

## SUPER-SAW IMPROVES SUBMARINE MAINTENANCE

Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY & IMF) has adapted special tooling, which was developed to cut submarine pressure hulls for maintenance and repairs. A heavy-duty, air-powered, reciprocating saw called the *Super-Saw* is used to make these *access cuts*. Access cuts are sections of a ship's hull plating



which are removed for access, installation, or removal of equipment. The removed sections of the hull are later reinstalled.

Access cuts are made early in the ship repair process to expedite removal of ship's components that are scheduled to be refurbished in the shipyard's waterfront

machine shops. Access cuts used to be made by a cutting torch method called *air arcing*. Air arcing generates metal fumes by vaporizing an area of the metallic hull heated to its melting point by the cutting torch. Metal fumes generated by this process can be an inhalation hazard to workers in adjacent areas as well as a fire hazard. Replacing the cutting torch with the *Super-Saw* eliminates both of these hazards.

The *Super-Saw* process also reduces the risk of back injuries since the heavy, awkward to handle panels adjacent to the inside of the submarine hull do not have to be removed during the hull cut procedure or replaced at the end of the project. Although the *Super-Saw* cutting process takes longer than torching, the *Super-Saw* method is far more efficient and cost effective. Since using the *Super-Saw* eliminates fire hazards, there is no need to commit resources for installation of fire protective material and other fire prevention strategies. Monitoring and surveillance for metal fumes is no longer necessary, because the *Super-Saw* eliminates the risk of metal fumes being released.

Pearl Harbor's use of the innovative *Super-Saw* successfully demonstrates that a ship repair facility with limited structural trades resources can accomplish access hull cuts with results that compare favorably to the cost and performance schedule of the conventional torch method. During PHNSY & IMF's recent Command Performance Inspection, the *Super-Saw* process was validated by the Naval Sea Systems Command Inspector General team as a Best Management Practice.

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