

# Engineering Systems Inc. PRESS RELEASE

## For Immediate Release

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### ESI Engineers Release Brush Chipper Hood Paper

AURORA, IL - - 11/22/2011 - - Several senior [ESI](#) engineers, including [Michael E. Stevenson](#), Ph.D., P.E., [Dennis B. Brickman](#), P.E., [John A. Wilkinson](#), P.E., and [Matthew T. Kenner](#), P.E., recently released a peer-reviewed paper entitled “*Failure Analysis of a Commercial Brush Chipper Hood*”. The paper is currently published as an *Online First* article through ASM International’s bimonthly [Journal of Failure Analysis and Prevention website](#), scheduled for hard copy publication in *V.11 #6, December, 2011*.

The paper describes the failure analysis and accident reconstruction of a brush chipper, whereby an initial impact from the rotating disk with the chipper’s hinged hood precipitated a chain of events that culminated with the ejection of the hood from the chipper. This analysis addressed whether or not the welds and/or four additional (aftermarket) retaining bolts used to restrain the hood were sufficient to contain the energy from the disk strike, thus prohibiting the hood from departing the machine and striking the operator.

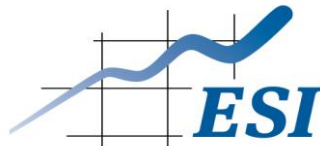
This was an ESI multidisciplinary analysis and evaluation from the Microscopy and Materials Science, Mechanical Engineering, and Safety capabilities – performing a complete accident reconstruction and failure analysis. [Materials Science](#) was used to determine, based on witness marks, which of the pins used to retain the hood were in place at the time of the incident, and the attitudes (positions in space) of the hood when it was initially struck by one of the knife blades attached to the disk and then struck again by one of the fan blades. [Mechanical Engineering](#) was used to estimate the mechanical energy imparted to the hood by the knife strike, and this estimate was correlated with the location of the ejected hood and various eye witness statements. The [Safety Engineering](#) portion of this investigation included a review of proper operational standards and procedures, which clearly indicated all access panels on the machine should be secured prior to operation and never opened while the chipper is running. The following four ESI consultants, also noted above, were key contributors to the investigation and reconstruction.

Dr. Stevenson, President, Principal, and CEO specializes in failure analysis, material and mechanical testing, mechanics, corrosion, metallurgy, testing, and inspections. He is a licensed P.E., registered in several states. He can be reached at the [Atlanta \(Norcross\), GA office](#) at 866-596-3994, or by email at [mestevenson@esi-atl.com](mailto:mestevenson@esi-atl.com).

Mr. Brickman, Senior Managing Consultant and P.E., specializes in mechanical engineering, safety, and design and has over 25 years experience in safety studies, accident investigation, failure analysis, experimental testing, warnings and instructions, and standards research. He can be reached at the [Chicago \(Aurora\), IL office](#) at 630-851-4566 or by email at [dbbrickman@esi-il.com](mailto:dbbrickman@esi-il.com).

Mr. Wilkinson, Senior Consultant and Illinois Regional Office Manager has over 30 years of diverse experience, specializing in design analysis, failure analysis, applied mechanics, fatigue analysis, fracture mechanics, and finite element analysis in multiple industries. He is also a licensed P.E. and can be reached at the [Chicago \(Aurora\), IL office](#) at 630-851-4566 or by email at [jawilkinson@esi-il.com](mailto:jawilkinson@esi-il.com).

Mr. Kenner, Senior Consultant and P.E., has over 15 years experience modeling and analyzing structures for a variety of industries in both design and failure analysis environments. He specializes in structural mechanics, finite element analysis, fracture mechanics, and aircraft accident investigation. He can be reached at the [Chicago \(Aurora\), IL office](#) at 630-851-4566 or by email at [mtkenner@esi-il.com](mailto:mtkenner@esi-il.com).



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