New Mexico State University

ARROWHEAD CENTER

LEADING ECONOMIC DEVELOPMENT FOR NEW MEXICO STATE UNIVERSITY

Status of the National Security Workforce

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National Nuclear Security Administration

NM STATE UNIVERSITY

Live, Learn and Thrive

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Status of the National Security Workforce

1.0 INTRODUCTION

This report documents the status of the national security workforce as part of the National Security Preparedness Project (NSPP), being performed under a Department of Energy (DOE)/National Nuclear Security Administration (NNSA) grant. This report is due March 31, 2008, as performance measure 3.1.1 (Grant No: DE-FG52-07NA28084, Arrowhead Center proposal, Page 17).

The national security workforce is an important component of national security for our country. With the increase of global threats of terrorism, this workforce is being called upon more frequently. This has resulted in the need for an increasing number of national security personnel.

2.0 CURRENT SITUATION

With the next waive of retirements among NNSA personnel, the nation will lose a cadre of Cold War scientists. This makes it imperative to attract and retain a skilled and competitive national security workforce. Lack of a skilled workforce could affect overall national security and result in the commercialization of fewer security technology products. A review of the current NNSA workforce was conducted using NNSA reference materials to ensure a complete, comprehensive, and correct determination of the current workforce.[1]

In 2007, all U.S. educational institutions awarded two and a half times more engineering, math, and computer science degrees than 40 years ago.[2] Even with the increase in the number of graduates, fewer graduates actually accept employment in the public sector, as salaries and benefits are much more attractive in the private sector. Today's graduates do not feel the call to serve their county as previous generations did. Today's youth does not know a time when the U.S. was not the world's sole superpower. Further complicating the shortage of national security workers is the prohibition of hiring foreign nationals and placing this type of work off shore.

In 2007, with a workforce of 2,463 in multiple locations, the average age of the NNSA workforce is 49 years of age, with an average length of service of 17.5 years. Of the total workforce, 2.65 percent have an associate's degree, 33.41 percent have a bachelor's degree, 27.4 percent have a master's degree, 3.09 percent have a doctorate degree, and 43.4 percent are at least 50 years of age. The current workforce is comprised of 30 percent minority populations. Since 1995, the NNSA has experienced a 27 percent reduction in its workforce. This decline in staffing has left NNSA with a significant challenge: reinvesting in its human capital to ensure that the right skills are available to successfully meet its missions.

In recent years, there has been an increase in the number of personnel assigned in the NNSA Washington, D.C., area as well as the number of African American and veteran employees. More employees now hold college degrees and are under the age of 30.

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[1] The National Nuclear Security Administration Human Capital Management Strategic Plan (2006). Retrieved January 20, 2008 from http://humancapital.doe.gov/pol/hcmp/pdf/NNSAHCMSP.pdf

[2] The Aerospace and Defense Sector (March 4, 2008). Retrieved March 4, 2008 from http://news.corporate.findlaw.com/ap/high_tech/1700/03-042008/20080304100505_02.html

Conversely, there have been decreases in the number of female, Asian, and Hispanic employees as well as those reporting a disability and between the ages of 30 and 49.

The work of NNSA is broken down in function areas. The majority of the total NNSA personnel are located in the Safety and Health, Science and Engineering, Logistics, and Administration functions.

Table 1. Years of Experience and Age by Function

Function	More than 40% of workforce with 20 years or more of service	More than 40% of personnel older than 49 years of age
Safety and Health	X	X
Science and Engineering	X	X
Logistics		
Directors and Program Management	X	X
Program and Budget Analysis	X	X
Procurement and Contracting	X	X
Financial and Accounting	X	X
Legal	X	X
Quality Assurance	X	X
Administration	X	X
Public Affairs	X	X
Security	X	X
Emergency Management	X	X
Information Technology		X
Human Capital Management	X	X
Foreign Affairs and Intelligence		

It is important to note that every function within the NNSA, with the exception of logistics and foreign affairs and intelligence, has a workforce that is more than 40% over the age of 49. With the average retirement age for NNSA career employees at 59, the NNSA will experience a high rate of turnover for many years to come, and well into the next decade. The largest function is Science and Engineering. More than three fourths of the personnel in this function are at least 40 years of age. Impending retirements will hit this function hard and for an extended period of time.

Through fiscal year 2010, NNSA can expect to lose 106 senior supervisors, as well as a number of personnel with various certifications, to retirement. This large extent of turnover will have a huge effect on NNSA productivity. The majority of the senior supervisor personnel loss will be in the Quality Assurance and Science and Engineering functional areas, however, the losses are spread out across all functions. NNSA currently has personnel with various certifications spread across all NNSA functions. As a result of previous turnover, there are now a number of personnel that lack various certifications. It is expected that number lacking certifications will increase over the next five years as a result of the expected retirements of personnel in the following areas:

- 31.7% of Federal Project Directors
- 41.7% of Contract Management
- 41.2% of Technical Qualifications Program

In 2006, NNSA indicated that about 40% of nuclear weapons program technical staff members were eligible for retirement. An independent estimate provided by the Department of Energy/National Science Foundation, Nuclear Science Advisory Committee (NSAC) report issued in 2004 suggests that within ten years "…more than three quarters of the workforce in nuclear engineering and at the national laboratories will reach retirement age." A true need exists to replenish this workforce.

3.0 CONCLUSION

With the average age of the NNSA workforce being at 49 and 33% of the workforce eligible for retirement in the next five years, it is not only important to assess the current workforce, but project future needs as well. The current workforce has extensive experience, expertise, and knowledge in fields that make their skill set nearly irreplaceable. That, coupled with fast changing technology developments, makes it difficult to train, recruit, and retain an adequately skilled national security workforce. Now that the national security workforce has been analyzed, it will be necessary to determine strategies to counteract the high personnel turnover rate experienced in the next several years.