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New Software Improving Transfers Within SRS Liquid Waste Program

AIKEN, S.C. (November 9, 2023) – A digital transformation initiative in the Savannah River Site (SRS)'s waste vitrification plant is ensuring accuracy and consistency and streamlining operations of nuclear waste transfers.

SRS liquid waste contractor Savannah River Mission Completion (SRMC) developed and implemented computer-aided software to assist control room operators at the Defense Waste Processing Facility (DWPF). That facility converts the high-level liquid waste stored in the SRS Tank Farms into a glass form within stainless steel canisters that is safe for long-term storage and disposal.

Material such as radioactive waste and other liquids are transferred throughout DWPF using the plant's distributed control system — an automated computer system with physical control elements. Such systems are also used to make material transfers in SRS' other liquid waste facilities, including the Salt Waste Processing Facility (SWPF), Saltstone Production Facility and Tank Farms, which is a group of underground waste-storage tanks.

As a 24/7 nuclear facility, DWPF operators transfer materials in, out and through the plant over 1,500 times per year. The new software directly assists operators who are used to making those transfers manually on the distributed control system, according to Will Brown, SRMC Information Technology/Operational Technology Programs and Innovation manager.

Collaborating with SRMC employees across many disciplines, Brown's team implemented the computer-aided software that enhances operability of DWPF transfers. Specifically, the software is programmed to follow existing transfer procedures verbatim, which automates facility equipment manipulation per procedure; provide enhanced plant monitoring, both prior to and during material transfers; predetermine the amount of material to be transferred and move exactly that much material; and complete calculations that support the transfer.

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Over 130 transfers between May and September this year have been completed with the new software with a 100% success rate.

Other benefits of the software include providing real-time transfer status and aggregated transfer data on a single screen. Overall, this computerized transfer assistance provides exceptional consistency, reduced operator touch points and improvement of transfer accuracy.

Mirwaise Aurah, SRMC chief information officer and engineering director for operational technology, said with SRMC's drive toward digital transformation, it is important to find the right balance between the risks and benefits of using technology to make lives and jobs safer and more efficient.

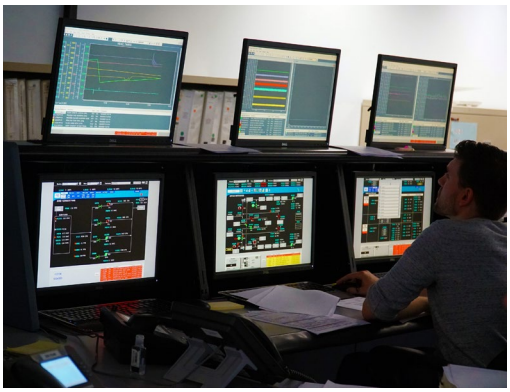
"Engaged and attentive operators ensure the success of the facility's critical processing system," Aurah said. "And this computerized enhancement reduces the risk of human-performance-related errors during transfers."

SRMC President and Program Manager Dave Olson said this innovative enhancement is an ideal example of SRMC's core value of continuous improvement in action.

"The successful implementation of the transfer-assistant software into the Defense Waste Processing Facility paves the way for further enhancements throughout the Liquid Waste Program by adding more of these assistants to all facilities' control systems," Olson said.

He noted the software implementation was a multi-disciplined effort that needed a wide group of contributors to succeed.

"Thank you to all who worked together to assemble, deploy, refine and improve this important product," Olson said. "I am proud of SRMC's commitment to safety, reliability and continuous improvement — all of which are attributes that are critical as we advance our mission."



Savannah River Mission Completion (SRMC) control room operator Garrett Jarnagin works at a distributed control system console for the Defense Waste Processing Facility (DWPF). SRMC has implemented software to assist control room operators with the operability and efficiency of waste transfers within DWPF.