

Making history: diving into the fuel bay

BRUCE A DRY FUEL STORAGE: GETTING READY FOR WANO 2010 AND 1-2 RESTART

ASI Group diver Dave Reaker made Canadian history at Bruce A on Jan. 5 with the first dive into a bay containing irradiated fuel. Reaker entered the Secondary Irradiated Fuel Bay (SIFB) to make repairs to the bay's liner.

The Bruce A Dry Fuel Storage (DFS) program is off to a good start in 2010 with this timely repair. Operations have taken the lead in making performance and reliability improvements like this one to ensure the continued success of the DFS program. The liner repair required a great deal of planning and co-ordination, incorporating lessons learned from previous dive jobs that didn't involve used fuel. Permitry, scaffolding and scheduling was complicated, but the job site was well prepared and no adjustments were required when the ASI Group divers arrived to do their part. Radiation Protection was a critical part of the planning. The team completed many prerequisite tasks to meet the target date.

"It was a well co-ordinated effort and nice to be in and out as scheduled," said Scott Black, ASI Group's Supervisor.

The team was pleased that the job went well.

"There was a strong focus on customer satisfaction by Rad Safety and Maintenance," said Leo Lootsma, Operations FLM. "For example, the Scaffolders and Civil Maintainers met us at the job site before and after task completion to ensure the work was done right the first time. This high level of support was the key to our success."

The fundamentals of radiological safety were rigidly employed – time, distance and shielding. Only one diver entered the water and the dive was fully planned to minimize the amount of time spent in the bay. Fuel bundles and equipment were cleared from the area to maximize distance from sources creating a "safe dive zone" that was verified with extensive surveys conducted by our Radiation Protection department. The shielding effect of the water was maximized because the diver kept his distance from the fuel stacks by staying close to the north wall while he entered, exited and worked in the bay and he was connected to the ladder and scaffolding the whole time.

It was important to get the liner repaired quickly. With the liner damaged, one of the big bay tools couldn't be stored on its normal bracket, but instead had to be left hanging from the gantry crane, where it was an obstacle to operators, increased their workload, and took up space needed for dry fuel storage shipments. Since the repair, the crew not only saves 78 days/year of workload, but have more space available and have cleared any rigging and lifting concerns.

Continually making incremental improvements like this one will contribute to the success of the Dry Fuel Storage program.

All told, there were more than 20 improvements made in 2009 that impacted safety, equipment reliability, procedure adherence, and foreign material exclusion (FME). The DFS



ASI Group diver Dave Reaker entered the secondary irradiated fuel bay (SIFB) to make liner repairs. This is the first time in Canada a dive has been made into a bay containing irradiated fuel.



What the diver saw: view of the SIFB taken from the camera on the diver's helmet, and transmitted to the dive supervisor's monitor.

Operators and their FLM have taken ownership of the program by driving these improvement initiatives. The SIFB liner repair is noteworthy because it is an example of what operational excellence looks like when driven by a team showing exceptional ownership and co-operation.