

**CHRISTOPHER E. EARLS**  
Sr. Director, Engineering and Licensing

1201 F Street, NW, Suite 1100  
Washington, DC 20004  
P: 202.739.8078  
cee@nei.org  
nei.org



NUCLEAR ENERGY INSTITUTE

7/8/2016

81FR44670

August 30, 2016

Ms. Cindy K. Bladey  
Office of Administration  
Mail Stop: O12-H08  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

4

RECEIVED

2016 AUG 31 11:30

RULES AND REGULATIONS

**Subject:** Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants* [Docket ID NRC-2016-0133]

**Project Number: 689**

Dear Ms. Bladey:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)<sup>1</sup> is providing comments on draft Regulatory Guide DC-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants* [Docket ID NRC-2016-0133]. We appreciate the NRC's endorsement of EPRI guidance on commercial grade-dedication in a Regulatory Guide (RG) and the clarity to the requirements of 10 CFR Part 21 that it provides.

The nuclear industry has utilized the dedication of commercial-grade items for use in safety-related applications since the 1970s. Commercial-grade dedication is an important aspect of the nuclear supply chain and is used in an increasing number of applications that support operations and maintenance as well as new nuclear construction. EPRI 3002002982, *Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications*, expands on earlier NRC and EPRI guidance, incorporating experiences and addressing clarity issues identified over the past several decades.

Included in the Attachment are comments that will further enhance the clarity provided in DG-1292. We are concerned that the discussion on seismic qualification creates confusion and appears to be inconsistent with NRC established guidance on this topic. Comments #10 and 11 provide additional information in this regard and recommendations that would clarify this discussion.

<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

NUCLEAR. CLEAN AIR ENERGY

**SUNSI Review Complete**  
Template = ADM - 013  
E-RIDS= ADM-03  
Add= S. Buntow (5x63)

Ms. Cindy K. Bladey  
August 30, 2016  
Page 2

If you have any questions or require additional information, please contact Marc Nichol at (202) 739-8131; [mrn@nei.org](mailto:mrn@nei.org) or me.

Sincerely,

A handwritten signature in cursive script that reads "Chris Earls". The signature is written in black ink and has a long, sweeping underline that extends to the right.

Christopher E. Earls

c: Mr. Michael C. Cheok, NRO/DCIP, NRC  
Mr. Kerri A. Kavanagh, NRO/DCIP/QVIB3, NRC  
Mr. Richard Laura, NRO/DCIP/QVIB3, NRC  
Stephen C. Burton III, RES/DE/RGGIB, NRC  
NRC Document Control Desk

**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
1.	Multiple locations, including page 10, References	Multiple locations in the draft guide do not accurately reference the EPRI guidance. The correct reference number is 3002002982. Use of the correct reference number will facilitate access to the document and will help avoid inadvertent use of the older version (NP-5652).	Revise reference #6 and in-line references throughout to:  "Electric Power Research Institute (EPRI), 3002002982, "Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications: Revision 1 to EPRI NP-5652 and TR-102260," September 2014"
2.	Section A, page 1, Purpose, 1 <sup>st</sup> paragraph	DG-1292 does not include clarification that the term "item" also includes services.  EPRI 3002002982 provides the following definition of items:  "An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, or unit. (See ASME NQA-1-2008, NQA-1a-2009 Addenda [1].) <u>For the purposes of this report, item includes services.</u> " (emphasis added)	Include the following footnote to the first usage of "commercial grade items":  "For the purposes of this regulatory guide, item includes services."
3.	Section B, page 4, Reason for Issuance, 1 <sup>st</sup> paragraph	The wording used is slightly confusing.	Change "commercial-grade dedication for items used" to "commercial-grade items to be used"
4.	Section B, page 4, Background, 1 <sup>st</sup> paragraph, 1 <sup>st</sup>	The wording used is slightly confusing.	Change "acceptance processes vary for these programs" to "acceptance processes for these items vary."

**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
	sentence		
5.	Section B, page 4, Background, 5 <sup>th</sup> paragraph	The 1st sentences in this paragraph does not seem to be related to the 2 <sup>nd</sup> and 3rd. The first one describes a commission action in 2011 (issuing a paper), and the other sentences describes things that apparently happened in 2014, Revision 1 to NP-5652 and TR-102260, and a determination by the NRC. Also, the determination by the NRC does not have a reference (e.g. a generic letter number, etc.).	<p>Revise the paragraph as follows:</p> <p>“Commission paper SECY-11-0135, “Staff Plans to Develop the Regulatory Basis for Clarifying the Requirements in Title 10 of the <i>Code of Federal Regulations</i> Part 21, Reporting of Defects and Noncompliance” (Ref. 10), was issued in September 2011. <u>In the SECY (page 9, second paragraph, NRC Staff indicated that “development of regulatory guides for . . . dedication activities will be an important part of the rulemaking effort. Wherever possible, these guides will consolidate and expand on existing industry guidance.”</u></p> <p>In September 2014, EPRI issued Revision 1 to EPRI NP-5652 and TR-102260. The NRC determined that this latest EPRI dedication guidance is consistent with the existing 10 CFR Part 21, <u>which is the subject of this regulatory guide.”</u></p>
6.	Section B, Background, page 4 last paragraph continuing to top of page 5	The discussion makes a strong distinction between qualification and dedication. Section C.2 reinforces the acceptability of EPRI TR-106439 and EPRI TR-107330 for the dedication of digital I&C equipment. The two EPRI	It would be useful to clarify whether qualification testing done in accordance with EPRI TR-107330 is a Method 1 verification of critical performance characteristics as

**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
		<p>documents and the associated NRC safety evaluation reports use dedication and qualification interchangeably with respect to commercial digital I&amp;C equipment. In particular, qualification testing for seismic, environmental, EMI/RFI and electrical isolation capabilities are discussed in the context of critical characteristics for dedication.</p> <p>RG 1.152, Revision 3, also uses the terminology interchangeably. It notes that EPRI TR-106439 can be used to satisfy IEEE Std 7-4.3.2-2003 requirement 5.4.2 for qualification of existing commercial computers.</p>	<p>outlined in EPRI TR-106439.</p>
7.	Section B, Background, page 5, paragraph from page 4, 1 <sup>st</sup> sentence	<p>The stated purpose of commercial-grade dedication confuses the objective of dedication (acceptance process) with the design process. As defined in 10 CFR Part 21 and confirmed in NRC DCS-000654 letter from NRC to Shaw AREVA MOX Services dated December 17, 2012, U.S. Nuclear Regulatory dedication is an acceptance process undertaken to provide reasonable assurance that a commercial grade item to be used as a basic component will perform its intended safety function.</p>	<p>Revise sentence to state:</p> <p>“The purpose of commercial-grade dedication acceptance is to provide reasonable assurance that <u>a commercial grade item to be used as a basic component will perform its intended safety function</u>. This includes performing its safety function during normal and accident conditions. Therefore...”</p>
8.	Section B, Background, page 5, paragraph from page 4, last sentence	<p>The following sentence does not accurately represent the intent of EPRI 3002002982.</p> <p>“The EPRI report specifies that if absolute assurance of compliance with all applicable requirements of a Code or standard is required, the item should be procured as a basic component.”</p> <p>In its correct context, this sentence is part of a paragraph in</p>	<p>Revise the sentence to state:</p> <p>“The EPRI report specifies that if absolute assurance of compliance with all applicable requirements of a Code or standard is required, the item should be procured as a basic component <u>or otherwise controlled in accordance with a 10 CFR Part 50,</u></p>

**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
		<p>EPRI 3002002982 Section 5.2.2, Page 5-23 that reads:            “If absolute assurance of compliance with all applicable requirements of a code or standard is required, the item should be procured as a basic component. <u>If not, and it is possible to dedicate the item based on intended end-use applications, proceed to Step 5.2.3.</u>” (emphasis added)</p> <p>Section 5.2.2, Page 5-23 is guidance on how to proceed with the dedication process after deciding the item will be dedicated (instead of being otherwise controlled in accordance with an Appendix B QA program without dedication), and after the dedication process has been started for the item. In this context, the sentence is the first part of a condition that offers the option of dedicating the item for its specific end use application(s).</p> <p>Without including the follow on-sentence, the NRC document could be misinterpreted to mean that it is not permissible to dedicate an item that must comply with any code or standard – which will restrict the ability to dedicate items for specific end-use applications / safety functions (without certifying to all the requirements of the specification) and restrict the ability to accept items for use using Appendix B quality controls without any dedication.</p> <p>Section 5.2, Page 5-7 (basic description of screening for eligibility sub-process) of the EPRI report includes the following statement that correctly represents the intent of the EPRI report and is appropriate for use in the context of the regulatory guide:</p> <p>“If the item is not eligible for dedication, it must be procured as a basic component or otherwise controlled in</p>	<p><u>Appendix B-compliant QA program.”</u></p>

**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
		accordance with a 10CFR50, appendix B-compliant QA program."	
9.	Section C, page 7, Staff Position, 1 <sup>st</sup> indented paragraph	DG-1292 uses the term "commercial-grade dedication of <u>parts</u> "; however, the term used in 10 CFR Part 21 and the EPRI guidance is "items", which includes more than parts.	Change "commercial-grade dedication of parts" to "commercial-grade dedication of items"
10.	Section C, page 7, Staff Position, item 1	<p>The NRC's discussion of EPRI guidance documents NP-7484 and TR 105849 related to seismic qualification creates confusion and appears inconsistent with other NRC guidance on this topic.</p> <p>Regulatory Guide 1.100, Seismic Qualification of Electrical and Active Mechanical Equipment and Functional Qualification of Active Mechanical Equipment for Nuclear Power Plants, Revision 3 is the NRC document that provides guidance on seismic qualification. RG 1.100 already addresses the use of experience data (similarity). In fact, the following statement in DG-1292 appears inconsistent with RG 1.100</p> <p>"The NRC . . . in general does not find the use of generic testing data bases acceptable as a means for maintaining or providing seismic qualification of seismically sensitive replacement components."</p> <p>DG-1292 adequately discusses the relationship between dedication and qualification in Section B, Background on pages 4 and 5. The discussion of qualification in item 1 of Section C on page creates confusion because it does not relate to dedication or the discussion in Section B.</p> <p>Finally, the reference to "NP-7874" contains a typographical error, and should be "NP-7484".</p>	<p>Revise item 1 to state:</p> <ol style="list-style-type: none"> <li>1. EPRI 3002002982, "Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications: Revision 1 to EPRI NP-5652 and TR-102260," September 2014", in Section I.3 refers to two EPRI guidance documents, NP-7484 "Seismic Technical Evaluation of Replacement Items for Nuclear Power Plants (STERI)" (Ref. 14), and TR 105849, "Plant Support Engineering: Generic Seismic Technical Evaluations of Replacement Items for Nuclear Power Plants," Revision 1 (Ref. 15). <u>These documents have not been reviewed or approved by the NRC as an acceptable approach for meeting an NRC requirement. NRC guidance on qualification is found in Regulatory Guide 1.100, Seismic Qualification of Electrical and Active Mechanical Equipment and Functional Qualification of Active Mechanical Equipment for Nuclear Power Plants,</u></li> </ol>

ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants*  
[Docket ID NRC-2016-0133]

No.	Affected Section and Page Number	Comment/Basis	Recommendation
			<u>Revision 3.</u>
11.	Section C, page 7, Staff Position, item 1, next to last sentence	"No changes" is inconsistent with accepted practices and is an unrealistic acceptance criterion for an equivalency evaluation to "confirm that an alternative item not identical to the original item will satisfactorily perform the design function(s) of the original item."	<p>The previous comment recommends that the sentence be deleted. Any discussion of equivalency evaluation in the regulatory guide for commercial-grade dedication should be limited to the inter-relationship and guided by the discussion from EPRI 3002002982 Section B.3.3.2 page B-5:</p> <p style="padding-left: 40px;">"The equivalency evaluation in itself is not a means to accept a commercial-grade item for safety-related use as defined herein. Rather, it is a sound engineering method to ensure that an alternative item specified is an acceptable substitute for the originally designed item. For a commercial-grade item requiring dedication, verification of the identified critical characteristics by an appropriate dedication method(s) would still be required to verify the acceptability of the replacement item."</p>
12.	Section C, page 7, Staff Position, item 2	<p>The following statement regarding four (4) EPRI guidance documents related to digital devices could be misinterpreted to mean that the four (4) documents have been reviewed by NRC and found to be unacceptable.</p> <p style="padding-left: 40px;">"The remaining four guidance documents, EPRI 1025283, "Commercial-Grade Digital Equipment for High-Integrity</p>	<p>Revise the statement as follows to clarify the status of the 4 documents:</p> <p style="padding-left: 40px;">The remaining four guidance documents, EPRI 1025283, "Commercial-Grade Digital Equipment for High-Integrity Applications: Oversight and Review of Evaluation and</p>



**ATTACHMENT – Industry Comments on Draft Regulatory Guide DG-1292 *Dedication of Commercial-Grade Items for Use in Nuclear Power Plants***  
**[Docket ID NRC-2016-0133]**

<b>No.</b>	<b>Affected Section and Page Number</b>	<b>Comment/Basis</b>	<b>Recommendation</b>
		<p>Applications: Oversight and Review of Evaluation and Acceptance Activities” (Ref. 18); EPRI TR-107339, “Evaluating Commercial Digital Equipment for High-Integrity Applications: A Supplement to EPRI Report TR-106439” (Ref. 19); EPRI 1011710, “Handbook for Evaluating Critical Digital Equipment and Systems” (Ref. 20); and EPRI TR-103291 “Handbook for Verification and Validation of Digital Systems” (Ref 21), have not been approved by the NRC as an acceptable approach for meeting an NRC requirement” (sic)</p> <p>To the best of our knowledge, the NRC has not formally reviewed these documents or found them to be unacceptable.</p>	<p>Acceptance Activities” (Ref. 18); EPRI TR-107339, “Evaluating Commercial Digital Equipment for High-Integrity Applications: A Supplement to EPRI Report TR-106439” (Ref. 19); EPRI 1011710, “Handbook for Evaluating Critical Digital Equipment and Systems” (Ref. 20); and EPRI TR-103291 “Handbook for Verification and Validation of Digital Systems” (Ref 21), have not been <u>reviewed or</u> approved by the NRC as an acceptable approach for meeting an NRC requirement.”</p>