

# **PRODUCT INTEGRITY & PRODUCT SUBSTITUTION**



Product Integrity & Product Substitution  
*Test Yourself*

## INTRODUCTION

Every Northrop Grumman employee has a personal responsibility for Quality and Integrity. Each of us must ensure that these Values are reflected in the products and services we provide. Employees must know -- and follow -- the specifications, procedures and instructions applicable to their jobs. The company's reputation for quality and integrity depends on this, as does the success of our customers' missions.

Our customers expect and our Quality Management System requires that we furnish products and services that strictly comply with the specifications and procedures set out in the contract. Any deviation from these requirements may be made only with the prior written approval of the customer. No contract requirement should be considered "minor" or unimportant. Documentation related to the product and process should be considered part of the product or service and must be accurate.

**"Product Integrity" includes every aspect of a product from cradle to grave. This includes product design, development, manufacture, maintenance and its disposal at the end of its useful life. Product integrity is broader than product quality or even total product quality. It is impacted by everyone who interacts in any way with the product.**

**A product's integrity is at risk when it does not** meet contract requirements or internal Northrop Grumman processes, procedures and other related requirements. Product integrity threats include:

- Using materials that are not properly authenticated – whether intentional or inadvertent-such as use of counterfeit parts or improperly processed materials
- Failing to perform the operations as specified in the contract and related procedures
- Failing to inspect and test as the contract or procedures require
- Performing processes or tasks without the requisite certifications.
- Falsifying documentation related to material content or testing
- Using the wrong solder type
- Comingling government property and use without authority
- Acceptance stamping a product without having performed the required or proper inspection
- Loading incorrect software on a deliverable product that has not been properly validated
- Using of production or test equipment that is improperly calibrated or inadequate for the intended function
- Failing to report products (data, software etc.) which you know or suspect to be nonconforming
- Skipping a required quality assurance test because an employee thinks it is redundant or a waste of time, or due to schedule concerns

**Product substitution occurs when** an alternative material is used in place of the material specified in the contract, the applicable drawings, and/or the procedures/ specifications. This includes using material that meets or exceeds the contract requirements and is better or superior to the material specified in the contract. All materials, testing and quality assurance steps must be followed as specified in the contract, unless a change, deviation or waiver is approved by the customer, in writing.

**Some specific examples of product substitution include:**

- Use of materials or components other than those called for in the contract, specifications, drawing or related procedure without the prior written permission of an authorized customer representative
- Using a part that is "equivalent" or even "better than" without prior written approval- the substitution of "better than" parts is allowable only when specifically authorized directly or by reference within the contract.

Product substitution is expressly prohibited unless it has been approved by the customer in writing prior to the substitution. If a product substitution takes place without approval, it could jeopardize our reputation, customer relations, and potentially the safety of the end user. Customer approval could consist of one or more of the following:

- **DEVIATION** – Customer authorization before manufacturing to change a design requirement
- **WAIVER** – Customer authorization during or after manufacturing to change a design requirement because of nonconformance

- **ENGINEERING CHANGE PROPOSAL** – Customer acceptance of a formal request to by the company to make major specification changes that is submitted and approved prior to making the change
- **MATERIAL REVIEW BOARD** – Representatives from functional organizations who review, evaluate and disposition nonconforming material and assess if it meets contract requirements and obtain necessary customer approvals if it does not.

## RESPONSIBILITY FOR PRODUCT INTEGRITY

The obligation to ensure product integrity and avoid product substitution involves all functions and levels of employees who participate in the development, procurement, production, inspection and testing of our products. This includes bids and proposals and negotiations, engineering, procurement, manufacturing, quality assurance, shipping and work performed by our suppliers.

Product substitutions and product integrity lapses can be unintentional. This does not excuse you or the Company from responsibility. You must understand and follow the requirements for the work that you perform.

An environment that encourages open and candid communication helps employees understand problems and effectively resolve any compliance issues. It is important that employees feel free to ask questions to identify product integrity/substitution issues before they become problems.

If you suspect that there might be a product integrity/substitution problem, immediately bring it to the attention of your supervision. If you can anticipate a possible problem and head it off by bringing it to the attention of your management, it is your duty to do so.

## PENALTIES AND RISKS

Product integrity concerns may be caused by the actions of one or more employees or suppliers. Maybe you know of a stronger or cheaper part or a better or faster way to perform an operation. Maybe you even have the new or improved part but lack customer approval. There is a right way and a wrong way to suggest alternative and better ways to do things. If you deviate from what is required, without getting prior, written customer approval, the potential consequences are serious and may include:

- Injury or loss of life for those using our products
- Failed systems
- Loss of your job
- Civil or criminal actions
- Penalties and fines for both the company and employee
- Damage to company reputation for quality and integrity and the resulting negative consequences for business

**Prevention** of product integrity lapses depends on the vigilance and attentiveness of employees. Be sure you:

- Read, understand and follow requirements and instructions that apply to your work
- Perform all operations required in proper sequence
- Use current, accurate and complete documentation
- Record information accurately and completely
- Ensure that your suppliers, if any, understand all of the product integrity requirements and confirm that your suppliers are following the scope of work as contracted.
- Sign off only on operations you perform and only when completed
- Communicate, raise issues and seek answers to questions before they become problems

Do not hesitate to speak up if you suspect product integrity/substitution problem, or if you are asked or directed to substitute a product, change or skip a required step, or falsify documentation. If you have questions or concerns, there are a number of resources that can help: Management, Quality/ Mission Assurance, the Law Department, your local Business Conduct Officer (BCO), the Sector OpenLine, or the Corporate OpenLine.

## TEST YOURSELF

- |                                                                                                                                                                                                                                                                 | Yes                      | No                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| The customer is pressing me for a product. Can I take the following steps to help meet the demand?                                                                                                                                                              |                          |                          |
| <b>1. Can I perform an operation out of the sequence specified in the contract or company policies or procedures?</b>                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>2. Can I skip an inspection step that will be repeated at final inspection?</b>                                                                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> |
| For questions 3-4. A particular part called for in the contract is not available. However, there is a part of higher quality that will achieve the same result.                                                                                                 |                          |                          |
| <b>3. Can I substitute that part if the customer approves?</b>                                                                                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>4. Is oral or non-written approval by the customer all I need?</b>                                                                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| For questions 5-6. The certification required for an experienced inspector in my department has expired. I should:                                                                                                                                              |                          |                          |
| <b>5. Allow the inspector to proceed with product inspections based on experience.</b>                                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>6. Adjust the expiration date of the certification document.</b>                                                                                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> |
| New equipment and techniques have made a particular step in the process outdated. I should:                                                                                                                                                                     |                          |                          |
| <b>7. Simply skip it since it won't affect the result.</b>                                                                                                                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>8. Bring this to the attention of my supervisor to get approval for change from the customer.</b>                                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| We're under pressure to cut costs. My supervisor has told me that a process change which will save money will be approved for implementation in two weeks. My supervisor says that:                                                                             |                          |                          |
| <b>9. We could "jump the gun" and start now. Is this appropriate?</b>                                                                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>10. He will adjust the documentation date. Is this appropriate?</b>                                                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| Some of the components needed for an urgent system upgrade are obsolete and aren't made by the original manufacturer any longer. Supply chain/ engineering found a source for those parts but the necessary documentation related to those parts is incomplete. |                          |                          |
| <b>11. Can we use them if we test them in the system and they work?</b>                                                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> |

## CORRECT ANSWERS

1. No, unless you receive written approval from the customer or your immediate supervisor.
2. No. All testing and quality assurance steps must be followed.
3. Yes, if the approval is in writing through contracts.
4. No. Documented approval is required.
5. No. If certification is required, it must be current.
6. No. This is falsifying a document.
7. No. All products must be exactly as specified in the contract.
8. Yes. Your suggestions to improve processes are important.
9. No. Two weeks means two weeks.
10. No. Accurate documentation is part of the product.
11. No. The documentation for these parts is important to ensure authenticity, chain of custody, and compliance with contract specifications