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Docket: NRC-2020-0245

Environmental Qualification of Certain Electrical Equipment Important to Safety for Nuclear Power Plants

Comment On: NRC-2020-0245-0001

Environmental Qualification of Certain Electrical Equipment Important to Safety for Nuclear Power Plants

Document: NRC-2020-0245-DRAFT-0006

Comment on FR Doc # 2020-27717

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General Comment

See attached file requesting an extension of the public comment period.

Attachments

EQPS RG 1.89 Comment Period Extension Request



February 10, 2021

Mr. Meraj Rahimi,
Chief Regulatory Guidance and Generic Issues Branch
Division of Engineering
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Request for Extension of Comment Period Regarding Draft Regulatory Guide, “Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants”

Dear Mr. Rahimi,

Curtiss-Wright hereby requests an extension of time for comments on draft Regulatory Guide DG-1361, “Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants,” which is to become Revision 2 of Regulatory Guide 1.89, of the same title. See 85 Fed. Reg. 81958, December 17, 2020. Curtiss-Wright manages and provides access to the Equipment Qualification Power Suite,TM which among other things provides members with access to databases containing activation energy information. Licensees, vendors, test laboratories and architect engineering firms domestically and abroad are members of this service, including over 75% of the operating nuclear power plants in the United States. This service began with the development and licensure of the Equipment Qualification Data Bank in 1981 for the purpose of exchanging information and data related to equipment qualification. For over three decades, Curtiss-Wright and its predecessor companies have hosted the annual EQ Technical Meeting (EQTM), which has had the participation of many NRC staff members. For most of that time the EQTM has been co-hosted by Curtiss-Wright and the Nuclear Utility Group on Equipment Qualification (NUGEQ).

With this letter, Curtiss-Wright requests a 60-day extension of the proposed comment period, to April 16, 2021, consistent with the request made by NUGEG in its request of January 31, 2021 and supplemental information provided on February 2, 2021. We believe that 60 days is a reasonable request for the reasons stated in the NUGEQ request and supplemental information.

A revision to Regulatory Guide 1.89 (RG 1.89) is long overdue. It has now been more than 36 years since it was last revised, and more than six years since the expected release for public comment stated in a periodic review performed in 2014 (ADAMS Accession Number ML14070A119) and a year past the expected release for public comment stated in a periodic review in 2018 (ADAMS Accession Number ML18354A861). During this 36-year period since the last revision to RG 1.89, the Standard it endorses, IEEE Standard 323 (now the joint standard IEC/IEEE 60780-323), has been revised and reaffirmed several times. NRC Staff members have participated in and chaired subcommittees overseeing these changes. The joint logo standard has a stability date of 2023 at which time it will be reconfirmed, withdrawn, replaced by a revised edition or amended.

While it is important to have regulatory recognition and endorsement of the modernization of this standard, incorporating decades of qualification experience, it is more important to have regulatory clarity of methods acceptable to the NRC. Additional time to provide comments will allow development of constructive comments that explain consensus methods developed by practitioners of the equipment qualification discipline, sometimes with tacit approval of the NRC staff, that can be incorporated in the Regulatory Guide or inform future changes to the joint logo standard.

Just one example of where DG-1361 lacks this regulatory clarity and leaves both licensees and NRC inspectors wanting for guidance can be demonstrated by review of the potential impact of certain sections of the draft guide. DG-1361, Section C.1.j(3) states “Activation energy values should be based on the testing of the specific compound used in the equipment and on the most relevant material property and property endpoint (i.e., failure mechanism). It also states, “The selected activation energy values should be traceable to a specific test report for which these values were established, including the specific material property for which the activation energy was developed and how that material property is related to the function of the material in question.” These statements show a lack of recognition of the limited availability of activation energies for specific compounds, material properties and material endpoints, and does not recognize the substantial cost and time required to develop activation energies without a corresponding increase in safety. These statements represent guidance for definition, justification and documentation of activation energies that goes beyond what is currently required by the regulation, 10 CFR 50.49, and the standard which the draft guide is attempting to endorse.

Examination of some Unresolved Issues (URIs) issued during the recent round of NRC Inspections under Inspection Procedure 71111.21N will demonstrate the inadequacy of this guidance. URI 05000390, 391/2017007-05 (Watts Bar Inspection Report 2017-007 (ADAMS Accession Number ML17220A153)) and URI 05000395/2018010-06 (VC Summer Inspection Report 2008-010 (ADAMS Accession Number ML18094A162)) both raise issues with the activation energy for electronic components in Barton transmitters. In these two URI cases, an extremely conservative original activation energy of 0.5 eV was assigned by the supplier, Westinghouse. The Westinghouse activation energy basis does not meet the specific compound, material property and material endpoint criteria of DG-1361. The manufacturer, Barton, assigned a higher activation energy of 0.78 eV for the electronic components in later qualification reports. In fact, the activation energy of 0.78 eV has been widely used for electronic components in transmitters of other manufacturers, often citing the same space program report cited in the VC Summer Inspection Report, as well as for other equipment. Although both cited URIs were eventually closed as violations, neither closure resolved the original issue of whether or not the activation energy used by the licensee was appropriate or adequately justified and documented. Without additional clarification in a revision to RG 1.89 concerning definition, justification and documentation of activation energy bases, future unresolved issues are likely. This is only one example. Additional time is needed to collect and present supporting information to present a cohesive, industry-wide approach and regulatory basis for consensus approaches of equipment qualification practitioners.

Curtiss-Wright also requests an opportunity to meet with the NRC Staff in a public meeting prior to the end of the comment period in order to discuss critical regulatory matters associated with this Regulatory Guide.

Best Regards,

A handwritten signature in black ink that reads "Rick Weinacht". The signature is written in a cursive style with a large, sweeping initial "R".

Rick Weinacht
Manager Nuclear Technical Support

cc: Mr. Michael Eudy, Office of Nuclear Regulatory Research
Mr. Matthew McConnell, Office of Nuclear Reactor Regulation