

**COMPARISON OF
ASME SECTION III NCA-3855.5
UTILIZATION OF UNQUALIFIED
SOURCE MATERIAL
V.
NRC 10CFR PART 50 APPENDIX B
COMMERCIAL GRADE
DEDICATION**



Alloy Stainless Products

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Knickerbocker Machine Shop Inc. - June 9, 2014



Time Proven Fittings Since 1944

Overview

NCA-3855.5
UTILIZATION OF
UNQUALIFIED
SOURCE MATERIAL

Is
an
acceptance
process

COMMERCIAL
GRADE
DEDICATION

for

ASME Section III
unqualified
source material

ONLY

for

▣ NRC 10CFR Part 50
Appendix B
Commercial Grade
Items

Always
included in

Includes, but not limited to

Overview

OF
UNQUALIFIED
SOURCE
MATERIAL

Is
an
acceptance
process

OF
AN
ITEM

when the supplier is not a
Material Organization
(certified or accredited),
Certificate Holder, or
approved supplier I in
accordance with the
requirements of ASME
Section III, NCA-3800

when the supplier has
not been audited and
approved as having a
quality program
meeting the applicable
requirements of US
10CFR50 Appendix B.

could
be
essentially
equivalent

Linking Terminology

NCA-3855.5 Utilization of Unqualified Source Material	10CFR50b Commercial Grade Dedication
is an acceptance process	is an acceptance process
of unqualified source material ONLY	of an ITEM
<p>not produced by a Certificate Holder, Material Organization, or approved supplier in accordance with the requirements of Section III, NCA-3800</p>	<p>(1) When applied to nuclear power plants licensed pursuant to 10 CFR Part 50, commercial grade item means a structure, system, or component, or part thereof that affects its safety function, that was not designed and manufactured as a basic component. Commercial grade items do not include items where the design and manufacturing process require in-process inspections and verifications to ensure that defects or failures to comply are identified and corrected (i.e., one or more critical characteristics of the item cannot be verified).</p>
in accordance with the requirements of Section	when the supplier has not been audited and approved
III, NCA-3800	as having a quality program meeting applicable requirements of
ASME NCA-3850	US 10CFR50 Appendix B

Linking Terminology

so that it can be used as **Source Material or MATERIAL**

material: for Section III, Division 1, metallic materials manufactured to an SA, SB, SFA, or any other material specification permitted in Section III and that are manufactured, identified, and certified in accordance with the requirements of Section III. For Section III, Division 2, metallic materials, as well as to nonmetallic materials, conforming to the specifications permitted in Section III.

Note: In ASME Section III,

item: a product constructed under a Certificate of Authorization or NS Certificate of Authorization (supports) (NCA-3120), or

material (NCA-1220). item: a product constructed under a Certificate of Authorization or NS Certificate of Authorization (supports) (NCA-3120), or material (NCA-1220), also known as a

BASIC COMPONENT

Applies to ASME BPV Section III Applications ONLY, in any application where the Section III Code is being used, Regardless of jurisdiction.

so that is can be used as a **BASIC COMPONENT**

(ii) Basic components are items designed and manufactured under a quality assurance program complying with appendix B to part 50 of this chapter, or commercial grade items which have successfully completed the dedication process.

so that is can be used as a

BASIC COMPONENT

Applies to ANY safety-related item, not designed and manufactured as a basic component, including ASME Section III items, in any jurisdiction subject to 10CFR50 Appendix B.

Acceptance Process

Prescribed by NCA-3855.5

Described in 10CFR Part 21

Limited to Material Organizations and Certificate Holders

Limited to Materials with material test reports (or certificates of compliance in some instances) that meet specific requirements

Testing specified in NCA-3855.5

Any entity with an approved 10CFR50 Appendix B Quality Assurance Program

Testing Plan determined by evaluation of critical characteristics

Testing Plan is supplemented by surveys, inspections, historical records, etc.

Testing Requirements

requirements of the material specification



critical characteristics materials

- ▣ Test plan Based on requirements of the material specification

- ▣ When applied to nuclear power plants licensed pursuant to 10 CFR Part 50, critical characteristics are those **important design, material, and performance characteristics of a commercial grade item** that, once verified, will provide reasonable assurance that the item will perform its intended safety function.

Testing Requirements

a product analysis to verify the chemical composition of each piece of unqualified source material.

AND

all other requirements of the material specification on each piece of unqualified source material.

- ▣ material characteristics of a commercial grade item
- ▣ Guidance on Sampling for Test Plans beyond scope of this presentation
Most frequently Referred to EPRI NP-5652
- ▣ EPRI NP-5652 is available for free from the EPRI Website
- ▣ AND OTHER AVAILABLE INDUSTRY LITERATURE

Other Requirements

Alternatively,
the Material Organization may perform or subcontract
**all other requirements of the material specification on each
heat and lot of unqualified source material
provided**

(-a) a Certified Material Test Report is provided
with the unqualified source material

(-b) the unqualified source material is traceable to
the Certified Material Test Report

(-c) procurement documents require that suppliers
of unqualified source material establish written procedures
for identifying source materials in a manner that
provides traceability to the Certified Material Test Report

(-d) the Material Organization reviews and accepts
the supplier's identification and traceability procedures
and verifies compliance with the procedures at a frequency
commensurate with the schedule of production
or procurement, but at least once triennially

(-e) upon receipt, the Material Organization shall
verify by review of objective evidence, that the requirements
of the procurement document have been met

(4) Where Certificates of Compliance
[NCA-3862.1(g)] are acceptable, testing of each piece for
all other requirements of the material specification (3) is
not required

Guidance on Sampling for Test Plans beyond scope of this presentation
Most frequently Referred to
EPRI NP-5652
EPRI NP-5652 is available for free from the EPRI Website
<http://my.epri.com/portal/server.pt?open=512&mode=2&objID=221>.

AND OTHER AVAILABLE INDUSTRY LITERATURE

commercial grade surveys;

product inspections or witness at holdpoints at the manufacturer's facility
and analysis of historical records for acceptable performance.

Other Requirements

NOTE: in areas of US NRC jurisdiction, only the programmatic aspect of a 10CFR Part 50 Appendix B compliant program is recognized by possession of a Quality System Certificate or ASME Certificate of Authorization; implementation of the 10CFR Part 50 Appendix B program of the dedicating entity must still be verified by the purchaser.

When applied to nuclear power plants licensed pursuant to 10 CFR Part 50, dedicating entity means the organization that performs the dedication process. Dedication may be performed by the manufacturer of the item, a third-party dedicating entity, or the licensee itself. The dedicating entity, pursuant to § 21.21(c) of this part, is responsible for identifying and evaluating deviations, reporting defects and failures to comply for the dedicated item, and maintaining auditable records of the dedication process.

Initiates 10CFR Part 21 responsibility for the Item

Conclusion

**ASME
Section III
NCA-3855.5
Utilization
of
Unqualified
Source
Material**

**By application of
correct terminology and
knowing differences in
requirements, synergies
between the two systems
may be used to apply
some tests, inspections,
reviews, and surveys to
both processes**

**10CFR 50
Appendix B
10CFR Part 21
Commercial
Grade
Dedication**