GLASS & CERAMICS SESSIONS

COMPUTERS CAN HELP PLAN A SAFETY PROGRAM

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You may consider the computer as the exclusive property of the "whiz kid" fresh out of college, who plans to revamp your entire firm with this magic wand. However, if your firm is going to have this "new look," it will not be done singlehandedly by the recent college graduate, but by men who have practical training and experience, who can make the computer a most valuable weapon. But you must provide the computer with data that makes sense.

How can this be accomplished? Of course, if you have a new plant to construct, you have a better start; especially when it is generally understood that safety is an integral part of a plant and safety requirements must be satisfied before the plant can go "on stream."

Too often new plant construction safety programs are given the "stepchild" treatment as emphasis is placed on those items essential to begin production. Consequently, a plant start-up is usually void of many essential safety requirements, resulting in temporary implementation and many times requiring "crash" projects to complete.

A possible deterrent to this condition is the Critical Path method of planning and scheduling which has come into its own in the last five years and has seen wide acceptance in the construction field. The first step in using computers to plan a safety program is the knowledge of the Critical Path Program. This technique utilizes computer calculations which permit the "management by exception" principle, where you can concentrate on reviewing the status of the critical items only. This technique provides safety engineers with the means to participate more actively in plant construction, expansion, or renovations.

CPM Fundamentals.

Before proceeding with how this technique works, let us discuss briefly the fundamentals. A minimum training effort in this method, which would be the "A-B-C's," is needed before using it; it is not difficult. To understand the fundamentals, several basic terms have specific meanings which, in this technique and the literature, differ from general usage. This basic terminology allows for understanding the philosophy of Critical Path and permits presenting a relatively simple training course.

PERT and CPM can be considered as having the same results through activity and event orientation.

Let us begin the "mini" course.

The Critical Path method is a new management technique for *planning, scheduling,* and *controlling* projects which consist of a group of interrelated activities or jobs that are directed toward a common goal.

The *planning* phase of a project consists of determining a proposed method of action or procedure. In this technique, planning must be separated from scheduling; therefore, it is independent of timing. Planning involves making an analysis to determine what specific jobs are to be done, the sequence of work required in accomplishing the project, and the interrelations between jobs.

Job 1, 2 "Decide on Computer" (Fig. 1.) must be completed before any other jobs are started. The job "Procure Computer" 2, 6 must be completed before Job 6, 11 can be started. Also Job 2, 6 "Procure Computer" can be performed concurrently with the jobs on three other paths: the path above Job 2, 6; the path below it; and the path at the bottom of the diagram.

Drawing the network plan on "arrow diagrams," which is done in conjunction with the planning analysis, allows for answering questions such as these:

1. What other activity(s) must be completed before this activity can start?
2. What other activity(s) can be done *while* this activity is being done?
3. What activity(s) cannot start until after this activity is done?