

**AFSC 61D4\***, Staff  
**AFSC 61D3\***, Qualified  
**AFSC 61D1\***, Entry

**PHYSICIST/NUCLEAR ENGINEER**  
**(Changed 30 Apr 23)**

**1. Specialty Summary.** Conducts or manages programs, projects, and activities to perform research/operational assessments, and to support highly technical operations and intelligence. Research includes defining a problem, selecting methods of approach, performing experiments, accumulating, and interpreting data, and publishing results. Research management includes formulating, planning, fiscal programming, monitoring, evaluating, coordinating, and administering programs, projects, and activities. 61D Physics officers concentrate efforts in areas to include but not limited to lasers, electro-optics, semiconductors, and materials science. Officers with the “N” suffix conduct or manage programs, projects, and activities in all parts of the nuclear enterprise to include nuclear hardness, nuclear treaty monitoring, nuclear forensics, consequence management, nuclear weapons employment planning, life-cycle management of strategic platforms and nuclear technology research. Related DoD Occupational Index: 25X series (See DoD Occupational Conversion Index, March 2001).

**2. Duties and Responsibilities:**

- 2.1. Conducts and manages research. Plans research projects, determines theoretical aspects of problems, and selects methods of approach. Constructs experimental models, conducts experiments, devises instrumentation and techniques to record and collect test results, correlates data compiled in research, analyzes and briefs results. Is cognizant of and applies interdisciplinary scientific knowledge to plan and conduct research programs.
- 2.2. Develops new concepts, methods, and techniques to solve scientific and operational problems. Analyzes theories and research findings to determine applications. Engages in continuous development and modification to improve performance and suitability of products and production processes. Employs mathematical techniques including probability and statistics, simulation, optimization theories, and computer systems to analyze, depict, and display data and analysis results. Develops design studies and monitors contracts.
- 2.3. Recommends research and development projects, and acceptance or non-acceptance of research products. Prepares technical reports, including recommendations for additional research and development projects. Maintains research records and development project records. Serves as technical consultant or representative on scientific and technical boards and committees. Maintains liaison with private sector research organizations, Air Force research and operational organizations, Army, Navy, and other government agencies.
- 2.4. Manages scientific programs, projects, and activities. Coordinates research efforts with related and interested agencies. Plans, organizes, and directs laboratories, field units, and staff agencies. Provides staff supervision over activities and programs. Performs as staff officer and manager in positions requiring technical specialization.
- 2.5. Supports highly technical operations and intelligence. Leads and manages highly technical programs supporting operations and intelligence. Develops concepts, methods, techniques, and policy in the area of physics, nuclear engineering, and weapons of mass destruction.

**3. Specialty Qualifications:**

- 3.1. Knowledge: Knowledge of Air Force operations, doctrine, requirements, acquisition and research policies, procedures, and management practices as they apply to the specialty overall or the specific scientific suffix is mandatory.
- 3.2. Education. For entry education requirements see [Appendix A, 61D CIP Education Matrix](#).
- 3.3. Training. The following training is mandatory as indicated:
  - 3.3.1. 61D3: Completion of Air Force Institute of Technology (AFIT) School of Systems and Logistics Fundamentals of Acquisition Management (FAM 104) (FAM 101, FAM 102, FAM 103 will also be accepted) course and Defense Acquisition University (DAU) Fundamentals of Systems Acquisition Management (ACQ 1010) course is mandatory. Prior to 31 October 2009, officers were required to have completed AETC's Acquisition Fundamentals course (L30QR63A1), AFIT's FAM 101, FAM 102, FAM 103, or DAU's ACQ 101.
  - 3.3.2. 61D3N: Completion of Air Force Institute of Technology (AFIT) School of Systems and Logistics Fundamentals of Acquisition Management (FAM 104) course and Defense Acquisition University (DAU) Fundamentals of Systems Acquisition Management (ACQ 1010) course is mandatory. Prior to 31 October 2009, officers were required to have completed AETC's Acquisition Fundamentals course (L30QR63A1), AFIT's FAM 101, FAM 102, FAM 103, or DAU's ACQ 101. For reserve officers, the FAM 104 requirement only applies to officers in the rank of O-1 to O-4.
- 3.4. Experience. The following are mandatory as indicated:
  - 3.4.1. 61D3: For award of this AFSC, a minimum of 24 months of experience in a 61D3/4 position is mandatory. It is mandatory that experience includes assignments in such activities as research, development, design, and technical writing. A master's degree in one of the specified disciplines in [Appendix A, 61D CIP Education Matrix](#) may be substituted for 12 of the required 24 months experience. A Doctor of Philosophy degree in one of the specified disciplines in [Appendix A, 61D CIP Education Matrix](#) fulfills the 24-month requirement.
  - 3.4.2. 61D3N: For award of this AFSC, 24 months of experience in a 61D3N/4N position within the nuclear enterprise is mandatory. A master's degree in one of the specified disciplines in [Appendix A, 61D CIP Education Matrix](#) may be substituted for 12 of the required 24 months experience. A doctoral degree in one of the specified disciplines in [Appendix A, 61D CIP Education Matrix](#) fulfills the 24-month requirement.

3.5. Other. 61DXN specialty requires routine access to Tier 5 (T5) information, systems, or similar classified environments. For award and retention of these AFSCs, completion of a current T5 Investigation IAW DoDM 5200.02\_AFMAN 16-1405, *Air Force Personnel Security Program*.

**NOTE:** Award of the entry level without a completed T5 Investigation is authorized provided an interim Top Secret security clearance has been granted according to DoDM 5200.02\_AFMAN 16 -1405.

**4. \*Specialty Shredouts:**

*Prefix*      *Portion of AFS to Which Related*

N      Nuclear