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Subject: Yellow Alert: Saw Blade Failure Causes Recordable Injury

Title: Yellow Alert- Saw Blade Failure Causes Recordable Injury

Date: November 13, 2001
Identifier: 2001-RL-HNF-0041

Lessons Learned Statement: Using an incorrect tool (in this case a saw blade) for a job can cause unexpected failures that put workers in hazardous situations.

Discussion of Activities: A Carpenter in the 400 Area was cutting lexan with a table saw when several teeth broke off the blade causing the material to "kick back" and rip off the carpenter's fingernail. The "PlanerCombo" blade was manufactured by Oldham as part of its "Woodworking Line." It is a carbide-tipped, 12-inch blade with 60 teeth. It is the blade of choice at Hanford for general purpose cutting because it produces a very low cutting pressure, provides a balanced cutting force, and allows the chips to fall free in the chip spaces

Analysis: The picture at <http://www.hanford.gov/lessons/sitell/1101/sawblade.jpg> shows the four broken teeth. The carpenters indicated that until this event they had only seen carbide tips fall off and not the whole tooth as in this case. The lexan piece being worked showed evidence of three teeth digging in but not completing the cut. Oldham literature states that the leading point is susceptible to wear and damage from shock loads. The manufacturer reported that the PlanerCombo blade is not recommended for cutting plastics. They recommended using the "TripleSolid" blade from their "Commercial" line (product number 120P7260) for cutting plastics, including lexan. A metallurgist examined the blade and confirmed that shock load was the apparent cause of the tooth failures. He indicated that there was no visual appearance of overheating, such as discoloration or metal deformation near the teeth.

Recommended Actions:

1. Inspected table saw blades for wear and replace the blade if there is any evidence of discoloration or deformation.
2. Carpenter shops should purchase blades approved for plastics or find a model that is good for all cutting applications.

Estimated Savings/Cost Avoidance: N/A

Priority Descriptor: YELLOW/Caution

Work / Function: Machining and Fabrication

Hanford Functional Categories: N/A

Hazard: Personal Injury - Mechanical Injury; Power Tools

ISM Core Function: Analyze Hazards; Develop/Implement Controls

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Authorized Derivative Classifier: Not required

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Keywords: circular saw; kickback; cutting

References: None provided