

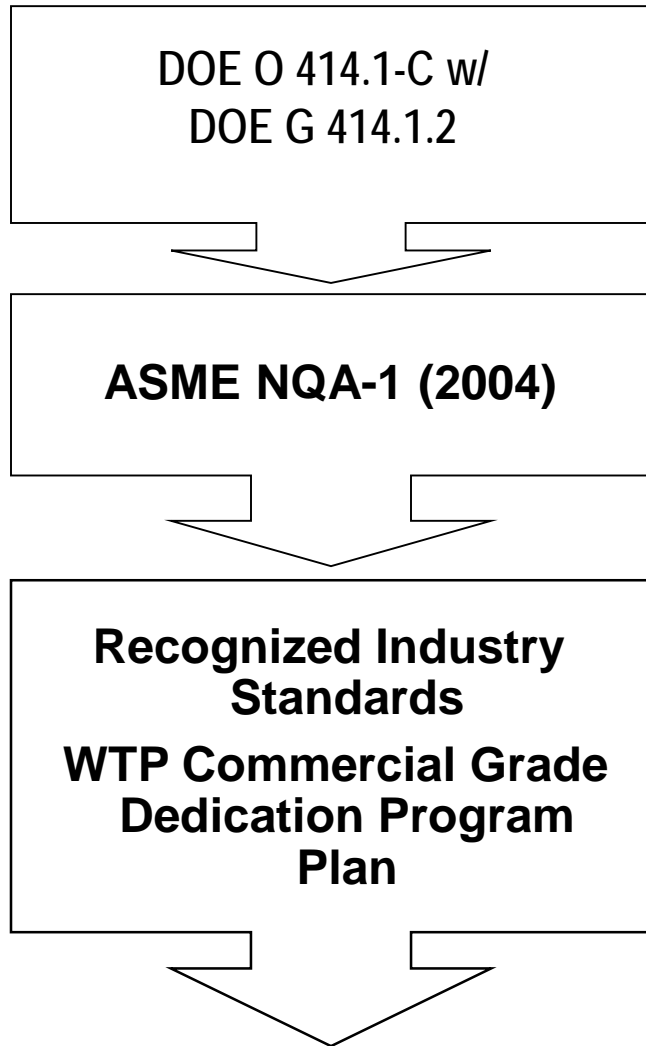
Information Objectives

- Define the terms “commercial grade item” and “commercial grade services”
- Understand the process for commercial grade dedication
- Describe the bases for implementing each element of the generic process and how they relate to requirements and EPRI Guidelines
- Describe each element of the process and its purpose
- Understand the acceptance process for items and services

Introduction

- What is the purpose of dedication?
 - Dedication is performed to establish the acceptability of an item to perform its safety function.
- How is dedication performed?
 - Dedication consists of a technical evaluation of an item followed by establishment of acceptance methods.
- What is needed to start the dedication process?
 - The design must be completed to the point that the suitability of the item for its intended application has been established.
- How much is enough?
 - The extent of technical evaluation and the rigor applied to the acceptance process are both commensurate with the significance of the safety function of the item. This decision is based on engineering judgment. It is important to document this basis.

How does the CGD process meet the requirements of DOE O 414.1C?



[DOE Order 414.1C](#) states that a national/consensus standard(s) must be chosen for implementation. NQA-1 2004 Part 1 and Part 3 provide requirements and supporting guidance respectively implementing EPRI guidance for CGD. [DOE G 414.1.2 Quality Management System Guide](#) (for use with 10 CFR 830.120 and DOE O 414.1) – Commercial Grade Items intended for use in nuclear safety applications should be procured in accordance with documented processes using recognized consensus standards.

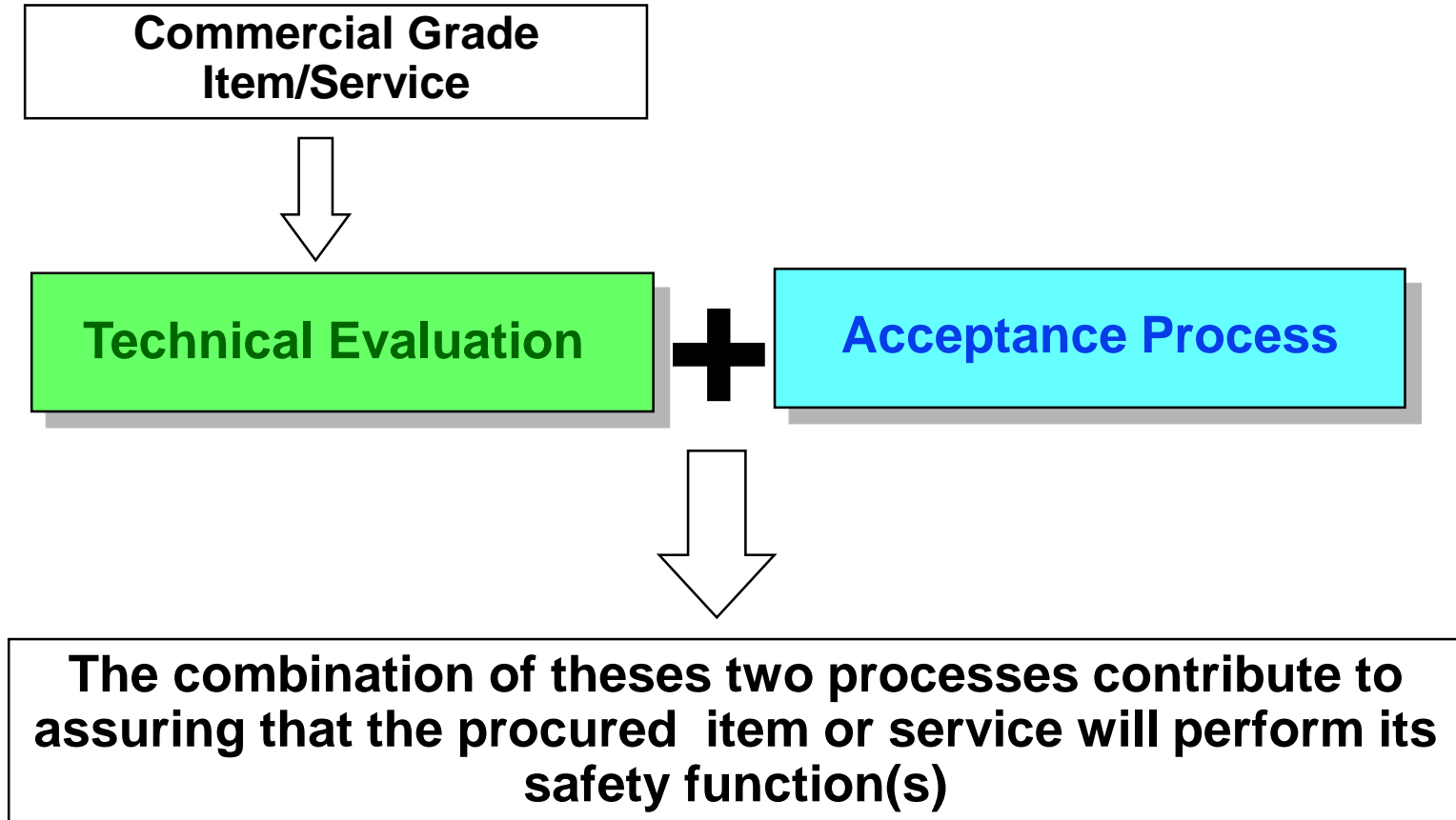
[NQA-1 Quality Assurance Requirements for Nuclear Facilities Applications](#) – Establishes Quality Assurance requirements for items and services that provide a safety function. CGD process is used when items or services that provide a safety function are not provided by NQA-1 qualified suppliers.

[EPRI NP-5652](#), [EPRI TR-106439](#) and [EPRI TR-102260](#) – EPRI NP-5652, Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications; EPRI TR-106439, Guideline on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Application; and EPRI TR-102260, Supplemental Guidance for the Application of EPRI Report NP-5652 on the Utilization of Commercial Grade Items are recognized in the nuclear industry as the standard documents regarding the purchase of commercial grade items for use in nuclear safety related applications.

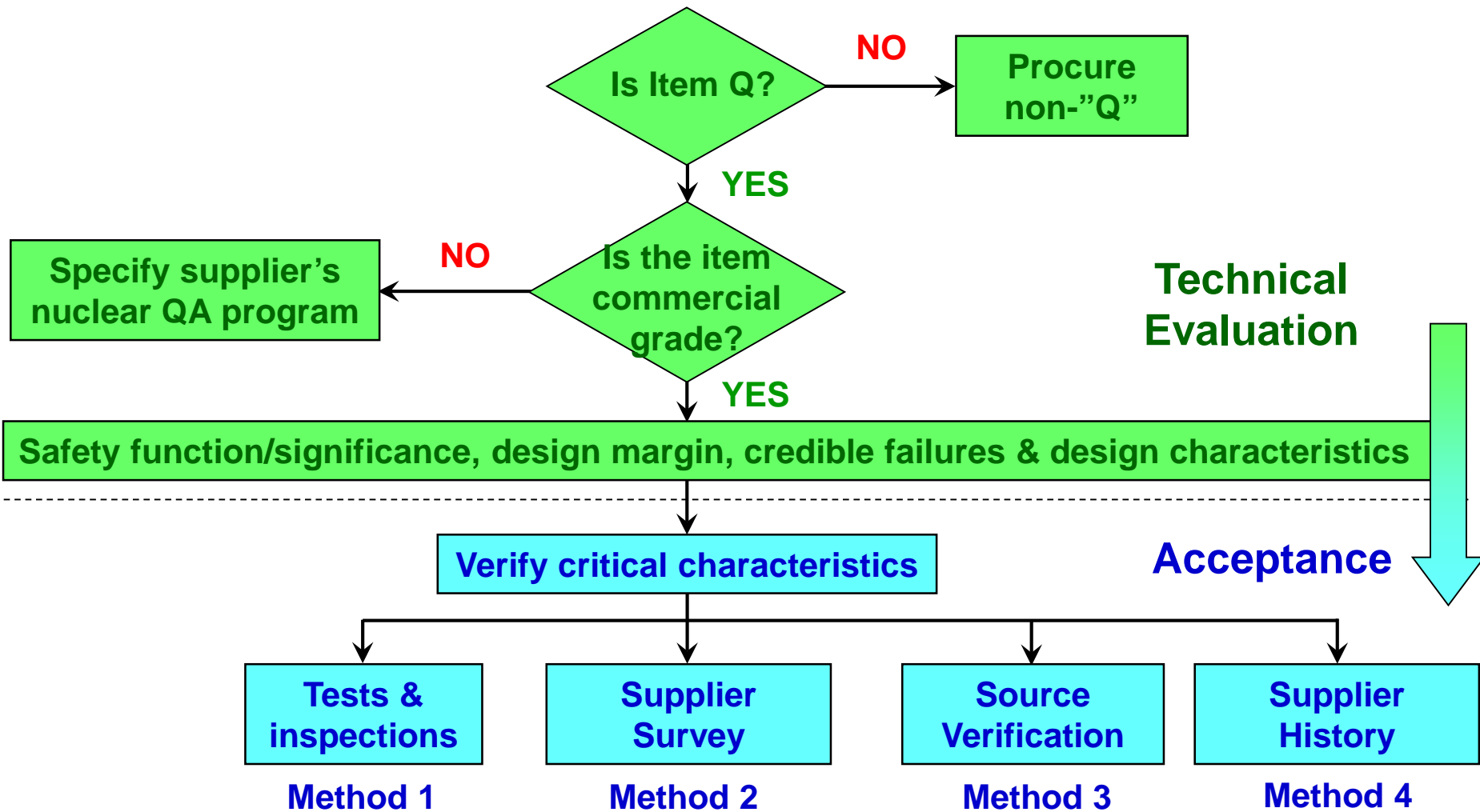
Major Steps In The Dedication Process

- Clearly identify the item
- Bound the application
- Research the design to identify the safety functions, the service conditions and the design margin
- Determine the safety significance of the item considering the consequences and likelihood of failure
- Determine the characteristics of the item that are critical to performance of the safety function
- Select acceptance methods, acceptance values and sample plans commensurate with the item's significance
- Document the basis

Commercial Grade Procurement Fundamentals



Commercial Grade Dedication



Quality Level Determination

- Determination of item safety function is part of the design process
- Safety functions are reflected in specifications, drawings, data sheets and procurement packages
- Technical justification should be documented for items classified differently than their host system/component
- Quality level of a service is equivalent to the quality level of the items associated with the service

Determine if the Item or Service Meets the “Commercial Grade” Definition

- NQA-1-2004 provides two definitions for a commercial grade item depending on the application of the item.
 - Definitions were modified from NQA-1-2000 to recognize that the availability of NQA-1 qualified suppliers who were fabricating one-of-a-kind and/or new technology to support construction activities was less than in previous years.
- Definition 1, a commercial grade item meets all of the following:
 - Not subject to design or specification requirements that are unique to nuclear facilities;
 - Used in applications other than nuclear facilities;
 - To be ordered from the manufacturer/supplier on the basis of specifications set forth in the manufacturer’s published product description (for example, a catalog)

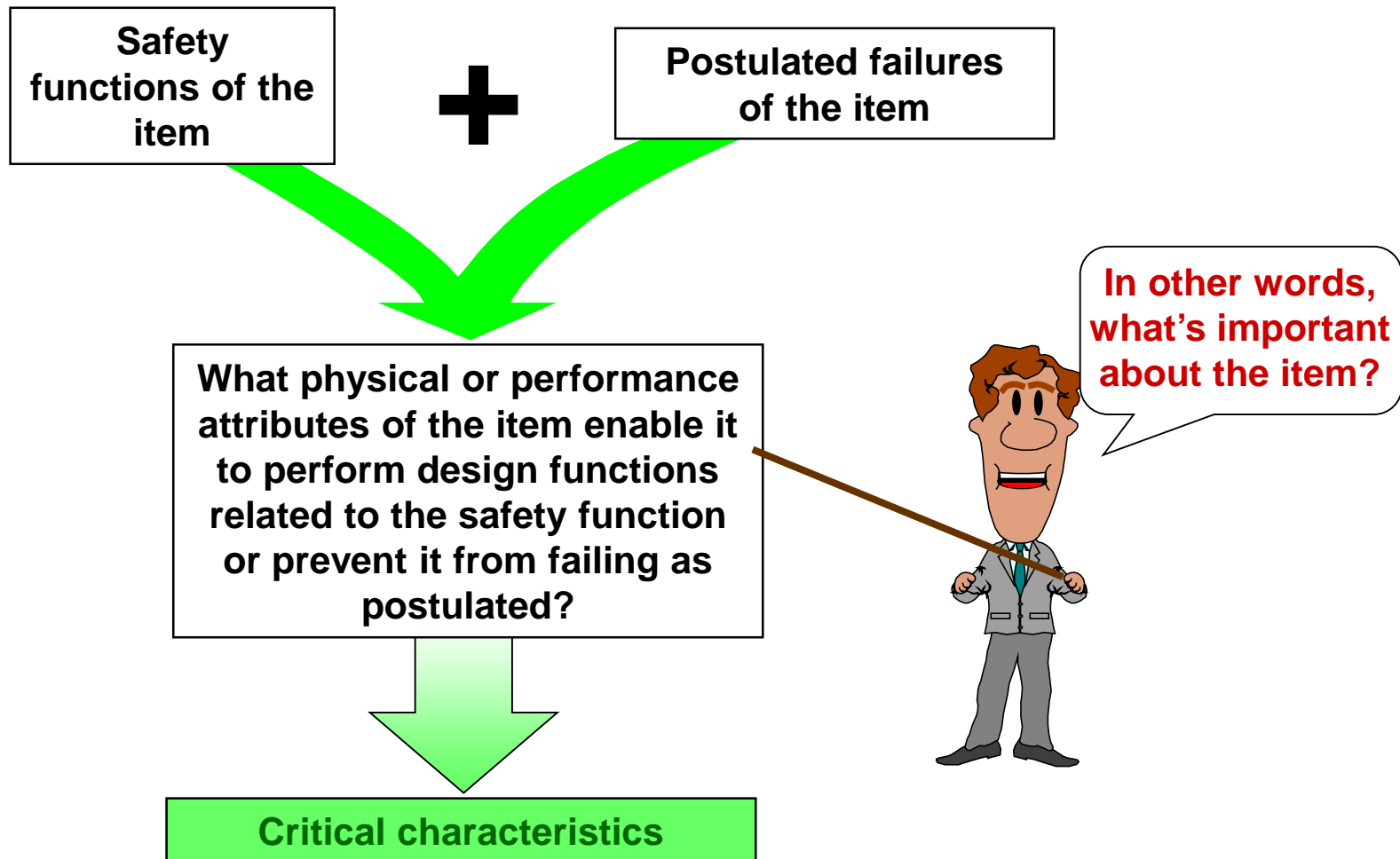
Determine if the Item or Service Meets the “Commercial Grade” Definition (cont.)

- Definition 2:
 - Commercial Grade Item (CGI) is a structure, system or component (safety-class/safety-significant), or part thereof, that affects its safety function, that was not designed and manufactured by an NQA-1 qualified supplier
 - Department of Energy nuclear facilities and activities regulated under 10 CFR 830, Nuclear Safety Management
 - Commercial Grade Service (CGS) is a service that is not provided by an NQA-1 qualified supplier

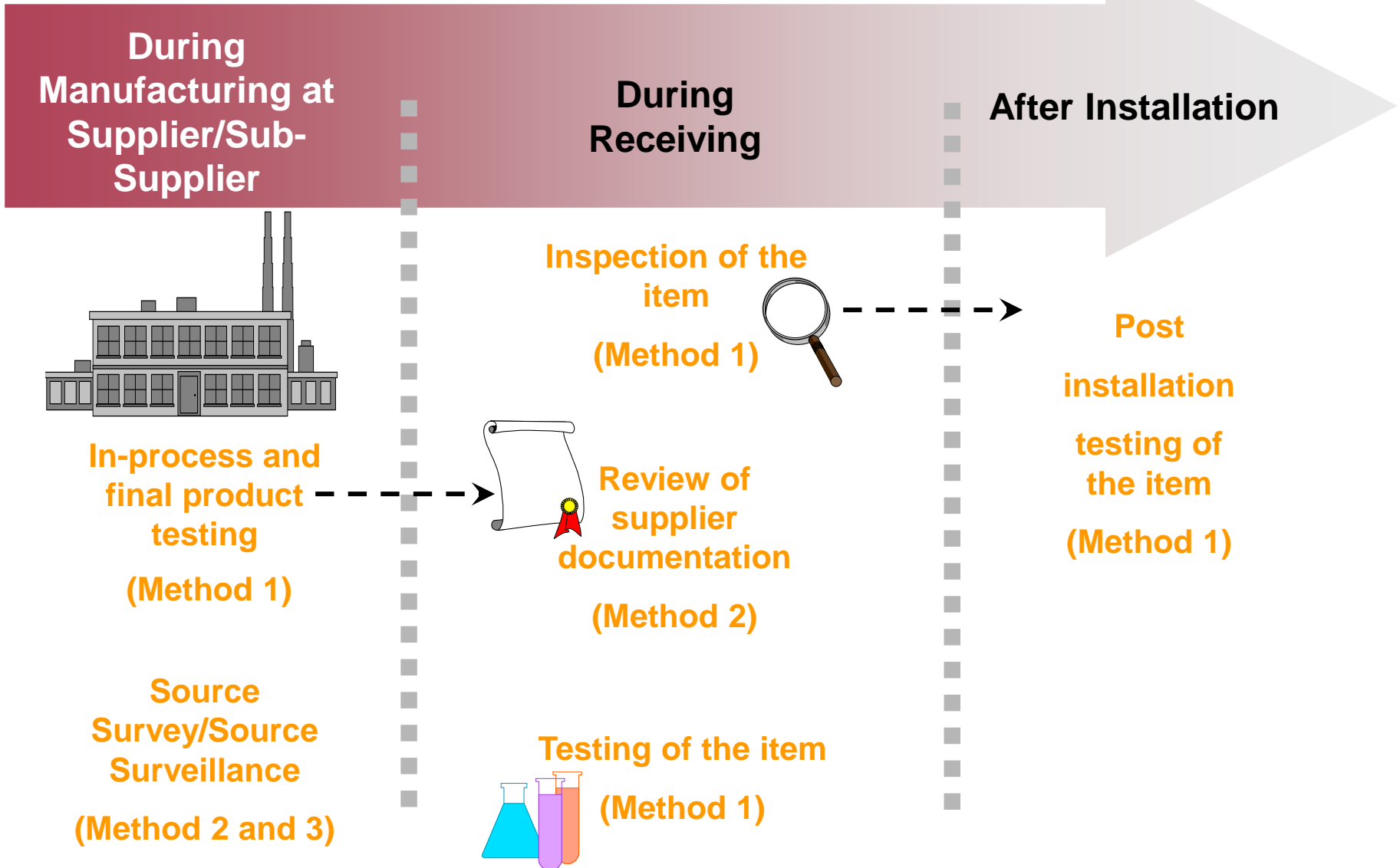
Utilization of the CGD Process

- Utilization of the CGD process for procuring items or services include the following:
 - Technical evaluation to determine that the item or service performs a safety function
 - Confirmation that the item or service meets the commercial grade definition criteria
 - Identification of the critical characteristics, acceptance criteria, and methods of acceptance
 - Documentation of the basis for the acceptance requirements
- When one or more critical characteristics for acceptance cannot be verified, then the CGD procedure is not used to procure or accept the CGI/CGS

Identify Critical Characteristics



When Critical Characteristics Are Verified



Commercial Grade Dedication

- Commercial grade dedication (CGD) is an acceptance process performed in accordance with procedures to provide reasonable assurance that a CGI or CGS will successfully perform its intended safety function and is deemed equivalent to an item or service provided from a qualified NQA-1 supplier
- Commercial grade dedication consists of two processes: (1) technical evaluation – assures that the requirements for an item/service are specified in procurement documents, and (2) acceptance process – provides methods to reasonably assure that the item/service received is what was specified

Commercial Grade Dedication

- Dedication can be performed by the Contractor, a qualified NQA-1 supplier, or a qualified third-party dedicating entity
- Dedication performed by a qualified NQA-1 supplier or a third-party dedicator must be performed in accordance with the supplier's QA program
- Dedication is complete when the organization verifying the critical characteristics completes the acceptance activities