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FOR ENGINEERING AND SCIENCE

Chemical A or B?

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Description

A scenario in which an engineering student attempts to initiate a manufacturing process that will ensure the safety of company workers and is met with stiff resistance from management.

Body

Part I

A chemical engineering student has been working with a local manufacturing firm as a part of her university's co-op program. For several years the firm has been using chemical A as a catalyst in their manufacturing process. Chemical A is carcinogenic, although studies supporting this claim have only recently been published. Without taking elaborate safety precautions, workers handling chemical A would be exposed to sufficient amounts to risk cancer. Moreover, the disease takes up to 20 years to manifest itself. The company has tried to implement safety procedures and controls, but workers routinely ignore them. The safety procedures slow down the manufacturing process, and the workers frequently cut corners to meet quotas.

The co-op student knows of another chemical, B, which also serves as a catalyst in this manufacturing process but is not carcinogenic. Nevertheless, chemical B is considerably more expensive.

Decision Scenario:

A meeting has been called to refine and possibly reengineer the company's manufacturing process. Along with the student are four other group members: a senior engineer, a manager, an industrial engineer who supervises the manufacturing process, and a marketing specialist. You are the Coop student. Should you suggest changing to catalyst B at this meeting? If so, how should you present your case? (Write out this presentation and give it before the class.)

Part II

The student decides to bring the issue up at the meeting. She cites the recently discovered dangers of chemical A and the tendency of the workers to violate safety procedures in using it. She then discusses the research on chemical B: although B is more expensive than A, it is much safer and is as effective a catalyst as A in the manufacturing process. Her argument meets with stiff resistance, especially from the manager present at the meeting. He tells her that her job is to make suggestions for streamlining the existing manufacturing process, not design a new one. Furthermore, he argues, if there were a problem with safety he would have heard about it by now from the Human Resources or Legal Affairs departments. The two engineers present say very little; they are intimidated by the manager and apparently intend to follow his lead. The manager asks the two engineers if using chemical A violates OSHA regulations; they reply that to the best of their knowledge, it does not. The manager concludes by proposing that if there are no further objections, the company will continue using chemical A. Nobody objects.

What should the co-op student do now?

Notes

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