

JANNAF PEDCS and SEPS Convene in Destin, Florida
PEDCS Holds Workshops on HTPB Supply Status and HTPE Propellant Characterization

Attendance topped 200 for the JANNAF 33rd Propellant and Explosives Development and Characterization Subcommittee (PEDCS) and 22nd Safety and Environmental Protection Subcommittee (SEPS) joint meeting held at the Hilton Sandestin Beach Golf Resort and Spa from 6-9 March 2006. A total of 57 papers were presented in 12 technical sessions. PEDCS also presented a specialist session on Nano-Materials for Propellants, which included three technical presentations. In addition to the technical sessions, three workshops were conducted on the topics of Characterization, Aging and Applications of HTPE-Based Propellants; Characterization and Supply Status of R-45 HTPB Polymer; and Ambient Atmosphere Solid Propellant Combustion.

The PEDCS program consisted of seven regular paper sessions, one specialist session, and six subcommittee panel meetings. Paper sessions included presentation of 42 technical papers, with particularly strong content in the areas of propellant process engineering and testing, propellant chemistry and test methods, guns and high gas output devices, and solid propellant ingredients and formulations. This meeting also marked the first full PEDCS paper session devoted wholly to the development of explosive formulations. The Nano-Materials specialist session, organized by the Air Force Research Laboratory, featured presentations from government and industry on the status of nano-aluminum, environmental health issues associated with nano-scale materials, and recent Chinese activities in the field of nano-materials.

The PEDCS Propellant and Process Engineering Panel conducted a workshop on solid propellant formulations based on the hydroxyl-terminated polyether (HTPE) binder system. Presenters from Aerojet, ATK, the Army and the Navy shared information on such topics as HTPE propellant service life, mechanical properties, and aging; application of this propellant family in the tactical arena; insensitive munitions performance in various motor sizes; and processing and material cost issues. Workshop participants agreed to pursue a round robin investigation into the aging characteristics of HTPE-based propellants. Results of this investigation will be presented at future JANNAF subcommittee meetings.

A second PEDCS workshop, focusing on the characterization and supply status of R-45 hydroxyl-terminated polybutadiene (HTPB) polymer, was jointly sponsored by the Propellant Process Engineering and Solid Propellant Ingredients and Formulations panels. Representatives of ATK, Aerojet, the Army, the Navy, the Office of the Deputy Under Secretary of Defense for Industrial Policy, and the Sartomer Company briefed the workshop attendees on issues associated with the possible stoppage in the production of HTPB polymer, as well as concerns over the potential effects of polymer variability. The potential loss of the single domestic source for this critical propellant ingredient has sparked concern and debate within the propulsion community. This workshop served as the first step toward formulating a unified JANNAF position on this ingredient criticality issue. Several risk mitigation options were identified and discussed. PEDCS will continue to monitor this issue and help the community to identify the most favorable options for avoiding an interruption in the supply of HTPB.

The SEPS technical program consisted of the presentation of 15 technical papers in four sessions. Topics of these sessions included technologies related to demilitarization, reclamation and reuse of energetic materials and munitions; range safety, modeling, and instrumentation; pollution prevention and hazardous waste management; and energetic material and ingredient toxicology. Several SEPS panel meetings were also held during the week. A major point of discussion of the SEPS Range Safety panel was the need to recover the momentum that existed following the July 2004 SEPS meeting to revise and update CPIA Publication 394, Hazards of Chemical Rockets and Propellants. Under NASA funding, CPIAC is currently converting Pub 394 into electronic form and inserting sections updated by members of the SEPS community over the past several years. Panel members presented ideas for stimulating interest and

participation in this update process, such as using workshops as bases for preparing revisions, and generating interest in communities beyond range safety and instrumentation. Several panels agreed to organize future technical paper sessions around “hot topics” of current interest to the JANNAF community.

Mr. Stuart Blashill, Director for Energetics Technology at the Naval Air Warfare Center Weapons Division, presented a JANNAF Executive Committee Lifetime Achievement Award to Dr. May Chan for her contributions to the JANNAF community in the fields of solid propellant and explosives formulation and development. Over the past 25 years, Dr. Chan has authored or co-authored more than 70 JANNAF technical papers.

The combined unclassified proceedings of the PEDCS/SEPS meeting, including the presentations given at the HTPE and HTPB workshops, were published on CD-ROM in March. For ordering information, contact CPIAC Customer Service at 410-992-7304 ext. 211 or 202.

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