Clear Lake City Water Authority names facility after longtime NASA employee

For decades, he has contributed to his profession and to his community through service to NASA and the Clear Lake City Water Authority.

In recognition of his foresight and leadership in helping the Clear Lake City Water Authority meet the growing needs of its customers, the Authority recently named its water reclamation facility for its longtime director, Robert T. (Bob) Savely. The dedication ceremony took place at the Robert T. Savely Water Reclamation Facility located at the intersection of Space Center Boulevard and Middlebrook Drive.

Savely has served as director and board secretary or president of the Clear Lake City Water Authority since 1976.

"I like to keep busy and believe in supporting the community in addition to my professional activities," says Savely, NASA senior scientist in JSC's Automation, Robotics and Simulation Division. "Community service starts with the individual. If there's trash out in front of your house, you need to pick it up and not wait for someone to do it for you. When time in your personal life permits, there are always important public service and volunteer opportunities."

The first unit of the Clear Lake City Water Authority Water Reclamation Facility was built during 1967-1969 to process a flow of 2.25 million gallons per day to serve 25,000 people in the Clear Lake area. Through the years, the plant has been systematically expanded. It now serves approximately 16,000 acres with a population of 70,000 and is currently permitted for a flow of 9 million gallons per day. The upgraded plant provides a state-of-the-art tertiary treatment facility including ultraviolet disinfection.

> ***I believe that working for NASA is a rare opportunity to participate in making science fiction come true.***
> – Robert Savely

Full development of the project service area is expected to occur in 2002 when the plant capacity is increased to a flow of 10 million gallons per day to serve a projected population of 100,000.

Savely joined NASA in 1963, working on developing navigation systems for the Apollo spacecraft and later applying the same expertise to the space shuttle system. He began his career working on the onboard navigation software for the Apollo spacecraft. He soon became involved in a development role for the control center software for onboard navigation, a role that would continue in various forms throughout his career. He worked as a flight controller for all Apollo lunar missions. He noted that on Apollo 12, the navigation team was able to bring the Lunar Excursion Module to within a few hundred feet of the Lunar Surveyor lander that was used early in NASA's lunar exploration program, a tremendous feat given the tools available at that time.

NASA JSC Photo 2000e19536 by Bill Stafford

Robert T. (Bob) Savely, NASA senior scientist in JSC's Automation, Robotics and Simulation Division, checks the water at the reclamation facility recently named in his honor by the Clear Lake City Water Authority.

He transitioned his onboard navigation experience into the Space Shuttle Program and participated in the design, development, and operational support of the shuttle onboard navigation function. He also served as a flight controller for the first shuttle flights through 1983. According to Savely, in those days, it was common to rotate between operations support and development projects, keeping the engineers fresh for all of their different activities.

As the shuttle became operational, Savely saw an opportunity to move into the rapidly advancing field of artificial intelligence technology. With management backing, he formed the group that became the Software Technology Branch. He directed a staff of talented engineers in the development of expert systems software for failure detection, isolation, and reconfiguration. These expert systems and their successors are used today in the Mission Control Center as well as other areas inside and outside of NASA. A basic tool used for constructing expert systems, the C Language Integrated Production System or CLIPS, was developed by STB personnel and the team received a $40,000 NASA Space Act Award for its efforts.

Savely's team continued to leverage its activities into advanced tools for training applications, planning and scheduling systems, neural network technology, fuzzy logic applications, and parallel-distributed processing technology. The Intelligent Computer-Aided Training system provides a "smart instructor" to enable the teaching of basic, intermediate, and advanced classes on a variety of subjects. With time, the ICAT can tailor its instruction to the student's abilities, for more effective training. Other tools developed by the STB include the Electronic Documentation Project, used by the Mission Operations Directorate to provide on-line management of many of the flight documents used in mission support. Closer to home in AR&SD, the RMS Assistant project was implemented based on earlier STB expert systems technology used to support MCC flight controllers.

With his experience in advanced software technologies, regional university grants, and training technologies, Savely enjoys mentoring and advising the talented engineers and scientists of AR&SD in his role as division chief scientist.

He says that Apollo 11 is the highlight of his career. "There will never be a chance to do something like that again in all eternity." He also pointed out that Apollo 8 was a great achievement and inspiration.

And the first shuttle flight ranks second. "Getting the shuttle back to the runway the first time was another critical milestone. The onboard navigation system for the shuttle was relatively complex," he said.

He received the Presidential Medal of Freedom for Apollo 13 as a member of the mission operations team. He still calls the Apollo 13 mission experience "traumatic": "I've never seen the movie. I don't think I could stand the stress."

Savely finds his current work in the AR&SD fascinating and challenging, with many opportunities to contribute to several projects. His current work caps off what has been a varied and successful career. "I've had three separate careers – Apollo, shuttle and my current work in technology development," he said.

Key projects that the division is working on include the Simplified Aid for extravehicular activity (EVA) Rescue device, a mini-maneuvering unit that can provide contingency maneuvering capability for a spacesuited crewmember during EVA operations on the space shuttle and the space station, and Robonaut, a robotic system that may perform future space-walking tasks using an advanced mechanical hand.

Savely looks back on a career filled with exciting events and a life of service to his community.

"I am very grateful for the opportunities that I have had and continue to have at JSC," said Savely. ■

JSC's eldest employee turns 80

Members of JSC's Avionic Systems Division, where Frank Metcalf has worked for the last few years, and other guests recently gathered to help him celebrate his 80th birthday. Among the well-wishers were JSC Director George Abbey, JSC Associate Director (Management) Sue Garman, JSC Chief Engineer Leonard Nicholson, JSC Human Resources Director Greg Hayes, Engineering Directorate Director Frank Benz, Engineering Directorate Deputy Director Jim Jaax, and Avionic Systems Division Chief Ken Land.

Metcalf was born on Flag Day, June 14, in 1920 in Rockville, Connecticut. Before joining NASA, he worked for Bell Labs in Winston-Salem, North Carolina; Vickers, Inc. in St. Louis, Missouri; and McDonnell Aircraft, also in St. Louis. At McDonnell, he worked on the Mercury and Gemini trainers. He was transferred to Houston with the Gemini trainers where he has been ever since. He joined NASA shortly after coming to Houston.

Some of Metcalf's other career projects at NASA have been working the Human-Rated Vacuum Chambers in the Crew Systems Division; helping develop the RS-18 scanner for the RB-57 aircraft when he transferred to the Infrared Scanner Group; and working flight hardware experiments for the Space Shuttle Program after transferring to the ASD. He currently supports information technology resources management for the ASD.

At 80, Metcalf still jogs daily, five days a week, and is a living example of good health.

Metcalf says that his main hobby now is taking care of his wife, Evelyn. He enjoys his work and has no immediate plans for retirement. ■

NASA JSC Photo 2000-04746

JSC Director George Abbey presents a commemorative flag from a shuttle mission to Frank Metcalf in honor of his 80th birthday.