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# Fukushima and the Mass Media Meltdown

## The Repercussions of a Pro-Nuclear Corporate Press

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A sociological and technological discussion — in the wake of the out-of-control nuclear apocalypse in Japan — addressing the compromise of public health and security created by the failure of the western corporate mass media to equitably report on, mildly investigate, or even moderately challenge, the nuclear power industry.

**Author's note, 19 June 2011:**

The following report was written after learning about the pro-nuclear and corporate bias of the Society of Environmental Journalists. It was originally published by VOICE NEWS, Winstead CT, in 2001 and was originally titled "The Potential Repercussions of a Pro-Nuclear Press." I have made a few minor changes, added hyperlinks, and inserted a few comments in [brackets].

The report was originally sent to Noel Grove, then an SEJ official and an editor in some capacity for the National Geographic, who I was communicating with at the time (and hoping to land a story assignment from). After perusing my article to some (unknown) extent, Mr. Grove — who was somewhat hysterical about it– criticized this writing as hysterical, and the thesis as impossible, and the writer as lacking all credibility.

However, the prophetic warnings advanced in this writing have now come true, although the nuclear "accident" did not occur on North American soil, but in Fukushima Japan — a surrogate client state of the United States and its national security apparatus and weapons complex — and a corporate ally in nuclear proliferation and global radioactive destruction.

It is now confirmed that there are three reactors at the Fukushima complex that melted THROUGH their outer containment vessels, through ALL the layers of so-called "defense-in-depth" and are continuing to spew lethal nuclear poisons and further contaminate the land we live on, the air we breathem, and the water that sustains all life on earth. We were always warned, and very worried, about reactor melt-DOWN, this being the absolute worst-case scenario and something that the nuclear industry and their purchsased government agencies assured us "could never happen" — always agreeing that these meltdowns would be "catastrophic" if it did.

Reactor melt-THROUGHs are much more serious than reactor melt-downs. At Fukushima, there is the equivalent of some twenty (20) reactor cores exposed and radiating lethal nuclear poisons. The corporate mass media system continues to downplay, distort, dismiss or deflect attention from the nuclear crises in Japan.

At Fukushima, and all over Japan — and with deadly nuclear poisons spreading all over the

world — it's much worse than you think.

The people of the United States, Canada, and the rest of the world need to take action to stop the ongoing nuclear contamination and possible nuclear catastrophes at operating reactors all over the world. Here's why.

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There is overwhelming evidence that a nuclear power catastrophe in the United States is highly probable. It matters little if you are "pro-" or "anti-" nuclear, as such constructs of your socialization are irrelevant to current nuclear realities. It is a tribute to our nuclear engineers that a worst-case accident has to date been avoided. The threat is real — it has always been real — but it has been dismissed.

Given the hostile economic climate of electric power deregulation [1999-2001], I submit that a major and potentially unprecedented nuclear disaster is a near certain event. This writing aims to address media neglect in probing the nuclear industry and regulatory agency assurances, standards, activities, safeguards, denials, etc. How should journalists respond? There are a few important questions from which one can formulate an answer.

How close am I to the nearest reactor? What level of emergency preparedness and evaluation procedures is currently practiced there? Such questions prompt concern. The repercussions of an "event" are dependent on the form and magnitude of the "event," on the human capacity to contain it, and on simple factors like weather. Evacuation plans constitute formal, institutionalized admissions that the threats are very real and demand attention.

What are the origins of my perceptions and beliefs about nuclear power? Origins are rooted in sociological and psychological factors pertinent to an individual's education, experience and identity. A related question is: How do "market forces" manifest themselves in the media's coverage of nuclear power? Insight is gained by recalling that from 1991 to 1993, the U.S. Department of Energy (D.O.E.) prepared and arranged 104 press conferences, prepared and distributed 950 press releases; arranged 1,650 press interviews for D.O.E. officials; and prepared and disseminated at least 307 editorials or letters to the editor [in mainstream U.S. media].

*Question:* Is there precedence for institutionalized deception? *Answer:* What is the nature of deception exercised by the tobacco industry? Are such deceptions inherent to tobacco interests alone? Such questions are valid and important. However, this writing predominantly addresses the question: How can I — and how should I — evaluate and verify the integrity (safety) or compromise (threat) inherent in nuclear power operations?

This brief writing introduces a few underlying impediments to nuclear safety. Isolated analyses of these impediments might suggest isolated integrity. However, the historical technological realities magnified over 20 plus years — coupled with industry and regulatory carelessness and arrogance, and the economic pressures of deregulation — virtually assure disaster.

**BRUTE-FORCE ENGINEERING**

As early as 1955, the nuclear industry was persistently seeing major, catastrophic technical

failures. While noting the great urgency to "capitalize on any technological lead the U.S. may have," Rear Admiral H.G. Rickover in 1957 testified to the dearth of knowledge, "Despite every design and operation precaution taken by us," he said, "we have experienced leaks in some of our steam generators... we had to spend considerable time and money on a brute-force approach, because there was no hope of obtaining an understanding of the fundamentals involved in a reasonable length of time."

A 1957 Atomic Energy Commission (AEC) study, WASH-740, created by the Brookhaven National Laboratory [now a toxic and irradiated SUPERFUND site], and titled Theoretical Possibilities and Consequences of Major Accidents in Large Nuclear Power Plants estimated "the consequences of a very large reactor accident at a hypothetically small nuclear plant near a large city" at 43,000 injuries, 3,400 deaths and seven billion dollars in 1957 losses. And, because of this, the U.S. Congress passed the Price-Anderson Act indemnifying the industry from economic liability.[The Price-Anderson Act was originally known as the 'Gore Bill', becuase it was introduced by Senator Albert Gore Sr., and this, indeed, is an inconvenient truth.] The McKinney Commission (1957) argues against "the rush to construct nuclear power plants just for us to look at, brag about and subsidize."

By 1963 there were three nuclear submarines in the water, with 22 more under construction. By 1967, Congress authorized 107 nuclear subs and eight nuclear surface ships, and 74 of these — including 41 Polaris nuclear missile launchers – were in operation. By 1972 there were 118 subs on order, with 95 subs and four ships in the water.Yankee Atomic Energy Corporation (YAEC) pioneered the nuclear power field with its Rowe (MA) reactor by 1960.By 1963, four larger nuclear plants were ordered, and in 1965 seven; in 1967, 20; in 1968, 14. When plants ordered in 1963 came on line in 1969, there were 91 plants on order; and by 1972, there were 162. All of the 107 nuclear plants in operation in the U.S. today deploy technology of this era. [There are 103 reactors operating in the U.S. at present.]

Former M.I.T. nuclear physicist and long-time industry consultant K. Uno Ingard attributes the problems with nuclear power to its 'economy-of-scale': "Engineers involved in designing these plants [got] their experience mainly from marine [steam] power plants where everything was relatively small," he confirmed [in a personal interview]. "In essence, they merely scaled plants up from what they knew before."

Problems identified by Admiral Rickover remain unsolved or ignored. One of these is steam-generator tube (SGT) cracking, an issue critical to safe reactor operation. [SGT cracking is one of the major issues that plague Westinghouse Pressurized Water Reactor (PWR) designs.] Reports on SGT pipe cracking appeared as early as 1960. A 1979 Nuclear Regulatory Commission (NRC) document details problems with failing SGTs that plagued at least 33 U.S. reactors. At least thirteen utilities sued Westinghouse and Combustion Engineering, alleging SGT fraud. Suits are settled out-of-court, with documents sealed against public scrutiny.

In 1995, over 500 cracked SGTs were discovered at Maine Yankee [Nuclear Power Complex], prompting the NRC to issue a mild request that reactors suffering SGT failures be inspected at the next refueling outage. Most utilities balked, explaining away the problem to complacent regulators. Plants using the potentially flawed SGTs were asked by the NRC "to tell us why they believe their plants are safe to operate." Both 1996 and 1997 saw the release of major NRC reports on steam generator tube failures.

Technological innovation is not achieved by “brute-force” or “make it work” engineering, but all evidence reveals that the pace of nuclear development exceeded the human capacity for innovation. Modeled after the reactors of Rickover’s nuclear navy, driven by the race to beat the Russians, to meet boom-or-bust sales worldwide, by economic optimism but unverified science, and forced to compete with an entrenched fossil fuel economy, nuclear power technology was virtually stillborn.

Yankee Atomic also pioneered a hasty and irresponsible reactor “decommissioning” at the Rowe reactor. In 1995, in *Citizen’s Awareness Network vs. Nuclear Regulatory Commission*, the U.S. First Circuit Court of Appeals ruled that Yankee Atomic violated NRC regulations and Federal Statutes.

[See also: keith harmon snow, Nuclear Poisons: They continue to accumulate: Too much, too fast, too hot to handle, insidious and deadly, lasting forever, Valley Advocate, July 1995.]


Photo credits: keith harmon snow

**CHAOS IN THE MAKING**

Pervasive and systemic aging degradation — like metal fatigue, structural embrittlement, corrosive water chemistry, and neutron bombardment — has been institutionalized by NRC and industry complacency and arrogance. Aging mechanisms like cracked SGTs degrade performance and compromise safety in unknown and unpredictable ways.Decades-old problems defined as “generic safety issues” (applicable to similar types or classes of reactors) were officially designated unworthy of immediate action. Many “generic” issues have never been resolved.

Compounding the original problems encountered — the incorrect and incomplete or forgotten assumptions, the inevitable instabilities and failures, the aging components and crumbling materials — have been the uncountable modifications, repairs and part substitutions which have caused significant and unpredictable deviations from the operational parameters of the original design.

Parameters have been altered, designs modified, upgrades creatively and casually implemented. Multiple modifications have spawned multiple blueprints — often outdated,

poorly modified, and unavailable in an emergency (e.g. Three Mile Island). There have been countless license modifications with their many justifications, but only mock attention to detail and procedure. “Every modification due to some problem,” says Paul Gunter of the Nuclear Information Resource Services, “constitutes an erosion in the design margins of safety.”

In 1990, the U.S. GAO reported that “utilities operating at least 72 of the 113 domestic nuclear power plants have installed or are suspected of having received nonconforming products.” Computer software has proved inadequate, hardware has failed. And too, there are the thousands of valves, plugs, pumps, motors, relays, switches, gauges, air ejectors, ducts, conduits, valve seals, grommets, electrical cables, switchboards, alarms, diesel generators, electrical buses, penetrations, inverters, resistors, turbines, condensers, transformers, nozzles, fuses, nuts, bolts and welds which have failed — fallen out, corroded, short-circuited, melted, disintegrated, fractured or stuck — under various circumstances.

Modern chaos theory says that Safety Analysis Reports (SARs) — submitted by industry and approved by the NRC — do not anticipate the consequences of all the severe reactor incident possibilities. [Fukushima’s earthquake.Tsunami one-two punch makes that clear.] Such predictions are beyond the realm of human knowledge and human capacity and human imagination. Initial conditions, specifications and assumptions chosen or argued to insure safe operation no longer apply. Engineers and scientists, for the most part, operate in their own little areas of specialization. Says James Gleick, author of *Chaos: Making a New Science*, they are “biased by the customs of their disciplines or by the accidental paths of their own educations.”

Human factors engineering introduces significant unpredictable risk. By virtue of the hundreds of plant employees and shift changes — with their unique personal concerns; their limitations of knowledge, comprehension, memory and judgment; their emotional and psychological realities; their disillusions, resentments, animosities and distractions — the man-machine interface is a fallible link in an already compromised chain.

**VIRTUALLY ASSURED DESTRUCTION**

Reactor operations are being “streamlined” at the expense of safety. Reactors are run longer and harder, with fewer inspections, at higher output power capacities. Given the greater propensity for failures to occur on start-up and shut-down phases of operation — where transients, power surges and instabilities proliferate — testing and safety analyses performed during refueling outages may prove meaningless after the subsequent start-up.

Utilities are minimizing reactor outages and maximizing operations at the expense of safety. Reliability and quality assurance testing of back-up safety systems have been relaxed, postponed or eliminated completely. Optimizing economic factors, Houston Light & Power (TX) recently broke industry records for a refueling outage. The intensity of irradiation prohibits or restricts access and in-service testing of systems and components. The concomitant shift to on-line maintenance means that so-called “redundant” safety systems — ever touted as the backbone of “defense-in-depth” — are disabled during full-power reactor operations. Economic imperatives are dictating patchwork repairs in lieu of expensive parts replacements.

[See: keith harmon snow, Vermont Yankee Nuclear Power Station: A Second Lease on Half-Life? Montague Reporter, December 2003.]

Corporate “downsizing” has displaced talented and qualified employees. Others are suffocated by budget and schedule constraints, driven by corporate imperatives divorced from the dynamic realities of daily operations. The profit principle translates directly to control room operators increasingly inclined to risk reactor deviation or operational uncertainty. Operators — too nervous in an emergency to exercise a “controlled breach” of reactor containment — may in the uncertainty of the moment allow the system to exceed the thresholds of control. [This is exactly what happened at Fukushima: reactor operators and the TEPCO management delayed triage actions out of the fear of economic losses; once they did react — dumping saltwater on the molten reactor cores — it was too little, too much uncertainty, too late]

Employees legitimately concerned about safety, improper procedures or the cutting of nuclear corners, are not free to speak without fear of retaliation:  The NRC has persistently betrayed “whistleblower” security — and punished nuclear whistleblowers.

**NATURE CANNOT BE FOOLED**

Deregulation — coupled with the historical compromises of this technology – is be the *coup de gras* for nuclear power as manifested in the U.S. today. Utilities long shielded from normal “market forces” by monumental public subsidies are now exposed to hostile competition.  While some utilities may appear to cling in desperation to our entrenched but obsolete and unprofitable nuclear economy, evidence also suggests that executives shielded by the Price-Anderson Act consider themselves impervious to the consequences of reactor failure.

It should also be acknowledged that radioactive remediation has become a billion dollar industry unto itself.

Journalists [and the corporate propaganda system that pays them] predominantly ignore such nuclear conundrums as safety, unprofitability, waste accumulation, unlawful decommissioning, routine radioactive releases, or the epidemics of disease clustered around nuclear sites. Those who are intimidated into ignorance and self-censorship merely by the science of it all have left themselves irresponsibly unprepared in proportion to the threat. Prudence would seem to dictate that the SEJ sponsor a conference, to debate — at the very least — the ideas of nuclear experts that have been synopsized herein. Nor is this so narrow an issue as it seems: The potential for domestic instability due to nuclear emergency has substantial foreign policy implications. [Not to mention the economic and political ramifications leading us to complete societal breakdown.]

Journalists would do well to revisit a portentous analysis offered by Nobel physicist Richard Feynman. “It appears that there are enormous differences of opinion as to the probability of failure with a loss” of equipment or human life, he wrote. “Estimates range from roughly one in 100 to one in 100,000. The higher figures come from working engineers and the very low figures from management. What are the causes and consequences of this lack of agreement? What is the cause of management’s fantastic faith in machinery?”

Commenting on technical problems ignored or tolerated, Feynman emphasized that “acceptance and success cannot be taken as evidence of safety. Failures are not what the design expected. They are warnings that something is wrong. The equipment is not operating as expected, and therefore there is a danger that it can operate with even wider deviations in this unexpected and not thoroughly understood way. The fact that this danger

did not lead to a catastrophe before is no guarantee that it will not the next time."

R.P. Reynman was not speaking about nuclear power, though he might have been. "The O-rings of the Solid Rocket Boosters were not designed to erode," wrote Feynman, in "Personal Observations on Reliability of the Shuttle," a brief but profound statement buried in *Appendix F* of Report of the Presidential Commission on the Space Shuttle Challenger Accident. "Erosion was a clue that something was wrong," Feynman concluded, not something from which safety can be inferred ... For a successful technology, reality must take precedence over public relations, for nature cannot be fooled." Disregarding structural constraints and systemic defects, GE has pushed output power levels to five percent above the maximum specification ratings of the original design.

As this previous writing is republished, the situation in Japan is unprecedented, unappreciated, unmanageable and it remains out-of-control: it is the worst industrial accident that humanity has ever faced. For the Fukushima nuclear apocalypse and the people of Japan — and with lethal nuclear poisons spreading all over the earth — the end is nowhere in sight.



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