

# IEEE-382 Working Group

Status Report: October 2005

# IEEE-382 Members & Guests

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Pat McQuillian	Flowserve- Limitorque
Ed Mohtashemi	GE Nuclear
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Tim Chan	TVA
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# Timeline

ID	Task Name	1st Quarter		2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Group Formation																						
2	Kick-off Meeting (San Diego, CA)																						
3	PAR 382 Accepted																						
4	W.G. Meeting (Huntsville, AL)																						
5	W.G. Meeting (Telecom)																						
6	W.G. Meeting (Telecom)																						
7	W.G. Meeting (Telecom)																						

- PAR accepted June 2005
- W.G. Meeting in Huntsville (Jim Gleason presented an overview of the philosophy behind recent changes to the IEEE-323 mother standard)
- W.G. starts compiling a list of the changes from the various stakeholders (e.g. utilities, actuator vendors, NSSS suppliers, test labs, etc.).
- W.G. recognizes limited utility input and solicits additional utility guests to participate.
- W.G. considers need for major overhaul of the standard to come into line with IEEE-323.

# PAR

## **13. Scope of Proposed Project:**

This standard describes the qualification of all types of actuators, including damper actuators, for Safety-Related Power-Operated Valve Assemblies for nuclear power plants. This standard may also be used to separately qualify actuator components.

**Is the completion of this document contingent upon the completion of another document?**

No

## **14. Purpose of Proposed Project:**

The standard establishes the minimum requirements for qualification of safety-related power driven valve actuators.

## **15. Reason for the Proposed Project:**

The reason for the project is to:

(1) Revise this standard to be consistent with IEEE Std 323-2003 (IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations) and IEEE Std 344-2004 (Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations).

(2) Reflect the current state-of-the art,  
and (3) Reevaluate the need of current testing and analytical requirements.

The target users are the nuclear industry.

# Changes Under Consideration

- **Revise type test procedure (Section 6.3) to reflect typical modern test sequence and start to incorporate tests that may be used for condition monitoring in the field.**
  - Add a note that “The qualification sequence shall place the equipment in its worst case end-of-life condition prior to being subjected to its design basis event. To this end, the sequence below describes a typical sequence to achieve that objective. However, an alternative sequence may be used if it is shown to be as severe or more severe than this sequence.”
  - Change the sequence to place radiation aging prior to thermal aging.
  - Move “normal pressurization cycle test” to just prior to the LOCA. The group does not consider this to be an ageing test, but rather a demonstration test. The group also plans to expand on the test definition to provide for alternative test methods.
  - Add additional functional tests between each of the aging mechanisms. This practice is currently being carried out in most modern test programs. The group also plans to investigate possible tests for condition monitoring that may be performed in the field to expand on the concept of end of life condition rather than time based qualified life.
- **Remove in its entirety - Part II “Qualification Cases”**
  - These cases are historical and may not be relevant to new plant construction.
  - One can reference the IEEE-382-1996 specification if he or she wishes to use these LOCA profiles, DBE radiation levels, etc.
  - IEEE-323-2003 no longer has specific test parameters.
  - It is ultimately up to the end-user (e.g. utility or NSSS supplier) to provide the environmental conditions for qualification.
- **Review and possibly expand Annex A “Method of selection of representative actuator(s) for type testing”**
  - May segregate according to actuator type (e.g. motor operators, air operators, etc.)
- **Revise Annex B “Representative normal and design basis event environmental conditions”**
  - May remove specific test parameters but may retain generic figures, etc. for illustrative purposes.
- **Expand Annex E “Performance verification test”**
  - Provide current state-of-the-art testing techniques.
  - Provide better differentiation between actuator types.



# Wrap-up

- The W.G. has concluded that these changes need to be given proper consideration which prohibited us from having the draft specification completed in a few months.
- The W.G. will continue to meet primarily through teleconferences as they have resulted in better participation.
- The W.G. recognizes no standard is perfect and will strive to achieve milestone progress outlined below.
  - October 3<sup>rd</sup> - Agreement on what will be eliminated from the standard (e.g. Part II, specific test parameters, etc.)
  - November 1<sup>st</sup> – Agreement on scope of expansion of the standard with individuals taking responsibility for specific sections.
  - January 2<sup>nd</sup> – Discussion on work completed to date.
  - February 1<sup>st</sup> – Draft of each section to be delivered to secretary.
  - March 1<sup>st</sup> – Secretary to deliver compiled draft standard to W.G.
  - March 15<sup>th</sup> – W.G. to discuss draft standard.
  - March 29<sup>th</sup> - W.G. to vote on outstanding issues with draft standard.
  - April 3<sup>rd</sup> – W.G. to present draft to SC-2 for comments.