

Nuclear Plants: Potential Disasters

Government Hides Facts Of Dangers

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When the *Fifth Estate* first undertook this series, we had in mind the discussion and analysis of a few isolated, yet significantly noteworthy, incidents of nuclear and chemical mishaps. Over the past two-to-three months, however, more and more of these “isolated incidents” have come to light, especially those involving the release of radioactive elements.

It seems as though there is an accident or nuclear related story reported in the news practically every other day. And these are just the tip of the iceberg. They're the tiny tidbits of information we're granted limited access to—certainly there are more accidents and scientific revelations than we're ever allowed knowledge of.

One example of this is the recent chilling, yet hardly startling, report of the resignation of a staff engineer of the federal Nuclear Regulatory Commission (NRC), who charged that the agency “has covered up or brushed aside nuclear safety problems of far-reaching significance.”

It's indicative of the media's lack of interest in newsworthy stories such as this that the national press downgraded its importance considerably and, locally, neither of the Detroit dailies even bothered.

Public Given Censored Reports

As for the resignation itself, in an interview with *The New York Times*, 28-year-old Ronald Fluegge, formerly an agency engineer with the NRC, charged that: “We are allowing dozens of large nuclear plants to operate in populated areas despite known safety deficiencies that could result in very serious accidents.”

“We are issuing safety evaluation reports that are carefully censored to conceal major safety problems,” Fluegge continued. “We are withholding from the public NRC staff technical analysis of a wide range of unpleasant nuclear safety difficulties. We are giving the public glib reassurances about nuclear plant safety that we know lack an adequate technical basis.”

Adding credibility to Fluegge's allegations were the remarks of nine other staff engineers for the NRC who charged that the agency refused to consider and act upon many serious safety questions posed by the staff.

While the NRC has recently completed a 300-page study of the charges leveled against the agency, and the Senate Government Operations Committee is allegedly conducting an “active investigation” of the matter, the fact remains that nothing of any consequence has been accomplished.

Even as such serious allegations as those raised by Fluegge and his fellow engineers are buried and forgotten in government committees and sub-committees, the results of the NRC's gross negligence continues, as evidenced by the recent explosions at the Hanford Nuclear Reservation near Richland, Washington and at the Donald C. Cook power plant in Bridgman, Michigan.

Created by some unexpected chemical reactions in a thirteen quart ion exchange column of liquid radioactive wastes (which caused pressure to build and shatter the column along with the plexiglass window constructed to protect workers from radioactive materials) the Hanford explosion on August 30 resulted in the americium contamination of ten workmen—one of whom was also injured by flying plexiglass.

Although all ten workmen were thoroughly decontaminated—a process which involves a meticulous cleansing of the pores of the skin—the ultimate effects of americium on them will not be known for some time. Experiments with laboratory animals injected with the element revealed pronounced lung, liver, kidney and blood damage, along with bone malignancy.

Speaking for the Atlantic Richfield oil company, which operates Hanford under a government contract to extract americium from liquid plutonium radioactive wastes stored in the plant's underground tank, the firm's president explained that, while this wasn't the first time a chemical reaction caused an explosion at the facility, the story was "being blown all out of proportion" and the incident was no more than a simple industrial accident that could have occurred anywhere. The over-simplification and complete incongruity of such a remark is beneath contempt.

Nuclear "Accidents" Are World-Wide

Not long after the Hanford explosion, an argon gas leakage at the Donald C. Cook Nuclear Power Plant on September 17 was responsible for the deaths of two members of a pipefitting crew and the illness of five others. Granted that the accident did not directly involve radioactive substances, the incident nonetheless indicates that mishaps of this nature do, in fact, occur all the time and could as easily as not include nuclear materials.

In the same vein, a two-paragraph wire service item on October 16 reported the spilling of a barrel of uranium—one of twelve which fell off a truck bound for a uranium treatment center in Toulouse, France—"on a storm-buffed car ferry" in Cherbourg harbor. "Only a minimum radiation level" was registered according to a team of experts, who also insisted that the spill presented no danger whatsoever. Again, perhaps there was no tragedy this time, but how about the next?

At present, the Oregon Energy Facility Siting Council is in the process of filing a civil suit against Portland General Electric for forty-three separate environmental monitoring violations within five months at the Trojan Nuclear Power Plant—the nation's largest operating nuclear facility. The plant, located 40 miles northwest of Portland, is being taken to court over its failure to monitor excessive heat discharges and instrumentation quality.

During its five months of operation, the plant, which has now been shut down since May of this year, experienced over a dozen separate breakdowns of safety water pumps, including a February 29 malfunction during which two major safety pumps simultaneously failed to respond while reactor temperatures rose. Plant workers were finally able to activate the pumps manually after four different automatic starting systems proved ineffectual.

Additionally, there have been some tense moments at the plant due to problems with the steam generator system, a control panel fire and radioactive leaks officially termed "internal."

The Trojan Nuclear Power Plant was caught red-handed with blatant safety violations. At other nuclear operations sites that hasn't always been the case, nor has the facility involved always been at all cooperative with investigating agencies. In some instances, these plants have stopped at nothing to halt the spreading of information injurious to their continuance.

The Case of Karen Silkwood

On November 13, 1974, Karen Silkwood, a technician at Kerr-McGee's Cimarron, Oklahoma plutonium factory, was killed in an automobile accident en route to a meeting with a member of the Oil, Chemical and Atomic Workers Union, Steve Wodka, and *New York Times* reporter David Burnham. It was her intention to reveal to them evidence that the plant was overexposing its workers to radioactive materials, manufacturing faulty plutonium fuel rods and falsifying its records to indicate that the rods were up to Atomic Energy standards.

Although it's never been officially acknowledged that Karen Silkwood was murdered, all evidence points to exactly that conclusion. For one thing, a freshly made dent found on the side of her car, when analyzed by the Accident Reconstruction Lab—a private consulting firm hired by the union to investigate after the accident—was discovered to have been made by another vehicle shortly before the car went out of control and off the road into a concrete culvert.

In addition to the dent, wreckers were mysteriously turned back halfway to the scene of the crash; the accident times were altered; incriminating evidence against Kerr-McGee was missing from a folder Ms. Silkwood was known to be carrying in the car; and post-mortem materials were tampered with.

The auto accident hadn't been the first attempt on Karen Silkwood's life either. In early November shortly before her death, someone had entered her apartment and contaminated the kitchen, bathroom and bedroom with plutonium, the most carcinogenic substance known to science. Whoever was responsible even went so far as to poison her bologna, cheese, chicken, bed sheets, bath mat, makeup and toilet seat. The amount of plutonium employed in the break-in, approximately 300 micrograms, would be sufficient to develop lung cancer in 300 human beings. Fortunately the contamination was discovered and all of the contaminated items were carted off for disposal.

Silkwood's criticisms of Kerr-McGee aside, the facility was, and still is, at best, a disaster area. To begin with, the plant is centrally located in the middle of a tornado alley—an area in which a statistical analysis shows there is a one-in-ten chance of the factory being leveled by a tornado during a 65-year span. Since 1959 there have been 260 tornadoes in counties within a 50-mile radius of the site. To minimize plutonium release should the facility fall, operations are actually curtailed on days when severe weather forecasts are out.

Furthermore, sloppy work practices were such that accidents at the plant were common occurrences. In one incident, seven workers were exposed to 400 times the weekly permissible limit for insoluble airborne plutonium when a bag filled with plutonium-contaminated waste caught fire.

Plant morale amongst workers was also dangerously low, understandably. To kill time, workers unaware that plutonium contamination leads to cancer engaged in races to see who could get the "hottest" the fastest—who could build up the highest exposure level in the shortest time. Another bored employee brought a pellet gun to work in order to shoot uranium dioxide fuel pellets at his fellow workers.

Corporations Bulldozing Toward Nuclear Power

With all these factors to take into account, there's considerable cause for public concern in the disclosure that the big-money interests are lining up heavily in support of the pro-nuclear energy forces. Among others, the Energy Research and Development Administration (ERDA) is leaning towards private industry and pro-nuclear companies and away from public interest and environmental groups.

This past June it was discovered that there were plainly conflicts of interest within ERDA and the Nuclear Regulatory Commission. In a report composed by Common Cause, it was noted that "six of the nine executive level positions surveyed in ERDA, including that of the administrator, are filled by individuals previously employed by commercial firms who are today ERDA's contractors."

In another recent disclosure, the *Michigan Free Press* revealed that Detroit Edison has joined forces with Consumers Power and other major corporations in an effort to beat down the current rash of criticisms of nuclear energy. According to the Public Interest Research Group in Michigan (PIRGRIM), Edison and Consumers Power have both participated in the Atomic Energy Forum (AEF), "an industry consortium to coordinate national strategy against the nuclear safety initiatives coming to a vote in a number of states."

Dues to the AEF and additional funds slotted into AEF's "public affairs and information program" come from both corporations' "rate base," the section of consumers' bills supposedly included to cover the utilities' operating costs.

On the opposing end of the nuclear energy controversy, there have been basically two different approaches. Attempting to wage war against nuclear exponents through the legal system, environmental protection groups in six states—Arizona, Colorado, Missouri, Montana, Oregon and Washington—succeeded in putting nuclear safeguard initiatives on the ballot for the presidential election.

The initiatives, if passed, would have required that: the testing of safety systems and methods for the disposal of nuclear wastes be proven effective to the satisfaction of the state legislature; the federal limit of \$560 million in damage liability for any one reactor accident be scratched; and plans for evacuation in case of a reactor mishap be published.

At best, these requirements would have been only marginally effective as, in all six states, the initiatives, still applied solely to future plants—not to any of those already in operation. As the election turned out, however, the initiatives were defeated across the board.

The utilities and pro-nuclear energy forces were simply too strong for the environmentalists, both financially and argumentatively. The insistence that a passage of the initiative would cripple the construction of new power plants and deny the United States a necessary alternative to foreign oil as an energy source won the day for the big-money interests.

Following an alternative and more direct course of action, 176 people representing the Clamshell Alliance and other political and environmental groups occupied a nuclear power plant construction site in Seabrook, New Hampshire on August 22 (see *The Fifth Estate*, October, 1976, page 15). Eleven persons involved were arrested and jailed for the illegal occupation. As ineffective as the action proved to be, it nevertheless moved the anti-nuclear energy protests beyond the point of relying on the state for answers.

Public opposition to nuclear power in Western Europe has grown in strength as well as it has in America. Plans to construct the initial atomic power plants in Denmark and Norway have been postponed as has the decision on a third plant in the Netherlands. Sections of West Germany and Switzerland have found plans to build power plants snarled in legal battles while France has already experienced sit-ins and bombings at reactor construction sites. In Britain, a 17-member Royal Commission recommended a delay in opening any more plants than the eleven currently in operation.

The recent defeat in Sweden of the Social Democratic Party after forty-four years in office has been directly attributable to the opposition party's promise to drop plans to build any more reactors and to dismantle the five already in operation. An extremely environmentally-conscious country, Sweden not long ago found itself in the unenviable position of having one of the highest uranium-generated electricity consumptions in the world per capita.

According to an article in the *New York Times* (Sept. 26, 1976), an additional aid to the opposing forces was the recent worldwide recession, whose consequent energy savings in Europe during the years 1973–1974 brought the growth in electrical consumption to a halt, taking much of the pressure off the reactor-building race.

“Roll Out the Barrels, We’ll Have a Barrel of...”

Of all the issues argued over by opponents and proponents of nuclear power, probably the two major issues cited by the opposing forces are the hazards of the release of radioactive materials into the atmosphere, and the disposal of nuclear waste materials produced by reactors.

In a 172-page report prepared for ERDA by an outside consultant—and revealed to the public by longtime nuclear industry critic Ralph Nader—it was concluded that 75 million gallons of high level radioactive wastes and millions of gallons of low level radioactive wastes stored in nine scattered locations across the United States represent a major health hazard.

The radioactive wastes are produced by the millions of gallons by nuclear fission in sixty-one commercial reactors generating electricity, government reactors producing atomic weapons materials and reactors used for the propulsion of naval ships.

“A major radioactive waste problem already exists in the United States,” the report concludes, adding that an escape of the material into the air or water would “constitute a radiological hazard for hundreds of thousands, perhaps millions of years.”

The report also charged that the existing waste storage system soon “will be unworkable” and that federal enforcement of safety standards “will be ineffective” without a drastic reorganization.

A good illustration of how ineffective America's waste storage facilities are already is the Hanford Nuclear Reservation, which, even before the aforementioned August 30th explosion, had experienced eighteen separate leaks resulting in the loss of 430,000 gallons of high level radioactive wastes into the surrounding soil. Recalling the seepage of plutonium and strontium 90 at the Maxey Flats, Kentucky disposal site (see the Fifth Estate, Sept. '76, page 5) it should be remembered that scientists admitted at that time to having absolutely no idea how far the radioactive elements can migrate through the earth.

"The leaks have neither killed nor injured anyone to date," the report to ERDA remarked in summation. "Nonetheless, their hazard will remain for hundreds of thousands of years."

As more information is made public concerning accidents involving nuclear components and the dangers of the spreading of radioactive materials, more is being discovered about the dangers of radioactive substances as well. In a newly-released book by McKinley C. Olson entitled *Unacceptable Risk: The Nuclear Power Controversy*, Dr. Edward Martell of the National Center for Atmospheric Research in Boulder, Colorado, explains that he believes "that natural low-level radiation from insoluble alpha particles in the body may be the principal agent of lung cancer among cigarette smokers, as well as heart disease and strokes.

"If I'm right," Martell states, "fission reactors, especially the breeder, because of plutonium production, are totally unacceptable. Nuclear fission is already in trouble because of reactor safety and plutonium safeguards. But it wouldn't require a catastrophic accident involving plutonium...because every little accident, in fuel transportation or processing, could gradually make this world uninhabitable."

According to Dr. Martell's findings, there is no doubt that insoluble plutonium poses the greatest danger to the general public. Plutonium, it seems readily combines with water vapor in air to form insoluble plutonium oxide particles. When plutonium metal corrodes, it forms insoluble dioxide particles small enough to inhale. A good deal of the plutonium which escapes into the environment, then, ends up in insoluble particle form.

Interestingly enough, the National Cancer Institute doesn't even have a program of radiation-induced research because it mistakenly assumed that the Atomic Energy Commission—now the NRC and the ERDA—was taking responsibility for all necessary research involved with the dangers, known and potential, of radiation.

Finally, if all this information isn't sufficiently numbing, there's a further update on the effects of plutonium in *Nuclear Opponents*, a monthly news paper published by the Citizens Energy Council in Allendale, New Jersey. Summarizing twenty-five scientific research studies on the behavior of plutonium in the environment and its biological effects, *Nuclear Opponents* has come up with some more bad news for the human race.

"Since it appears that the concentration of plutonium in the lungs is only half that in the gonads, going to a 'plutonium economy' as envisaged by ERDA with fast breeders turning out 30,000 tons of the PU during the next 45 years will mean the deposition of an enormous amount of plutonium in the gonads of four billion people with very severe genetic effects.

"From the papers (twenty-five studies) it is clear that plutonium is migrating faster and further from the spots it was dumped than was believed with Americium 241, the material involved in the recent explosion at Hanford which irradiated ten workers, moving through the soil much more rapidly than progenitor plutonium.

"P.W. Krey of US RDA calculated that as plutonium decays to americium," N.O. writes, "the decay product will peak in soils from worldwide fallout by 2037; it will then be comparable in alpha-activity to the remaining plutonium, but because americium is taken up so much more readily by man and animals, this may become the greatest danger to mankind."

Sidebar: Soviet Nuclear Accident Hidden

An Associated Press wire story on Sunday, November 7 revealed that, according to exiled Soviet biochemist Dr. Zhores A. Medvedev, hundreds of people were killed and thousands suffered from radiation sickness as a result of the explosion of buried atomic waste materials in the Ural Mountains in 1958.

In an article published in *New Scientist* magazine, a British scientific weekly, Medvedev asserted that atomic reactor wastes which had been buried in a deserted area a few dozen miles from the town of Blagoveschensk in the Urals overheated within the shallow burial facility and erupted "like a violent volcano" blowing radioactive clouds hundreds of miles from the site of the explosion.

As has been the case elsewhere, including the recent Seveso, Italy disaster, no one was evacuated from the affected area in the Urals until symptoms of radiation sickness became readily apparent.

Dr. Medvedev said that many of the Ural towns where the level of radiation was moderate to high, but not lethal, were never even evacuated. The area considered most seriously affected by the explosion, however, is yet today labeled dangerous and forbidden to public access.

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