

A VACATION

I

Dan Dorset had been looking forward to this trip for weeks. Once he was assigned to help Rancott install its equipment for Boulding, Inc., he arranged his vacation at a nearby ski resort. The installation would be completed on the 12th, and his vacation would begin on the 13th--a full week of skiing with three of his old college buddies.

Unfortunately, not all of Rancott's equipment arrived on time. Eight of the ten identical units were installed by mid-morning on the 12th. Even if the remaining two units had arrived that morning, it would have taken another full day to install them. However, Dan was informed that it might take as long as two more days for the units to arrive.

"Terrific," Dan sighed, "there goes my vacation--and all the money I put down for the condo."

"No problem," replied Boulding engineer, Jerry Taft. Jerry had worked side-by-side with Dan as each of the first eight units was installed. "I can handle this for you. We did the first eight together. It's silly for you to have to hang around and blow your vacation." Jerry knew why Rancott had sent Dan to supervise the installation of his firm's new equipment. Rancott's equipment had to be properly installed in order to avoid risking serious injuries to those who use the equipment. For years Rancott trusted its clients to follow the carefully stated directions for installation. But several recent accidents were directly traceable to failure to follow proper installation procedures. It was now Rancott's policy to send one of its engineers to supervise all installations.

Dan was confident that Jerry was as fully capable as he to supervise the installation of the remaining two units. What should Dan do?

1. Decline Jerry's offer and stay until the job is complete.
2. Call Rancott's home office and ask if it is alright to let Jerry take care of the last two units.
3. Accept Jerry's offer, and leave for his vacation.
4. Other.

II

[Following I. 1.]

Tempting as it is to leave early, Dan decides to stay until the job is completed. He loses all but the last two days of his vacation, but he feels he has done the right thing. Some time later Dan and his unit's chief of engineering, Ed Addison, are having a drink after work. Eventually the conversation turns to Dan's vacation.

Dan: What would you have done if you found out I left before all the units were installed?

Ed: Honestly? Probably nothing. It sounds like Jerry Taft had everything under control.

Dan: So if I had called, you would have told me it was okay to leave before the job was completed?

Ed: I didn't say that. I don't think it would be wise for me to officially approve something like that. Then it would be my neck, too, if anything went wrong.

Dan: Meaning it would have been on my neck if anything had gone wrong?

Ed: Sure. My only point is that I probably wouldn't have done anything about your leaving early--unless something went wrong. That's a chance you would have been taking. But it sounds like it wouldn't have been a very big risk.

Dan: Would you have taken it?

Ed: That depends on how badly I wanted to ski. Actually, I never have cared for skiing--it's too risky.

What do you think of Ed's position on this matter? If Dan had known Ed's position when he was at Boulding, would it have been all right for Dan to leave early?

III

[Following I. 2.]

When Dan calls his home office, he talks with his chief engineer, Ed Addison. Ed tells him that he is very sorry, but he cannot officially approve Dan's leaving before the job is completed.

Dan: So you can't officially approve. What happens if I leave early anyway?

Ed: You'd better not tell me about it. I gave you your assignment. The rest is up to you.

Dan: But what if you never found out?

Ed: Look, I don't like hypotheticals. The bottom line is satisfied customers and keeping Rancott out of trouble. So, I sent you to Boulding to make sure the installations are done correctly. I've done my part. The rest is your job.

Dan: Are you telling me not to leave before all the units are installed?

Ed: I'm telling you to make sure the units are installed properly.

Dan has no doubt that Jerry is now quite capable of handling the remaining two installations. In fact, he believes that Rancott has been engaged in "overkill" by having Rancott engineers oversee all installations. All anyone has to do is follow the very clearly stated instructions--a task that is easily manageable by engineers like Jerry. Furthermore, Rancott is not required by law or contract to supervise installations. Given this, and given what Ed has said, would it be all right for Dan to leave for his vacation?

1. Yes, as long as he is quite certain that Jerry will do the job right.
2. No, he does not have official approval by Rancott.
3. Other.

Explain your choice.

IV

[Following I. 3.]

Dan decides to leave for his vacation. However, he tells Jerry that he will stop at Boulding on the way back for a final check. Although he won't be able to check all points of the installation (since this would require some dismantling of the units), he can give the units a general check-over. "When I return," Dan says, "we can sign the papers, and everything will be set." "Sign the papers?" Jerry asks. "Yes," Dan replies, "the papers verifying that I've supervised the installations." Does Dan's signing of the papers raise any ethical questions? How about Jerry's signing them?

V

Suppose the reason Dan wants to leave before the installations is that he will be late for his next assignment if he does not leave early. A late start on the next assignment will result in failure to meet the contractual deadline of a major customer who is very insistent on having the work completed on time. If Dan's phone conversation with Ed is essentially the same as in III above, should Dan leave early?

1. Yes, Dan should leave early.
2. No, Dan should not leave early without Ed's official approval.
3. Other.

Explain your choice.

VI

Although the probability of things going wrong if Dan leaves early is quite low, the improbable can happen. If he does leave early and something does go wrong, what evaluation of Dan's decision should be made? If nothing ever goes wrong, would you make a different evaluation? [That is, does the appropriateness or inappropriateness of Dan's decision depend on the **actual** outcome of his decision or the **possible** outcomes of his decision?]

COMMENTARIES

Kenneth L. Carper

Dan Dorset has been provided with an excellent opportunity to demonstrate the extent of his personal commitment to professionalism. He can act in his own selfinterest, or at some personal cost, he can choose to act in the interest of public safety. The easier, lesscostly alternative violates company policy and may increase the risk of accidents. The right thing to do is clear.

Unfortunately, an attractive compromise has been presented. Jerry Taft's offer would relieve Dan of any personal cost and would compromise professional principles only slightly.

Dan's employer has funded his travel to supervise installation of equipment. The location of the project is near a

ski resort. Dan's vacation plans at the resort were predicated on the assumption that there would be no delays in the project. He didn't provide for a single day of contingencies when making these plans.

Construction engineering projects always involve scheduling uncertainties. Dan surely recognizes that planning with no contingencies was his responsibility. His concern for public safety, along with acknowledgment of deficient planning on his part, should encourage him to eliminate any options that imply increased risk to the client or the public, even if these risks are of very low probability.

Of the options listed at the end of Part I, only the first is directly driven by the moral principles of professionalism: Decline Jerry Taft's offer and stay until the job is complete. The second option also has some merit. A call to the home office may suggest some additional alternatives. For example, Dan's supervisor, Ed Addison may offer some additional vacation days or other compensation, or he may be able to suggest ways to circumvent the immediate installation of safetycritical components of the equipment so that other construction scheduling is not unnecessarily delayed.

This option, not listed at the end of Part I, deserves some consideration. Perhaps the installation of the final two units could simply be delayed altogether until after Dan's vacation. Not enough information is given to assess the possibility of this option. It may be that the project schedule would be severely impacted by such a delay, but creative people might be able to find an acceptable compromise. Ed Addison should feel some obligation to assist Dan in meeting both his professional and personal commitments, insofar as possible.

In Part II, Ed Addison exhibits some very disturbing attitudes for an engineer in a management position. Ed is clearly motivated by the desire to avoid personal responsibility for management decisions. He would rather not know when company policies or professional responsibilities are being circumvented. This attitude is not likely to inspire confidence with his subordinates, or to encourage them to accept responsibility.

Complacency and a cavalier attitude regarding professional responsibility is contagious within organizations, particularly when management sets this tone. Rubin and Banick, in their outstanding review of the Kansas City Hyatt pedestrian walkway collapse, refer to the complacent attitude of the design engineer. In this case, 114 people were killed and another 200 seriously injured, partly due to this complacency. Rubin and Banick ask:

How can their conduct be explained? An understanding of their conduct is perhaps the most important lesson that can be drawn from the Hyatt collapse because it represents, more than anything else, a human failure to which all professionals are subject. Some succumb, some do not; most are just plain lucky in that they do not get caught. Our errors are picked up by others, or although our errors go undetected, no tragedy ensues.

Complacency is a human failure. It creeps into a professional's approach to practice as the newness, excitement, and other early rewards of the profession fade. The professional becomes indifferent and stops worrying and agonizing. He takes shortcuts and gets away with it, and then takes more shortcuts. It becomes a way of life. This is human. The shock of an occasional failure brings him to his senses and forces him to reevaluate his conduct. (Rubin & Banick 1987)

Ed Addison's attitudes are particularly disturbing since Rancott's equipment has experienced some recent failures. The possibility of failure should be more than an abstract concept to Ed, and he has a responsibility to convey the seriousness of inspection to his young subordinate, Dan Dorsett.

Apparently, it is all right for Ed's subordinates to take risks, but he won't. His cautious approach to risktaking involves concern for his "own neck," rather than concern for public safety, should something "go wrong." This

selfinterest based concern is also evident in his comments about skiing, although there is no ethical conflict here. The risks one takes while skiing are directly related to one's own wellbeing. The risks taken by professionals involving the welfare of others fall into an entirely different moral category.

Complacency is a dangerous attitude for an engineer. But engineers in the corporate setting, particularly in management positions, can become insulated from the public they serve. Professional responsibility may become an abstract concept, unrelated to daytoday decisions.

The dialogue presented in Part II certainly does not suggest a reevaluation of the moral rightness of Dan's decision. Ed is not a worthy role model for professional responsibility. The safety of society depends to a great extent on a professional engineering community that takes its responsibilities much more seriously than Ed Addison does. The profession has a long tradition of engineers who have spent sleepless nights contemplating the risks associated with their judgments (Petroski 1985). Were this not so, there would be far more failures of engineered facilities and products.

Ed Addison says, "...the bottom line is satisfied customers and keeping Rancott, Inc. out of trouble..." This statement is absolutely untrue. The primary guiding principle for engineers is to "use their knowledge and skill for the advancement of human welfare." (Evans 1988). The Code of Ethics further instructs engineers to "hold paramount the safety, health, and welfare of the public in the performance of their professional duties." Thus, the engineer's ethical responsibilities extend far beyond the employer and the client. Engineers are more than employees of a corporation. They are licensed professionals, trusted by society to maintain this focus on the public welfare (Rubin and Banick 1987).

Perhaps it should be noted here that other professions may operate under entirely different ethical guidelines. For example, attorneys are bound by their Code of Ethics to always act in their client's interest (Carper 1990). This concept could have disastrous implications for public safety, should it be adopted by the engineering profession.

Ed Addison would like to avoid failure. However, he interprets this task as his responsibility to "keep Rancott, Inc. out of trouble," rather than a responsibility to protect the public welfare. The danger in this attitude toward failure is that it confuses liability with professional responsibility. The engineer who is motivated merely by the desire to avoid liability may simply address the problem by writing contracts that transfer responsibilities to others, and by purchasing more insurance to insulate the firm from the economic impact of failure. This approach alone is not in the interest of public safety, but it is all too common in the current litigious society. Traditionally, engineers have accepted the responsibilities of their profession, and have been diligently motivated by concerns for the public who will suffer when things go wrong.

In Part IV, the violation of company policy and compromised professional standards leads to a further deterioration of principles, as small compromises often do. The next step involves falsification of records. This is a definite complication, one that raises legal implications in addition to new ethical issues.

Part V asks us to consider the dilemma from a new perspective. Dan's situation is now the result of a new job assignment. In this case, he should insist on official orders from Ed Addison authorizing him to leave the first assignment prior to completion. This transfers responsibility to Ed; it will be good for him.

While asking for official orders, it might be in order for Dan to further discuss with Ed the ethical dimensions of his statements. He might include reference to the lessons Dan is learning from Ed's example. Perhaps Ed has become so insulated in his management position that he is no longer cognizant of his professional responsibilities

that extend beyond enforcement of company policies. Perhaps he is unaware of his important influence on the professional development of his colleagues.

Part VI introduces the question of probability of outcome. The varying probabilities of various outcomes certainly ought to be a factor in making professional judgments among alternatives. It should always be recognized that these probabilities are estimates, and even if they prove to be accurate statistically, an outcome having a low predicted probability is still a possibility.

For this reason, the actual outcome should not necessarily be given greater weight than other alternative outcomes when reviewing the rightness or wrongness of a prior decision. While the consequences may be undesirable, the decision may have been morally correct, given the information available at the time the decision was made. Similarly, a positive outcome should not be used to justify a decision that was morally flawed.

Risk analysis is an important component of engineering (Martin and Schinzinger 1989). One contemporary engineer who specializes in risk analysis defines this activity as "assessing the probability of regret." Consideration of risk is something one should lose sleep over; it is not something to be taken lightly, as Dan is tempted to do, for personal convenience.

Suggested Readings:

1. Carper, Kenneth L. 1990. "Ethical Considerations for the Forensic Engineer Serving as an Expert Witness," Business and Professional Ethics Journal, Rensselaer Polytechnic Institute, Troy, NY, Vol. 9, Nos. 1 and 2, Spring/Summer, pp. 2134.
2. Evans, R. J. 1988. "Commentary on the Code of Ethics," Journal of Professional Issues in Engineering, American Society of Civil Engineers, New York, NY, Vol. 114, No. 2, April, pp. 148156.
3. Martin, Mike W. and R. Schinzinger 1989. Ethics in Engineering (2nd edition), McGrawHill, Inc., New York, NY, pp. 118124.
4. Petroski, Henry 1985. To Engineer is Human, St. Martin's Press, New York, NY, pp. 214215.
5. Rubin, Robert A. and Lisa A. Banick 1987. "The Hyatt Regency Decision: One View," Journal of Performance of Constructed Facilities, American Society of Civil Engineers, New York, NY, Vol. 1, No. 3, August, pp. 161167.

Joseph Ellin

I

Poor Dan Dorset! After weeks of looking forward to his ski trip, both it and his deposit are about to go down the drain--and unnecessarily at that, because Jerry Taft is qualified to supervise installation of the tardy equipment. It's too bad Dan is going to lose his vacation, but he has no choice, as his responsibility is to supervise installation of the units. What can he do about it? It's not that he's without recourse. What he can do is to try to get his company, Rancott, to reimburse him for his lost condo payment, and perhaps give him a free vacation to compensate for the one he lost. If he's a valuable employee, this seems like a good investment on Rancott's part. However if Dan doesn't think this option will work out, there's no harm done in phoning home and seeing if Rancott will let him leave early; perhaps there's another engineer available who can fill in. Although

Rancott has good reasons for their policy of having one of their own engineers supervise installations, it doesn't necessarily have to be Dan, and in any case it is Rancott's company policy, not required by law or contract. So they can make exceptions if they choose (and Taft is said to be fully capable). But if Rancott turns him down, he's got to sacrifice his vacation. You can't just walk away from a job responsibility, even if you think nothing will go wrong.

II

Later, Dan asks his chief, Ed, what Ed would have done if Dan had taken the vacation. Ed replies that he probably would have done nothing, at least not if nothing had gone wrong, but nevertheless 'officially' he wouldn't have approved of Dan's leaving, because to do so would be to risk his own neck. Is this a defensible position for a chief to take? No: Ed's position is mealy-mouthed and unconscionable. If he doesn't think Dan is needed, he should give him permission to leave. Since he won't authorize him to leave, and is afraid of "his neck," this is an implicit admission that Dan is needed; something might go wrong in Dan's absence. Ed is trying to be a nice guy and 'reasonable' by not telling Dan straight away that he isn't allowed to leave; he's afraid to authorize Dan to leave and doesn't have the courage to order him to stay and do the job. He wants to avoid making any definite decision so as to appear blameless no matter what happens. Ed needs to learn to accept the responsibilities of his position.

On the other hand, Dan's way of going about this is not above reproach either. He has no right to push Ed into making hypothetical commitments Ed is reluctant to make. His approach to his lost vacation should be to request compensation from Rancott; he ought to simply assume that he would have been subject to disciplinary action if he absents himself from the work site without authorization. In fact, this assumption is part of his claim to compensation. Clearly, were it the case that he would not have been disciplined, then his claim for compensation is weaker, since in fact he would not have lost anything had he taken the vacation.

III

In this scenario, Dan asks Ed for permission to leave, and doesn't get it. Ed's avoidance of responsibility is at least consistent: he won't authorize Dan's departure, but he won't threaten punishment if Dan departs without authorization. On the other hand, Ed isn't obligated to tell Dan what he would or would not do if Dan takes unauthorized leave. Given that nothing goes wrong, Ed might regard it as within his discretion to overlook the infraction; there is no rule saying that every infraction must be punished, nor is there any rule that he must decide in advance and notify Dan whether he'll be disciplined or not. Actual outcomes ought to be taken into account in determining punishments (as they are in the law: the drunken driver who kills someone is punished more severely than the drunken driver who manages to get home safely). Dan knows the rules and can assume violations will be punished. When Ed says he's given Dan his assignment and the rest is up to him, this is strictly speaking correct, (and in fact a tautology), but Ed's problem is that he's saying this as a way of evading his own responsibility to tell Dan in unmistakable terms that he's supposed to be on the assignment. Ed is not giving orders, he's covering his own neck.

Ed's position is that Dan takes the risk by leaving without authorization; if something should go wrong, Ed will have no choice but to come down on Dan. This is a fair position to take, but not a fair proposition to put before Dan, who is thereby not given any clear directives.

Given Ed's mealy-mouthed direction, and given that Dan really thinks his own presence at the site is unnecessary, would it be all right for Dan to leave? No, since he's not authorized to do so; the fact that Jerry can do the job

and Rancott isn't legally obligated to have anyone present means that Dan could very well have been allowed to leave; but he wasn't. From his conversation with Ed, he's discovered that he works for a boss who doesn't like to accept responsibility. This makes it more difficult for Dan to make decisions, but doesn't change the picture about this one. Even assuming that he's correct in thinking that he isn't needed because nothing will go wrong if he's not there (an assumption which may not be justified), the fact remains that he's been told to be there and so has no choice.

IV

Therefore Dan's decision to leave is wrong, and now he shows that he's also dishonest and untrustworthy by being willing to falsify documents and expecting Jerry to do so as well on his behalf. Jerry would be a fool to sign, since obviously he's got a lot to lose if something should go wrong. Since Dan knows that Jerry will have to lie on his behalf, his willingness to take the vacation involves more than (arguably, minor) dereliction of duty on his own part, but subornation of dishonesty as well. Now Jerry is forced to choose between falsifying the documents, or in effect revealing that Dan took unauthorized absence. Maybe Dan didn't foresee the dilemma this creates for Jerry, or maybe he didn't think it would be a dilemma because he thinks Jerry is just as dishonest as he is; but the inevitability of putting his colleague on the spot in this way is another argument against taking the leave.

V

In this scenario, Ed wants to leave early, not to take his vacation, but to begin another assignment. It's not stated how Dan got into this conflict. If he works under assignment from Rancott company, the fact that he'll be late for the next job is their problem which they can handle as they wish; since they can't have their engineers in two places at once they'll have to decide which is more important. Presumably Dan would point out to Ed that he's needed elsewhere, and let Ed decide where to send him. Whether Rancott sends someone else to look after the other job, or seeks a delay from the client, or decides to let Jerry finish the installation at Boulding, is not a problem for Dan.

On the other hand perhaps the next assignment is one Dan is doing on his own. In that case, given the constraints of the question, Dan has a real problem that's not easily resolved, since he's apparently got inconsistent ethical obligations, to do work for two different employers at the same time. In the first place, one wants to know how he got himself into this situation. Presumably he relied on completing the Boulding job on time, which turns out to have been unrealistic, so his contract with the new client should have made allowance for this. Second, one should look for a solution: maybe he can overcome the late start and meet the deadline anyway, or persuade the second client to waive the on-time completion requirement, or persuade his boss Ed to let him leave the Boulding site. But third, if no solution presents itself, Dan will have to make some precise calculations. Since he can't fulfill both obligations, he ought to fulfill the one that's the most important. One consideration would be risk. Just how risky is it to let Jerry finish the first job? Is it correct that serious injuries may be possible from improperly installed equipment on the Boulding job? Against this possibility, how important is it to get the second job started on time? The risks of late installation at the second site are not given: do they involve safety, or just time and money for everybody? If there are equal risks involved, or if the risks to safety at the Boulding job are really insignificant, then if the second job is very important for Dan in terms of compensation and career advancement, he might be justified in opting for his self-interest and letting Jerry finish at Boulding. But if he does so, he'll take the risk that many other people won't agree with this decision, and he'll be blamed if something goes on the first job.

VI

The question of whether evaluations should be based on actual outcomes or on foreseeable outcomes is important in law and ethics, but the answers are not the same. In law, crime is generally measured by the harm actually done rather than foreseen or attempted; if you shoot at me and kill me you've committed murder, but if you miss you've committed only attempted murder. In ethics however the situation is different, since ethics, which evaluates character as well as behavior, depends much more heavily on intention than does law, which regulates in the first instance behavior, not thinking. If you do shoot at me, I might be thankful that you missed, but I'll evaluate you by your murderous intention and not by your inaccurate aim. Therefore ethical evaluation should be based on what is intended or foreseeable rather than on what actually happens. Putting aside all other considerations such as his responsibility to his company, whether Dan's decision to leave would be justifiable or not should depend on the risk he is running rather than on what actually happens. equal unwarranted risk deserves equal condemnation, regardless of actual outcomes in the two cases. Since a bad outcome is said to be unlikely, Dan's decision to leave, though wrong, is less to be condemned than were the odds of an accident greater, whether or not the bad outcome actually happens. However punishment is another question, since to punish is a law-like activity rather than a strictly ethical activity. Since punishment imposes harm on the person punished, in part in order to compensate for the harm he/she has done to some victim, there is always an argument that punishment should be reduced where no actual harm has occurred. Hence, two risks being equal, the one with no bad outcome should be punished less than the one where the bad outcome occurs; and it is at least open to question that someone ought to be punished at all for taking a small, though unwarranted, risk which does not in fact eventuate. It could be said then that whether or not a person is subject to punishment, should be determined by the risk he runs; but whether the punishment be administered, and how much, by outcomes. In actual fact, this seems to be Ed's position in II and III. Since ethically however we judge Ed by his intention, which is to save his own neck, and not by the actually outcome of his reflection, which is to arrive at a philosophically valid position, he gets little moral credit for it.

Ted Lockhart

I

It is certainly tempting for Dan to convince himself that his staying on the job and missing out on his vacation would be unduly cautious and pointless. After all, at this point Dan has worked with Jerry on the installation procedures, and Jerry should be able to manage the last 2 installations if he is at all competent. Dan should certainly let his employer know before he leaves the project early to begin his vacation, since his colleagues in the Rancott home office can reasonably expect him to stay on the job unless they are informed otherwise. The more difficult issue is whether he should leave early even if he is given approval to do so by his home office.

One argument in favor of Dan's leaving before the last 2 installations are completed is that the risks of things going wrong as a result of his doing so are quite low. They are

already low because the installation directions are clearly stated and no accidents should occur if they are conscientiously adhered to. They are especially low because he would be leaving the last two installations in the hands of a presumably competent engineer who at this point has significant experience in the installation procedures. However, there is still the fact that accidents have occurred in the past. Moreover, even though Jerry has been through the installation procedure eight times, he is much less experienced than Dan and may not be aware of the kinds of things that can go wrong or cause problems. This is especially true if the installation is complicated and susceptible to unforeseeable problems.

Although Dan's desire to begin his vacation on schedule may be very important to him, it is difficult to see how this is relevant to the ethical questions arising in relation to his decision. If Rancott's policy of having its engineers supervise all installations is sound, then it is hard to see why Dan's vacation plans should be weighed against the application of that policy in this particular instance. Perhaps it will be argued that Jerry's experience in assisting in the installation of the first eight units is enough to allow Dan to suspend the policy under these particular circumstances, but as noted above Jerry's experience in the installation procedure is still meager in comparison with Dan's.

Dan's overriding concern as an engineer should be for the safety of those who will use the equipment. His vacation plans are secondary. Unless he is firmly convinced that Rancott's policy regarding installation of the equipment are needlessly cautious and restrictive, he should remain on the job until it is completed.

II

Ed's main concern seems to be his "neck" and what would happen to it if anything went wrong. He is willing for Dan to leave before the equipment installation is completed as long as Dan gets all the blame if negative consequences ensue. Either Ed does not believe in Rancott's policy, which he is presumably supposed to enforce, or he is willing to see it violated as long as he suffers none of the ill effects. If he disagrees with the policy, then he should attempt to have it repealed. If he agrees with the policy, then he should do his job, which is to enforce the policy. In either event, his self-serving attitude about Dan's actions is deplorable.

Dan's obligations are not affected by Ed's position on this matter. Whether he could have "passed the buck" to Ed if things had gone wrong has little if any ethical significance. Again, Dan should stay on the job until it is completed.

III

As in the previous scenario, whether Ed gives official or unofficial approval to Dan to begin his vacation before the job is finished and whether Dan will be held responsible by others if things go wrong is not ethically significant. As a member of the engineering profession, Dan should assume responsibility for his actions and make decisions on the basis of his ethical obligations to the general public, his employer, and his clients. Even if he is firmly convinced that Jerry is capable of finishing the installations without Dan's presence, there is still the small chance that errors will occur if he is not there to catch them. Furthermore, there is some extra insurance in having two engineers cooperating and checking each other's work. Even if both engineers are competent, there is always the chance that momentary inattention will result in accidents if there is no backup support. Perhaps duplication of effort is inefficient, but if the stakes are high it may provide an added margin of safety that should not be declined.

IV

Dan's signing the papers certainly does raise ethical questions. For example, what is the purpose of having papers signed verifying supervision of the installations? Is it a mere formality that no one pays any attention to? Or is it intended to be an integral part of the implementation of Rancott's policy regarding supervision of equipment installation? The greater likelihood is that signing the papers is intended to be a check preventing violation of the policy which relies upon the honesty and integrity of those assigned to carry out the supervision. For Dan to sign the papers without actually completing the supervision defeats the purpose of the policy, which, if the policy is sound, cannot be justified. Moreover, even if the policy is excessively restrictive and should be

abandoned, signing a statement that one knows to be false is dishonest and therefore unethical unless there are overriding reasons for doing so. No such reasons are evident in this case. Similar arguments apply to Jerry's signing the papers.

V

In this scenario, Rancott must choose between carrying out its policy regarding supervision of equipment installation or fulfilling its contractual commitment to the second customer. It seems unlikely that Dan would be the one who would decide which is the more important, and it would certainly be appropriate for him to consult with Ed and others at Rancott on this matter.

Clearly there would be a stronger argument for Dan's leaving the completion of the equipment installation at Boulding to Jerry in order to go on to the next job than if his motives were to begin his vacation on schedule, since it can certainly be argued that contractual commitments generate ethical obligations. Unfortunately, Ed again seems to be preoccupied with his "neck" and what happens to it and not with ethical considerations. Consequently, his input is of little help to Dan. Perhaps Dan can consult with others at Rancott who will be more forthcoming in their suggestions. Otherwise, Dan must decide which obligation is more stringent--reducing the risks to the users of the Rancott equipment at Boulding or fulfilling the terms of the contract to the second client. The conflicting ethical considerations are preventing harm vs. promise-keeping. It is difficult to judge which is the more significant without additional details. However, in general, it would seem that the former is normally the more important consideration.

Michael Rabins

It would appear that Dan Dorset has been somewhat imprudent in putting his money down for the skiing condo vacation on such a tight timetable with his work. By not leaving any slack in his schedule, he is inviting Murphy's law to go into operation. This fact puts him in a negative light when discussing his situation with Ed Addison and others at Rancott.

First and foremost, Dan must "act in professional matters for each employer or client as a faithful agent or trustee" (NSPE Fundamental Canon #4). As a salaried employee of Rancott he owes allegiance to their policies and procedures. He is fully expected to loyally carry out Rancott's policy of sending one of it's engineers to supervise all installations. This does not mean accepting Boulding employee Jerry Taft's offer to supervise the installation in his place. Even if Jerry Taft were more qualified than Dan Dorset to supervise the installation, that would not abrogate Dorset's responsibility to sign off on correct installation as an employee of Rancott, therefore assuming Rancott liability.

One other unlisted possibility that may be feasible in version I of the case, is for Dan to go to the "nearby ski resort" and start his skiing vacation as scheduled. Then, when the two late units arrive two or more days later, he could arrange for Jerry to call him and interrupt his vacation for the "full day to install them". This would mean some additional travel and cost to Dan, but he would still be meeting all of his professional obligations. In this case, depending upon company policy and how well he gets along with his supervisors, it might be reasonable for him to request reimbursement for the cost of the extra travel since the late delivery of the two units was ostensibly Rancott's fault. Also, Rancott would certainly have had to approve Dan's vacation in advance, so his supervisors had to have known about Dan's vacation plans. However, it is difficult to make a case for any reason for Dan Dorset to call Rancott's home office to ask permission to let Jerry take care of the two units. Similarly, it is difficult to justify Dan's just leaving for his vacation while accepting Jerry's offer to supervise the installation.

In either one of these latter scenarios, Dan and Jerry would obviously have had to sign off on the final installation documentation (version IV) in clear violation of several aspects of the NSPE code of ethics. First there is the Fundamental Canon about issuing public statements in a truthful manner (I-3). Then there is the Rule of Practice regarding not signing any plan or document not prepared under their direction and control (II-2-b). Next there is the Professional Obligation to not sign any specifications that are not in conformity with accepted engineering standards (III-2-b). The standard here is the announced Rancott policy of having their salaried employee supervise all installations. Finally there is the Professional Obligation to avoid misrepresentations which are misleading or intended to create an unjustified expectation(III-3-a). Here the unjustified expectation by Boulding would be that the installation had been overseen by a Rancott employee (not Jerry Taft, their employee), and that Rancott was accordingly assuming liability.

Version II of the case raises some additional flags. First, it is not clear that Ed Addison's cocktail conversation with Dan was appropriate. It misses all of the points raised in the previous paragraphs about the professional ethics of the situation or the expected loyalty of Dan (and Ed) to Rancott. The question is not whether Dan should have left early if he had known Ed's position when he was at Boulding. The question is really whether Ed's position was acceptable and what should Dan have told him-- in a nice way over a second beer. Incidentally, Ed's final response to Dan's question in version II about the risk involved raises still other questions. How could the risk be estimated of installing the units without Dan's supervision? How safe would be safe enough? There is some excellent literature on risk analysis and risk management which may be relevant reading for Rancott management in reviewing their policy. Some of this literature differentiates between voluntary risks (like skiing) and involuntary risks (like using equipment not properly installed by others).

The new idea introduced in version III of the case is that Rancott is not required by law or contract to supervise installations. This fact really does not change previous arguments presented above. The Rancott policy of requiring installation supervision by a Rancott employee supersedes whatever contractual arrangements have been negotiated between Rancott and Boulding. Further, legality does not equal morality. There have been many laws in the past that were clearly immoral (supporting slavery or genocide for example) and there has been an absence of many needed laws which would have pointed to moral behavior. The resulting laws following Watergate are a case in point.

Version V introduces a new consideration, namely that instead of a skiing vacation, a following important assignment of a second installation is a scheduling conflict. Regardless of Dan's conversation with Ed (in version III) it is incumbent on Dan to either get Rancott to send a substitute for him to Boulding or to rearrange his follow-on schedule. For all of the reasons given above, Dan should not allow himself or the company to be put in a vulnerable position just to maintain a schedule. Whether in this version or the following one (VI) where he went skiing and nothing ever goes wrong, it is still incumbent upon Dan and his company to do the right and professionally acceptable thing.