MEETINGS

Meetings Held
The last meeting of SC-5 was held in Las Vegas, NV January 19-20, 2015.

Future Meetings
SC-5 will meet in conjunction with the July NPEC 15-02 in Salt Lake City and independently in Key Largo, FL in October.

ACTIVITIES

SC-5, Human Factors, Control Facilities and Human Reliability oversee the following working groups:

WG 5.1 – Human Factors Applications & Methods
WG 5.2 – Human Factors International Conference
WG 5.4 – Human Reliability Analysis
WG 5.5 – Lessons Learned

Activities Started During Report Period

- Members of WG 5.1 began preparation for participation in the NEA/CSNI Workshop on Control Room Validation to be held February 19-21 in Charlotte, NC. Results of this workshop will be evaluated in the development of P2411.
- Members of WG 5.2 began development of a paper, “AN OVERVIEW OF THE IEEE HUMAN FACTORS STANDARD DEVELOPMENT ACTIVITIES,” which will be presented at the 9th International Conference on Nuclear Power Instrumentation, Control, and Human-Machine Interface Technology (NPIC & HMIT), to be held in Charlotte, NC, February 2015.
- Member of WG 5.2 began organizing a round table session, “Meet Your Human Factors Points of Contact” for the 9th International NPIC & HMIT meeting. This roundtable session will include representatives of SC5, among
representatives from other nuclear industry organizations that provide human factors services to the industry (e.g., EPRI, the national labs) and will provide SC5 an opportunity to promote their standards development activities and recruit new members.

**Activities Continued During Report Period**

**WG 5.1 - Human Factors Applications & Methods**

- IEEE 1023 - “IEEE Recommended Practice for the Application of Human Factors Engineering to Systems and Equipment of Nuclear Power Generating Stations and Other Nuclear Facilities.”
  No new activity during this period.

  The PAR for revision of IEEE 1289 was administrative withdrawn in a prior reporting period due to insufficient resources to support this work. During this reporting period SC5 established a process for re-evaluating the availability of a potential champion and working group member to renew work on this standard.

  No new activity during this period.

  No new activity during this period.

  The WG continued efforts to identify a champion to replace the current champion who intended to step-down during 2015. S. Jerrow and R. Hall met on the afternoon of January 20 and continued work on the validation framework. It was decided to develop a set of logic diagrams illustrating the relationship between the overall plant design process, the preliminary or design validation testing, the final ISV and the ongoing plant start up testing program. These diagrams should also illustrate the differences between applications to new designs as well as plant modifications and between conventional plants and small modular design. Current logic diagrams were reviewed as possible starting points for the exercise.

**WG 5.2 – Human Factors International Conference**

- The WG continued efforts to support collaboration between NPEC and ANS for the conduct of international topical conferences on human factors and
instrumentation and control in the nuclear industry. Current efforts focused on soliciting NPEC participation in the 9th International Conference on Nuclear Power Instrumentation, Control, and Human-Machine Interface Technology.

WG 5.4 – Human Reliability Analysis
  The WG has continued development of a revision to the standard for potential future adoption by the IEC. The revisions principally address comments and requested changes by representatives of the IEC.

WG 5.5 – Lessons Learned
- P1707 – “Recommended Practice for the Investigation of Events at Nuclear Facilities”
  The WG continued resolution of technical and editorial comments of the draft recommended practice in preparation for submitting P1707 for a preview to ballot.

Activities Completed During Report Period
- WG 5.1 - Human Factors Applications & Methods:
  - There were no completed milestones on IEEE 1023, IEEE 845, IEEE 1289, or IEEE 1786 during the reporting period.
  - A task group was formed and a kick-off meeting was held for the development of P2411, “Human Factors Engineering Guide for the Validation of System Designs and Integrated Systems Operations at Nuclear Facilities.”

- WG 5.2 International Conference on Human Factors and Power Plants:
  - The following Note will continue to appear in this section of all future NPEC reports for knowledge retention purposes. [Note: Following the conference, Satish Aggarwal, the NPEC Secretary, traveled to IEEE headquarters in Piscataway, NJ to make a plea to the Standards Association and Conference Committee as to why NPEC should be allowed to keep the profits from the Monterey conference. Because we signed a contract, IEEE would not allow NPEC to keep the profits from the Monterey meeting. However, the terms & conditions of future contracts are negotiable. For the next conference we should negotiate prior to signing the contract. If PES is unwilling to negotiate, then NPEC should consider working with SA or another society.]
  - A paper describing the standards development activities of SC5 was accepted for presentation at the 9th International NPIC & HMIT meeting, as well as a proposal for a round table session that will include representation of SC5.
o SC5 gained approval from NPEC and IEEE to sponsor the 9th International NPIC & HMIT meeting

- WG 5.4 Human Reliability Analysis:
  IEEE 1082 – “IEEE Guide for Incorporating Human Action Reliability Analysis for Nuclear Power Generating Stations.” The WG has completed a draft that incorporates changes requested by representatives of the IEC as well as other changes to update the guidance to current practices and terminology. The draft is currently with SC5 for review and comment.

- WG 5.5 – Lessons Learned:
  o The WG solicited and resolved a final round of comments from the WG members and SC5 on P1786.
  o The WG submitted P1786 for a preview to ballot at NPEC 15-01.

STANDARDS/WORKING GROUP STATUS

<table>
<thead>
<tr>
<th>Working Group</th>
<th>Chairman</th>
<th>Standard</th>
<th>Rev/ Reaff Date</th>
<th>Comments</th>
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<td>Generating Stations and Other Nuclear Facilities.</td>
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<td></td>
<td></td>
<td>of Computer-Based Monitoring and Control Displays for Nuclear Power</td>
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<td>The PAR for this standard approved March 2010 and administratively</td>
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<tr>
<td></td>
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<td>Generating Stations</td>
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<td>withdrawn July 2014.</td>
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<tr>
<td>5.1</td>
<td>Bob Waters</td>
<td>1786 – Human Factors Guide for Applications of Computerized Operating</td>
<td>9/22/2011</td>
<td>Published 9/22/11.</td>
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<td></td>
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<td>Procedure Systems at Nuclear Power Generating Stations and other Nuclear</td>
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<td>Facilities</td>
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<td>5.3</td>
<td>Handed off to SC3</td>
<td>933 – Guide for Definition of Reliability Program Plans</td>
<td>12/2004</td>
<td>Reaffirmation approved for 5 years. Transferred ownership to SC3.</td>
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<td>5.3</td>
<td>NA</td>
<td>P1587 – Recommended Practice for Human Interactions with Operating Experience Programs for Nuclear Facilities</td>
<td>PAR approved thru 12/2005</td>
<td>PAR administratively withdrawn 12/7/05. Now defunct.</td>
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<td>5.4</td>
<td>J. Bongarra</td>
<td>P1574 – Recommended Practice for Conducting Human Reliability Analysis for Nuclear Power Generating Stations</td>
<td>PAR expired 12/2006</td>
<td>PAR has been administratively withdrawn.</td>
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<td>5.5</td>
<td>J. Persensky</td>
<td>P1586 – Recommended Practice for Human Interactions with Operating Experience Programs for Nuclear Facilities (Lessons Learned)</td>
<td>PAR expired 12/2005. There is no new PAR under development</td>
<td>PAR has been administratively withdrawn. Progress on hold until WG can complete the new root cause standard.</td>
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<td>5.5</td>
<td>C. Kerr</td>
<td>P1707 - Recommended Practice for the Investigation of Events at Nuclear Facilities (Root Cause)</td>
<td>PAR approved thru 12/31/2016</td>
<td>PAR approved by Standards Committee (NESCOM) 12/7/07. PAR revision approved by Stds. Bd 3/29/12.</td>
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**STATUS OF DOCUMENTS IN BALLOT** - None
Report submitted by David Desaulniers
Chair, SC-5
January 30, 2015