FY15-17 CORE SKILL REQUIREMENTS
NUCLEAR ENGINEERING
SUBSPECIALTY 520x
CURRICULUM 520

The Nuclear Engineering subspecialty code (520X) will identify an officer with extensive knowledge of the theory of fission, reactor design and control, heat transfer, shielding and safety requirements and associated systems and equipment's applicable to design, development, operations and maintenance of nuclear power plants ashore and afloat. Specific capabilities and requirements include the following:

- The ability to formulate and solve engineering and technical problems. Competence in research, design, development, procurement, and maintenance of large-scale ship systems and ships. Ability to prepare and present technical briefings, project plans, and reports.

- The ability to use techniques, skills, and modern engineering tools for naval nuclear power plants, including the ability to analyze and interpret relevant data.

- The ability to apply knowledge acquired in academic disciplines specifically to the concept formulation, design, acquisition, construction/modernization, maintenance, and industrial support of naval nuclear power plants.

Billet subspecialty coding is to be based on the minimum education/training/experience level required for optimum performance. Nuclear Engineering (520x) subspecialty codes are justified when, in addition to the general criteria stated in NAVPERS 15839 series (Manual of Navy Officer Manpower and Personnel Classification) Part B, the following specific criteria are satisfied:

1. Subspecialty Coding Restrictions

   Billets assigned to: Restricted Line Officers.

2. Applicable Officer Designator:

   14xx

3. Applicable Billet Designator:

14xx

4. Significant Experience Criteria:

a. Nuclear Engineering (520x) S-coded billets are not justified.

b. Nuclear Engineering (520x) S-coded officers are authorized when:

(1) The officer has no other 520x subspecialty code AND

(2) The officer has served at least 18 months in a 520xP or higher coded billet.

c. Naval Construction and Engineering (510x) R-coded billets are not justified.

d. Naval Construction and Engineering (510x) R-coded officer are not authorized.

5. Baccalaureate Criteria:

a. Nuclear Engineering (520x) E-coded billets are not justified.

b. Nuclear Engineering (520x) E-coded officers are not authorized.

6. Elective Level Criteria:

a. Nuclear Engineering (520x) H-coded billets are justified when the billet's primary duties require expertise in Nuclear Engineering, and a Master's degree level of knowledge is desirable but not essential.

b. Nuclear Engineering (520x) H-coded officers are not authorized.

7. Functional Education Criteria:

a. Nuclear Engineering (520x) F-coded billets are not justified.

b. Nuclear Engineering (520x) F-coded officers are authorized when:

(1) The officer has a 520xG code AND

(2) The officer has served at least 18 months in a 520xP or higher coded billet.

c. Nuclear Engineering (520x) G-coded billets are not justified.

d. Nuclear Engineering (520x) G-coded officers are authorized when:

(1) The officer satisfies all Nuclear Engineering 520xP ESRs with the exception of a relevant Master's thesis, OR

(2) The officer has completed a relevant Master's thesis and satisfies all but three or fewer Nuclear Engineering (520xP) ESRs.

8. Master's Criteria:

a. Nuclear Engineering (520x) P-coded billets are justified when the billet's primary duties require expertise in Nuclear Engineering at a Master's degree level of knowledge.

b. Nuclear Engineering (520x) P-coded officers are authorized when the officer satisfies all Nuclear Engineering (520xP) ESRs, including a relevant Master's thesis. The P code will not be given if thesis is not completed; in that case the officer would receive the F code. Utilization and obligations are still required in either case. If thesis is eventually completed, student must obtain an updated official transcript and forward to PERS-43.

c. Nuclear Engineering (520x) Q-coded billets are justified when the billet's primary duties require expertise in Nuclear Engineering at a Master's degree level of knowledge AND work experience in Nuclear Engineering-related systems, processes, design, acquisition, management or leadership.

d. Nuclear Engineering (520x) Q-coded officers are authorized when:

(1) The officer has a 520xP code AND

(2) The officer serves at least 18 months in a 520xP or higher coded billet.

9. Post-Master's (Engineer) Criteria:

a. Nuclear Engineering (520x) N-coded billets are justified when the billet's primary duties require expertise in Nuclear Engineering at an Engineer degree level of knowledge.

b. Nuclear Engineering (520x) N-coded officers are authorized when the officer satisfies all Nuclear Engineering (520xN) ESRs, including a relevant Engineer thesis.

c. Nuclear Engineering (520x) M-coded billets are justified when the billet's primary duties require expertise in Nuclear Engineering at an Engineer degree level of knowledge AND work experience in Nuclear Engineering-related systems, processes, design, acquisition, management or leadership.

d. Nuclear Engineering (520x) M-coded officers are authorized when:

(1) The officer has a 520xN code AND

(2) The officer serves at least 18 months in a 520xN or higher coded billet.

e. NOTE: The academic requirements for an Engineer thesis/degree exceed those of a Master's thesis/degree in scope and depth. The MIT Nuclear Engineer degree requirements will be used as the standard for comparison.

10. Doctorate Criteria:

a. Nuclear Engineering (520x) D-coded billets are not justified.

b. Nuclear Engineering (520x) D-coded officers are not authorized.

c. Nuclear Engineering (520x) C-coded billets are not justified.

d. Nuclear Engineering (520x) C-coded officers are not authorized.

11. Community Manager and the Budget Submitting Office has agreed to allow billets to be coded for Nuclear Engineering (520x) and officers to be educated for this Curriculum.

Mr. Robert Klocek
Engineering Duty Officer Plans and Policies (NAVSEA COS T1)
Approval date: 07 May 2015

12. Sponsor and Subject Matter Expert:

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|---|---|
| Sponsor: | RADM David Johnson<br>Program Executive Officer for<br>Submarines |
| Subject Matter Expert: | Mr. Robert Klocek<br>Engineering Duty Officer Plans and<br>Policies (NAVSEA COS T1) |

APPROVED: _____ 7 MAY 2015
Major Area Sponsor — Date

APPROVED: _____ MAY 21 2015
President, NPS — Date

APPROVED: _____ 7 July 2015
Director, TFTE (OPNAV N12) — Date