SR-25-001

Sustainability and Evironmental Group

PROFESSIONAL GUIDE TO UNDERSTANDING TEST OFFICER AND ENVIRONMENTAL MANAGER RESPONSIBILITIES

ABERDEEN TEST CENTER
DUGWAY PROVING GROUND
ELECTRONIC PROVING GROUND
REAGAN TEST SITE
REDSTONE TEST CENTER
WHITE SANDS MISSILE RANGE
YUMA PROVING GROUND

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION PATUXENT RIVER
NAVAL AIR WARFARE CENTER WEAPONS DIVISION CHINA LAKE
NAVAL AIR WARFARE CENTER WEAPONS DIVISION POINT MUGU
NAVAL SURFACE WARFARE CENTER DAHLGREN DIVISION
NAVAL UNDERSEA WARFARE CENTER DIVISION KEYPORT
NAVAL UNDERSEA WARFARE CENTER DIVISION NEWPORT
PACIFIC MISSILE RANGE FACILITY

96TH TEST WING
412TH TEST WING
ARNOLD ENGINEERING DEVELOPMENT COMPLEX

SPACE LAUNCH DELTA 30
SPACE LAUNCH DELTA 45

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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PROFESSIONAL GUIDE TO UNDERSTANDING TEST OFFICER AND ENVIRONMENTAL MANAGER RESPONSIBILITIES

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Preface

The Range Commanders Council Sustainability and Environmental Group developed this report to allow test officers and environmental managers to better understand the many responsibilities each office has in order to execute a successful test. This document is intended to be a general resource that can be used by both groups to appreciate the duties and timelines each must meet throughout a test.

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Acronyms

†AAR	After Action Review
CATEX	categorical exclusion
†CCB	Configuration Control Board
†COL	Close Out Letter
†DCE	Detailed Cost Estimate
DoD	Department of Defense
EA	environmental assessment
EO	Executive Order
EIS	environmental impact statement
EOD	Explosive Ordnance Disposal
†EOTM	End of Test Meeting
FONSI	Finding of No Significant Impact
†KO	kickoff (meeting)
NEPA	National Environmental Policy Act
NOI	Notice of Intent
OSD	Office of the Secretary of Defense
†PID	Program Introduction Document
†PL	Planning Letter
†RFA	Request Frequency Authorization
ROD	Record of Decision
†ROM	rough order of magnitude (cost estimate)
SEG	Sustainability and Environmental Group
†SOC	Statement of Capability
†T-X	test execution (meeting)
†TCR	test concept
†TP	test plan
†TR	technical report
†TRR	Test Readiness Review
†TSS	test support summary

†= Used in figures, not defined in body of document.

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1. Introduction

This document identifies the requirements of both test officers and environmental managers. With better understanding, the offices can more efficiently and effectively work together to meet the many requirements that exist for successful test execution.

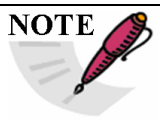
The guide is designed to identify requirements at different stages of test execution: pre-test, test execution, and post-test. Timelines are provided where applicable. The Sustainability and Environmental Group (SEG) understands each range may operate slightly differently; therefore, requirements in this guide are presented generically under broad categories. The guide is not intended to lay out how the requirements are met, but rather to identify what requirements exist so that the offices can better understand the workload of each other. Each Service and location will have site-specific requirements and documents to meet the requirements.

To develop the guide, the SEG distributed questionnaires to both test officers and environmental managers. Responses were aggregated to develop the general requirement themes that are presented in this guide.

2. Test Officer Responsibilities

2.1 General

Test officers are responsible for a wide array of issues and tasks, including customer coordination, budgetary needs, safety concerns, security, range operations, scheduling, and environmental compliance coordination. Each range has working groups and processes to ensure the requirements are met. Examples of these are test planning working groups or test readiness reviews, safety review boards, scheduling meetings, hazard analysis working groups, flight readiness reviews, mission planning meetings, standard operating procedures, test plans, etc. Test officers should consult range managers early in the process to ensure compliance with the different planning meetings and/or documents that a particular range uses to develop and execute tests.

NOTE 	In this document, “test officer” is generalized term capturing broad duties outlined above. Each range may perform these duties under other titles, such as test conductor, test manager, project coordinator, etc.

2.2 Pre-test Activities

Figure 1 shows an example of a pre-test planning and preparation process flow, provided by the 746th Test Squadron. This figure provides a good overview of the many responsibilities that a test officer must meet before a test can occur.

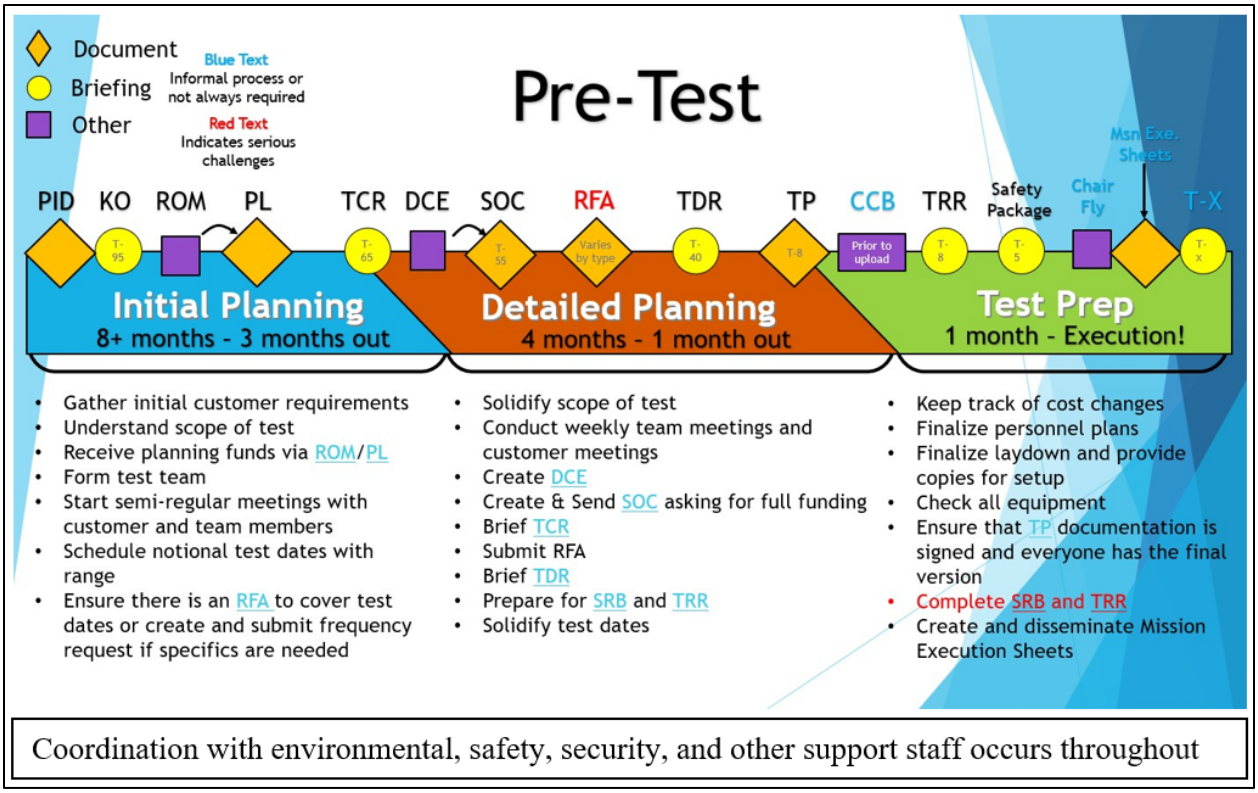


Figure 1. 746th Test Squadron Pre-test Process

Across Services, the nomenclature and timing of activities in the pre-test process may be different, but the general requirements are similar. Initially, the test officer will work with a customer to understand their requirements and develop a scope of work for the test. Once the customer and test officer agree on a scope of work, the test officer generates a cost estimate. The scope and cost estimate is an iterative process until both sides reach a final agreement. At that point, funds are requested from the customer. Once funding is received at the range, the test officer can assemble the test team and begin preparation.

During preparation, the test officer must meet with several support offices to obtain approvals, schedule resources, and coordinate activities. Most ranges have a pre-test working group that includes all pertinent support offices. The purpose of the working group is to ensure all compliance requirements are met, and sufficient resources are available.The following is a general list of these requirements.

- Test Directorate: Develop and obtain approval of test plans.
- Range Operations
  - Schedule the range.
  - Identify surface danger zones.
  - Coordinate airspace requirements.
  - Schedule support personnel, equipment, instrumentation, and/or targets.
  - Deconflict range conflicts.
- Safety
  - Obtain approval of safety requirements.

  - Evaluate risk to people and property.
  - Host safety review boards.
  - Publish safety documents.
  - Identify appropriate standard operating procedures.

- Security
  - Ensure any security protocols or classification requirements are met.
  - Verify appropriate personnel clearances.

- Environmental
  - Obtain National Environmental Policy Act (NEPA) documentation.
  - Submit site approval requests.
  - Comply with all environmental, permit, and mitigation requirements.

- Other requirements
  - Obtain needed ammunition.
  - Ensure the range is cleared by Explosive Ordnance Disposal (EOD).
  - Verify staff from other support offices are available for assistance.

Once all the requirements are met and approvals are received, the test officer can coordinate and verify all equipment and instrumentation is on range and ready for test execution. They confirm support personnel are prepared and ensure all safety activities with Range Operations and Safety.

2.3 Test execution activities

Figure 2 presents a general overview of the activities that a test officer must execute during the test execution phase. Although this is specific to the 746th Test Squadron, these activities are common among all testing.

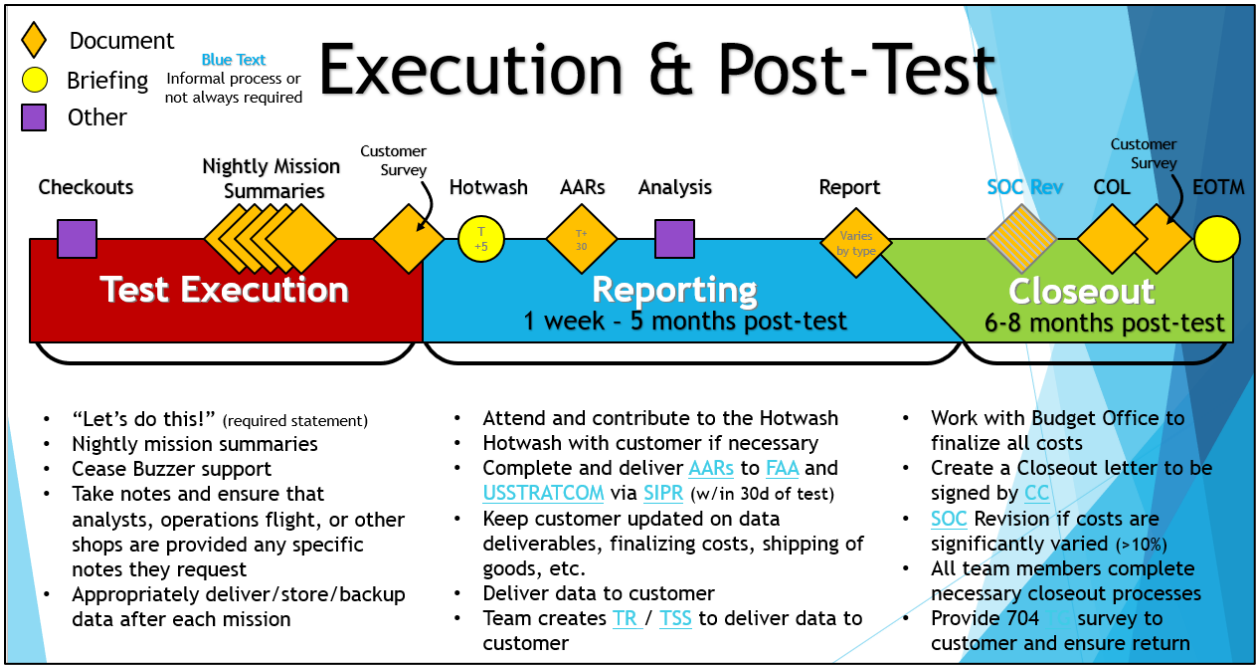


Figure 2. 746th Test Squadron Test Execution and Post-Execution Process

Each day during execution, the test officer must perform tasks that require coordination with numerous support offices. They must ensure all equipment and instrumentation is in place and configured correctly. Data collection devices must be set up following all test plan requirements, and functioning properly. The test item must be in the proper configuration. The test officer must coordinate with range control to ensure the range is secured, and clearance is provided; all air, land, and/or sea space is controlled; and emergency response is in place. Everyone on site must adhere to approved safety requirements for the length of the test. If ammunition is involved, it must be accounted for and cleared through multiple steps before use in the test. Any environmental requirements outlined in the NEPA approval for the test must be coordinated with the environmental manager to ensure adherence.

To achieve all these tasks, the test officer may have daily briefings with the test crew. They must constantly consult the test plan to verify the test is performed in accordance with the approved plan. They may also have regular interactions with support offices to ensure all environmental compliance, safety, range operations, and other requirements, are met throughout the execution of the test. These regular interactions are necessary to determine if the test can be executed that day, or if there are any "no-go" windows within which the test must stand down.

2.4 Post-test activities

Figure 2 also provides a general overview of the post-test requirements for test officers. At the conclusion of the test, the test officer must ensure all equipment, instrumentation, and other assets are taken down and returned. Any excess ammunition must be returned to the supply point. Test officers must verify that data was collected, and all aspects of the approved test plan have been completed. Any required range-specific after-action reports must be completed and submitted to the appropriate group. Test officers must coordinate with support staff to turn in and dispose of any waste generated. All environmental requirements must be completed, and if required, inspected or validated. They may also be responsible for obtaining support to clear or clean the range, which could require EOD support.

Predominantly after the test has been executed, the test officer is responsible for processing all the data collected and writing the test report. The report and data, once complete and approved at the range, are provided to the customer. After the report is submitted, the test officer must finalize all costs and return any unused funds to the customer. The test item must also be returned to the customer, if required. Environmental compliance requirements that were developed and identified during the pre-test phase may trigger post-test resource monitoring, hazardous material cleanup and documentation, or other activities. Finally, the test officer may develop lessons learned to support future test activities.

3. Environmental Management Responsibilities

3.1 General

Environmental managers are responsible for compliance with federal, state, and local laws, regulations, and policies addressing all aspects of the human environment. Additionally, there are DoD and Service instructions and directives and Executive Orders (EOs) that must be considered. Environmental managers must ensure that test officers and support staff are aware of their environmental compliance obligations for conducting testing and training activities.

The following is a short list of major laws and relevant executive orders that generally apply across test ranges, sorted by category. Appendix A provides more information for these references.

- NEPA, including EO 12114 for at-sea ranges.
- Natural Resources
  - Endangered Species Act
  - Marine Mammal Protection Act
  - Sikes EO 11990 Protection of Wetlands
  - Coastal Zone Management Act
  - Migratory Bird Treaty Act
- Cultural Resources
  - National Historic Preservation Act
  - Archaeological Resources Protection Act
  - American Indian Religious Freedom Act
  - Native American Graves Protection and Repatriation Act
- Solid and Hazardous Waste
  - Resource Conservation and Recovery Act
  - Comprehensive Environmental Response, Compensation, and Liability Act
  - Toxic Substances Control Act
- Water
  - Clean Water Act
  - Safe Drinking Water Act
- Air
  - Clean Air Act
- Hazardous Materials Management
  - Occupational Safety and Health Act

Each one of these laws has requirements that may take from days to years to complete. Additionally, some of the requirements may involve permitting costs. Timelines, costs, and requirements can be highly variable across locations.

To ensure all of the environmental requirements are met, most ranges have formalized processes and working groups that ensure coordination with test officers and other pertinent support personnel. A sampling of some of these includes the Environmental Impact Assessment Process/DAF813; Operational Requirements Document; and Environmental Review Boards.

Often, environmental managers must train employees working on the range to ensure they are aware of their environmental compliance obligations. These training activities can include site-specific requirements unique to individual ranges. Ranges have various procedures to train employees and test officers; some of which are provided below.

- New employee orientation
- Test officer certification/briefings
- Central points of contact within test directorates to coordinate requirements

- Environmental awareness/Environmental Management System briefings
- Range briefing and user guide sections
- Monthly standdown reviews

Test officers and support staff are encouraged to reach out to their local environmental office for questions regarding training needs.

3.2 National Environmental Policy Act Compliance

Conducting an environmental impact analysis under NEPA is the first step. The NEPA law requires federal agencies to consider the environmental impact of their actions before making decisions. For at-sea ranges, NEPA practitioners must also consider compliance with EO 12114. While test managers play a very important role in helping environmental personnel understand the details of a proposed activity, only environmental personnel can conduct the NEPA analysis. Test managers should not make determinations on their own about potential environmental impacts of their test or project.

The Office of the Secretary of Defense (OSD) has released implementing guidance to comply with NEPA. Each of the Services is currently updating specific NEPA compliance guidance.

The NEPA law is an umbrella law that points the way to compliance with all other environmental laws. While a project that may have significant adverse impacts on the environment won't necessarily be denied if there is sufficient reason to proceed, NEPA requires consideration of the environmental effects of a project, including alternatives, as part of an overall decision-making process. Depending on the scope, location, and overall details of the project, an evaluation under the NEPA process can take weeks or even years, so it's best to plan early whenever possible.

The NEPA law uses a screening process to determine the level of documentation required based on the potential environmental impacts. There are three basic levels of NEPA used to address the potential environmental impacts from proposed actions: categorical exclusions (CATEXs), environmental assessments (EAs), and environmental impact statements (EISs).

3.2.1 Categorical Exclusions

The CATEXs are actions a federal agency has determined do not individually or cumulatively have a significant effect on the environment. The OSD NEPA guidance includes all 285 DoD CATEXs. While these CATEXs are separated by originating service, any agency within the DoD can apply any of the CATEXs, if applicable to the proposed test. If an environmental manager determines the project fits within the scope of a CATEX and there are no extraordinary circumstances, this NEPA documentation can typically be completed in a matter of days to weeks.

3.2.2 Environmental Assessment

The EAs are documents that evaluate the significance of potential environmental effects from a proposed action and analyze alternatives. The EA describes the proposed action; the environment where the proposed action will occur; alternatives to the proposed action; and an

analysis of the environmental impacts resulting from the proposed action, alternatives, and no action. The EA may identify ways in which the agency can revise the action to avoid significant environmental impacts or minimize environmental effects through mitigation, best management practices, or by complying with permitting requirements. The EA should be a concise public document written under 75 pages. The EA must be completed in one year from the time the agency shows intent to take the action until it results in a determination. There are two outcomes from an EA: Finding of No Significant Impact (FONSI) to the environment or need to prepare an EIS. If a FONSI is signed, the NEPA compliance is complete. It is important to note if there were any mitigation requirements to reach the FONSI stage. If so, those mitigation requirements must be met before the action can proceed. The environmental manager will help identify any additional environmental compliance that is required for the action to proceed.

3.2.3 Environmental Impact Statement

The EISs are prepared when an agency is proposing a major federal action that will significantly affect the environment. The EIS analyses are like those detailed for an EA, above. Though the need for an EIS can be the outcome of an EA, in some cases (typically when a potentially significant environmental impact is expected) an agency may decide to skip the EA and go straight to an EIS. The EIS should be less than 150 pages and must be completed in two years from the time a Notice of Intent (NOI) is published in the Federal Register until the Record of Decision (ROD) is signed. Note that getting to an NOI requires a well-defined scope of the project. The EIS results in a ROD signed by an appropriate Assistant Secretary level or Principal Deputy Assistant Secretary level official of the Military Department.

3.3 Service NEPA Documentation

Each Service has a process for determining the level of NEPA needed to execute a test. A member of the environmental office at a range may ask a test manager to fill out a form that describes the potential environmental impacts of a test or training event. The Service version of these documents is listed below.

- Department of the Army – Record of Environmental Consideration
- Department of the Air Force – DAF813
- Department of the Navy – Memorandum for Record

These documents will typically take about two weeks to process and will generally outline any environmental requirements associated with a test.

3.4 Other Environmental Requirements

As outlined in Section 3.1, in addition to NEPA, there is a long list of environmental laws with which the Services must comply. These laws are extensive and may be managed differently from range to range and state to state. The NEPA process aids in identifying requirements associated with those environmental laws. To comply with these laws, the environmental management team will work with local, state, and federal regulators to identify permitting requirements and applicable mitigation requirements. Some permitting actions can take up to years to accomplish depending on location and the permitting authority, usually delegated to a

state agency by the federal agency. Itis best to coordinate with the environmental management team early and use the NEPA process to identify specific requirements, costs, and timeframes.

4. Keys to Successful Coordination

The absolute best key to successful coordination is complete, honest, and continuous communication between the test officer and environmental management expert. The test officer should provide detailed information on the test requirements so that the environmental professional can best assess what level of environmental analysis may be required and what other environmental requirements may exist. Likewise, the environmental professional should let the test officer know all environmental requirements with their associated costs and estimated timelines. The communication between test officer and environmental professional will be iterative as the program develops. To maximize communication, each range should have a process that connects test officers with support offices as early as possible so that all support offices can provide their requirements. In some cases, modifying a test to meet environmental requirements may present additional safety or range operations requirements, or vice versa.

A secondary key to success is simply knowing each test officer and support office has a litany of requirements they must meet to successfully execute a test. Employing some patience with each other and removing personality-driven conflicts can go a long way in achieving the mission.

APPENDIX A

Citations

American Indian Religious Freedom Act. 42 U.S.C. §1996

Archaeological Resources Protection Act. 16 U.S.C. §470aa-470mm

Clean Air Act. 42 U.S.C. §7401 et seq.

Clean Water Act. 33 U.S.C. §1251 – 1388

Coastal Zone Management Act. 16 U.S.C. §1451-1468

Comprehensive Environmental Response, Compensation, and Liability Act. 42 U.S.C. §9601-9675.

Endangered Species Act. 16 U.S.C. §1531-1544

Environmental effects abroad of major Federal actions. Exec. Order 12114. 44 C.F.R. 1957.

Migratory Bird Treaty Act. 16 U.S.C. §703-712

Marine Mammal Protection Act. 16 U.S.C. §1361-1423

National Environmental Policy Act. 42 U.S.C. §4321-4370.

National Historic Preservation Act. 54 U.S.C. §300301-307108

Native American Graves Protection and Repatriation Act. 25 U.S.C. §3001-3013

Occupational Safety and Health Act. 29 U.S.C. Chapter 15 §651 – 678.

Protection of wetlands. Exec. Order 11990. 42 C.F.R. 26961.

Resource Conservation and Recovery Act. 42 U.S.C. §6901-6992k.

Safe Drinking Water Act. 42 U.S.C. §300g-1.

Toxic Substance Control Act. 15 U.S.C. §2601-2629.

*** * * END OF DOCUMENT * * ***