



SIA

Semiconductor Industry Association
Task Force on Worker Health

Report to the SIA Board of Directors:
**WORKER HEALTH STUDY STATUS
AND RECOMMENDATIONS**

May 1993



RECOMMENDATIONS AND FUTURE PLANS

In its action plan announced December 3, 1992, the SIA Task Force on Worker Health announced it would create a subcommittee designed to develop additional recommendations for protecting worker health and safety as a result of the UC Davis study. In January, the SIA Task Force on Worker Health named its subcommittee on Occupational Health and the Work Environment (OHWE) to further review the UC Davis research to determine what additional actions may be appropriate to undertake at the industry level in response to the UC Davis findings.

The work of the OHWE group was discussed by the SIA Task Force on Worker Health at its meeting in Scottsdale, Arizona on March 30. Some OHWE recommendations were a direct response to specific UC Davis findings while others were developed as a general result of the study. All OHWE recommendations were accepted by the SIA Task Force on Worker Health.

GENERAL RECOMMENDATIONS

1. Reproductive Surveillance

One method for evaluating changes over time regarding reproductive outcomes for workers in the industry would be to institute a system of reproductive surveillance.

While reproductive surveillance might be a useful tool in assessing the success of risk reduction measures (and has been recommended by the UC Davis researchers), the OHWE has some concerns about its use because it is relatively untested and has some problematic aspects (confidentiality issues, population size and statistical limitations).

In addition, a review of the Johns Hopkins' study results and recommendations would be helpful prior to making decisions regarding reproductive surveillance. The task force recommends formation of a small subgroup of physicians, occupational health nurses, and epidemiologists from SIA member companies to carry out the following tasks:

a. The group will review existing recommendations and opinions regarding reproductive surveillance from SIA's Scientific Advisory Panel, UC Davis and published literature, in light of the results from the UC Davis and Hopkins studies.

b. Meetings with appropriate experts in the field of reproductive surveillance will be arranged to evaluate applicability and feasibility of such programs for companies in the semiconductor industry.

c. The subgroup will also recommend to the Worker Task Force whether it is logical and desirable for member companies to proceed with reproductive surveillance programs (and, if so, suggest appropriate methodologies that will permit comparison and, possibly, combination of the data). The recommendation should be made no later than June 30, 1993.

d. SIA will provide the subgroup with any funds necessary to perform these tasks.

2. Further Research

The Task Force on Worker Health believes UC Davis fully addressed the original intent of the worker health study and provided SIA with appropriately documented results. Additional research questions and investigations by UC Davis can be pursued at UC Davis' discretion using the data base collected. SIA and member companies will track the published results of such studies to determine appropriate industry actions.

The Occupational Health and Work Environment Subcommittee will remain intact at least until the Johns Hopkins study for IBM has been completed and the results made available. The subcommittee will review these results, along with any additional results available, and compare them with those already disclosed before recommending any additional study/studies.

Following any recommendation by the OHWE subcommittee and the Task Force on Worker Health, the SIA may propose that SEMATECH and/or the Semiconductor Research Corporation consider funding additional research.

3. Continuing Efforts At the Industry Level

Through its committees made up of member company experts, SIA will review industry progress implementing programs and achieving identified objectives related to the UC Davis worker health study. The SIA in its continuing health and safety function will track progress in this area either by establishing a new standing committee, by continuing the role of the Task Force on Worker Health, or, by folding this responsibility into the existing Occupational Health Committee.

4. Personal Protective Equipment

While personal protective gear is standard equipment at semiconductor manufacturing facilities, the SIA Task Force on Worker Health strongly supports additional research into the development of improved equipment that will provide additional protection for semiconductor industry clean room workers. The

Task Force supports SEMATECH funding for the development of improved cleanroom qualified gloves and other personal protective equipment.

5. Industry Policies

The SIA and its member companies believe that the health and well being of its employees is of utmost importance. The willingness of the semiconductor industry to fund and conduct a major study such as the one just completed, recognizing the importance and the sensitive nature of the questions that were raised, must be viewed as unique to American industry.

While semiconductor companies have shared technical information related to hazardous chemical usage, measurement, and control among member companies and with standards writers (such as building code makers and the Semiconductor Equipment Materials International), policies related to worker health and human resources issues should remain in the hands of individual companies.

This will allow the industry the flexibility to more quickly and appropriately respond to advancements in technology in an effort to better protect the health and safety of its workforce.

SPECIFIC RECOMMENDATIONS BASED ON STUDY OUTCOMES

1. Recommendations Related to Cross-Sectional Study Outcomes

The SIA Task Force on Worker Health made three recommendations related to study results from the cross-sectional component of the UC Davis research.

a. The Worker Task Force recommends that individual companies work toward ergonomic improvements in the workplace and share information with the industry.

b. The Task Force recommends that individual companies consider developing or modifying programs to assess the prevalence of negative cross-sectional outcomes.

c. Individual companies that do not already have "wellness" programs to heighten awareness, promote employee health and help prevent injuries are strongly encouraged to institute such programs.

2. Recommendation Related to Increased Risk of Miscarriage in Masking and Etch Areas of Fabrication Rooms

The SIA Task Force on Worker Health recommends that individual companies consider process and/or equipment modifications to eliminate or reduce potential exposure to certain process chemicals. This may be achieved by:

- ◆ working with suppliers to develop alternatives to photoresist containing the glycol ethers identified by the UC Davis study and seeking more information from suppliers regarding use and implementation of alternative chemicals;
- ◆ developing process modifications to reduce, substitute, or eliminate the use of potentially hazardous materials where possible (pollution prevention); and,
- ◆ employing more fully enclosed or automated equipment to reduce exposure potential to all chemicals.

In addition, the industry should consider studying the correlation between potential chemical exposure sources and airborne concentrations, by collecting and pooling air sample data. The information should be provided to the SIA Occupational Health Committee.

3. Recommendations Regarding the Association of Miscarriage with Self-Reported Stress

The Worker Task Force recommends that individual companies evaluate physical and psychological stress in fabrication areas, and if necessary, work to reduce such stress.

CONCLUSIONS

The SIA and its member companies are committed to ensuring a safe and healthy work environment for all its employees, and have been responsive to the findings contained in the UC Davis study of worker health.

The industry has taken a leadership role in worker safety issues. The proactive approach SIA and its member companies have taken toward worker safety have been a key reason behind the semiconductor industry's low incidence of workplace injuries and illnesses.

Industry health and safety programs will not end now that the worker health study has been completed. Instead, they will continue through the SIA and its committees, and the Semiconductor Research Corporation and SEMATECH.

In addition to these SIA-led efforts, it is important to emphasize that individual companies are implementing comprehensive programs and policies to protect workers. Each company has its own unique manufacturing processes and facilities that require flexibility in the creation and implementation of safety programs. While industry-level actions tend to be the focus of attention, the SIA cannot and should not dictate policy to its member companies. It is the individual companies within the industry that have been extremely aggressive in their pursuit of a safer workplace.

For example, the SIA is not aware of a single semiconductor company that plans to use ethylene-based glycol ethers when developing new manufacturing processes. Individual companies have shouldered the responsibility for creating a safe work environment willingly, and judging by the record, effectively as well. Individual companies truly deserve the credit for the industry's strong record of accomplishment in workplace safety.

As events dictate, the SIA Task Force on Worker Health will provide updated information regarding the industry's implementation and response to the UC Davis health study. The Task Force believes that by sharing this information the U.S. semiconductor industry is responsibly demonstrating its long-standing commitment to its workers and their safety.