3	0.33

Table 16: 2020 Raises by Employer Type.

	2020 Raises	
Employer Type	Number of Responses	Average Raise (%)
All	86	3.49
Government agency	8	1.75
Government contract company	48	3.75
Private company, commercial nuclear power	5	3.54
Private company, other	4	2.08
Private company, radio-pharmaceutical	3	2.67
Private Company/Fuel Cycle Facility	1	2.75
Subcontractor/Consultant, self-employed	5	2.80
Subcontractor/Consultant, subcontract agency	9	4.26
University, college	3	5.67

Table 17: 2019 Raises by Employer Type.

	2019 Raises	
Employer Type	**Number of Responses**	**Average Raise (%)**
All	83	3.81
Government agency	7	2.19
Government contract company	45	4.32
Private company, commercial nuclear power	6	4.97
Private company, other	4	2.75
Private company, radio-pharmaceutical	3	2.67
Private Company/Fuel Cycle Facility	1	2.75
Subcontractor/Consultant, self-employed	5	1.00
Subcontractor/Consultant, subcontract agency	9	4.27
University, college	3	4.00

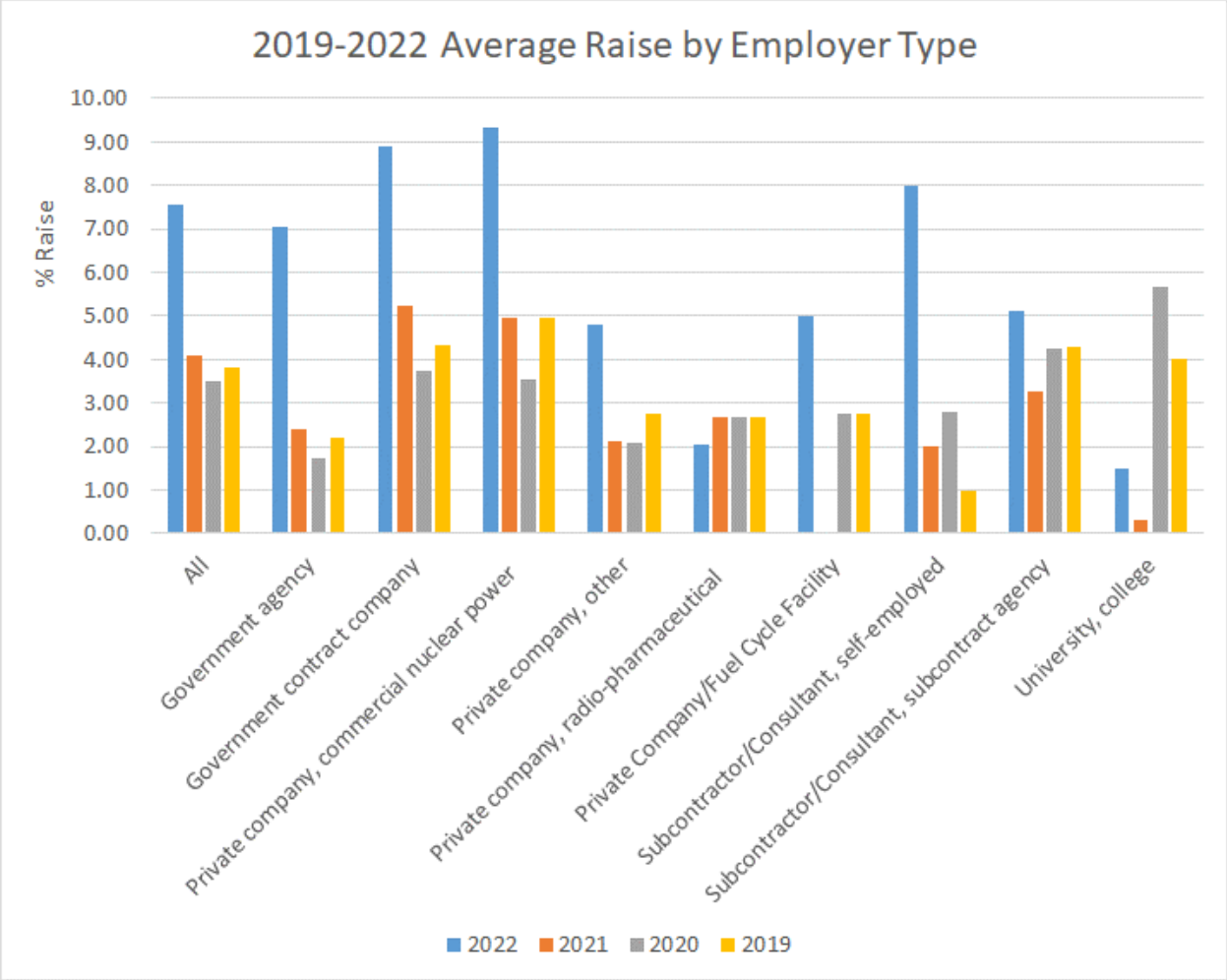

Figure 13: 2019-2022 Average raise by employer type.

6.3. 2022 Raise Contributing Factors

Of the 100 respondents who provided their 2022 raises, 78 performed the requested allocation. The results are presented in Table 18.

Table 18: 2022 Raise Contributing Factors.

Factor	Average Fraction
Cost of Living	0.192
Market Increase	0.271
Merit	0.536

6.4. Discussion

Overall raises were generous in 2022, perhaps due to a depression during the COVID-19 pandemic as evidenced by Figure 13 or perhaps due to the need to keep up with rising inflation. Data showed that early career NCS professionals are getting the larger percentage raises (Figure 11). Once normalized to actual dollar amounts the trend is much flatter (Figure 12).

In 2022, the most generous raises were provided by commercial nuclear power and self-employed subcontractors (to themselves). This was not consistent over the last four years thought. Moreover, commercial nuclear power and government contract companies tended to be more generous. Self-employed subcontractors did not report generous raises during 2019-2021. One of the consistently lower groups are the government agencies.

In general, this is a very positive result. While many industries suffered during the 2019-2022 years, NCS managed to generally continue providing reasonable raises to its staff.

Concerning the basis for these raises, the respondents indicated the largest portion of their raises were due to personal merit, followed by market adjustments, with cost-of-living adjustments being the least impactful. Even in the face of economic turmoil, it seems the salary of the NCS professional is still tied strongly to their own performance.

7. Overtime and Supplemental Pay

Many NCS professionals, and engineers in general, fall into the exempt category sometimes also called salaried. This means they are paid a flat fee for their service either on a monthly or annual basis. As such it is expected that supplemental pay, of various forms, may not be a given with all employers and overtime pay, something common among hourly employees, may be even more rare.

Survey takers were asked to respond to a series of questions about overtime and supplemental pay. The sections below provide the results and discussion.

7.1. Overtime

This criterion was somewhat difficult to respond to due to the high degree of variance between the rules of employers regarding overtime allowance. Respondents were asked to respond to the following set of questions:

- Does your employer offer overtime compensation?
- Is your overtime compensation for any work? Select “No” if it only applies to selected projects.
- Overtime is compensated with time off or flexible schedule?
- Overtime pay is equal to my regular hourly/salary rate?
- Overtime pay is 1.5x my regular hourly/salary rate or more?
- Other, please describe.
- What is the total of your typical overtime pay in a year?

If the respondent answered no to the first question, the remainders were not applicable. A total of 106 survey takers responded. Of those only 35 (33%) reported they are compensated for overtime. Of those 35, 15 work for government contractor companies and 9 work for subcontract agencies. There were a few each who work for government agencies (a surprise), as self-employed subcontractors, and in other private industries. Table 19 reports how those 35 said they were compensated.

Table 19: Compensation practices for overtime.

Inquiry	Response	% of Respondents
Is your overtime compensation for any work? Select "No" if it only applies to selected projects.	No	57.1%
Overtime is compensated with time off or flexible schedule?	No	37.1%
Overtime pay is equal to my regular hourly/salary rate?	No	22.9%
Overtime pay is 1.5x my regular hourly/salary rate or more?	No	94.3%
Other, please describe.	Most responded with either hourly rate or some form of comp time	31.4%
What is the total of your typical overtime pay in a year?	Ranged from as little as 10 hours and $175 to as much as 10% of time and $152,000. Of 16 reported numerical dollar values, discarding the two extreme outliers, the average was $9,864/year	N/A

7.2. Regular Supplemental Pay (Bonuses)

Perhaps more common is supplemental pay. This takes various forms such as retention bonuses, qualification bonuses, etc. These typically occur on some regular basis and are the subject of this section. One time or periodic supplemental are sometimes termed awards and are the subject of the next section.

Survey takers were asked the following questions, which were correlated to their employer type.

- Do you currently regularly receive any supplemental pay?
- What is the total annual value of all regular supplemental pay?
- What is the basis for this pay? (Check all that apply)
    - Retention
    - Seniority with current employer
    - Personal performance
    - Company performance dividend
    - Qualification/expert status
- If the pay is not contractually guaranteed, is it this pay subject to annual customer approval and/or company financial performance?

Of the survey takers, 105 responded and 58 said they received regular supplemental pay. Table 20 shows the supplementary pay recipients by employer type and Table 21 breaks down the distribution and range of the supplemental pay. For those receiving a fixed lump sum payments those were primarily

government contractors, a few university employees, and a few private company employees. For those receiving a percentage of their salary as a bonus, half were from private companies and half were from government contractors.

Table 20: Regular supplemental pay recipients by employer type.

Reponses	**105**
Total Number reporting a regular bonus	**58**
Government agency (DOE, NNSA, NRC, etc.)	4
Government contract company	36
Private company, commercial nuclear power plant	1
Private company, commercial nuclear power vendor	5
Private company, other	5
Private company, radio-pharmaceutical manufacturer	2
Private Company/Fuel Cycle Facility	1
Subcontractor/Consultant, work for a subcontract agency	2
University, college, or other educational institution	2

Table 21: Distribution and range of supplemental pay.

Reported Values	55
Lump Sum	47
Percentage of Salary	8
Values	
Average	$ 10,646.78
Min	$ 1,200.00
Max	$ 50,000.00
Basis	**Reponse percentage (sum>100 because can mark multiple)**
Company performance dividend	29.3%
Personal performance	41.4%
Qualification/expert status	41.4%
Retention	36.2%
Seniority with current employer	10.3%

These data are quite telling. 55% of respondents are receiving some form of regular supplemental pay. Of those, the majority (36) work for government contract companies like those who run major DOE sites. Of those who received this pay, 85% (47 of 55) say it comes as a fixed lump sum versus the minority who say it is a percentage of their salary. The average payout was $10,647 but the range was quite large from as little as $1,200 up to $50,000.

The basis was variable. 41.4% of respondents said that personal performance or qualification status was a factor in the value of their bonus. 36.2% reported that some aspect of their bonus was based on retention and 29.3% some or all of their bonus was based on their company's financial performance. Simple seniority with their company was the last marked basis.

7.3. Periodic Supplemental Pay (Awards)

Periodic supplemental pay takes the forms of specific awards. In an attempt to quantify this metric, survey takers were asked to respond to the following questions:

- In the last 12 months, have you received any of the following one-time or non-recurring payments? Check all that apply and enter the amount received.
    - Bonus for obtaining an advanced degree
    - Bonus for obtaining a professional certification
    - Bonus for obtaining a new job-specific qualification
    - Work anniversary bonus
    - Award for completing a special assignment
    - Award for technical efforts outside of the company (e.g. a bonus for teaching at a community college)
    - Award for non-technical efforts outside of the company (e.g. a bonus for community service)
    - Other non-recurring supplemental payment
- In a period greater than 12 months ago but still with your current employer, have you received any of the following one-time or non-recurring payments? Check all that apply and enter the amount received.
    - Same options as above

This a much more difficult question to gauge. The results provided are stated below.

- **43** respondents reported a one-time bonus within the past year. Values ranged from $150 to $29,000
    - One person reported receiving 20 additional hours of vacation time rather than monetary compensation
    - The most commonly reported reason for the bonus was completion of a special assignment
- **37** respondents reported receiving a one-time bonus more than a year ago but sometime in their career. Most values were several thousand dollars.
    - The most commonly reported reasons were new qualifications, special assignments, and major work anniversaries.

7.4. Discussion

From the data provided by the survey takers, government contract employees are the most likely to get supplemental pay and the most likely to be compensated for overtime. Paid overtime is rare for NCS professionals - only a 1/3 of respondents were compensated for it. The range on overtime pay was so large that it as inconclusive.

Conversely, 55% of respondents report some form of regular supplemental pay (e.g. an annual bonus). It appears from the results that in most cases the pay is a fixed lump sum that is based on the respondent's qualification or expertise and to a lesser extent on retention. The range of supplemental pay was large but averaged to a little over $10,600 per year.

Finally, less than half of respondents reported received some kind of one-time award. The range on these was quite large as well but the motivation was consistently either qualifications or special project assignments. It is worthy to note that one of the recipients received additional time off, which to some may be invaluable.

8. Job Satisfaction Profiles

For this part of the survey, respondents were asked to provide a yes or no response to the following eight questions about their job satisfaction.

- Do you feel your total compensation is in line with the market?
- Do you feel your benefits package is in line with the market?
- Do you feel your work is respected and appreciated by your immediate manager?
- Do you feel your work is respected and appreciated by your upper-level managers?
- Do you feel your duties and responsibilities are in line with your job description?
- Do you regularly receive feedback from your manager?
- Do you have one or more coworkers you consider friends and with whom you socialize with outside of work?
- Do you believe you have a good work-life balance?

The responses are presented in the following subsections. In additional to the divide between yes or no, the responses are plotted against the salary of the respondents. This is done to assess if there is any pay bias, i.e. would a person feel more satisfied if they were more highly paid? The responses are presented blind to employer type.

Do you feel your total compensation is in line with the market?

Responses: 103, Yes: 60

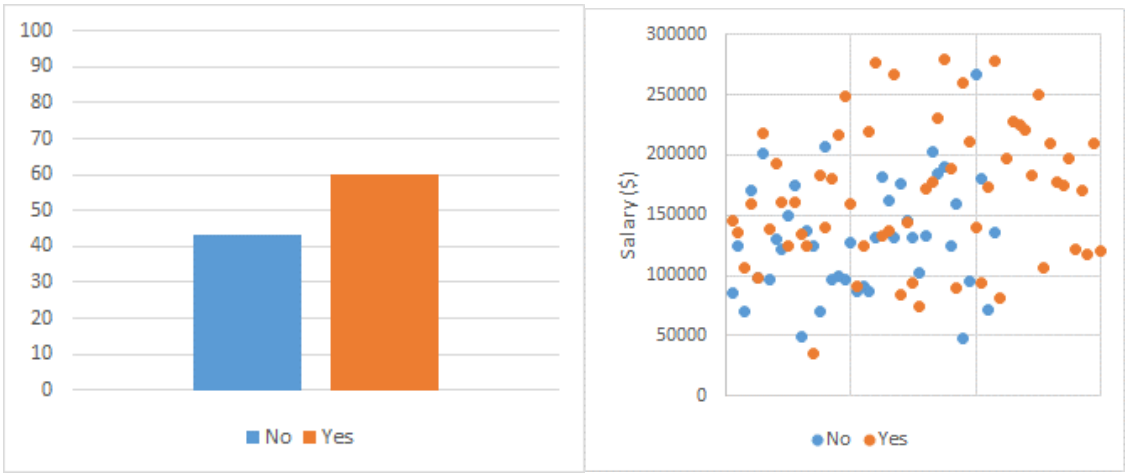

Figure 14: Compensation in line with market.

Do you feel your benefits package is in line with the market?

Responses: 103, Yes: 82

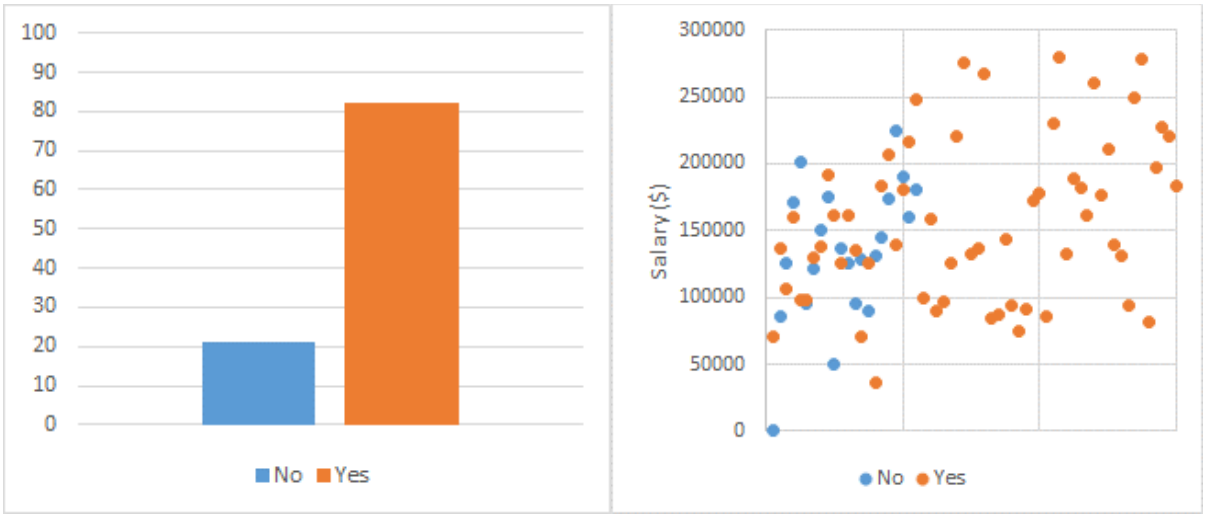

Figure 15: Benefits in line with market.

Do you feel your work is respected and appreciated by your immediate manager?

Responses: 105, Yes: 98

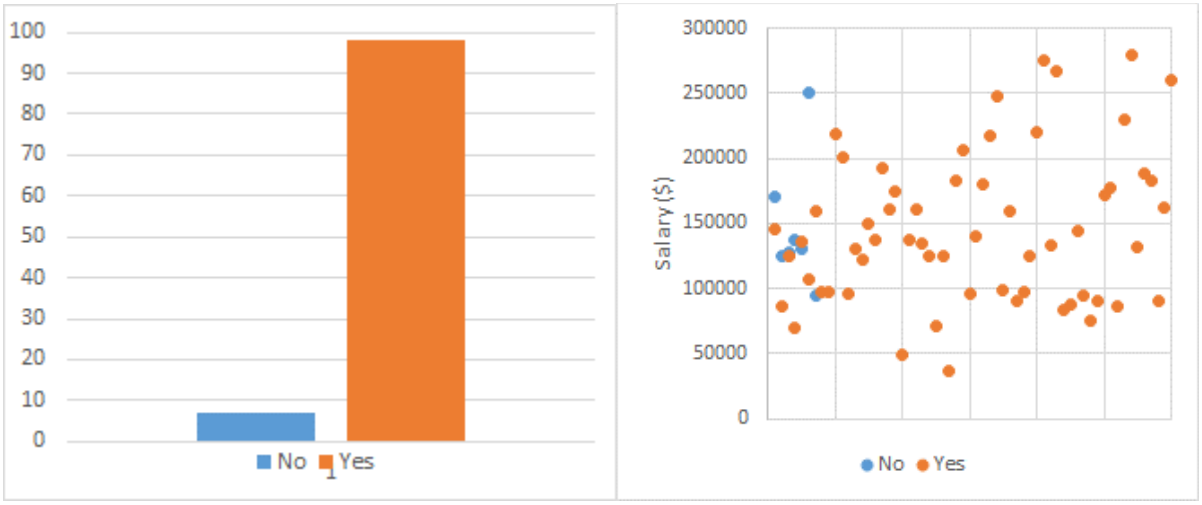

Figure 16: Work respected by immediate manager.

Do you feel your work is respected and appreciated by your upper-level managers?

Responses: 105, Yes: 89

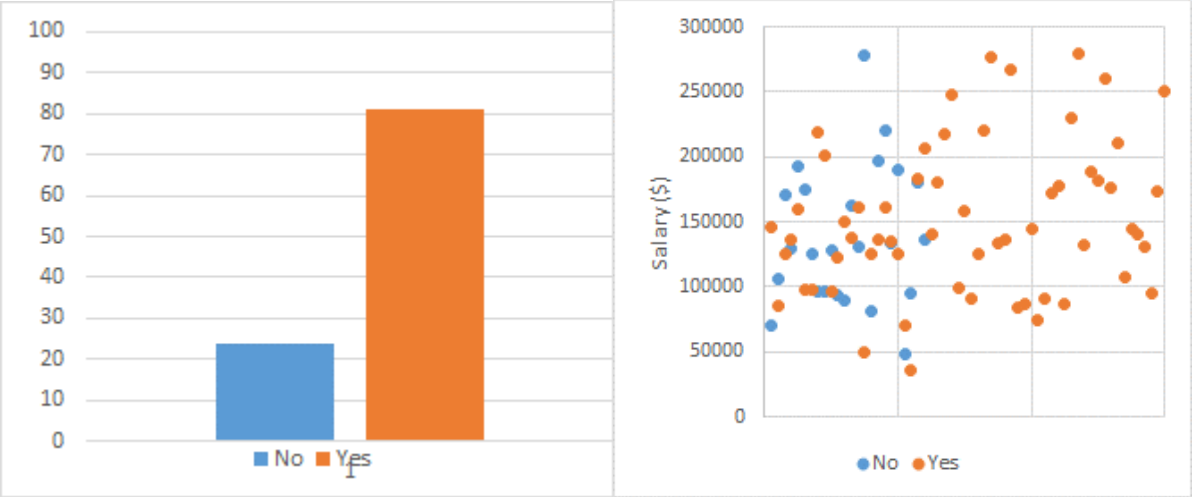

Figure 17: Work respected by upper-level managers.

Do you feel your duties and responsibilities are in line with your job description?

Responses: 105, Yes: 92

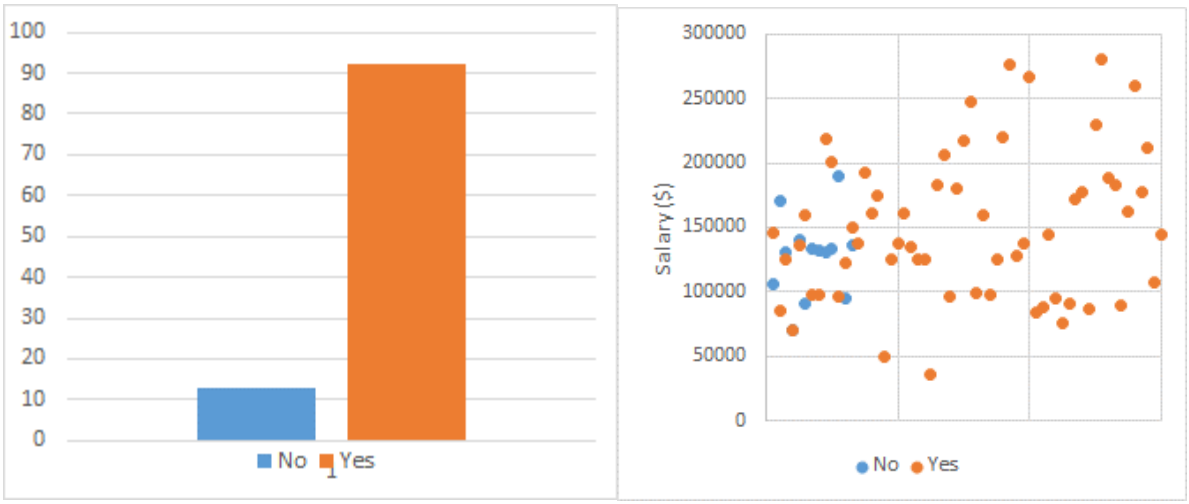

Figure 18: Responsibilities in line with job description.

Do you regularly receive feedback from your manager?

Responses: 104, Yes: 71

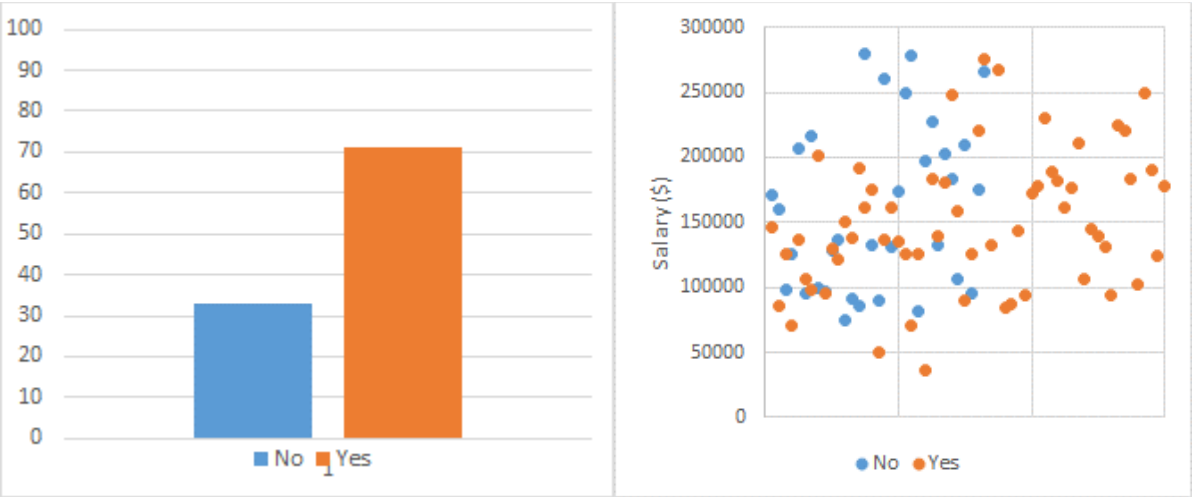

Figure 19: Regular feedback from manager.

Do you have one or more coworkers you consider friends and with whom you socialize with outside of work?

Responses: 104, Yes: 70

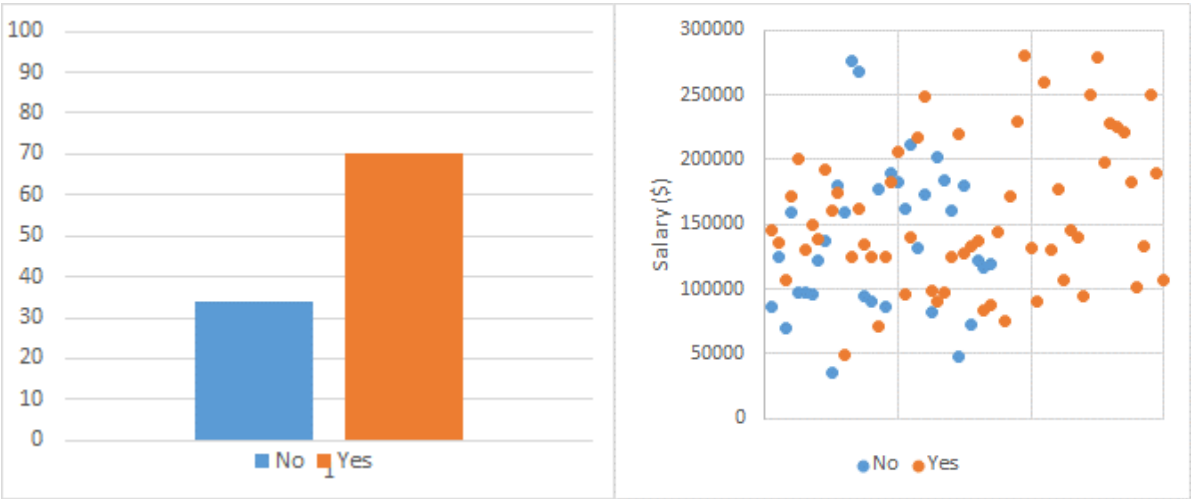

Figure 20: Friends at work.

Do you believe you have a good work-life balance?

Responses: 105, Yes: 95

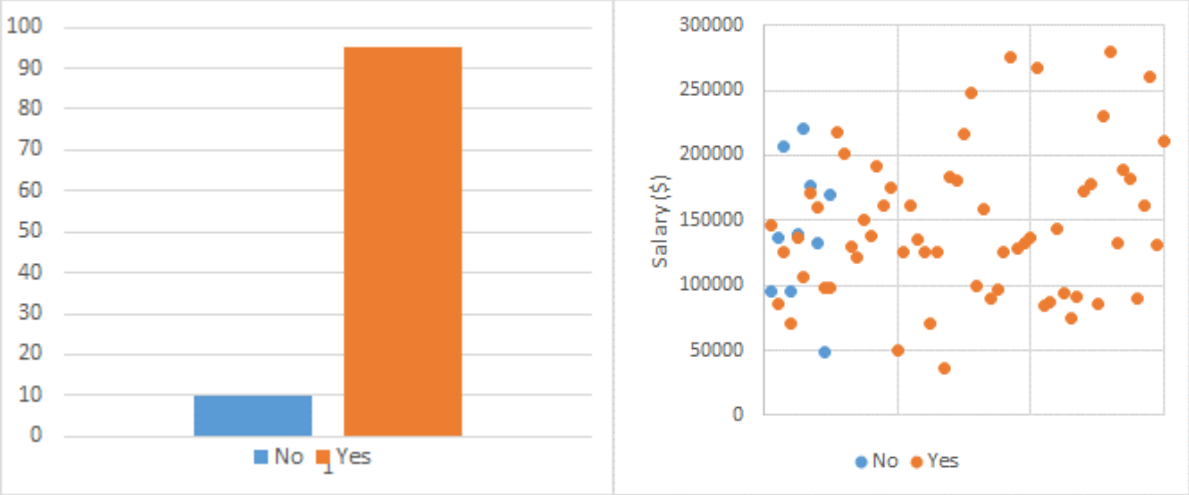

Figure 21: Good work-life balance.

8.1. Discussion

Response to this series of questions was reasonably consistent and high. In all but three cases, the vast majority of respondents (~80% or greater) responded in the affirmative indication good overall satisfaction. The scatter of all responses indicates there is not a salary bias in the results.

Three cases did rank lower than the other two. The lowest was whether or not respondents believed their salary was in line with market values. In that case approximately 40% responded they did not believe this was the case and may not be satisfied with their salary.

The two other low scoring cases were somewhat surprising. Approximately 1/3 of respondents say they do not regularly receive feedback from their manager and approximately 1/3 do not have a real friend at work. There was limited overlap between the two groups for those questions. Therefore, it seems there is a significant number of NCS professionals who may feel somewhat isolated, unguided, or lonely at work.

The results are recast below in a simple summary with the % “yes” in parentheses:

- Do you feel your total compensation is in line with the market? (58.3%)
- Do you feel your benefits package is in line with the market? (79.6%)
- Do you feel your work is respected and appreciated by your immediate manager? (93.3%)
- Do you feel your work is respected and appreciated by your upper-level managers? (77.1%)
- Do you feel your duties and responsibilities are in line with your job description? (87.6%)
- Do you regularly receive feedback from your manager? (68.3%)
- Do you have one or more coworkers you consider friends and with whom you socialize with outside of work? (67.3%)
- Do you believe you have a good work-life balance? (90.5%)

9. Job Benefits Profiles

Employees as well as employers place great value in the benefits packages. In some cases, this how an employer beats out competitors in recruiting employees. Survey takers were asked to respond to a series of questions about their benefits packages. Responses are presented below and are give in terms of an overall average and by employer type.

9.1. Pension Plans

Pension plans for many companies are a thing of the past but some employers still offer them and some still maintain them for their long-term employees. The survey included two questions on pension plans.

Does your employer offer a pension plan available to new employees?

Table 22: Pension plan for new employees.

Employer Type	# Responses	Affirmative
Overall Response	**106**	**Yes: 25**
Government agency (DOE, NNSA, NRC, etc.)	12	Yes: 10
Government contract company	55	Yes: 10
Private company, commercial nuclear power plant	1	Yes: 0
Private company, commercial nuclear power vendor	5	Yes: 0
Private company, other	6	Yes: 1
Private company, radio-pharmaceutical manufacturer	3	Yes: 0
Private Company/Fuel Cycle Facility	1	Yes: 0
Subcontractor/Consultant, self-employed	5	Yes: 1
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 0
University, college, or other educational institution	6	Yes: 3

Does your employer support a legacy pension plan but does not allow new employees to join?

Table 23: Legacy plan for existing employees.

Employer Type	# Responses	Affirmative
Overall Response	**106**	Yes: 56
Government agency (DOE, NNSA, NRC, etc.)	12	Yes: 5
Government contract company	55	Yes: 39
Private company, commercial nuclear power plant	1	Yes: 1
Private company, commercial nuclear power vendor	5	Yes: 3
Private company, other	6	Yes: 4
Private company, radio-pharmaceutical manufacturer	3	Yes: 0
Private Company/Fuel Cycle Facility	1	Yes: 1
Subcontractor/Consultant, self-employed	5	Yes: 0
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 1
University, college, or other educational institution	6	Yes: 2

9.2. Savings Plans

The current industry standard is for the employer to provide some kind of 401k type savings and investment plant for retirement. Most employers follow the model of providing some base input as a percentage of the employee's salary followed by an additional match up to a certain percentage of the employee's salary. Survey takers were asked four questions on their employer's plan.

Does your employer offer a retirement savings (401k type) plan?

Table 24: Employer offered 401k plan.

Employer Type	# Responses	Affirmative
Overall Response	**106**	Yes: 100
Government agency (DOE, NNSA, NRC, etc.)	12	Yes: 10
Government contract company	55	Yes: 54
Private company, commercial nuclear power plant	1	Yes: 1
Private company, commercial nuclear power vendor	5	Yes: 5
Private company, other	6	Yes: 6
Private company, radio-pharmaceutical manufacturer	3	Yes: 3
Private Company/Fuel Cycle Facility	1	Yes: 1
Subcontractor/Consultant, self-employed	5	Yes: 4
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 12
University, college, or other educational institution	6	Yes: 4

If so, what base percentage do they contribute independent of your contribution?

Table 25: Employer base percentage provided to 401k plan.

Employer Type	# Responses	Average
Overall Response	**68**	5.04%
Government agency (DOE, NNSA, NRC, etc.)	7	4.64%
Government contract company	42	4.43%
Private company, commercial nuclear power plant	0	--
Private company, commercial nuclear power vendor	4	3.00%
Private company, other	6	5.67%
Private company, radio-pharmaceutical manufacturer	0	--
Private Company/Fuel Cycle Facility	0	--
Subcontractor/Consultant, self-employed	3	3.00%
Subcontractor/Consultant, work for a subcontract agency	5	12.20%
University, college, or other educational institution	1	8.00%

If so, is the base percentage tied to years of service?

Table 26: 401k contribution tied to years of service.

Employer Type	# Responses	Affirmative
Overall Response	**82**	Yes: 24
Government agency (DOE, NNSA, NRC, etc.)	6	Yes: 1
Government contract company	49	Yes: 18
Private company, commercial nuclear power plant	0	--
Private company, commercial nuclear power vendor	5	Yes: 1
Private company, other	6	Yes: 2
Private company, radio-pharmaceutical manufacturer	1	Yes: 0
Private Company/Fuel Cycle Facility	1	Yes: 0
Subcontractor/Consultant, self-employed	3	Yes: 0
Subcontractor/Consultant, work for a subcontract agency	8	Yes: 1
University, college, or other educational institution	3	Yes: 1

If so, what percentage match do they offer?

Table 27: Employer matching provided to 401k.

Employer Type	# Responses	Average
Overall Response	**69**	4.42%
Government agency (DOE, NNSA, NRC, etc.)	5	4.20%
Government contract company	43	4.57%
Private company, commercial nuclear power plant	1	6.00%
Private company, commercial nuclear power vendor	4	3.75%
Private company, other	3	4.33%
Private company, radio-pharmaceutical manufacturer	3	4.50%
Private Company/Fuel Cycle Facility	1	6.00%
Subcontractor/Consultant, self-employed	2	4.00%
Subcontractor/Consultant, work for a subcontract agency	6	3.83%
University, college, or other educational institution	1	3.00%

9.3. Stock Options

Some NCS professionals are employed by publicly traded companies. Survey takers were asked: Does your employer offer stock options or other investment incentives?

Of 105 responses, only 11 people responded yes and of those 9 were in private industry and two in government contractor companies. This is a rare but extant benefit in the industry.

9.4. Insurance

Nearly all companies employing a professional workforce offer some kind of insurance benefits package. Survey takers were asked to select from a list of employer benefits. 103 survey takers checked boxes on this list and there was essentially no variation in the result. Nearly every respondent reported their employer offered a package including:

- Medical insurance
- Dental insurance
- Vision insurance
- Group life insurance
- Short term disability
- Long term disability
- Accidental death and dismemberment

Survey takers were also asked if their employer also offered retiree health insurance.

Table 28: Employer offered retiree health insurance.

Employer Type	# Responses	Affirmative
Overall Response	**101**	Yes: 33
Government agency (DOE, NNSA, NRC, etc.)	12	Yes: 10
Government contract company	50	Yes: 17
Private company, commercial nuclear power plant	1	Yes: 1
Private company, commercial nuclear power vendor	5	Yes: 1
Private company, other	6	Yes: 2
Private company, radio-pharmaceutical manufacturer	3	Yes: 0
Private Company/Fuel Cycle Facility	1	Yes: 0
Subcontractor/Consultant, self-employed	5	Yes: 0
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 0
University, college, or other educational institution	6	Yes: 2

9.5. Parental Leave and Childcare

A growing incentive for many younger employees is the availability of maternity and paternity leave, sometimes lumped into parental leave. Many employers have a long history of maternity leave. Paternity leave is a more recent addition to the benefits package at some employers. Survey takers were asked three questions about leave and subsequent on-site child care. Responses are below. The numbers of weeks reported are averages.

Does your employer offer maternity leave (birth or adoption)? How many weeks?

Table 29: Employer offered maternity leave.

Employer Type	# Responses	Affirmative	# Weeks*
Overall Response	**102**	**Yes: 73**	11.15
Government agency (DOE, NNSA, NRC, etc.)	11	Yes: 10	25.43
Government contract company	53	Yes: 39	9.26
Private company, commercial nuclear power plant	1	Yes: 1	12.00
Private company, commercial nuclear power vendor	5	Yes: 5	10.50
Private company, other	6	Yes: 6	7.20
Private company, radio-pharmaceutical manufacturer	3	Yes: 2	--
Private Company/Fuel Cycle Facility	1	Yes: 1	6.00
Subcontractor/Consultant, self-employed	5	Yes: 1	3.00
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 5	6.67
University, college, or other educational institution	5	Yes: 3	7.00

*only **47** of the respondents provided the number of weeks their company provides

Does your employer offer paternity leave (birth or adoption)? How many weeks?

Table 30: Employer offered paternity leave.

Employer Type	# Responses	Affirmative	# Weeks*
Overall Response	**99**	**Yes: 56**	9.65
Government agency (DOE, NNSA, NRC, etc.)	10	Yes: 9	22.29
Government contract company	52	Yes: 26	7.29
Private company, commercial nuclear power plant	1	Yes: 1	12.00
Private company, commercial nuclear power vendor	5	Yes: 3	9.33
Private company, other	6	Yes: 6	5.60
Private company, radio-pharmaceutical manufacturer	3	Yes: 2	--
Private Company/Fuel Cycle Facility	1	Yes: 1	2.00
Subcontractor/Consultant, self-employed	5	Yes: 1	3.00
Subcontractor/Consultant, work for a subcontract agency	12	Yes: 5	5.33
University, college, or other educational institution	4	Yes: 2	5.00

*only **37** of the respondents provided the number of weeks their company provides

Does your employer offer on-site childcare?

For this question there were 94 responses and of those only 5 indicated their employer offered on-site child care. Three were government agency employees, one from a government contract company, and one from a university. Again, this is a rare but extant benefit.

9.6. Relocation Benefits

Survey takers were asked what benefits does your employer offer in their relocation assistance program? They were then given a list of common relocation benefits to choose from. There were 75 responses and there was little variance. Nearly all reported a lump sum relocation bonus, a house hunting trip, and the provision of professional movers. Most reported buying and selling assistance.

Survey takers were given the option to enter “other” and provide details. Only one survey take used this option and reported their employer paid per diem expenses every day during the move.

9.7. Discussion

The results of this section are not particularly surprising and in line with most professional industries.

Only 24% reported their employer has an active pension program open to new employees and half of those response were employee from government agencies. Still more than half of respondents said their companies continue to honor legacy pension programs. Nearly all employers however appear to have a 401k type savings plan which the employer on average contributes 5.04% to, with higher contributions for subcontract agencies and educational institutions. Employers will then match employee contributions up to another 4.42% on average. Stock or investment options are rare and appear mainly to be limited to private industry employers.

There was little variation reported in insurance benefits programs across all respondents. These benefits appear to effectively be a standard of doing business and recruiting quality NCS professionals. However, only a third of respondents reported their company offered post-retirement insurance and the most commonly place to find that benefit was with government agencies.

When asked about maternity leave, 71% of respondents reported their company offered this benefit with an average time off at 11.15 weeks. However, only 56% of respondents reported their companies offered paternity leave, averaging 9.65 weeks. Where reported paternity leave was consistently shorter than maternity leave. Government agencies provided the longest leave periods. The rarest parental benefit was on-site child care which only 5% of respondents said their employer provided.

Similar to insurance benefits, relocation benefits were somewhat standard across all respondents who reported for this question.

Overall, benefits provided to NCS professionals were reported to be competitive across all responses with some higher value benefits for working for a government agency. The reason for this is most likely that a strong benefits package, comparable to an employer’s main competitors, is an expectation to recruit and retain highly skilled and educated professionals.

10. Vacation, Work Schedule, and On-Call

The next section of the survey asked survey takers about their vacation time allotment, holidays, other paid time off, on-call expectation, telework, and overall work schedule. This was assessed through the following series of questions:

- How many days do you get for vacation?
- How many days do you get for holidays?
- How many days do you get for personal illness?
- How many days do you get for personal business?
- Does your employer use allotted vacation time or permissive leave?
- Does your vacation time rollover from year to year?
- Does your job offer telework? If so, what percentage of time?
- If your employer does not offer telework, would you participate in the program if they did?
- Would you be willing to take a lower salary if you were allowed to telework?
- Does your employer require you to be on-call during off hours? If so what percentage of time?
- Does your employer offer flexible time of some form? For example, if you need next Thursday off for a professional event, you can work the preceding Saturday.
- How many hours per year do you estimate spending on off-hour calls?
- What is your typical weekly scheduled hours?
- If your employer does not offer a 4-10 or 9-80 schedule, would you be interested in working that schedule if allowed?

The responses are reported versus employer type as these are often considered competitive benefits that vary between employers. Response as also divided into subsections on paid time off, telework, and work schedule including on-call responsibilities. The data in this section are highly variable. The number of responses to each question varied from as few as 57 to as many as 104.

10.1. Paid Time Off

The first six questions were intended to assess the paid time off that NCS professionals receive.

The first question was how many days off are provided each year. This goes by many names – personal time, vacation time, paid time off, etc., but refer to time the employee has off from work that is not a state, federal or other holiday recognized by the employer.

Table 31: Paid days off per year.

# of Responses	95
Employer Type	**Days off**
Average	19.1
Government agency (DOE, NNSA, NRC, etc.)	21.4
Government contract company	18.2
Private company, commercial nuclear power plant	20.0
Private company, commercial nuclear power vendor	13.5
Private company, other	18.2
Private company, radio-pharmaceutical manufacturer	15.0
Private Company/Fuel Cycle Facility	20.0
Subcontractor/Consultant, self-employed	21.0
Subcontractor/Consultant, work for a subcontract agency	17.9
University, college, or other educational institution	32.5

Consequently, the second question was how many recognized state, federal or other holidays the employee gets a paid day off for each year.

Table 32: Paid holidays off per year.

# of Responses	88
Employer Type	**Days off**
Average	10.5
Government agency (DOE, NNSA, NRC, etc.)	11.4
Government contract company	10.4
Private company, commercial nuclear power plant	8.0
Private company, commercial nuclear power vendor	10.8
Private company, other	10.8
Private company, radio-pharmaceutical manufacturer	9.0
Private Company/Fuel Cycle Facility	11.0
Subcontractor/Consultant, self-employed	8.7
Subcontractor/Consultant, work for a subcontract agency	9.8
University, college, or other educational institution	12.3

Survey takers were also asked if their employer separates out time for personal illness (sick days) or personal business. By the results, few employers separate out sick time from vacation time and still fewer allow specific time for personal business. This is indicated by N/A responses in the table below. Additional discussion is provided in Section 10.4.

Table 33: Paid days for illness or personal business year.

	Illness	Personal
# of Responses	**91**	**91**
Employer Type	**Days off**	**Days Off**
Average	11.0	0.6
Government agency (DOE, NNSA, NRC, etc.)	24.3	1.4
Government contract company	9.4	0.7
Private company, commercial nuclear power plant	As needed	2.0
Private company, commercial nuclear power vendor	N/A	N/A
Private company, other	9.0	N/A
Private company, radio-pharmaceutical manufacturer	N/A	N/A
Private Company/Fuel Cycle Facility	5.0	N/A
Subcontractor/Consultant, self-employed	N/A	N/A
Subcontractor/Consultant, work for a subcontract agency	0.9	N/A
University, college, or other educational institution	45.0	N/A

Survey takers were also asked if their employer used allotted vacation time or permissive leave. Only 85 responses were received to this question, but 74 said their paid time off was allotted annually. Permissive leave seems to be rare for NCS professionals but there was no strong correlation to one employer type over another.

Finally, respondents answered if their employer allowed vacation time roll over from year to year, even if there was a cap. The responses are shown in the table below.

Table 34: Employer allows vacation time rollover from year to year (% responding yes).

# of Responses	**99**
Employer Type	**Allow Rollover**
Average	86%
Government agency (DOE, NNSA, NRC, etc.)	92%
Government contract company	98%
Private company, commercial nuclear power plant	100%
Private company, commercial nuclear power vendor	40%
Private company, other	67%
Private company, radio-pharmaceutical manufacturer	67%
Private Company/Fuel Cycle Facility	100%
Subcontractor/Consultant, self-employed	67%
Subcontractor/Consultant, work for a subcontract agency	78%
University, college, or other educational institution	0%

10.2. Telework

At the time of the last NCSD Salary Survey in 2016, telework was practically an unheard-of perk allowed only in the most extreme cases of need for a certain subject matter expert. Since the COVID-19 pandemic however, it has become a norm for most industries that can support it. Survey takers were asked about their employer's options for telework and if they participated in such programs through the following questions:

- Does your job offer telework? If so, what percentage of time?
- If your employer does not offer telework, would you participate in the program if they did?
- Would you be willing to take a lower salary if you were allowed to telework?

There were 99 responses to the first telework question and a surprising 81 people reported that their companies offer some level of telework arrangement. Of those 81, 76 reported the arrangements allowed. Arrangements were variable with most reporting increments of 25% time.

Table 35: Employer allows telework, and up to what % of time.

# of Responses	99	76
Employer Type	Yes to Telework	Up to % Time
Average	83%	58.4%
Government agency (DOE, NNSA, NRC, etc.)	80%	50.0%
Government contract company	89%	57.7%
Private company, commercial nuclear power plant	100%	50.0%
Private company, commercial nuclear power vendor	80%	93.3%
Private company, other	29%	100.0%
Private company, radio-pharmaceutical manufacturer	100%	11.7%
Private Company/Fuel Cycle Facility	0%	--
Subcontractor/Consultant, self-employed	75%	58.3%
Subcontractor/Consultant, work for a subcontract agency	91%	77.1%
University, college, or other educational institution	100%	25.5%

When asked "If your employer does not offer telework, would you participate in the program if they did?" there were 57 responses and regardless of employer type the answer was overwhelmingly yes. Note that with 57 responses here and 99 and 76 responses to the last questions, there is some overlap in individuals who do work at employers with telework options and answered they are interested in those programs (obviously).

When asked if the employee would take a lower salary if telework was an option, of 89 responses, 77 were "No" with 3 maybes, and 9 yes.

10.3. Work Schedule

The employees' work schedules including on-call duties were assessed with the following questions:

Does your employer require you to be on-call during off hours? If so what percentage of time?

The results of this question are presented in the table below but need some explanation. There were 100 responses overall. Of those 36 (36%) across all employer types indicated they have required on-call hours. The percentage of respondents for each employer type who reported being on-call is also shown. For example, there were 12 responses under government agency and 4 reported being on-call, so 33% is reported. The adjacent column reports the average percent of the time and respondent reported being on call. Of the 36 who reported being on-call, 26 provided this additional input.

Table 36: Required to be on-call and % time on-call.

# of Responses	100	26
Employer Type	Yes to On-Call	Average % Time
Average	36%	34.7
Government agency (DOE, NNSA, NRC, etc.)	33%	100.0
Government contract company	42%	28.4
Private company, commercial nuclear power plant	100%	3.8
Private company, commercial nuclear power vendor	60%	100.0
Private company, other	60%	50.0
Private company, radio-pharmaceutical manufacturer	0%	--
Private Company/Fuel Cycle Facility	100%	--
Subcontractor/Consultant, self-employed	0%	--
Subcontractor/Consultant, work for a subcontract agency	9%	20.0
University, college, or other educational institution	0%	--

How many hours per year do you estimate spending on off-hour calls?

Respondents were then asked how many actual hours per year they estimate being on off-hour calls. The results in the table below present the average time reported by respondents.

Table 37: Average hours off hours calls per year.

	Average Time (hr)
# of Responses	**93**
Average	11.2
Government agency (DOE, NNSA, NRC, etc.)	10.9
Government contract company	12.1
Private company, commercial nuclear power plant	20.0
Private company, commercial nuclear power vendor	22.0
Private company, other	17.4
Private company, radio-pharmaceutical manufacturer	--
Private Company/Fuel Cycle Facility	50.0
Subcontractor/Consultant, self-employed	--
Subcontractor/Consultant, work for a subcontract agency	1.4
University, college, or other educational institution	--

Does your employer offer flexible time of some form?

Table 38: Employer offers flexible time.

	% Responding Yes
# of Responses	**96**
Average	95%
Government agency (DOE, NNSA, NRC, etc.)	91%
Government contract company	98%
Private company, commercial nuclear power plant	100%
Private company, commercial nuclear power vendor	100%
Private company, other	83%
Private company, radio-pharmaceutical manufacturer	33%
Private Company/Fuel Cycle Facility	100%
Subcontractor/Consultant, self-employed	100%
Subcontractor/Consultant, work for a subcontract agency	100%
University, college, or other educational institution	100%

What if your typical weekly scheduled hours? (Given four options with the ability to write in a unique one)

Survey takers were given the options of a work week of five 8-hour days (5-8s), four 10-hour days (4-10s), a two-week rotation of 9-hour days to reach 80 hours with a day off (9-80s), or write in a custom response. There were 104 responses, 95 of which selected one of the three given options. The remaining 9 reported various hour combinations including both full and part time. The division of the remaining 95 response is shown in the table below.

Table 39: Typical weekly schedule.

Type of Schedule	5-8s	4-10s	9-80s
# of Responses	42	37	16
Government agency (DOE, NNSA, NRC, etc.)	7	2	3
Government contract company	14	30	8
Private company, commercial nuclear power plant	0	1	0
Private company, commercial nuclear power vendor	4	0	1
Private company, other	6	0	1
Private company, radio-pharmaceutical manufacturer	3	0	0
Private Company/Fuel Cycle Facility	0	0	1
Subcontractor/Consultant, self-employed	1	3	0
Subcontractor/Consultant, work for a subcontract agency	4	1	2
University, college, or other educational institution	3	0	0

If your employer does not offer a 4-10 or 9-80 schedule, would you be interested in working that schedule if allowed?

There were 64 responses to this question and 23 indicated they would be interested in these alternative schedules. There was no significant correlation amongst employer types for this response.

10.4. Discussion

With some variation by employer, the average NCS professional enjoys an average of 19 days of paid time off plus 10 or 11 paid holidays every year. In rare cases employers offer a separate bank of sick time, though it is possible some respondents entered the time their companies allow for short term disability in this response. Even rarer are cases where companies have a time bank just for personal business. The majority of respondents' employers do traditional allotted time off each year; permissive leave is uncommon. Finally, most respondents' employers allowed their vacation to roll over. The exceptions appear to be some private commercial companies and some subcontract arrangements which do not.

Respondents indicated that most employers offer a telework arrangement but they are less common in private industry and with self-employed subcontractors. Values up to half time appear to be the going rate with some respondents reporting high utilization of telework. NCS staff are required to maintain familiarity with operations and provide oversight, which is difficult to achieve from the home office. For companies that do not offer a telework option, the employees seem eager to have one, thought only a small fraction of respondents said they would take a lower salary for being allowed to telework.

From the responses about 1/3 of NCS professionals serve on-call to respond to issues during off hours. The range of time requirements reported was very wide going for as little as two weeks per year (3.8%) all the way to being expected to be available at any time. Comparatively, the average actual time reported to spent on off-hours call per year was only 11.2 hours, which is not bad.

Flexible time was a nearly universal offering among employers with the exception of some private companies. The work week reported for most respondents was either a 4-10 or 5-8 schedule with the 4-

10 particularly popular among employees of government contract companies. The 9-80 schedule was a less popular third choice.

11. Professional Development Support

Survey takers were asked about the level of support their received from their employer for various professional development activities outside of their normal day to day jobs. This was assessed through the following series of yes or no questions:

- Does your employer pay for your membership in a professional society?
- Does your employer pay for your credentials/license renewals?
- Does your employer pay for your technical publications?
- Does your employer pay for your attendance at professional conferences?
- Are you permitted to hold a second job in accordance with your professional development provided there is no conflict of interested (e.g. teaching a class at a community college)?
- If you request professional developmental resources (e.g. study guide for the P.E. exam) are they provided promptly by your employer?

The following table shows the results of these inquiries as a percentage of the respondents in each group that responded "yes" to theses question.

Table 40: Employer professional development support (% responding yes).

	Membership in a professional society	Credentials or license renewals	Technical publications	Attendance at professional conferences	Second Job for professional development	Professional development resources provided
# of Responses	105	104	103	104	104	96
Average	46%	34%	50%	80%	80%	43%
Government agency (DOE, NNSA, NRC, etc.)	25%	17%	50%	75%	42%	42%
Government contract company	48%	37%	60%	91%	84%	49%
Private company, commercial nuclear power plant	0%	100%	0%	100%	100%	100%
Private company, commercial nuclear power vendor	80%	20%	60%	80%	80%	0%
Private company, other	83%	67%	67%	83%	67%	50%
Private company, radio-pharmaceutical manufacturer	100%	67%	0%	100%	100%	100%
Private Company/Fuel Cycle Facility	0%	0%	100%	100%	0%	0%
Subcontractor/Consultant, self-employed	0%	0%	40%	50%	75%	0%
Subcontractor/Consultant, work for a subcontract agency	50%	36%	27%	55%	100%	33%
University, college, or other educational institution	0%	0%	33%	33%	83%	33%

Overall, the strongest employer support appears to be for attending professional conferences and a second job (provided there is no conflict of interest). The majority of respondents were from either government agencies (12), government contract companies (54), or subcontract agencies (12).

12. Work Spaces and Environment

Survey takers were asked about the work space their employer maintains for them and if there were any other perks or benefits, they wished to comment on. The questions were as follows:

Do you work in a cubicle, soft walled office ("officle"), hard walled office, or other?

There were 104 responses to this question, of which 46 reported they work in a cubicle, 41 report they have a hard walled office, with the remainder reporting various other arrangements.

Does your work space have, in your opinion, all the of the necessary resources to perform your daily work?

In perhaps one of the most consistently answered questions on the survey, there were 107 responses with the results on the following table.

Table 41: Work space has all necessary resources (% responding yes).

# of Responses	107
Employer Type	**Positive**
Average	90%
Government agency (DOE, NNSA, NRC, etc.)	83%
Government contract company	85%
Private company, commercial nuclear power plant	100%
Private company, commercial nuclear power vendor	100%
Private company, other	100%
Private company, radio-pharmaceutical manufacturer	100%
Private Company/Fuel Cycle Facility	100%
Subcontractor/Consultant, self-employed	80%
Subcontractor/Consultant, work for a subcontract agency	100%
University, college, or other educational institution	100%

Does your employer offer any other benefit or perk not listed here (on-site gym, walking track, short distance to restaurants, temporary company housing, etc.) but that you find important to your job satisfaction.

Only 33 survey takers provided response to this open-ended question and there was no strong consistency in response among employer type. The two most commonly reported additional work space perks were on-site fitness centers and proximity to dining options.

13. Importance Factors

In the final section, survey takers were asked to assign an integer importance value between 1 (not important to me) and 10 (extremely important to me) to various facets of their job. There were 104 responses and the data speaks for itself. Both average and by employer type responses are presented.

Table 42: Importance factors for job satisfaction.

	Salary	Benefits package	Job responsibilities	Job location	Telework	Management support	Flexible work hours	Workplace culture	Relationship with coworkers	Opportunities for advancement	Physical work environment	Facility type	Amount of travel required
Average	8.6	8.2	8.1	7.7	6.1	7.7	8.1	7.8	7.6	7.3	6.5	5.7	5.8
Government agency (DOE, NNSA, NRC, etc.)	9.0	8.4	7.4	7.9	7.4	7.2	8.1	7.5	7.8	7.7	7.1	6.5	6.2
Government contract company	8.5	8.2	8.1	7.7	5.5	7.8	8.0	8.0	8.0	7.7	6.5	5.7	5.8
Private company, commercial nuclear power plant	7.0	9.0	8.0	9.0	9.0	10.0	10.0	9.0	10.0	7.0	6.0	6.0	5.0
Private company, commercial nuclear power vendor	9.6	9.2	9.4	7.8	7.4	7.0	7.2	6.6	7.4	7.6	5.2	3.2	5.0
Private company, other	9.1	8.5	8.3	7.3	5.9	7.6	7.3	7.7	7.1	7.0	5.4	5.0	4.0
Private company, radio-pharmaceutical manufacturer	9.3	5.3	7.3	5.7	5.0	9.0	9.0	4.5	4.5	6.0	4.0	2.5	2.5
Private Company/Fuel Cycle Facility	8.0	10.0	9.0	7.0	1.0	10.0	10.0	10.0	10.0	7.0	10.0	10.0	8.0
Subcontractor/Consultant, self-employed	8.8	7.5	6.8	5.8	5.5	6.8	8.0	6.8	5.5	5.8	6.0	5.8	7.0
Subcontractor/Consultant, work for a subcontract agency	9.0	8.7	8.5	8.2	7.5	7.8	9.2	7.9	7.4	6.7	6.6	6.2	6.4
University, college, or other educational institution	7.0	7.2	8.2	8.5	6.5	6.7	8.0	8.3	6.5	6.3	7.8	7.0	6.8