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Rick Parks - (Barus Awardee 1986)

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Description

Rick Parks received an Award for Outstanding Service in the Public Interest (now deemed the Carl Barus Award) given by the IEEE Society on Social Implications of Technology in 1986. This account of his story is excerpted from the book Controlling Technology: Ethics and the Responsible Engineer, by Stephen Unger.

Body

CUTTING CORNERS--THE THREE MILE ISLAND CLEANUP

The worst nuclear power plant accident in American history occurred on March 29, 1979, when one of two nuclear reactors operated by General Public Utilities (GPU) at Three Mile Island (TMI) Pennsylvania underwent a partial meltdown. A massive cleanup effort was necessary to stabilize the situation and prevent further leaks of radioactive material from the damaged facility. This task was given to an organization involving both GPU Nuclear (a subsidiary of GPU, referred to henceforth as GPUN) and the Bechtel Northern Corporation. Nuclear Regulatory Commission (NRC) personnel were also present on site to monitor operations.

The project was a difficult one, in part because of its non-routine nature. Nobody had any significant experience in dealing with the many unusual problems involved in dismantling the highly radioactive components of the damaged plant. The estimated cost was in the hundreds of millions of dollars, and the actual costs exceeded a billion dollars. Many hundreds of people were involved, and by the end of 1992, the job had not yet been completed.

An important factor in the situation is that the Department of Energy agreed to contribute financially to the cleanup by treating the various tasks involved as research projects. Funds were supplied to Bechtel for each task, but only after completion of previous tasks. This gave Bechtel an incentive rush the work.

A Polar Crane is Not an Arctic Bird

In 1982, Laurence P. King, Director of Site Operations for GPUN at the stricken TMI-2 reactor, began to experience difficulties on the cleanup job. He felt that a number of other high-level managers, particularly Bechtel people, were not following NRC regulations and established engineering procedures in carrying out various operations. This was being done, he felt, in a misguided effort to meet unrealistic schedules.

A particularly serious problem concerned the polar crane, an important piece of equipment used to move very heavy objects around within the plant. The crane had been damaged in the original accident and was being reconditioned. Various parts, both electrical and mechanical, had been replaced, some with components similar but not identical to the original parts. Certain other modifications had been made, for example some fuse ratings were changed.

Richard D. Parks, a Senior Startup Engineer employed by Bechtel, was seconded as an Operations Engineer to King's Site Operations Department. His responsibilities included serving as a liaison with NRC representatives and ensuring compliance with licensing requirements. He also served as Alternate Startup and Test Manager for the plant. In November, 1982, King designated Parks as his representative to the Head Lift Task Force (HLTF), the group involved with the polar crane.

Parks soon reported that all was not well. The HLTF was planning to begin using the plant's polar crane to lift various heavy components such as the 40 ton concrete missile shields and the reactor head, which weighed about 150 tons. The problem

was that the Bechtel team was not following standard engineering procedures for testing the crane before using it. They were not obtaining all of the certifications required by the rules under which the plant was licensed by the NRC. Furthermore, they were making modifications detrimental to safety, some of which may not have been documented at all. These were serious issues, since a crane failure resulting in the dropping of a heavy object inside the plant could have catastrophic consequences--in the form of releases of substantial amounts of radioactive material.

King received similar reports about the polar crane from another of his subordinates, Plant Engineering Director Edwin H. Gischel. Both King and Gischel had previously encountered other problems at TMI. For example, some radioactive material had been found leaking into the environment early in 1982. Gischel discovered that certain drains from filter cabinets had never been closed off with drain plugs, as specified in the original plant design, but had been sealed with adhesive tape instead. He immediately had proper drain plugs installed, stating later that, "The incident left me shaken, however. I wondered how many similar oversights were lying dormant". With respect to the cleanup operation, there seemed to be a marked tendency to bypass the administrative procedures that had been developed to ensure against mishaps. While strict adherence to such procedures may seem to be a picayune matter, in a complex system such as a nuclear power plant, seemingly minor errors can have drastic consequences.

King agreed with Parks and Gischel that the crane as a whole and its components should be carefully tested before putting it into service. But when he tried to correct the situation he encountered resistance, not only from the Bechtel part of the cleanup operation, but also from top management at GPUN. On the one hand, he was told that his concerns were of a nitpicking nature--that the crane would work properly, or that even if it failed no significant harm would be done. But when challenged to take responsibility for their assertions by personally signing off on the crane refurbishment task, his critics declined, insisting that Site Operations approve the attenuated testing process.

Pressure

In February, 1983, the situation turned nasty. Within a few days after Ed Gischel had submitted a memorandum criticizing the proposed use of the polar crane, King's immediate superior, Deputy Director of TMI-2 John Burton, angrily urged King to fire

Gischel. King defended Gischel and expressed support for his position. Next came a series of ugly incidents.

First, some background information must be presented. In June, 1982, Gischel had suffered a stroke from a pinched blood vessel that affected his vision and short-term memory. He was back at work in October and seemed to have made a good recovery. Not long after his return, he met several times with Dr. William Jenkins, a psychologist at Corporate StressControl Services, Inc., a company engaged by GPU. Jenkins suggested that Gischel take a neuropsychological stress evaluation test, but , after some hesitation, Gischel declined on the advice of his physician.

Shortly after the issuance of the memorandum mentioned above (February 10), Gischel received a certified letter from Jenkins urging him to take the test. A few days later, he was summoned to a meeting with Barton, Bahman Kanga (Director of TMI-2), and Robert Arnold (President of GPUN). Arnold pushed Gischel hard to take the neuropsychological examination, revealing in the course of the conversation, intimate details of Gischel's conversations with Jenkins. This, despite the fact that Jenkins had, at their initial contact, assured Gischel that their conversations would be held confidential under the doctor-patient relationship.

Pressure on Gischel to take the test continued, reaching a climax in mid May when he received a written ultimatum from the Board Chairman of GPU: either take the test by July 1 or be transferred. In the interim, on April 4, Gischel sent to GPUN President Arnold a copy of a sworn affidavit that he had prepared giving his position on the situation with respect to the cleanup operation and his version of the ensuing events. The covering letter included a request that Arnold forward this to the NRC, and an indication that if this were not done that Gischel himself would do so. Arnold did forward the letter. Later, Gischel refused to take the test and, on July 1, he was transferred to a new position with a non-nuclear subsidiary of GPU in Reading, Pennsylvania.

The president of StressControl stated that his concerns about safety at TMI motivated him to urge Gischel to undergo testing and that this same concern led him to violate patient confidentiality by passing on confidential information to GPUN management. Arnold maintained that he too was motivated by safety considerations and that there was no intent to punish Gischel. In evaluating these claims, one must consider what sort of damage a man in Gischel's managerial position might do as a consequence of the minor impairments involved in the stroke. It is also pertinent

that Gischel's immediate superior, King, had no doubts about his ability to perform his duties.

Meanwhile, Rick Parks was subjected to different kinds of attacks. In mid-February, King assigned Parks to review the crane proposal. This resulted in a memorandum by Parks arguing that the proposal was deficient in that it did not specify adequate testing and analysis prior to the use of the crane, and that proper organizational procedures were not being followed. Essential safety reviews were being omitted. King concurred with this appraisal. The day after this memorandum was circulated, a manager told Parks that upper management was talking about getting him transferred off the site. Bechtel management also replaced Parks as Alternative Startup and Test Manager. He immediately reported this to the NRC as a reprisal threat. Several weeks later Parks was informed by another manager (indirectly through Larry King's wife) that his ex-wife was "trying to get some dirt on him" in order to get custody of his two young sons. The false and malicious nature of this "report" was evident since Parks did not have an "ex-wife"; he was a widower. It was this incident that prompted Parks to seek outside assistance in the form of legal counsel. He obtained this through the Government Accountability Project (GAP), a public interest group.

About a week later, his apartment was broken into. Nothing was taken, but his personal papers had been rifled. The police were unable to identify the perpetrators. The next day, Parks was removed from the crane project. A week later, March 23, having exhausted the possibilities of resolving the problem internally, he filed a sworn affidavit with the NRC, along with a formal complaint charging harassment. On the following day, he was suspended from work indefinitely, with pay. A Bechtel spokesman stated that this was done to insulate Parks from harassment by fellow employees, and that his charges would be investigated. Parks scoffed at the justification for his suspension and predicted that he would eventually be fired. (He later said that most of his fellow engineers agreed with his position, but remained silent for fear of losing their jobs. Parks characterized their attitude toward him as manifesting, not hostility, but rather embarrassment for letting him down. At least one engineer quietly resigned.) During this same period, swift and decisive action was taken to knock Larry King out of the game. For several years, King had, as a sideline, been president of a small firm (which he had helped found), called Quiltec, that provided consulting services to companies in the nuclear power industry.

GPUN's upper management had known about this at least since November, 1982, and they had raised no objections. Suddenly, on February 24, at the peak of the dispute over the polar crane, this became a "conflict of interest", and GPUN President Arnold ordered the suspension of King. He claimed that King had hired people away from GPUN to work at Quiltec (no details such as names or dates were supplied), and said that the discharge was not related to King's criticisms of the cleanup effort. King was denied access to his office, and he later charged that copies of memos that he wrote criticizing various aspects of the cleanup were removed and destroyed. A week later, Joyce Wenger, King's secretary, was grilled by higher level managers, who tried to get her to go to StressControl for counselling concerning "her involvement in the Larry King situation". Some of her friends were questioned about her personal life. She was effectively suspended from work. On March 23, both King and Wenger were fired.

The Regulators

Since TMI-2 was a licensed nuclear power plant, all of the regulations pertinent to the safe operation of such a plant were legally in effect. The NRC's job was to ensure that the cleanup operation was carried out safely and effectively. But they were not only right on top of the situation at TMI, they were virtually inside it. According to Parks, Gischel, and King, part of the problem was that the NRC worked too closely with GPUN and Bechtel management. Proposals by the Bechtel-dominated Recovery Program Department were shown to NRC staffers and often received their informal approval before King's Site Operations Department had a chance to review them. Then, if Site Operations found that the proposals were inadequate, the fact that they had already been "blessed" by the NRC was used as a lever to get them to drop their objections and sign off on them. [Parks Aff. D-2 pp.13, 41, 55-6, Gischel Aff. D-5 p. 20, King Interview D-4, p.3] Sometimes, drafts of NRC reports were shown to company employees before being finalized. What made all this into a serious problem was the perception that the NRC was more interested in speeding up the operation than in making sure that proper procedures were followed.

At various stages, Parks, Gischel, and King sought support from the NRC. The results were mixed. This was due, at least in part, to the fact that several different NRC organizations were involved. For example, the NRC Office of Investigations (OI) looked into allegations by the three engineers to the effect that Bechtel was, in many cases, not following proper procedures and that GPUN's upper management

were allowing this to take place. The covering letter of their report (September 1, 1983), which substantially supports the charges, states that, "The allegations were not only substantiated, but we found them to be illustrative rather than exhaustive." It also suggests that "the TMIPO (NRC's TMI Program Office) passive role on administrative control matters may have contributed to the licensee's procedural noncompliance." Another of its findings was that "The Quality Assurance program for the facility is being compromised". But when another arm of the NRC, The Office of Inspector & Auditor, looked into charges of improper behavior by NRC officials and staff, it reported no evidence of misconduct or impropriety.

Parks and King testified in late April before a committee of the House of Representatives, elaborating on their concerns about the TMI cleanup. Gischel, in an effort to avoid allout war with his employer, declined to appear. In addition to appealing to the NRC for assistance, Parks, King, and Wenger complained to the Department of Labor (DOL) about being suspended or discharged as a result of cooperating with the NRC. The NRC staff and the NRC Office of investigations agreed that Parks had been harassed by Bechtel and GPUN. In mid-May, the DOL formally concurred in this appraisal and ordered Bechtel to reinstate Parks to his TMI job. This order was never carried out because an appeal by Bechtel delayed matters to the point where financial pressure induced Parks to accept an offsite transfer.

Wenger reached an out-of-court settlement with GPUN in which she received $3740 in back pay and was given a new job elsewhere in the company. In King's case, the NRC OI found that he had not violated conflict-of-interest rules and had been unjustly discharged. But the NRC staff, without disputing King's account of the events, concluded that he had not been harassed and that his discharge was not improper. In October, 1984, King too reached an out-of-court settlement with GPUN, receiving an undisclosed sum of money.

In Gischel's case, the NRC OI and staff again disagreed. The OI investigation found that he had been improperly treated in that there was no justification for requiring him to take the neuropsychological test; the minor impairments he suffered would not impair his job performance. The staff, without disputing his account, saw no indication of harassment, and no connection between his dispute with upper management and their pressing him to be tested.

On August 12, 1985 (the wheels grind slowly!) the NRC Office of Inspection and Enforcement issued a violation notice to GPUN for acts of discrimination against

Parks. A Civil Penalty of $64,000 was proposed. This notice went out two years after Parks had been transferred by his employer (Bechtel) to a coal gasification plant in the Mojave Desert (Daggett, California) and then fired six months later (as he had predicted). GPUN appealed the penalty. In 1987 the company finally paid--but only $40,000, as the NRC agreed to reduce the fine in an out-of-court settlement.

In September, 1986, the same NRC office issued another violation notice against GPUN. This was for having improperly added a hand-release mechanism to the polar crane which "directly affected the ability of the main hoist brakes to properly function". The proposed fine was $40,000. This violation had occurred in 1982. Polar crane malfunctions had occurred when it was used in 1984 to lift the reactor head. Indeed one of the two sets of brakes failed.[PI 2/12/85p.3] Had both sets failed, the head could have dropped. Although these malfunctions delayed the operation, they did not, fortunately, result in any damage being done. It may well be that a serious accident was averted as a result of the attention focussed on the crane by Parks, Gischel, and King. In the midst of all of the charges, public protests, on-going investigations, violation notices and other misdeeds (only a part of the story has been related here), the NRC, by a 4-1 vote on May 29, 1985, authorized GPU to restart TMI-1, the undamaged unit on 3- Mile Island. It had been in a shut-down state since the 1979 accident. On October, 9, 1985, it was back in operation.

The phrase that comes to mind in evaluating the performance of the NRC in this case is "too little, too late". When three conscientious engineers stuck their necks out on behalf of the procedures that the NRC was mandated to uphold, they received minimal support from that agency. All three were forced out of the operation and, even in the case where the regulators agreed that a wrong had been done, they did no more than propose a trivial fine long after the event. This paper-tiger performance will do little to deter employers from retaliating against other responsible engineers in the future.

The Engineers

The TMI cleanup case is interesting in that it is not simply a situation in which one or a few engineers dispute the views of their managers. We have here a situation in which a line engineer and another engineer in a management position both were concerned about what they regarded as a potentially dangerous situation, and where they were fully supported by their superior, another engineer at a high level of management. (A fourth high level engineer at the site, who was interviewed by a

NY Times correspondent with the understanding that he not be named, agreed with the positions taken by King and Parks.)[NYT 3/28/93 p1, also PI 4/17/83] It is worth looking a bit more closely at the three who spoke out.

Rick Parks, a native of Missouri, first learned about nuclear reactors in the Navy, where he served for seven years as, among other things, an instructor in the nuclear power program, and was qualified as an engineering watch supervisor for nuclear power plants. Subsequently his experience included working on the construction of one commercial atomic energy facility, as a shift supervisor in another, and as a senior startup and test engineer in a third plant. He was well respected as an engineer. Parks was firmly convinced of the need to "go by the book" when dealing with matters related to nuclear power equipment. An enthusiast for nuclear power, he was very much concerned about the consequences of another accident at 3-Mile Island, not only to the public, but also to the industry. In addition to being a very competent, conscientious engineer, Rick Parks impressed me as an unusually well balanced, good natured man who stood up remarkably well to some very rough treatment without becoming embittered.

Parks' exile to the Mojave Desert was professionally a severe setback, but there was a splendid, unanticipated side effect . While there he met and subsequently married Donna Folger. In recognition of his courageous behavior as an engineer, he received the IEEE SSIT Award for Outstanding Service in the Public Interest in 1986. (SSIT's limited resources is the essential reason that Edwin King and Laurence Gischel were not corecipients.) After trying unsuccessfully for two years to get a regular position as a nuclear engineer, Parks concluded that he was being blackballed. Parks sued Bechtel and, in 1987, accepted an out-of-court settlement for an undisclosed amount. He began a new career in the precision tool industry and eventually established a small business providing services to manufacturers using such tools. Parks reports that, while his income in the power industry would have been greater, he enjoys his work and appreciates being his own boss.

Ed Gischel also began his professional career in the Navy, with nuclear powered submarines. After leaving the navy he spent 10 more years working on nuclear submarines for General Dynamics Corporation. For the next decade, he worked for two companies involved with commercial nuclear power plants prior to joining GPUN. He is a registered Professional Engineer. Gischel showed great organizational skill in this affair, managing to remain within the GPU organization while not yielding his principled position. But he was relegated to a deadend position and never got back

into the nuclear power field.

Larry King had more than twenty years of engineering experience prior to joining the TMI cleanup operation in 1980. His previous employer described him as "frank, hardnosed, operationally oriented...". GPUN's management must have been very favorably impressed with his performance as Plant Operations Director (his initial position) since, after less than one and a half years on the job, he was promoted to Director of Site Operations. In that position he was in charge of nearly 300 employees, over one third of all those engaged in the cleanup. Even after King's suspension, GPU spokesmen, including GPUN President Arnold, acknowledged that King is a very smart, competent engineer and manager[PI, 4/17/83 p.3].

His reputation with his subordinates was excellent. Parks, in his sworn affidavit, says that "Larry King's ethics are beyond reproach".[p. 45] Later, in a sworn statement to NRC investigators, Parks described King as "...dynamic; he has a great deal of fortitude. King also does what it takes to get the job done. However, King only operates within legal boundaries."[p. 4] Gischel, in his sworn affidavit, describes King as "...a decent, hardworking, competent, extremely dedicated individual who routinely 'moved mountains' to maintain progress in the recovery program".[p.14] Both Parks and Gischel dismiss the conflict of interest charge against King as being without foundation--a pretext to get rid of him because of his stand on the polar crane issue.

Following his dismissal by GPUN, King had difficulty finding another position in industry. In the summer of 1984, the NRC hired him as an inspector at a South Carolina nuclear power facility, and, at this writing, he is still working for the NRC. An interesting aspect of this case, that has echos in many other cases, pertains to the flow of information and responsibility in hierarchical organizations. King told NRC investigators that his immediate superior, John Barton, had issued a memorandum instructing him not to send memoranda to President Arnold or Vice President Clark without first going through the proper chain of command.[p.5] This may be part of the reason that Arnold, on the occasion of King's dismissal, said that he was unaware that King had raised questions about the safety of the operation. [PI, 4/17/83 1st p]

Notes

This story is an excerpt from:

- Unger, Stephen. Controlling Technology: Ethics and the Responsible Engineer. 2nd Ed., Wiley, 1994. Chapter 2 Section 7.

Contributor(s)

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Rights

Use of Materials on the OEC

Resource Type

Case Study / Scenario

Parent Collection

Award Winners

Topics

Catastrophes, Hazards, Disasters
Public Health and Safety

Discipline(s)

Nuclear Engineering
Engineering