What's Wrong With the NRC Fact Sheet on the 1979 Accident?

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Because the Nuclear Regulatory Commission continues to publicize false information about the TMI accident, we correct the record once again. The NRC's erroneous statements are listed in the *red* text which follows.

"The main feedwater pumps stopped running, caused by either a mechanical or electrical failure, which prevented the steam generators from removing heat."

The problems did not start with the feedwater pumps, trouble began in the condensate polisher system. The NRC reported this in 1979 but states that they don't need to know the exact cause of the condensate polisher valves failure. No one knows why the accident began to this day.

"Signals available to the operator failed to show that the valve was still open… In addition, there was no clear signal that the pilot-operated relief valve was open."

Because TMI had been falsifying reactor leak rates to the NRC in the weeks leading to the accident, operators had learned to ignore the most obvious sign that the PORV had stuck open and that coolant was being lost through this pathway. The high temperature reading at the PORV drain line was a clear indication that coolant was escaping. But, operators had become accustomed to this anomaly because of the criminal falsification which allowed this condition to exist for several weeks.

It should be noted that if the company had operated lawfully, the plant would have been shut down for repairs and there would have been no accident on March 28, 1979.

It is also noteworthy that NRC inspectors at TMI during the weeks before the accident failed to find or note the reactor coolant leak. Later, the company pleaded "no contest" to federal charges of criminal falsifications On May 22, 1979, former control room operator Harold W. Hartman, Jr. tells the NRC investigators that Metropolitan Edison - General Public Utilities had been falsifying primary-coolant, leak rate data for months prior to the accident. At least two members of management were aware of the practice. NRC investigators do not follow-up or report the allegations to the commission.

On February 29, 1984, a plea bargain between the Department of Justice and Met Ed settled the Unit 2 leak rate falsification case. Met Ed pleaded guilty to one count, and no contest to six counts of an 11-count indictment.

"In a worst-case accident, the melting of nuclear fuel would lead to a breach of the walls of the containment building and release massive quantities of radiation to the environment. But this did not occur as a result of the Three Mile Island accident."

It was only by luck that the reactor walls were not breached. The industry conjectured that voids in the coolant prevented molten fuel from burning through the reactor walls. It is not known if these voids will form to prevent a total meltdown in future accidents. Fifteen million curies of radiation is a "massive quantity."

"The accident caught federal and state authorities off guard."

State officials had no means to measure radiation at the scene. They had to take field samples and return to their laboratories. This was not an effective way to acquire real-time data or collect data on gaseous releases. Their data collection abilities were insufficient to determine release rates. The NRC no longer monitors radioactive releases at reactor sites.

"They did not know that the core had melted, but they immediately took steps to try to gain control of the reactor and ensure adequate cooling to the core."

Reactor core measurements taken during the first morning showed that fuel might have melted. This data was cast aside because operators believed it was not possible and therefore erroneous. During the first day, the NRC in fact distanced itself from the company by stating it did not tell them how to run their plant and that they were overseers of regulatory matters. Initially, the NRC was more interested in hiding from responsibility than offering advice to the company.

"Helicopters hired by TMI's owner, General Public Utilities Nuclear, and the Department of Energy were sampling radioactivity in the atmosphere above the plant by midday. A team from the Brookhaven National Laboratory was also sent to assist in radiation monitoring."

By mid-morning, citizens (many who had not heard about the accident) were reporting a metallic taste in their mouths. Because the reactor had been leaking for several weeks, the reactor drain tank was full and a pathway to the environs had already been created by valves aligned to handle the leaking coolant and facilitate the falsification of the leak rates. Additionally, at the time of the accident, GPU reported that radiation monitors went off- scale, filters were clogged and other monitoring devices "disappeared." Therefore, we do not know how much radiation escaped undetected into the atmosphere. Still, the Columbia Study found **increased cancer incidence**, including lung cancer, from 1975-1985.

“In an atmosphere of growing uncertainty about the condition of the plant, the governor of Pennsylvania, Richard L. Thornburgh, consulted with the NRC about evacuating the population near the plant. Eventually, he and NRC Chairman Joseph Hendrie agreed that it would be prudent for those members of society most vulnerable to radiation to evacuate the area. Thornburgh announced that he was advising pregnant women and pre-school-age children within a 5-mile radius of the plant to leave the area.”

The NRC’s agreed-upon conditions of a reactor which would require evacuation of nearby communities had already been met two days earlier on Wednesday, March 28. Governor Thornburgh complained often about the conflicting and confusing data coming from the plant and the NRC.

“...even though it led to no deaths or injuries to plant workers or members of the nearby community.”

In August 1996, a study by the University of North Carolina-Chapel Hill, authored by Dr. Steven Wing, reviewed the Susser-Hatch study (Columbia University; 1991). Dr. Wing reported that "...there were reports of erythema, hair loss, vomiting, and pet death near TMI at the time of the accident... Accident doses were positively associated with cancer incidence. Associations were largest for leukemia, intermediate for lung cancer, and smallest for all cancers combined... Inhaled radionuclide contamination could differentially impact lung cancers, which show a clear dose-related increase."

Findings from the re-analysis of cancer incidence around Three Mile Island is consistent with the theory that radiation from the accident increased cancer in areas that were in the path of radioactive plumes. "This cancer increase would not be expected to occur over a short time in the general population unless doses were far higher than estimated by industry and government authorities," Wing said. "Rather, our findings support the allegation that the people who reported rashes, hair loss, vomiting and pet deaths after the accident were exposed to high level radiation and not only suffering from emotional stress.”

Even under normal operating circumstances nuclear plants release radiation. **The NRC acknowledged that 12 people are expected to die as a direct result of normal operation and releases for each commercial nuclear reactor that is granted a license extension of 20 years.**

The admission came in a correction to its relicensing regulation, which the NRC published in the Federal Register on July 30, 2001. According to the Federal Register notice, each relicensing is expected to be responsible for the release of 14,800 person-rem of radiation during its 20-year life extension. The figure includes releases from the nuclear fuel chain that supports reactor operation, as well as from the reactors themselves. The NRC calculates that this level of radiation release spread over the population will cause 12 cancer deaths per reactor.

"But new concerns arose by the morning of Friday, March 30. A significant release of radiation from the plant's auxiliary building, performed to relieve pressure on the primary system and avoid curtailing the flow of coolant to the core, caused a great deal of confusion and consternation."

This was not by accident or design. The release was perpetrated by a lone operator acting on his own and without permission or consultation with anyone else. There were no regulatory repercussions resulting from his actions.

"Today, the TMI-2 reactor is permanently shut down and defueled, with the reactor coolant system drained, the radioactive water decontaminated and evaporated, radioactive waste shipped off-site to an appropropriate disposal site, reactor fuel and core debris shipped off-site to a Department of Energy facility, and the remainder of the site being monitored."

The reactor was destroyed. No one knows how much fuel remains in the reactor core debris. Some estimates have placed it at 20 tons of uranium. **Unit #2 is still releasing small amounts of radiation to the air and water.**

"The accident was caused by a combination of personnel error, design deficiencies, and component failures."

Also add to the list: criminal activity, the NRC's failure to disseminate safety data, NRC inspection and enforcement failures, failure to fix problems noted by control room operators, sloppy control room housekeeping and economic gain placed above safety.

"Upgrading and strengthening of plant design and equipment requirements. This includes fire protection…"

A reactor safety division specifically created to spot problem trends in the wake of the TMI accident was abolished by NRC executives in 1999. According to the NRC's Office of Inspector General, only half of NRC employees feel it is safe to bring up new safety problems in 2003. One former NRC employee stated those who do have their careers harmed by NRC executives.

For more than a decade, the NRC was aware that the fire protection material Thermolag was defective and burned at the same rate as plywood. The NRC was aware that Thermolag's manufacturer has falsified test results yet did nothing to fix the problem. Finally the NRC asked TMI to remove Thermolag. Two years after that request, TMI was again asked to remove Thermolag. The NRC and TMI were very slow to act.

"Expansion of NRC's resident inspector program - first authorized in 1977 - whereby at least two inspectors live nearby and work exclusively at each plant in the U.S to provide daily surveillance of licensee adherence to NRC regulations…"

At Davis Besse, there was no chief inspector for a year. Inspectors find fewer than 2 percent of problems identified at the plants. The NRC has decreased total inspection man-hours in recent years.

"The installing of additional equipment by licensees to mitigate accident conditions, and monitor radiation levels and plant status…"

The NRC no longer monitors radiation at the plants. On many occasions, the communication lines from the control room computers to the NRC are found to be inoperable.
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"Employment of major initiatives by licensees in early identification of important safety-related problems, and in collecting and assessing relevant data so lessons of experience can be shared and quickly acted upon…"

Oh, if this were only true. Drastic employee cutbacks and overburdened workers and engineers have little time and are reluctant to raise safety new issues. TMI Alert has learned of TMI employees who simply "up and quit" due to the excessive work load.

"July 1980 Approximately 43,000 curies of krypton were vented from the reactor building."
For 11 days, in June-July, 1980, Met Ed illegally vented 43
,000 curies of
radioactive Krypton-85 (beta and gamma; 10 year half life) and other radioactive gasses into the environment without having scrubbers in place. In November 1980, the United States Court of Appeals for the District of Columbia ruled that the krypton venting was **illegal**.

By 1993, TMI-2 evaporated 2.3 million gallons of accident-generated radioactive generated water, including tritium, a radioactive form of hydrogen (half life; 12.5 years), into the atmosphere despite legal objections from community-based organizations.

Postscript:

The NRC fails to point out that it had ignored for more than a year prior to the accident, a newly discovered safety problem which did occur at TMI. Voids in the coolant created by a poor design of piping caused reactor pumps to cavitate and vibrate violently. These vibrations threatened to destroy the pumps. The coolant pumps had to be turned off during the height of the accident.

The NRC's role in the accident is one of tacit permissiveness. The attitude of the industry was criticized by the President's Commission above all other factors. Three Mile Island Alert has observed that safety conditions and attitudes are returning to the level evidenced by the industry in 1979. Many of the so called "permanent" changes have been downgraded since the time of their installation. The NRC inspectors have little confidence in the newly implemented regulatory process according to a January 2000 GAO investigation. The new regulatory process handcuffs the ability of inspectors to pursue safety problems at the plants. Unless a suspicious condition is deemed clearly dangerous, the new process doesn't allow the implementation of other than routine inspections.

The Davis Besse near-miss is a prime example. The NRC did not have a resident inspector there for one year. Although there was clear evidence of a leaking reactor, the NRC initially denied possession of the "smoking gun" – a picture of the red crud which had formed on the outside of the reactor vessel. The NRC had in fact ignored the problem to allow the plant to continue operating.[1] Determining that something is clearly dangerous is apparently still a subjective skill at the NRC. (1)

There are many outstanding safety issues identified by the NRC following the accident which have still not been corrected. One example is the vulnerability of electrical cables during an accident which can electrically short circuit. Another example is the PORV valve which released the coolant during the accident – it is still not rated as a "safety item."

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1 "When nuclear regulators fixed blame for failing to notice that there was a hole in the lid of the Davis-Besse reactor in Ohio, they spent little time criticizing the role played by their new oversight rules.

Those rules, seeking to reduce overly burdensome regulations, in 2000 replaced the subjective, nit-picky set of guidelines that had governed power plant inspections for years.

But documents obtained by a watchdog group show that a special Nuclear Regulatory Commission task force last year had in fact intended to blame the new regulatory system in part for the slipshod inspections at Davis-Besse. Before the task force's report was complete, however, NRC staff had removed a section on the shortcomings of the NRC's new reactor oversight process.

The final report - an indictment on the agency and plant owner FirstEnergy Corp. - did list possible improvement to the oversight process. But it was far less sweeping and less critical than the earlier suggestions." ('Plain Dealer,' 5/16/03).