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Subject: Sandia LL - Green Alert- Musculoskeletal Disorders linked to Office Tasks

Title: Musculoskeletal Disorders linked to Office Tasks

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Lesson Learned: Musculoskeletal disorders (MSD) are highest among office workers in a four year survey of injury trends. This trend is due to a combination of factors, though time spent at the computer and the aging population of Sandians appears to be the two most significant influences.

Discussion: The annual OSHA log and summary for calendar years 1994-1999 were analyzed for trends. These data are from Sandia's official record of injuries and illnesses. Data from OSHA log column 7(f), "Disorders Associated with Repeated Trauma" were analyzed for incidence rates, and body part. This information was combined with the results of ergonomic assessments performed in 1998.

Analysis: MSD accounts for 11% of all injuries and illnesses at Sandia. According to OSHA statistics, illnesses comprise 6% of the total injury rate nationwide; however, Sandia MSD alone is nearly double the rate of the combined total of all illnesses. The Bureau of Labor Statistics' 1995 survey found an incidence rate of 37 cases per 10,000 employees across all industries. At Sandia the rate (using column 7(f) data only) varies between a low of 22 in 1995 to a high of 72 in 1998. In the most recent year, 1999, the rate was 67 cases per 10,000. Two factors are at work to increase incidence rates: first, Sandia has an aging population. Most Sandians are in their mid-forties or older. The workforce as a whole has moved well into middle age when joints, tendons and muscles are more susceptible to injury. Secondly, the amount of time Sandians spend at the computer has increased dramatically with the advent of the internal web. Work that was previously performed with pencil and paper has now become electronic files. In a recent survey, 129 employees' office spaces were ergonomically evaluated. Forty-one percent of those surveyed spent 6 hours or more at the computer (see table below).

Distribution of Time Spent at the Computer

1-4 Hours	4-6 Hours	>6 Hours
18 (16%)	49 (43%)	46 (41%)

More than sixty percent of MSD affect the hand/wrist/fingers (see pictures and chart below). These results are quite different from an earlier National Institute for Occupational Safety and Health (NIOSH) study that found eye strain and neck/shoulder discomfort as the predominant complaints of computer users.

Resolution: The Worldwide Web now has interactive websites [<http://www.pc.ibm.com/ww/healthycomputing/index.html>] where individuals can learn how to evaluate their computer workstation setup to reduce discomfort, optimize their work posture and learn about risk factors they can control. The General Accounting Office (GAO) provided a

milestone report of the characteristics of successful ergonomic programs in private industry. They found that effective ergonomic programs contained a core set of elements to ensure ergonomics hazards were identified and controlled: Management Commitment, Employee Involvement, Identification of Problem Jobs, Training and Education, Appropriate Medical Management. A self assessment of the existing program using the GAO criteria will be completed to identify our weaknesses. Emphasis will be given to developing long term success as well as meeting short term goals such as reducing injuries to the hands/wrists/fingers.

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