

**Title: Ames Yellow Alert: Improper Modification of High Voltage Power Cord (Two Male Ends)**

**Lessons Learned Statement:** Only trained and qualified workers are to assemble electrical/electronic devices, and all assembly must be to National Electrical Code standards, or approved by the Ames Laboratory Electrical Committee.

**Event Specifics:** An annual Program Walk Through was performed September 16, 1998. During the Walk Through a heavy duty electrical cord approximately 20 feet in length was found with two male plug ends. Thus, when the power cord was energized, the opposite end had exposed energized parts from which someone could be shocked or electrocuted. It was determined that this was the method of connecting two machines together with the same energy source.

**Corrective Action Taken:** The safety specialist asked that the power cord be corrected immediately. As the cord was not energized, An occupant cut the cord, making it inoperable.

**Recommendations:** The following are options which could be taken to prevent reoccurrence:

1. The second machine could be equipped with a male plug end and the cord with a female cord end to ensure that there are no exposed electrical parts. This would ensure that each connection will prevent accidental contact with live electrical parts.
2. Attach a flexible cord to the second machine with a male plug end. The primary machine would have to have a female plug end installed which would accept the new male end.

All electrical wiring and electronic equipment shall meet the requirements of the National Electrical Code and the Ames Laboratory Electrical Safety Manual. Substandard modifications that pose a risk to the safety of the worker and visitors, and increase the likelihood of a fire are unacceptable. If you are not sure that changes or additions to a system are compliant, an evaluation by Engineering Services before putting the system on-line may be more expedient than the delays of repair.

For more information, please contact Shawn Nelson at 515/294-4161.